

How does pension automatic enrolment affect savings?

Evidence from a linked UK household panel



Authored by

Christopher Firth, John Gathergood and Jesal Sheth, University of Nottingham; Neil Stewart, Warwick Business School, University of Warwick.
Foreword written by Matthew Blakstad, Nest Insight. © 2024 National Employment Savings Trust Corporation.

About this report

This report is part of Nest Insight's programme of work exploring the dynamics of household finances. For more information, visit nestinsight.org.uk/research-projects/using-data-to-understand-the-dynamics-of-household-finances/

About Nest Insight



Nest Insight is a public-benefit research and innovation centre finding better ways to support people's financial wellbeing, now and in later life. We focus on understanding the needs and goals of those on low and moderate incomes, partnering with employers, product providers and policy thinkers to identify, invent and test solutions that work for people in the real world. For more information visit nestinsight.org.uk

About Nest Insight's strategic partner

BlackRock

BlackRock is a global investment manager serving the UK market for more than 30 years with a purpose to help more and more people experience financial wellbeing. BlackRock's Emergency Savings Initiative is made possible through philanthropic support from the BlackRock Foundation and the BlackRock Charitable Gift Fund. The initiative brings together partner companies and non-profit financial health experts to make saving easier and more accessible for low- to moderate-income people across the US and UK, ultimately helping more people to establish an important financial safety net. For more information, visit blackrock.com/corporate/about-us/social-impact

About our programme partners



The Nuffield Foundation is an independent charitable trust with a mission to advance social well-being. It funds research that informs social policy, primarily in Education, Welfare, and Justice. The Nuffield Foundation is the founder and co-funder of the Nuffield Council on Bioethics, the Ada Lovelace Institute and the Nuffield Family Justice Observatory. The Foundation has funded this project, but the views expressed are those of the authors and not necessarily the Foundation.

Website: nuffieldfoundation.org

Twitter: @NuffieldFound

About our research and delivery partners



The University of Nottingham is a research-intensive university with a proud heritage, consistently ranked among the **world's top 100**. The university prides itself in unlocking the potential of its students and offering a life-changing experience. It has a pioneering spirit, expressed in the vision of its founder Sir Jesse Boot, which has seen it lead the way in establishing campuses in China and Malaysia – part of a globally connected network of education, research and industrial engagement. For more information, visit nottingham.ac.uk



Warwick Business School (WBS) is the largest department at the University of Warwick. Thought leaders in Leadership, Strategy, Behavioural Science, Healthcare, Finance, Future of Work, Entrepreneurship & Innovation, and Sustainability, WBS research is published in the world's leading science journals influencing Governments, policymakers and industry. For more information, visit wbs.ac.uk

Contents

Foreword	4
Retirement saving doesn't happen in isolation	4
Savings can't go down when you have no savings	5
Executive summary	6
Introduction	9
Policy background and analysis design	11
Related studies	12
Data and econometric approach	15
Data	15
Econometric approach	16
Related studies	17
Results	18
Characteristics of the auto enrolled sample	18
Summary statistics for auto enrolees	18
Comparison with the non-Nest working age population	20
Spouse characteristics	21
Estimated effects of automatic enrolment on saving	23
Effect on active monthly saving	23
Estimates for different groups	25
Estimates for enrolees close to firm staging date	25
Estimate by enrolee income	26
Estimates by enrolee age	26
Two-way fixed effects estimates	26
Policy implications	27
Understanding the savings behaviour of the automatically enrolled population	27
Implications for future savings policies	27
Conclusion	29
References	30

Foreword

Automatic enrolment into pensions saving has vastly increased the numbers of working people who are saving for retirement. In particular, millions of low to middle income workers have joined the ranks of pensions savers. But there are growing concerns that many are still not saving enough, and others are missing out completely because they're excluded from auto enrolment.

A range of retirement industry bodies, including the Pensions and Lifetime Savings Association and the Association of British Insurers have recently called for auto enrolment contributions to rise. This builds on draft legislation looking to expand the reach of auto enrolment contributions.

The intention behind these proposals is clear: everyone should be encouraged to save enough to fund a comfortable retirement. But what about those people whose present-day financial realities are already far from comfortable? Is there a risk that increasing coverage or contributions will leave them worse off?

In a programme of work spanning the past two years, using data from the Nest pension scheme, and a range of innovative techniques, we've been working to understand how automatic enrolment interacts with the wider financial lives of participants and their households – specifically, the impact it has had on their levels of savings and debt, and the impact that cost of living pressures have had on auto-enrolled pension contributions. This report covers the latest of these studies, carried out as a collaboration with the University of Nottingham and Warwick Business School, with funding from the Nuffield Foundation.

Taken together, we believe the evidence from these studies provides a vital new perspective on the financial experiences of the millions of people who've been auto enrolled.

Retirement saving doesn't happen in isolation

When a worker is auto enrolled by their employer, they experience a slight reduction in take-home pay, because of the employee contribution. If they don't want to participate, they can of course opt out. But if they stay enrolled, they can cover the cost of their contributions in one of three ways:

- › reduce their spending
- › draw on other savings
- › borrow more.

From a policy perspective, we might hope that they'd do the first of these. The purpose of pensions auto enrolment is to increase overall wealth and help people smooth their spending through their working lives and into retirement into retirement. For this to be the case, though, it would have to be the case that most people reduce their spending somewhat when they're enrolled. Until recently, though, we've not had clear evidence of whether people are doing this.

This gap in our evidence base is closing thanks to a number of recent studies¹ looking at the effects that auto-enrolment has had on participants' borrowing and consumption. The picture emerging from these studies is mixed: people do spend less, but to some degree they also borrow more and draw on liquid current account balances.

¹ Beshears et al, 2004; Choukmane, 2023; Choukmane & Palmer, 2023

This report builds on these studies by asking whether people also drew on their savings to cover some of the cost of being enrolled.

Savings can't go down when you have no savings

This paper describes the innovative data matching and analysis techniques used by the research team to explore the interactions between auto enrolment and the other forms of savings previously held by the people who were enrolled.

The headline finding is that we did not see any large reductions in other savings among the auto-enrolled population in Nest. Yet this simple statement disguises a perhaps more significant discovery: a large proportion of those who were auto enrolled had no other forms of savings. It's no surprise, therefore, that these people did not reduce their levels of saving.

The effect of auto enrolment on this group has been to get them started with long-term savings, while throwing into sharp relief their lack of any accessible savings to fall back on in the case of financial shocks like an unexpected bill or an interrupted income.

We believe this new finding makes an important contribution to the evidence base outlined in this introduction. It is consistent with a broader body of work that has developed over recent years on how automatic enrolment affects broader personal finances. Nest Insight is of the view that the future shape of personal finance policies like auto enrolment needs to be developed through the lens of improving overall financial security. A narrow focus on increasing pension saving fails to take into account the inter-connectedness of savings, spending and borrowing behaviour. In particular, we see merit in incorporating some element of emergency savings into the future evolution of pensions automatic enrolment, for low to middle income households.

We're grateful to the Nuffield Foundation for enabling this research and helping build this crucial evidence base.

Matthew Blakstad

Analysis Director, Nest Insight

Executive summary

Automatic enrolment into workplace pensions is a strong policy intervention designed to address shortfalls in retirement saving among the working age population. A broad evidence base has established that the policy substantially increases pension participation rates, leading to higher average saving within the pension. However, it is possible that the effect of automatic enrolment in generating new saving within the pension might be offset by less saving elsewhere within the individual's finances. This project focused on how pension automatic enrolment affects other forms of saving.

This is an important issue because, as our analysis shows, the effects on automatic enrolment of generating new pension contributions among employees are highly persistent. Evidence shows that opt-out rates are persistently low, as are cessation rates (whereby individuals do not opt out but do cease to make contributions at a future point in their employment). In our recent analysis of opt-out, cessation and pension withdrawal rates during the past few years, published earlier in this project, we show that despite the increases in the cost of living, these rates have remained low.²

The main analysis undertaken in this project examined how pensions automatic enrolment affects other forms of saving using data from the UK. The project took the following approach:

Comparing the automatic enrollee population with the wider population

- New data on the savings behaviour of individuals with automatic enrolment pensions was obtained by linking data from the UK's largest household survey, *Understanding Society*, with pension records from Nest, the UK's largest workplace automatic enrolment pension provider.
- All adults in Wave 11 of *Understanding Society* (27,891 individuals) were asked whether they would consent to having their Nest records linked to their survey answers. Of the consenting individuals, 1,672 (13.2%), were linked to a Nest member record based on name, date of birth and address.
- Using this matched sample, a comparison was made between the savings behaviours of Nest pension automatic enrollees and the working age population observed in the linked sample, drawing both upon a representative sample of the working age population and the sub-sample of the working age population observed to be in employment. This allowed a comparison of behaviours among similar groups in the population, in particular those in employment but not automatically enrolled into the Nest pension.

Estimating the effect of automatic enrolment on other saving

- To analyse the effect of automatic enrolment on saving, the project used a difference-in-differences research design, exploiting the staggered rollout of automatic enrolment across employers in the UK. The rollout of automatic enrolment across firms was staggered by firm size and, for smaller firms, by firm PAYE number, beginning in 2012. Hence, at any point in time from 2012 onwards, firms staggered earlier in the rollout were obliged to offer automatic enrolment pensions to their employees, whereas firms staggered later in the rollout were not yet obliged.
- This allows us to use a staggered rollout difference in differences design. The control group in this approach is those individuals yet-to-be enrolled. Key to our design is the 'staging date', which is the calendar date by which the firm had to enrol its employees. At the first staging date, the control group is those yet to be enrolled, which at this point

² See <https://www.nestinsight.org.uk/what-happens-to-pension-contributions-when-the-cost-of-living-is-high/>

in time includes all other individuals in the sample (i.e. all those yet to be enrolled). At the second staging date, the control group is those yet to be enrolled, which is all individuals in the sample minus those enrolled at the first staging date and those enrolled at the second staging date. In this way, the control group at each staging date is made up of those individuals yet-to-be enrolled.

The analysis reveals a series of new insights into the savings behaviours of the Nest automatically enrolled population.

Comparing the automatic enrollee population with the wider population

- Nest pension savers typically have slightly lower income, have lower levels of education and are less likely to own a home (outright or via a mortgage) compared to the representative sample of the in-employment working age population.
- More than half of Nest enrollees have no stock of non-pension financial savings (54%). In addition, more than half of Nest enrollees are not contributing to any new non-pension financial saving (55.9%).
- Levels of non-pension financial savings are also low among the spouses and partners of Nest enrollees. Using linked data at the household level, we find that only half of spouses/partners of Nest enrollees hold a stock of non-pension financial savings (50.8%) and the majority are not contributing to any new non-pension financial saving (61.1%).
- A small share of Nest enrollees do have a stock of significant non-pension financial savings, which are on average lower than non-pension financial savings in a representative sample of the working age population.

Estimating the effect of automatic enrolment on other saving

- Estimating statistically precise effects is made more difficult by the low rates of non-pension saving we found in this sample, and the small sample size of linked individuals available. Estimates show no statistically significant effect of automatic enrolment on active monthly non-pension saving, or on the likelihood of contributing to a self-invested personal pension.
- Confidence intervals show that we can rule out large effects from automatic enrolment on active monthly non-pension saving, implying that automatic enrolment does not substantially change non-pension savings behaviours. This does not rule out small or moderate sized-effects, or that effects might vary across individuals with differing levels of financial assets (including pensions, financial savings, and housing) or levels of financial debts.

The findings from the project have potential policy implications relating to the broader financial wellbeing of individuals who experience pension automatic enrolment.

Long-term vs short-term savings needs

- While levels of non-pension financial saving in the working age population are generally low, a notable feature of the Nest enrollee population is, therefore, that for the majority of individuals, the concentration of their saving is into pension saving only.
- With a total contribution rate into the Nest pension of 8% of earnings (the default for automatically enrolled employees from 2019 onwards), the levels of saving undertaken by Nest enrollees are disproportionate compared with their non-pension financial saving. The pension saving arising from Nest contributions is significant (on average £135.70 per month among those making contributions, including employer contribution and tax relief). This is contributed into the illiquid pension saving vehicle (prior to age 55).
- Arguably, those Nest enrollees with no non-pension saving would be better served by accruing a stock of liquid short-term savings, alongside a stock of illiquid long-term savings. This is because liquid short term savings enable individuals to self-insure against emergency needs such as replacing a durable good, an unforeseen

expenditure, or an unforeseen reduction in income. The effect of auto enrolment on this group has been to get them started with long-term savings, while throwing into sharp relief their lack of accessible savings to fall back on in the case of financial shocks like an unexpected bill or an interrupted income.

Automatic enrolment pensions offsetting other saving

- The finding that large offsetting effects on other forms of saving can be ruled out suggests that automatic enrolment is not being undermined by reductions in saving elsewhere. However, this does not rule out small or moderate sized-effects, or that effects might vary across individuals with differing levels of financial assets (including pensions, financial savings, and housing) or levels of financial debts. In order to understand these sub-group effects, larger samples would be required. This is a challenge in the UK setting, where large administrative savings data sets are not available.
- One policy issue arising from this analysis, therefore, is that the depth of analysis we can undertake in the UK is currently limited by the availability of large-scale data sets. It would be beneficial for policy analysis in this and many areas if the UK could develop large-scale linked savings and pensions data sets, which contain records of the portfolio of savings and pensions products held by an individual. These data sets would be analogous to credit file data, which contains records of the portfolio of credit and debt held by an individual. These would facilitate more in-depth analysis of a wide range of topics.

Overall, the new findings from this project are consistent with a broader body of work that has developed over recent years on how automatic enrolment affects broader personal finances. Nest Insight is of the view that the future shape of personal finance policies like auto enrolment need to be developed through the lens of improving overall financial security. A narrow focus on increasing pension saving fails to take into account the inter-connectedness of savings, spending and borrowing behaviour. In particular, there would be merit in incorporating some element of emergency savings into the future evolution of pensions automatic enrolment, for low to middle income households.

Introduction

Automatic enrolment into workplace pensions is a strong policy intervention designed to address shortfalls in retirement saving among the working age population. This policy has been adopted in many nations and is now legally required of employers in the United Kingdom, New Zealand and Turkey. The primary intention of the policy is to raise individual net wealth prior to retirement. (Thaler, 1994; Beshears et al., 2006), and in doing so facilitate individual consumption smoothing through higher incomes and reduced reliance on social security programmes in retirement.

A number of studies have shown that the policy substantially increases pension participation rates, leading to higher average saving within the pension (Madrian and Shea, 2001; Choi et al., 2002, 2004; Beshears et al., 2009; Cribb and Emmerson, 2021; Blumenstock et al., 2018). Evidence also shows that opt-out rates are persistently low, as are cessation rates (whereby individuals do not opt out, but do cease to make contributions at a future point in their employment). In our recent analysis of opt-out, cessation and pension withdrawal rates during the past few years, we show that despite the increases in the cost of living, these rates have remained low (Nest Insight, 2024).

However, it is possible that the effect of automatic enrolment in generating new saving within the pension might be offset by less saving elsewhere within the individual's finances. More generally, in the UK context, relatively little is known about the broader financial situation of individuals with automatic enrolment pensions, such as quantification of their non-pension saving behaviours and financial position.

In this paper, we draw upon data from the UK's largest household panel survey, Understanding Society (USoc), together with linked automatic enrolment pension records from the National Employment Savings Trust (Nest), to study the automatically enrolled population. This data linkage allows us to analyse the broader financial position of automatically enrolled individuals, and to estimate the effect of automatic enrolment on active monthly non-pension saving, and contributions to other pensions outside of the workplace pension. For the latter, we use a staggered differences in differences econometric approach, exploiting the purposely staggered rollout of the policy across firms, which was varied by the firm size (based on number of employees).

Our research makes two main contributions. First, the linked survey data allows us to form a profile of the automatically enrolled population and compare this to a representative sample of working age individuals. With this, we show that Nest pension savers typically have slightly lower income, are less educated and are less likely to own a home (outright or via a mortgage) compared to the representative sample of the working age population – however, these differences are small in economic terms. Nest pension savers are more likely to be in employment, as is expected given they have recently been enrolled into a workplace pension (for example, groups such as retirees, students and the self-employed are significantly under-represented in the Nest pension member sample).

Turning to savings behaviours, we find more than half of Nest enrolees have no stock of non-pension financial savings (54%). In addition, more than half of Nest enrolees are not contributing to any new non-pension financial saving (55.9%). Levels of non-pension financial savings are also low among the spouses and partners of Nest enrolees. Using linked data at the household level, we find that only half of spouses/partners of Nest

enrolees hold a stock of non-pension financial savings (50.8%) and the majority are not contributing to any new non-pension financial saving (61.1%). A small share of Nest enrolees do have a stock of significant non-pension financial savings, which are on average lower than non-pension financial savings in a representative sample of the working age population.

While levels of non-pension financial saving in the working age population are generally low, a notable feature of the Nest enrolee population is, therefore, that for the majority of individuals, the concentration of their saving is into pension saving only. With a total contribution rate into the Nest pension of 8% of earnings (the default for automatically enrolled employees from 2019 onwards), the levels of saving undertaken by Nest enrolees are disproportionate compared with their non-pension financial saving. The pension saving arising from Nest contributions is significant (on average £135.70 per month among those making contributions, including employer contribution and tax relief). This is contributed into the illiquid pension saving vehicle (prior to age 55). Arguably, those Nest enrolees with no non-pension saving would be better served by accruing a stock of liquid short-term savings, alongside a stock of illiquid long-term savings. This is because liquid short term savings enable individuals to self-insure against emergency needs such as replacing a durable good, an unforeseen expenditure, or an unforeseen reduction in income.

Second, our econometric approach provides estimates of the effect of automatic enrolment on other saving. Estimating statistically precise effects is made more difficult by the low rates of non-pension saving we found in this sample, and the small sample size of linked individuals available. Estimates show no statistically significant effect of automatic enrolment on active monthly non-pension saving, or on the likelihood of contributing to a self-invested personal pension. Confidence intervals show that we can rule out large effects from automatic enrolment on active monthly non-pension saving, implying that automatic enrolment does not substantially change non-pension savings behaviours. This does not rule out small or moderate sized-effects, or that effects might vary across individuals with differing levels of financial assets (including pensions, financial savings, and housing) or levels of financial debts.

Policy background and analysis design

Our approach exploits the staggered roll-out of automatic enrolment to UK firms. The UK Pensions Act 2008 introduced an obligation on firms with at least two eligible employees to automatically enrol all of their eligible employees into a workplace pension. The set of eligible employees is those aged between 22 and the State Pensions Age (during the roll-out period for the sample of firms we study, this age was 65 for men, and in the 62-64 range for women, depending upon their month and year of birth), employed continuously for at least three months, and earning a minimum amount (currently £10,000 per annum).³ Compliance with the policy was mandatory, with significant penalties for non-compliance.⁴

The staggered rollout of the policy to firms is a result of managing the volume of firms and individuals who were eligible: the policy would involve the enrolment of more than 10 million individuals into new pensions. Consequently, its roll-out was spread out over time, beginning with the largest firms, defined by their size as of April 1, 2012. The roll-out occurred between October 1, 2012, and April 1, 2017, for firms already in existence before April 2012, and between April 1, 2017, and February 1, 2018, for firms established afterwards. Each firm was given a “staging date” on which automatic enrolment of all eligible employees must ordinarily take place at each firm not currently offering an employer-provided pension.⁵ For larger firms, staging dates were assigned based upon size only. Firms with 120,000 or more employees were obliged to start offering the scheme by October 1, 2012; for those with 50,000-119,999 employees, November 1, 2012; for those with 30,000-49,999 employees, January 1, 2013; and so on down to firms with 30-39 employees, whose staging date was October 1, 2015.⁶

The rollout of automatic enrolment would see many firms offer workplace pensions for the first time, hence the UK government established a new pension provider, Nest, specialising in automatic enrolment pensions. Nest’s offering is a defined contribution scheme, including a choice of investment funds and a default target retirement date fund. It is free for employers to use and has a public service obligation, whereby any employer can use Nest to meet its mandatory automatic enrolment obligations. Firms are not required to use Nest. They can meet their mandatory automatic enrolment obligations by using their own existing scheme, setting up a new one, or outsourcing provision to an external provider such as an insurer or a multi-employer mastertrust. However, the vast majority of small firms that have introduced pensions as a result of the automatic enrolment mandate have chosen to use the Nest scheme due to its low cost and public service obligation.⁷

³ Over the period of our study, the State Pension Age for women was increased so as to equalize State Pension Ages for men and women at 65 by November 2018.

⁴ The Act includes escalating penalty notices for employer non-compliance, with a maximum penalty of £10,000 for each day the firm does not offer a pension to eligible employees. Wilful failure to put eligible employees into a pension scheme and knowingly and falsely declaring compliance can result in two years in prison or a fine for the company directors.

⁵ Employers could postpone automatically enrolling employees for up to three months after the staging date, but they were required to inform employees of the delay and accept opt-in enrolments between the staging date and the actual automatic enrolment date.

⁶ Appendix Table B3 provides the staging dates by employer size.

⁷ As of March 31, 2021, Nest managed pensions of 9.9 million members on behalf of 881,000 employers, accounting for approximately one in three working-age individuals in the UK. Figures sourced from <https://www.nestpensions.org.uk/schemeweb/nest/nestcorporation/news-press-and-policy/press-releases/Nest-10-million-members-10-years-of-investing.html>.

Automatic enrolment of an individual employee proceeded as follows. Employees automatically enrolled into the Nest pension were informed of their enrolment, first in a written communication from their employer, then by Nest via a letter and brochure sent to their home address (as provided by the employer). These communications included details of the pension and information on how to opt out.⁸ Employees had one month after enrolment to opt out and obtain a full refund of any contributions. For employees who did not opt out, employers were required to make a minimum pension contribution of 1% of qualifying earnings alongside the employees' 1% contribution. This minimum rose to 5% of qualifying earnings (with at least 2% from the employer) in April 2018, and to 8% (with at least 3% from the employer) in April 2019. Employers can set a default contribution rate higher than these minimums.⁹

Our approach therefore takes advantage of the staggered rollout of automatic enrolment pensions, to which we apply a staggered difference-in-differences design, together with the large sample of individual pension records available via Nest. Using the linked Nest-USoc data, we can identify individuals in the USoc survey who have previously been enrolled into Nest. This link allows us to observe, for individuals, the timing of their enrolment, the staging date of the firm at which they were enrolled, a set of outcome variables of interest, and a set of covariates.

Related studies

Recent studies from this paper's authors, along with other researchers (Beshears et al, 2004; Choukmane, 2023; Choukmane & Palmer, 2023) provide valuable context for this study. They have shown that:

- › As auto enrolment was rolled out in the years up to 2017, participants covered some of the cost of their contributions by taking on additional borrowing. This was in spite of the fact that, at this stage, the cost to participants was only 0.8% of a band of earnings, equating to around £7 per month for someone on a £20,000 salary.
- › Lower earners took on higher levels of additional borrowing than higher earners.
- › There was, however, no negative impact on defaults or credit scores.
- › At the same time, those who were enrolled also became slightly more likely to take out a mortgage.
- › Between 2017 and 2019, when the cost to participants rose to 4%, banking data shows a range of effects. Overdraft levels increased for some, while those with positive account balances saw these creep down. As predicted, people did also adjust their spending to cover some of the cost of contributions.

⁸ The UK government's evaluation report for the automatic enrolment policy indicates a 74% awareness of the introduction of auto enrolment among the target population. <https://www.gov.uk/government/publications/automatic-enrolment-evaluation-report-2014>.

⁹ Qualifying earnings in tax year 2015–2016 were those between £5,824 and £42,385 per year; this band is reviewed each year. For those who did not opt out, the total minimum employee contribution plus employer contribution plus tax relief (the government contribution to the Nest account that equals the reduction in tax liability granted due to the employee's contribution—typically 20% of the employee contribution) was initially 2% of qualifying earnings. Employees can also choose to save a different amount than the default employee contribution, although contributions that exceed 100% of their earnings in the year or a certain pound threshold in the year (£40,000 for most of our study period) cannot be made using before-tax money.

- › During the Covid-driven labour market disruptions of 2020 and 2021, those who'd been enrolled were overwhelmingly likely to keep contributing at the 4% rate, even as salaries were severely impacted in many sectors. And they continued to do so throughout the historically high rates of inflation in subsequent years.

Bringing these results together, we can see that:

- › Auto enrolment does not happen in a vacuum. In the financial lives of low to mid income people especially, the reduction in income caused by enrolment is offset in a range of ways, including increased borrowing and reductions in account balances.
- › People saving in the auto enrolment system overwhelmingly continue to do so, even when facing significant financial challenges in the present day.

The present study adds to this existing evidence base by exploring the impact of auto-enrolment on participants' existing savings.

Data and econometric approach

Data

The data set we use links respondents of the USoc survey with their Nest member records. USoc is a long-running household survey, beginning in 2009. As a household survey, it has the advantage of providing a broad set of questionnaire responses for a representative sample of UK households, including a variety of demographic and related variables on employment and housing status. However, survey data such as these do have some disadvantages. The accuracy of the data is dependent on self-reporting, the granularity of financial variables is lower than one would observe in administrative data (where one might observe, for example, daily bank transactions over a long period of time which cannot be feasibly asked about in an online survey), and the sample size is restricted by the scope of the survey.

The linked data is provided as a supplemental data set to the main survey data. The data entries at the UK Data Service (ISER, 2023) are:

- University of Essex, Institute for Social and Economic Research. (2023). Understanding Society: Waves 1-13, 2009-2022 and Harmonised BHPS:Waves 1-18, 1991-2009. 18th Edition. UK Data Service. SN: 6614 <https://doi.org/10.5255/UKDA-SN-6614-19>
- Nest Corporation, University of Essex, Institute for Social and Economic Research. (2023). Understanding Society: Linked Nest Auto-enrolment Pensions Dataset, 2014-2022: Secure Access. UK Data Service. SN: 9127 <https://doi.org/10.5255/UKDA-SN-9127-1>

Understanding Society (SN 6614) is the UK's large-scale household panel survey (similar to the US PSID). It contains survey responses on demographic, employment and personal financial questions (such as savings amounts) for a large sample of UK residents. The linked automatic enrolment data set (SN 9127) contains pension histories for a subset of individuals from the Understanding Society sample who have a pension with the National Employee Savings Trust (Nest), and who consented for their data to be linked in Wave 11 of the survey, and for whom a match could be made using personal identifying information. Nest is the largest provider of automatic enrolment pensions in the UK, so offered the best chance of a match being made among possible pension providers.

Data collection proceeded as follows: All adults in Wave 11 of Understanding Society (27,891 individuals) were asked whether they would consent to having their Nest records linked to their survey answers (note many of these individuals would not be eligible for Nest). Of these 12,833 consented.¹⁰

Of the consenting individuals, 1,672 (13.2%), were linked to a Nest member record based on name, date of birth and address. This is an approximate one-in-eight match rate, and

¹⁰ It should be noted that this seems very high indeed as the proportion of UK adults with a Nest pension is approximately one-in-eight. A possible explanation is that this consent question was one of a block included in the survey and individuals tended to answer yes to all / no to all.

suggests that half of adults chose to consent to the link and these adults appear selected at random from the population based on the limited information available here.

We take the full sample of [N = 1672] linked individuals who appear in both Understanding Society and the linked automatic enrolment data set.¹¹ We then remove individuals who at their first enrolment were not automatically enrolled into their Nest pension but instead had made an active decision to voluntarily enrol (variously labelled as: voluntary enrolments, opt-ins, workers below qualifying earnings and others). The effects of these steps in sample selection leaves a baseline sample of [N = 1522] individuals who constitute our treatment group.

Thanks to the linkage provided by UK Data Service, we are able to create a joined data collection, which contains all the individuals and information of Understanding Society plus additional pensions information for the smaller subset of those individuals who are also in the linked automatic enrolment data set. While our analysis focuses on the automatic enrolment data set subset it also uses information on other individuals in Understanding Society, to allow a comparison of characteristics of the automatically enrolled sample with the broader working age population.

Econometric approach

The project uses a difference-in-differences research design. The research design is as follows. Our interest is in understanding how automatic enrolment into a workplace pension affects saving outcomes. The rollout of automatic enrolment across firms was staggered by firm size and, for smaller firms, by firm PAYE number, beginning in 2012. Hence, at any point in time from 2012 onwards, firms staggered earlier in the rollout were obliged to offer automatic enrolment pensions to their employees, whereas firms staggered later in the rollout were not yet obliged. This allows us to use a staggered rollout difference in differences design. The control group in this approach is those individuals yet-to-be enrolled. Key to our design is the 'staging date', which is the calendar date by which the firm had to enrol its employees. At the first staging date, the control group is those yet to be enrolled, which at this point in time includes all other individuals in the sample (i.e. all those yet to be enrolled). At the second staging date, the control group is those yet to be enrolled, which is all individuals in the sample minus those enrolled at the first staging date and those enrolled at the second staging date. In this way, the control group at each staging date is made up of those individuals yet to be enrolled.

Each individual in the baseline sample has a date at which they were first enrolled in the pension by an employer. And each employer has a staging date. Both are provided in the linked automatic enrolment data set. The employer staging date is the staggered rollout we wish to use in the difference-in-differences design. However, not all individuals who we observe with a Nest pension in our linked data were employed with the firm as of the staging date. To show the distribution of the distance between employer staging date and employee enrolment date, for each individual in the baseline sample, we calculate the distance in days between these dates (in the final panel, we use annual distance).

Ideally, all of the individuals in the baseline sample would be first enrolled in the pension on or close to that date. In the data, approximately 25.5% of individuals have a first enrolment

¹¹ Details are provided in Table A1.

date within 90 days of the staging date. Approximately 38.0% have a first enrolment date within one year. We therefore also estimate models restricting the sample to those who were automatically enrolled within 90 days of the firm staging date and, separately, the sample of those who were automatically enrolled within 180 days of the firm staging date.

We estimate the difference-in-differences model using the estimator provided by Callaway and Sant'Anna (2021). Covariates used throughout, unless indicated otherwise, are: age in years; female; number of children in household; and most recent surveyed gross household income at or before year of treatment (note: this variable is in £000s, whereas comparable figures in the summary statistics tables are in £).

Related studies

Our difference-in-differences design based on the staggered rollout of automatic enrolment draws upon not-yet-enrolled individuals as a comparison group. Recent studies in the literature are based on both event studies and comparison group studies. Choukhmane (2023) finds that automatic enrolment in the current employer's pension reduces employees' contributions to their next employer's pension if that future pension does not also have automatic enrolment. Choi et al. (2023) find that employees subject to automatic enrolment or default contribution auto-escalation subsequently withdraw a higher fraction of their 401(k) balances upon separating from their jobs than employees not subject to these policies. Chetty et al. (2014) estimate that about 30% of compulsory retirement savings in Denmark is undone via increased debt and reduced saving in non-retirement accounts.

Our study is related as well to Choukhmane and Palmer (2023), who find that for every £1 reduction in take-home pay, consumers cut their spending by £0.34 and increase their balances on credit cards issued by the bank by £0.79. Beshears et al. (2022) find that automatic enrolment causes no statistically significant change in debt balances. Using UK data, Beshears et al. (2024) find that the additional savings generated through automatic enrolment are partially offset by increases in unsecured debt. Over the first 41 months after enrolment, each additional month increases the average automatically enrolled employee's pension savings by £32-£38, unsecured debt (such as personal loans and bank overdrafts) by £7, the likelihood of having a mortgage by 0.05 percentage points, and mortgage balances by £118.

Results

Characteristics of the auto enrolled sample

Summary statistics for auto enrolees

Summary statistics for the baseline sample, as observed in wave 13 of the USoc survey, are provided in Panel A of Table 1.¹² The total number of individuals from the baseline sample contained in wave 13 is 1,011. The “Present (%)” column reports the percentage of observations for which values are present. In most cases this is 100%. In a small number of cases (approximately 2.5%), individuals do not report their financial data relating to household income, homeownership status and monthly housing costs.

Details of the variables are as follows: Age is the individual’s age at interview. Female is a dummy variable taking a value of 1 if the individual reports in the survey that they identify as female, and zero otherwise. Number of children is the number of children (individuals aged under 18) in the household for which the individual and/or their partner is responsible. This is followed by three 0/1 dummy variables for the highest educational qualification of the individual: degree, college or high school. Savings flows monthly amount in £ and Savings stock savings amount in £, are taken from self-reported values in the survey, and show the monthly amount saved by the individual outside of their pension, and the stock of savings outside of their pension respectively. Gross annual household income is the sum of all income received, including benefits, at the household level. This is followed by three 0/1 dummy variables for whether the individual is a homeowner outright, a homeowner with a mortgage, or renting a home. Monthly housing costs is the self-reported rent or mortgage cost. The two Nest pension variables Total contribution £, and Pot value £, are taken from the Nest administrative records, which are provided by the Nest pension fund. These show the total contribution per month and the total pot value of the pension respectively. Private pension contribution £, is taken from self-reported values in the survey. This is followed by six 0/1 dummy variables denoting the current labour market activity status of the individual. The table reports mean values plus standard deviations where relevant. In line with UKDS disclosure requirements, to avoid disclosing values relating to individuals, the table omits to show the median, minimum or maximum and has further limitations on reporting figures computed from a very small number of observations.¹³ All rows are calculated over the full set of 1,011 observations, minus those missing for the home-ownership and education variables.

The summary statistics show that the average age of a Nest enrolee in the sample is 43.6, with a little more than half the sample female and a little below half the sample holding a degree. Average household income in the sample is a little below £57,000, with a little below 70% of individuals owning their home either outright or via a mortgage. 79% of individuals in the sample are in paid employment. This high rate of paid employment reflects the sample composition, which is made up of individuals who have been in employment in recent years (noting that they would not have been enrolled into the Nest pension if they had not been employed recently). Unsurprisingly, the sample includes a very low percentage of students or retirees.

¹² Tables A2 and A3 report equivalent summary statistics for waves 4 and 8 respectively.

¹³ This is a requirement set out by UKDS.

Table 1: Summary Statistics for USoc-Nest Matched Sample vs USoc Working Age Population (Wave 13)

	(A) USoc-Nest Matched Sample			(B) USoc Working Age Population			(C) USoc Working Age Population in Employment		
	Present (%)	> 0 (%)	Mean	Present (%)	> 0 (%)	Mean	Present (%)	> 0 (%)	Mean
Demographics									
Age	100		43.6	100		43.6	100		43.6
Female (%)	100		52.5	100		56.4	100		55.1
Number of children	97.5		0.565	97.2		0.651	97.3		0.618
Degree (%)	99.2		48.5	98.4		52.4	98.7		56.1
College (%)	99.2		25.8	98.4		21.5	98.7		21.1
High school (%)	99.2		17.1	98.4		17.3	98.7		16.2
Savings									
Monthly savings (£)	100	44.1	149	100	36.2	159	100	46.2	190
Savings stock (£)	100	46.0	7,260	100	42.5	9,190	100	44.7	8,450
Other financials									
Gross annual household income (£)	97.4	96.2	56,900	97.1	96.5	59,600	97.2	96.7	65,200
Homeowner outright (%)	97.3		20.9	96.8		42.2	96.9		22.0
Homeowner with mortgage (%)	97.3		48.6	96.8		48.7	96.9		54.6
Renting home (%)	97.3		29.9	96.8		26.6	96.9		22.9
Monthly housing costs (£)	97.5	74.4	539	97.2	55.9	559	97.3	72.2	585
Nest pension									
Total contribution (£)	100	40.9	55.5	-		-	-		-
Pot value (£)	100	86.1	2500	-		-	-		-
Private pension									
Contribution (£)	100	26.6	37.2	100	14.9	81.4	100	28.1	92.1
Employment status									
Self-employed (%)	100		5.44	99.7		8.73			
In paid employment (%)	100		78.5	99.7		66.8	100		100
Unemployed (%)	100		4.15	99.7		5.05			
Retired (%)	100		3.66	99.7		6.45			
Family care (%)	100		1.68	99.7		3.99			
Full-time student (%)	100		1.09	99.7		1.71			
Long-term sick or disabled (%)	100		1.09	99.7					
	N=1011			N=27,998			N=13383		

Table shows summary statistics for the linked sample and also for the USoc working age population. N reported is unweighted observations. Means and standard deviations are computed for non-missing values. USoc monetary variables are imputed to zero where relevant. For Nest variables, means and standard deviations are computed only on values for those with Nest accounts at that point in time. Those not yet with Nest accounts are not considered missing values nor imputed to zero. Based on linkage of Nest Corporation, University of Essex, Institute for Social and Economic Research. (2023). Understanding Society: Linked Nest Auto-enrolment Pensions Dataset, 2014-2022: Secure Access. UK Data

Service. SN: 9127 <https://doi.org/10.5255/UKDA-SN-9127-1> and University of Essex, Institute for Social and Economic Research. (2023). Understanding Society: Waves 1-13, 2009-2022. 18th Edition. UK Data Service. SN: 6614 <https://doi.org/10.5255/UKDA-SN-6614-19>

Turning to the savings measures, in the sample 44.1% of individuals report active monthly savings, with 46% holding a stock of savings. As of the month of interview, 86% of the sample held a Nest pension pot (note this is not 100% as, as at wave 13, some individuals were yet to be enrolled in the pension). As of the month of interview, approximately 40% of individuals made a contribution. The average value of a contribution among those who contribute is approximately £135.¹⁴ Mean values of financial variables are calculated including zero-valued observations. As is commonly the case with individual financial data, the mean values are increased by a subset of individuals with very high values for financial assets. The average Nest pot value (including employer contribution and tax relief), is £2,500 (£2,900 for those with a non-zero pot value). Outside of the Nest pension, 27% of individuals are contributing to a private pension, with an average contribution rate of £37 (£140 for those with non-zero contributions).

These summary statistics imply some important patterns in the saving behaviour of the Nest population. While close to 90% of the sample have a pension pot, with an average value of £2,500, more than half of the sample of Nest enrolees do not hold liquid savings outside of their pension and a similar proportion are not engaged in active saving. Only a very low percentage of individuals hold a private pension. Hence, for more than half of the Nest population, their Nest pension represents their only saving pot.

Comparison with the non-Nest working age population

We compare the sample of Nest enrolees with the non-Nest population. By construction, Nest enrolees are of working age (or very early retirement given the scheme was introduced only within the past ten years). Hence, comparison with the population as a whole is unlikely to be meaningful given the population includes minors, students, retirees and other groups outside of working age. To create informative comparison groups, we therefore restrict the USoc wave 13 sample to individuals of working age, and re-weight this working age sample to match the age profile of the Nest enrolee sample. From this working age sample, we draw i) all individuals in the sample, regardless of their employment status, ii) individuals in employment only.

Summary statistics for these comparison samples are shown in Columns B and C of Table 1.¹⁵ By weighting, the summary statistics report the same average age and standard deviation as in the Nest enrolee sample. Summary statistics show that individuals in Columns B and C are more likely to be female, have higher likelihood of having children, are more likely to have a degree, have higher income, more likely to own a home (either outright or via a mortgage). Notably, average household income among the Nest matched sample

¹⁴ This is consistent with the finding of Beshears et al. (2024), who use Nest member records linked to Experian credit files. They show that over the first 41 months after enrolment, each additional month increases the average automatically enrolled employee's pension savings by £32-£38. In the period they study, the total contribute rate was 2%. In the period under consideration here, the total contribution rate was 8%. The estimated total contribution of £135 is approximately four times the contribution in the range £32-£38.

¹⁵ Equivalent statistics for the waves 4 and 8 samples are shown in Tables A4 and A5 respectively.

in Column A is 13% lower than in the working age population in employment shown in Column B.

In the Nest matched sample in Column A 44% of individuals engage in monthly saving and the average savings stock (taking an average over all individuals, including those not currently saving) is approximately £7,300. The proportion of people from the working age population in Panel B engaged in saving is lower, at 36.2%, with higher average saving stock of £9,200. This indicates a higher variation in savings behaviours, with more individuals not saving at all, yet higher average savings indicating the presence in the sample of some higher savers. This is perhaps unsurprising given the working age population includes a wider variety of employment states, including those unemployed, retired and students. Restricting to those in employment in Column C, we see the proportion of individuals engaged in monthly saving is similar to Column A, at 46%, with average saving stock balance of £8,500.

We also compare the average stock of savings held in each group in the table with the average income of each group. In Column A, the average savings stock is 12.8% of average household income, while in Column C it is 12.9%. Hence, observed rates of saving and mean savings stocks as a percentage of household income in the Nest matched sample are similar to those we observe in the employed working age population.

Spouse characteristics

One feature of the USoc survey is that interviews are conducted with multiple persons within the household unit. This allows us to identify individuals who are spouses or partners of Nest enrolees, and in particular examine their saving behaviours. Summary statistics for the spouses of auto-enrolees are shown in Table 3. Approximately six-in-ten of Nest enrolees have a spouse or partner in the survey, and this provides a sample of 642 individuals. Among this group, we see similarly low levels of holding a stock of non-pension financial saving (50.8%) and contributing to non-pension financial saving (38.9%).

Table 2: USoc Summary Statistics for Spouses of Nest Members (Wave 13)

	Present (%)	> 0 (%)	Mean	SD
Demographics				
Age	100		43.9	12.5
Female (%)	99.8		55.8	
Number of children	99.8		0.708	0.94
Degree (%)	97.5		49.9	
College (%)	97.5		19.6	
High school (%)	97.5		21.7	
Savings				
Monthly savings (£)	100	38.8	149	353
Savings stock (£)	100	43.2	7500	27600
Other financials				
Gross annual individual income (£)	100	93.3	25,400	21,900
Homeowner outright (%)	99.6		17.1	
Homeowner with mortgage (%)	99.6		54.2	
Renting home (%)	99.6		27.6	
Monthly housing costs (£)	99.8	78.8	571	440
Private pension				
Contribution (£)	100	23.9	44.0	135
Employment status				
Self-employed (%)	100		9.91	
In paid employment (%)	100		71.4	
Unemployed (%)	100		4.45	
Retired (%)	100		5.09	
Family care (%)	100		3.64	
Full-time student (%)	100		*	
Long-term sick or disabled (%)	100		*	
N=570				

Table shows summary statistics for spouses of individuals in the linked sample who are present in wave 4 of the USoc panel. N reported is unweighted observations. Means and standard deviations are computed for non-missing values. USoc monetary variables are imputed to zero where relevant. For Nest variables, means and standard deviations are computed only on values for those with Nest accounts at that point in time. Those not yet with Nest accounts are not considered missing values nor imputed to zero. Based on linkage of Nest Corporation, University of Essex, Institute for Social and Economic Research. (2023). Understanding Society: Linked Nest Auto-enrolment Pensions Dataset, 2014- 2022: Secure Access. UK Data Service. SN: 9127 <https://doi.org/10.5255/UKDA-SN-9127-1> and University of Essex, Institute for Social and Economic Research. (2023). Understanding Society: Waves 1-13, 2009-2022. 18th Edition. UK Data Service. SN: 6614 <https://doi.org/10.5255/UKDA-SN-6614-19>

Estimated effects of automatic enrolment on saving

In this section we present estimates for the effects of automatic enrolment on non-Nest pension saving. We first present estimates for the effects on active monthly saving for the sample of Nest enrollees. Active monthly saving refers to individuals saving outside of a pension, such as in a savings account, ISA, or other liquid saving vehicle.¹⁶ Subsequently, we present estimates for sub-groups by proximity of the individual's scheme joining date to the firm staging date, by levels of income and age. We also present estimates using a two-way fixed effects estimator.

Effect on active monthly saving

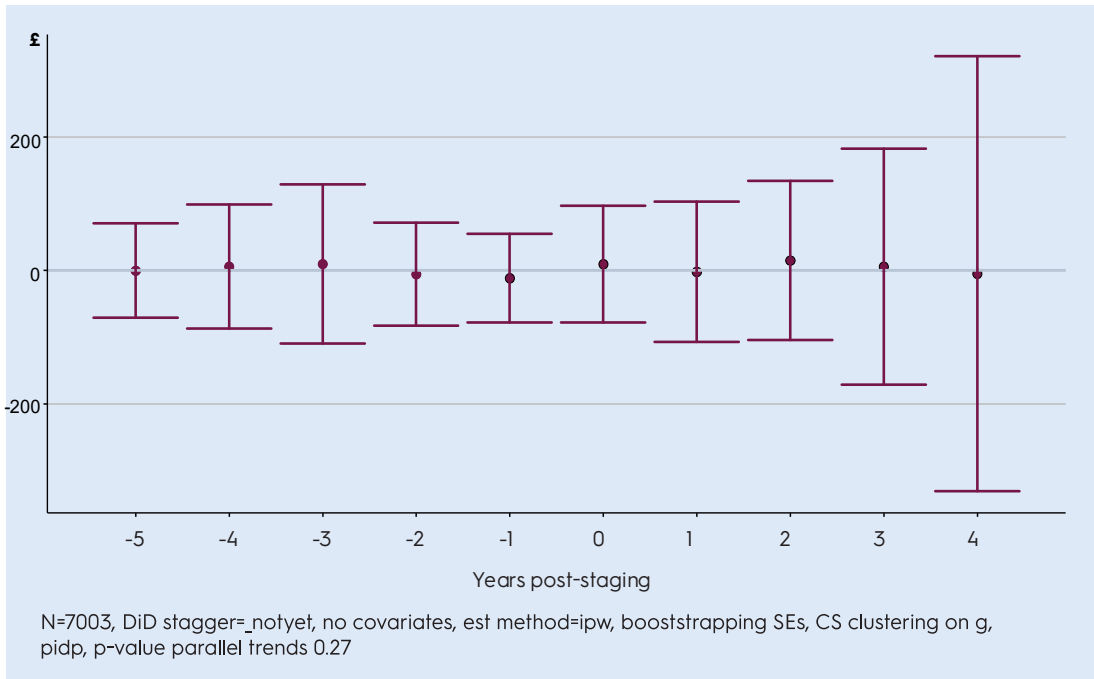
Given that levels of active monthly saving in the sample are low, the econometric models do not return precise estimates of the effect of automatic enrolment on saving. Estimates from the staggered difference-in-differences model are shown in Figure 1 (which shows estimates without covariates including in the specification). The figure plots point estimates, together with confidence intervals, for 5 years pre-staging and 4 years post-staging using the control group of those not yet enrolled. Corresponding regression statistics are shown in Table 3.¹⁷ Overall, in the small sample with low level of saving we do not detect any statistically significant effects of automatic enrolment on active monthly saving.

Estimated coefficients are centred around zero, with relatively wide confidence intervals. The pre-period estimates shown in Figure 1 indicate no pre-period differences in active monthly saving between treated and not-yet treated groups. The post-period estimates show no trend in the coefficient values, which are each centred around zero, with widening confidence intervals at higher years post-treatment. The confidence intervals span zero, and estimates in Table 3 return coefficient values not statistically significantly different from zero. We conclude from these that the effect of automatic enrolment on active monthly saving sits in a range that excludes very large effects (of either increasing or decreasing active monthly saving)

¹⁶ In additional analysis shown in the Technical Appendix we also examine contributions to private pensions (e.g. a Self-Invested Personal Pension) as an outcome variable. We find no evidence that automatic enrolment affects saving in private pensions, though the very small sample of individuals saving in a private pension in the sample does not allow us to estimate precise effects.

¹⁷ Estimates from the model with the inclusion of covariates are shown in Figure A2 and Table A6.

Figure 1: Automatic Enrolment and Active Monthly Saving: Staggered Difference-in-Differences Estimates



Estimates and CIs shown all use N unweighted observations, as indicated on the chart. No covariates used. Critical value of 1.96 used for 95% confidence intervals for TWFE estimates, and 95% pointwise confidence band shown for Callaway estimates. Based on linkage of Nest Corporation, University of Essex, Institute for Social and Economic Research. (2023). Understanding Society: Linked Nest Auto-enrolment Pensions Dataset, 2014-2022: Secure Access. UK Data Service. SN: 9127 <https://doi.org/10.5255/UKDA-SN-9127-1> and University of Essex, Institute for Social and Economic Research. (2023). Understanding Society: Waves 1-13, 2009-2022. 18th Edition. UK Data Service. SN: 6614 <https://doi.org/10.5255/UKDA-SN-6614-19>

Table 3: Automatic Enrolment and Active Monthly Saving: Staggered Difference-in-Differences Estimates

	ATT	se	tstat	95% CI	
Event-study aggregation	4.33	68.2	0.0635	-129	138
Group aggregation	6.95	58.5	0.119	-108	122

N=7003

Overall summary ATT based on event-study and group aggregations, following the definitions and methodology of Callaway and Sant'Anna (2021). Observations are unweighted. Based on linkage of Nest Corporation, University of Essex, Institute for Social and Economic Research. (2023). Understanding Society: Linked Nest Auto-enrolment Pensions

Dataset, 2014-2022: Secure Access. UK Data Service. SN: 9127 <https://doi.org/10.5255/UKDA-SN-9127-1> and University of Essex, Institute for Social and Economic Research. (2023). Understanding Society: Waves 1-13, 2009-2022. 18th Edition. UK Data Service. SN: 6614 <https://doi.org/10.5255/UKDA-SN-6614-19>

The confidence intervals allow us to interpret bounds on the effect sizes that we can rule out with 95% confidence. The lower bound on the confidence interval using the event-study aggregation method as shown in Table 3 is £129. This allows us to rule-out an effect size of automatic enrolment decreasing active monthly saving by more than £129 per month. With the standard deviation of active monthly saving in the sample of enrolees at £326, we can rule out that automatic enrolment results in more than four-tenths of a standard deviation decline in the monthly saving rate. An alternative way to express this effect size is that average active monthly saving in the sample among those who save is £338, and we can rule out an effect size equivalent to a 40% decline in active monthly saving.

These estimates therefore allow us to rule out that automatic enrolment results in large reductions in active monthly saving among the automatically enrolled population. It is not possible to rule out some reduction, i.e. an offsetting effect, with the relatively small sample size and low rates of saving in the sample contributing to the wide range of plausible effect sizes returned by the results. However, these bounds on the estimated effect allow us to rule out large effect sizes of a magnitude which would cause automatic enrolment to wholly offset average monthly saving in the automatically enrolled population.

Estimates for different groups

Estimates for enrolees close to firm staging date

One limitation of the estimates for the main sample is that in the sample a large share of individuals have a date of first enrolment much later than the firm staging date. The sample is restricted to individuals who consent to have their Nest records linked to their USoc responses as at wave 11 of the survey. Individuals in this group have joined a Nest employer (and not opted out of the Nest pension) at any point between the staging date of the employer and the point of interview. This sample will include individuals who were employed with the firm as of the firm staging date, and hence have a date of first enrolment within three months of the firm staging date (the statutory time window within which firms were obliged to enrol their existing employees into the scheme). However, the sample also includes individuals who joined the firm after the firm staging date. The first staging date is the date used in the difference-in-differences design. Where the firm staging date is a poor measure of the individual's first enrolment date, the latter is a weak instrument for the design.

Analysis of the distribution of days between the firm staging date and the individual's first enrolment date reveals that approximately 25% of individuals have a first enrolment date within 90 days of the firm staging date, and 50% within 365 days.¹⁸ In additional analysis, we therefore restrict the sample to individuals for whom the distance between the dates is low, choosing 90 days and 180 days as limits. This sample selection improves the accuracy of the firm staging date as a measure of an individual's first exposure to the automatic enrolment policy, but at a cost of reducing the sample size.

Results for individuals enrolled close to the firm staging date also return coefficient estimates centred upon zero, both in the pre- and post- periods of the difference in differences estimates. However, the confidence intervals returned by the model estimates are narrower than those returned by estimates on the whole sample. This allows us to put tighter bounds upon the effect

¹⁸ See Figure A1.

sizes we can rule out with confidence. Here we draw upon the sample of individuals for whom their first enrolment date is within 180 days of the firm staging date, which provides a sample of 2,257 observations (for the sample of individuals for whom their first enrolment date is within 90 days of the firm staging date, the sample size is 1,873 individuals). For this sample, the coefficient estimate is again statistically not significantly different from zero, with a lower bound on the 95% confidence interval of £49.40.¹⁹ This narrower confidence interval allows us to rule out a decrease in active monthly saving of more than approximately £50. In the sample of individuals enrolled within 180 days of the firm staging date, the mean contribution is £136.²⁰ This implies we can rule out a reduction in saving of more than 37% of the total monthly contribution to the Nest pension.

Estimate by enrolee income

Results for the main sample split at the median by high/low income again return estimates centred upon zero, for both groups, and do not provide any statistically significant differences in the effect sizes for the two groups. This provides no evidence of differences in responses to automatic enrolment by level of income.²¹

Estimates by enrolee age

Similarly, results for the main sample split at the median by high/low age returns estimates centred upon zero, for both groups, and again do not provide any statistically significant differences in the effect sizes for the two groups. As with income, these estimates for enrolee age groups provide no evidence of differences in responses to automatic enrolment by enrolee age.²⁰

Two-way fixed effects estimates

In addition to estimates from the staggered difference-in-differences estimator, we also provide estimates using the two-way fixed effects estimator. The estimates returned from the two-way fixed effects estimator are in keeping with the patterns we observe when using the staggered difference-in-differences estimator. The estimated treatment effect is again centred upon zero, with no estimates for the main sample (or sub-sample) returning estimated effects statistically significantly different from zero. Confidence intervals from these estimates, which again allow us to bound effect sizes, are in keeping with those from the staggered difference-in-differences estimator.²²

¹⁹ Full results are shown in are shown in Figures A3 (within 90 days) and A4 (within 180 days), with estimates shown in Tables A7 and A8.

²⁰ See Table A9 and A10.

²¹ Full results are shown in Figures A6 and A5, with estimates shown in Table A12 and A11.

²⁰ Full results are shown in Figures A8 and A7, with estimates show in Table A14 and A13.

²² Full results are show in Figures A10 to A17, which provide equivalent estimates of the same models shown and described for Figures A2 to A8, using a two-way fixed effects estimator. Table A15 reports regression estimates for the covariates used in all models (except when noted), estimated by the two-way fixed effects estimator. ²²Results are shown in Figure A9, with estimates shown in Table 5.

Policy implications

Understanding the savings behaviour of the automatically enrolled population

Our findings on the savings behaviours of the automatically enrolled population have implications for our understanding of this population, and potential policy designs related to increasing the liquid savings of this population alongside the illiquid pension savings. Automatic enrolment is designed to increase long-term saving for retirement and, within the UK system, these savings are highly illiquid (unlike in the US system, on which see Beshears et al., 2015). While automatic enrolment is proving successful in achieving this outcome, our analysis of the saving behaviour of the automatically enrolled population suggests that the balance of pension and non-pension saving among this group under the policy may be overly weighted to pension saving. Individuals accruing saving during their working lives face the task of balancing their long-term pension saving and short-term liquid saving. The balance is dependent upon the combination of risks and benefits they face, such as the need for liquid savings to meet emergency expenses or cover periods of unemployment, and the tax benefits of long-term saving. While the balance of these is individual-specific, it seems unlikely that for a large share of individuals the optimal balance would involve holding no liquid savings.

Analysis of the effects of automatic enrolment on other forms of saving is made more challenging by the difficulties in obtaining large sample sizes, and in the limitations of self-reported data. This study uses the largest survey available in the UK, USoc, together with linked data from the largest provider of automatic enrolment pensions, Nest. Despite this, the linkage achieved only a modest sample and we are unable to obtain as precise estimates as we might do if we could obtain sample sizes similar to those used in consumption and debt analysis. For example, Beshears et al. (2024) use Experian credit file data linked to Nest records and achieve a sample size of over 600,000 individuals. Unfortunately for researchers, the UK (as for the US) does not have a “wealth file” provider analogous to the credit file provider, and so there is no pre-collated source of individual or household wealth portfolio data available for researchers. Despite this, our estimates are able to place bounds on effect sizes that are informative of the potential size of offsetting effects arising from automatic enrolment. In particular, we are able to rule out large offsetting effects on active monthly non-pension saving.

Implications for future savings policies

Our findings have two main implications for future savings policies. First, our findings on the low rates of non-pension saving among the automatically enrolled population are further evidence of the potential scale of need for so-called “sidecar savings” products, or other forms of emergency savings mechanism that could be introduced alongside automatic enrolment pensions. These kinds of products would facilitate individuals building a stock of liquid saving, alongside illiquid long-term pension saving. There is an active policy-focused debate regarding the design and merits of sidecar savings vehicles (on which see Mitchell and Lynne, 2017; Prabhakar, 2021; Towarnicky, 2022). Our findings suggest these products may be very valuable to a majority of the auto enrolled population.

Second, our findings, taken together with those in Beshears et al. (2024), suggest that there may be important heterogeneity in savings and debt responses to automatic enrolment. Thinking in terms of individuals as classified into four broad groups: those with non-pension savings, those with unsecured debt and no savings, those with neither, and those with both; the findings from the two studies imply potential heterogeneity in responses. Beshears et al. (2024) find evidence of automatic enrolment leading to higher unsecured debt, and this increase happening at the intensive margin of those already holding unsecured debt, and also larger among lower-income individuals. Our findings rule out large effects among those with existing savings. It may be the case that automatic enrolment, via reducing take home pay of individuals post-enrolment, may affect the finances of individuals more constrained in their household finances (in particular, lower income, higher debt), compared with those with higher financial assets. Future policy considerations may need to address heterogeneity in responses, in particular the effects of the policy on lower income and more constrained individuals.

Conclusion

The introduction of automatic enrolment into workplace pensions has resulted in large-scale increases in workplace pension coverage among individuals in many nations. Our study uses linked data to characterise individuals affected by the introduction of automatic enrolment, and present estimates of the effect of automatic enrolment on active monthly non-pension saving. We provide new insights into the automatically enrolled population, in particular low rates of other saving among this group. We also provide estimates which bound the effect of automatic enrolment on other saving, with difference-in-differences estimates allowing us to rule out large offsetting effects.

We first show new results on the characteristics of the automatically enrolled population. We show that Nest pension savers typically have slightly lower income, are less educated and are less likely to own a home (outright or via a mortgage) compared to the representative sample of the working age population. Nest pension savers are more likely to be in employment, as is expected given they have recently been enrolled into a workplace pension. Turning to savings behaviours, we find more than half of Nest enrolees have no stock of non-pension financial savings (54%). In addition, more than half of Nest enrolees are not contributing to any new non-pension financial saving (55.9%). While levels of non-pension financial saving in the working age population are generally low, a notable feature of the Nest enrolee population is, therefore, that for the majority of individuals, the concentration of their saving is into pension saving only.

We go on to estimate the effect of automatic enrolment on active monthly saving. Estimating statistically precise effects is made more difficult by the low rates of non-pension saving we found in this sample, and the small sample size of linked individuals available. Estimates show no statistically significant effect of automatic enrolment on active monthly non-pension saving, or on the likelihood of contributing to a self-invested personal pension. Confidence intervals show that we can rule out large effects from automatic enrolment on active monthly non-pension saving, implying that automatic enrolment does not substantially change non-pension savings behaviours. This does not rule out small or moderate sized-effects, or that effects might vary across individuals with differing levels of financial assets (including pensions, financial savings, and housing) or levels of financial debts.

Taken together, our results raise two main issues for further consideration for policymakers. Firstly, they provide further insight into the debate around the adequacy of long-term vs short-term savings and the balance of these for the automatically enrolled population. We suggest policymakers should investigate the potential for “sidecar savings” or similar vehicles to increase short-term savings available to individuals to improve financial resilience. Secondly, they contribute to the evidence base on how automatic enrolment affects other forms of saving by showing, in this UK sample, that automatic enrolment does not have large effects on other margins of saving. We would encourage policymakers to consider how future analysis of the ongoing effects of automatic enrolment on savings behaviours might be facilitated by larger data sets with wider coverage across the population of members of automatic enrolment pension schemes and wider coverage across financial asset holdings with pension and non-pension providers.

References

- Beshears, J., M. Blakstad, J. J. Choi, C. Firth, J. Gathergood, D. Laibson, R. Notley, J. D. Sheth, W. Sandbrook, and N. Stewart (2024). Does pension automatic enrolment increase debt? evidence from a large-scale natural experiment. Technical report, National Bureau of Economic Research.
- Beshears, J., J. J. Choi, J. Hurwitz, D. Laibson, and B. C. Madrian (2015). Liquidity in retirement savings systems: An international comparison. *American Economic Review* 105(5), 420–425.
- Beshears, J., J. J. Choi, D. Laibson, and B. C. Madrian (2006). Retirement saving: Helping employees help themselves. *Milken Institute Review* 8(3), 30–39.
- Beshears, J., J. J. Choi, D. Laibson, and B. C. Madrian (2009). The importance of default options for retirement saving outcomes: Evidence from the United States. In *Social Security Policy in a Changing Environment*, pp. 167–195. University of Chicago Press.
- Beshears, J., J. J. Choi, D. Laibson, B. C. Madrian, and W. L. Skimmyhorn (2022). Borrowing to save? The impact of automatic enrolment on debt. *Journal of Finance* 77(1), 403–447.
- Blumenstock, J., M. Callen, and T. Ghani (2018). Why do defaults affect behavior? Experimental evidence from Afghanistan. *American Economic Review* 108(10), 2868–2901.
- Callaway, B. and P. H. Sant’Anna (2021). Difference-in-differences with multiple time periods. *Journal of econometrics* 225(2), 200–230.
- Chetty, R., J. N. Friedman, S. Leth-Petersen, T. H. Nielsen, and T. Olsen (2014). Active vs. passive decisions and crowd-out in retirement savings accounts: Evidence from Denmark. *Quarterly Journal of Economics* 129(3), 1141–1219.
- Choi, J. J., D. Laibson, J. Cammarota, R. Lombardo, and J. Beshears (2023). Do automatic savings policies actually increase savings? *Working Paper*.
- Choi, J. J., D. Laibson, B. C. Madrian, and A. Metrick (2002). Defined contribution pensions: Plan rules, participant choices, and the path of least resistance. *Tax Policy and the Economy* 16, 67–113.
- Choi, J. J., D. Laibson, B. C. Madrian, and A. Metrick (2004). For better or for worse: Default effects and 401(k) savings behavior. In *Perspectives on the Economics of Aging*, pp. 81–126. University of Chicago Press.
- Choukhmane, T. (2023). Default options and retirement saving dynamics. *Working Paper*.
- Choukhmane, T. and C. Palmer (2023). How do consumers finance increased retirement savings? *Working Paper*.
- Cribb, J. and C. Emmerson (2021). What can we learn about automatic enrolment into pensions from small employers? *National Tax Journal* 74(2), 377–404.
- Institute for Social and Economic Research (2023). Understanding Society: Waves 1-13, 2009-2022 and Harmonised BHPS: Waves 1-18, 1991-2009, User Guide, 6 December 2023, Colchester: University of Essex
- Madrian, B. C. and D. F. Shea (2001). The power of suggestion: Inertia in 401 (k) participation and savings behavior. *Quarterly Journal of Economics* 116(4), 1149–1187.
- Mitchell, D. S. and G. Lynne (2017). Driving retirement innovation: Can sidecar accounts meet consumers’ short-and long-term financial needs? *Aspen Institute, June*.
- NEST Corporation, University of Essex, Institute for Social and Economic Research. (2023). Understanding Society: Linked Nest Auto-enrolment Pensions Dataset, 2014-2022: Secure Access.

References

Nest Insight (2024). What happens to pension contributions when the cost of living is high? Blog accessed via <https://www.nestinsight.org.uk/what-happens-to-pension-contributions-when-the-cost-of-living-is-high/>

Prabhakar, R. (2021). Sidecar savings.

Thaler, R. H. (1994). Psychology and savings policies. *American Economic Review* 84(2), 186–192.

Towarnicky, J. M. (2022). Adding a sidecar savings account for emergency savings? Better solutions may exist. *Benefits Quarterly* 38(1).



Contact us

insight@nestcorporation.org.uk

To find out more, visit our website:

nestinsight.org.uk

© 2024 National Employment Savings Trust Corporation. All rights reserved. Reproduction of all or any part of the content, use of the Nest trademarks and trade names is not allowed without the written permission of Nest. Nest does not warrant nor accept any responsibility for any loss caused as a result of any error, inaccuracy or incompleteness herein. This content is provided for information purposes only and should not be construed as financial, investment or professional advice or recommendation by Nest. Data may be obtained from third party weblinks, but these may not be error free and cannot be verified. Contact insight@nestcorporation.org.uk for more details.