The Economic and Social Review, Vol. 54, No. 3 Autumn 2023, pp. 173-192

The Short-Term Distributional Impact of Pension Auto-enrolment

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Abstract: The Irish government plans to introduce pension auto-enrolment with an initial employee contribution rate of 1.5 per cent eventually rising to 6 per cent. We examine the immediate distributional, poverty and inequality impacts of an auto-enrolment charge. We find that the bottom two income quintiles will see the smallest fall in disposable income, driven by the fact that only 2 per cent of family units in the lowest quintile and 18 per cent in the second quintile will actually be affected by auto-enrolment. There will be little impact on the at-risk-of-poverty rate. This is explained by the fact that the largest negative impacts on disposable income will be in higher income quintiles.

Acknowledgements: Funding from the ESRI's Tax, Welfare and Pensions Research Programme (supported by the Departments of Public Expenditure and Reform; Social Protection; Health; Children, Equality, Disability, Integration and Youth; and Finance) is gratefully acknowledged. We are grateful to the CSO for facilitating access to the Survey of Income and Living Conditions (SILC) Research Microdata File used to construct the database for the SWITCH tax-benefit model. The authors are solely responsible for the content and the views expressed.

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I INTRODUCTION

Ireland is now the only OECD country to have no mandatory or soft mandatory earnings-related scheme to save for retirement. A variety of national and international research (see Government of Ireland, 2007; OECD, 2014; Government

of Ireland, 2018a) has identified pension coverage in the private sector as a key challenge. The review of Ireland's pension system by the OECD (2014) identified an urgent need to increase pension coverage. Overall, the CSO estimates that 65 per cent of all employees in 2020 had some form of (non-State) pension, with coverage highest in the 'Public administration and defence; compulsory social security' sector at 96 per cent. Coverage was lowest in the 'Accommodation and food service activities' sector at 21 per cent.[1] Burke and Gilhawley (2018) estimated that in 2017, only 30 per cent of the private sector in Ireland had a supplementary (i.e. non-State) pension.

In light of these challenges, the Government's *Roadmap for Pension Reform* (Government of Ireland, 2018a) proposed the introduction of a new auto-enrolment retirement savings system. Subsequently, the Government published a draft or 'Strawman'[2] proposal for automatic enrolment into a retirement saving system as the basis for a public consultation process (Government of Ireland, 2018b). In October 2019, the then Government approved significant elements of the design of the auto-enrolment system for Ireland. These included provisions for opting out as follows:

- Contributions during the first six months of membership will be compulsory;
- Member opt-out of the system will be facilitated in a two-month 'opt-out window' (between the start of the seventh and the end of the eighth month);
- Members who opt out during this opt-out window will receive a refund of personal contributions paid up to the point of opt-out.

More recently it has been announced that auto-enrolment will be introduced in 2024.[3] Auto-enrolment will be a 'quasi-mandatory' scheme where eligible employees will be automatically enrolled but may choose to opt out.

While the use of auto-enrolment to boost pension saving is expected to improve retirement outcomes by overcoming inertia and myopic decision-making, it may also lead to some individuals "scrimping and saving" unnecessarily (see MacDonald *et al*., 2016) during younger, healthier years which may be particularly worrisome if the welfare of children is involved. The fact that individuals can opt out will help reduce these concerns, though research shows that the default option can be a powerful influence on behaviour (see Beshears *et al*., 2009; Choi *et al*., 2004). Therefore, automatic enrolment provisions may impact on some individuals for whom the appropriate decision might be to opt out and to rely on the State Pension for their retirement income. These individuals would tend to be in lower income groups for whom the State Pension replaces a larger proportion of their pre-

[1] See https://www.cso.ie/en/releasesandpublications/ep/p-pens/pensioncoverage2020/.

[2] A Strawman proposal is a simple or outline proposal intended to generate discussion of strengths and weaknesses.

[3] See https://www.gov.ie/en/campaigns/0ab04-automatic-enrolment-for-pensions-hub/.

retirement income than those located higher up the earnings distribution. While there may be significant longer-term benefits of pension auto-enrolment, such as higher supplementary pension coverage rates and lower shocks to people's incomes and standards of living upon retirement, the scheme will also result in lower net income over a person's working life as they contribute to a pension and reduce their own consumption or other savings as a result. The fact that the scheme will only auto-enrol those earning over €20,000 a year should, however, mean that those on lower incomes, for whom the State pension will already replace a larger proportion of their pre-retirement income, will likely avoid such "scrimping and saving".

On the basis of the model approved by the Government for 2024, this paper considers the immediate distributional and poverty impact of mandatory participation in a pension scheme. Lower earners may be less able to cope with the financial burden of contributing during the initial six months of mandatory participation. While these groups will receive a refund of their contributions should they choose to opt out after the initial six-month period, such groups may feel the financial strain more than other groups. While the pension auto-enrolment contribution is effectively enforced saving on an individual's behalf to be drawn down in the future upon retirement, rather than say a tax increase which will not accrue to that individual in the future, our focus is on the shorter-term affordability issues faced by those auto-enrolled.

Research has shown that those in lower income households tend to consume more of their income (see CSO, 2017a; 2017b; Coffey *et al*., 2020) and may be more likely to face credit constraints to maintain their expenditure during the initial six-month period (see CSO, 2020, Corrigan *et al*., 2020). In this paper we focus on the impact on disposable incomes during this initial six-month period of mandatory participation. We examine which income groups will be most affected, if there are differing effects by gender or employment status, as well as the impact on poverty rates in the shorter term. The proposed auto-enrolment scheme is intended to target employees aged between 23 and 60[4] who earn over €20,000 a year and who do not already contribute to a supplementary pension.[5] Contribution rates will start at 1.5 per cent and eventually rise to 6 per cent with matching contributions from employers. A State contribution to incentivise participation is planned.[6] Given that the contribution rate will rise to 6 per cent, this paper will examine the impact of this 6 per cent rate. Previous ESRI research (Bercholz et al., 2019) profiled those who will fall into the auto-enrolment population. It found that pension non-coverage was more prevalent amongst younger workers and those on lower earnings. It also found that men were more likely to be auto-enrolled than women (making up

[4] While 60 is the upper age at which automatic enrolment will be mandatory when the system is first introduced, individuals auto-enrolled before age 60 will continue to participate after age 60 until their retirement.

[5] Current contribution levels by income quintile are presented in Appendix 2.

[6] This has been announced as one-third of the employee contribution.

57 per cent of the auto-enrolment population). This is due to a variety of reasons such as the tendency for fewer women to be in employment than men in the first place. Also, women in employment are more likely to have earnings below the auto-enrolment threshold, and a greater proportion of women work in the public sector where supplementary pension coverage is significantly higher than in the private sector.

Therefore, men and lower earners will be most affected once auto-enrolment begins. The overall distributional and gender impact of auto-enrolment during the initial mandatory six-month period is unclear, however. Distributional analysis focusses not on individual earnings but rather the income of a 'unit', be that a nuclear family or a household which may consist of multiple families. Therefore, the fact that lower earning individuals may be partnered with higher income individuals, that younger, lower earners may live with their parents and that the majority of men and women cohabit (and are therefore assumed to share incomes) means that a distributional impact analysis of auto-enrolment is a useful exercise.

Regarding employment status, it is unclear if those working part-time will be more or less likely to be affected by auto-enrolment – this will depend on the number of part-time workers that earn above the auto-enrolment threshold, and if part-time workers are more or less likely to be contributing to a supplementary pension. Similar to the distributional and gender impact, the overall impact on their disposable income will depend on their living circumstances, for example if they tend to live with higher earning full-time workers.

Section II examines relevant literature regarding pension auto-enrolment (PAE), Section III discusses the data and methodology used in the analysis while Section IV presents the results. Section V concludes.

II LITERATURE

A sizeable literature of empirical evidence regarding auto-enrolment has developed and examines a variety of issues. We provide an overview of the evidence relating to the effects of auto-enrolment, focusing particularly on the composition of the target group and the potential effects on those on lower incomes.

There is broad consensus within the literature that auto-enrolment leads to a significant increase in pension scheme participation (e.g. Beshears *et al*., 2009; Bourquin *et al*., 2020). The magnitude of the increases in participation can be substantial, particularly for certain sub-groups of the population. For instance, Cribb and Emmerson (2019) show that auto-enrolment in the UK led to an average increase in participation by 37 percentage points, and that the employees who display the largest increases in participation are generally young, low-income, and low-tenure workers. These findings mirror those of Beshears *et al*. (2010), who find that the effects of auto-enrolment are much greater for low-income employees and recent joiners.

Research by Bourquin *et al*. (2020) shows that auto-enrolment has the effect of reducing gaps in pension participation between different employees, especially between young and old, and between low and high-earning employees. For instance, among 22-25-year-olds, supplementary pension coverage in the UK increased from 20 per cent to 88 per cent following auto-enrolment, while an increase from 55 per cent to 93 per cent was observed in the 51- to 55-year-old cohort. There is also evidence to indicate that auto-enrolment increases retirement contributions among those with low financial literacy. Shah *et al*. (2019) demonstrate that there is a positive correlation between financial literacy and the probability of contributing to a pension scheme where the schemes are opt-in regimes, and that this correlation disappears if enrolment is automatic.

Since the employees most affected by pension auto-enrolment tend to have low incomes, it is important to consider the potential impact that auto-enrolment could have on poverty rates over a person's working life. Auto-enrolment would leave earners with less disposable income and so, to maintain the same level of consumption, employees would need to accumulate debt to offset the increase in savings. Therefore, there could be concerns that auto-enrolment could lead to financial burdens from borrowing or a deterioration of credit scores among low-income households.

However, Beshears *et al*. (2019) find little evidence of any such outcomes, with auto-enrolment having practically no effect on debt or credit scores. Although there is some weak evidence that car loans and first mortgage balances may be affected, these results tend not to be found once other factors are taken into account. Furthermore, under auto-enrolment, participation rates of those behind on multiple bills remain similar to those of employees who are up to date with their bills, whereas a large differential exists prior to auto-enrolment. Pension participation rates in the UK remain similarly high among the least financially secure section of the workforce at 90 per cent, compared to 22 per cent before auto-enrolment (Bourquin *et al.*, 2020), although this paper acknowledges that some households remain enrolled when perhaps they would benefit more from an increase in disposable income. It is also important to acknowledge that the UK has a lower threshold for auto-enrolment of £10,000, thus explaining in part such high participation rates amongst those on lower incomes.

Another important aspect to consider is any potential pattern that drives opting out of the scheme. Following the introduction of an auto-enrolment scheme in Oregon, a survey of those who opted out found that "I cannot afford to save" was the most common reason (Chalmers *et al*., 2020), indicating that mechanisms may be needed to avoid people entering poverty as a result of being auto-enrolled. The rate of opt-out is positively correlated to the minimum contribution rate set out in the scheme (Beshears *et al*., 2009), while there is only a very modest positive relationship between participation rates and the rate at which the contribution is matched by the employer (Beshears *et al*., 2010). It would make sense that higher

minimum contribution rates would be more likely to push lower income households into poverty, while a higher employer match rate makes little difference to those who cannot afford to save in the first instance.

The introduction of auto-enrolment schemes can create numerous spill-over effects which often have positive consequences for financial behaviour. For instance, Cribb and Emmerson (2019) find that participation rates of workers who were not eligible for auto-enrolment increased by 18 percentage points following the roll-out of an auto-enrolment scheme in the UK. Auto-enrolment may therefore raise awareness of saving or encourage better financial planning even for those not due to be enrolled. More generally, previous studies have found that asset accumulation can improve self-confidence, goal setting, and community participation (Grinstein-Weiss and Irish, 2007).

To our knowledge this is the first piece of research that examines the short-term distributional impact of auto-enrolment before it is actually implemented through the use of microsimulation techniques.

III DATA AND METHODOLOGY

We use SWITCH, the ESRI's tax-benefit microsimulation model of the Irish tax-benefit system, to examine, ex-ante, the distributional impact of pension auto-enrolment. The model is based on the 2019 wave of the CSO's Survey on Income and Living Conditions (SILC). SILC is a nationally representative annual household survey and the source of official data on income and poverty indicators. It provides information on the key variables of interest from the point of view of auto-enrolment e.g., employment status, earnings, age, and whether or not an individual is already covered by an occupational or personal pension scheme. Monetary values (employment income, self-employment income, etc.) are uprated by inflation rates to estimated 2023 levels and data are reweighted to ensure they represent administrative statistics regarding the income distribution.[7]

The proposed auto-enrolment scheme is intended to target employees aged between 23 and 60, who earn over €20,000 a year and do not already contribute to a supplementary pension. Age and income are readily available in the data. We define someone who does not currently contribute to a supplementary pension scheme as someone who had no pension contributions deducted from their last wage or salary payment nor will they receive a supplementary pension[8] when they

[7] See https://www.esri.ie/publications/switch-a-tax-benefit-model-for-ireland-linked-to-survey-and-register-data for more detailed information on the model and the reweighting procedure.

[8] This will capture individuals who will be entitled to a supplementary pension when they retire but do not pay contributions themselves.

retire.[9] We then implement a 6 per cent pension auto-enrolment contribution and examine the impact this has on the income distribution. Given that it has been announced that the State will provide a top-up to those in an auto-enrolment scheme, rather than provide tax relief on contributions (as is the case with current pension contributions) we do not model tax relief for those who are auto-enrolled. We take into account the knock-on effect on social welfare entitlements that may occur due to these new pension contributions reducing families' means in the calculation of a variety of benefits.

Results are presented at a 'family unit' level. A family unit represents a married couple or single person, together with all children aged under 15, and children aged less than 18 who are in full-time education; therefore we assume incomes (and any income losses due to auto-enrolment) are shared fully within the family unit. Household level analysis groups together all those living in the same household and assumes income is shared equally amongst all household members. Results at a household level are shown in Appendix 1.

IV RESULTS

4.1 Distributional Impact

We begin by examining the distributional impact of a 6 per cent auto-enrolment contribution by income quintiles as shown in Figure 1. The population is split into five equally sized groups, or quintiles, ranging from 1, the fifth of the population with the lowest income, to 5, the fifth of the population with the highest income.[10] Results are also shown for the population overall.

Before we examine the results, it is worth bearing some issues in mind. Bercholz *et al*. (2019) discussed the fact that pension non-coverage is more prevalent amongst employees aged between 23 and 30 as well as those earning under €30,000. It is worth bearing in mind, however, that lower income individuals are not always in lower income families. For example, Redmond *et al*. (2020) found that minimum wage workers in Ireland were spread throughout the household income distribution and are often located in high-income households. As income quintiles are calculated based on total household/family income, a lower income individual may be located higher up the income distribution due to the fact that their partner has higher earnings. Analysis at household level will also take account of the fact that some lower income earners may reside with higher income parents.

[9] Some of this information was missing in a small number of cases (less than 2 per cent of all employees) sampled. For these cases, pension coverage was imputed using a simple linear probability model of the likelihood to be covered based on gross employment income, age and a public sector dummy variable.

[10] Income quintiles are calculated, as standard, using equivalised disposable income. Income cut-offs for each quintile are shown in Table A.4 in Appendix 2.

The pattern of overall losses by income quintile will be influenced by a combination of factors. First, the proportion of families[11] actually affected by auto-enrolment will have a significant impact on the overall results. Second, the living arrangements of people across the income distribution will also have an impact as discussed above. For example, couples where only one partner is auto-enrolled will see losses diluted due to the assumption that they share their income, and any income losses, fully. Third, results are shown as a proportion of disposable (i.e. after-tax) income, a more accurate reflection of a family's standard of living than gross income. Given that the auto-enrolment contribution analysed is 6 per cent of **gross** employment income, the larger the gap between an individual's gross income and their disposable income, the larger the percentage impact on disposable income. For this reason, higher income households may be more affected as a proportion of disposable income due to the highly progressive nature of the tax system in Ireland.

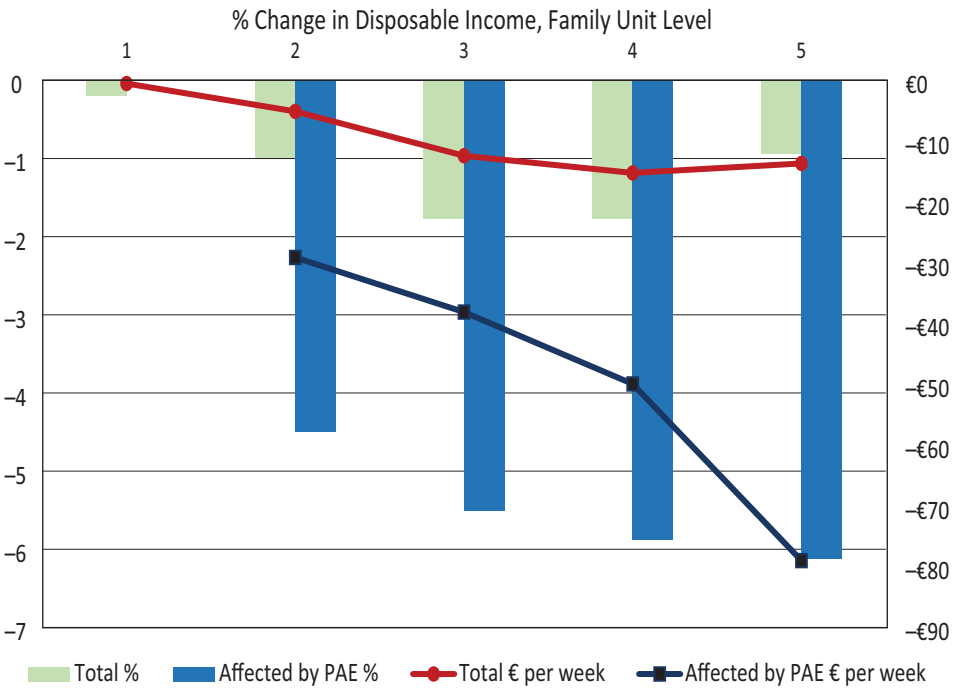
The green bars show the average percentage loss in disposable income for that income quintile. Looking at the overall population we see that losses in income are highest in the middle of the income distribution, with quintiles 3 and 4 facing the largest overall loss (–1.8 per cent). In monetary terms this equates to losses of €12.40 and €15.23 per week respectively, quintiles 2 and 5 experience similar losses in the region of 1 per cent (€5.11 and €13.67 respectively). Losses are smallest in the lowest income (–0.2 per cent/€0.52 per week). These losses represent the average loss for the quintile overall and will include families that are unaffected by auto-enrolment as they contain no-one in the target group.

The blue bars show the average loss in disposable income for those people actually auto-enrolled. Income reductions are largest in quintile 5 (–6.1 per cent/€79 per week) followed by quintile 4 (–5.9 per cent/€50 per week). Quintile 3 experiences a 5.5 per cent drop in income (€38 per week) while the loss for quintile 2 is 4.5 per cent (€29 weekly). In the bottom quintile the sample size is too small to show the average reduction in income for those actually auto-enrolled in these deciles. This is because of the low numbers of people auto-enrolled in these deciles. While we would anticipate the losses in these deciles to be of a similar magnitude to those of higher income deciles, the losses may be smaller for a couple of reasons – firstly people in the lowest income quintile likely pay less income tax due to the progressive nature of the Irish income tax system, therefore the 6 per cent deduction from gross income will be a smaller percentage of their disposable income (compared to higher income groups) as explained earlier. Some lower income individuals may also gain from increased social welfare income as a result of auto-enrolment reducing their disposable income as discussed in Section III.

[11] Results are presented here at a family/tax unit level i.e. grouping couples and their dependent children together. Results are also available at a wider household level, whereby all those individuals living in the same house are grouped together, in Appendix 2.

It is worth noting that while we examine the 'losses' in income as a result of auto-enrolment, it is important to bear in mind that the contributions are essentially savings made by individuals, thus reducing their income over their working life, but providing them with higher retirement income in the future.

Figure 1: Percentage Change in Disposable Income due to Pension Auto-enrolment (6%)



Source: SWITCH based on SILC 2019 adjusted to projected 2023 income levels.
Notes: Figures for those affected by PAE are not provided for quintile 1 due to too low a sample size (<100 cases). Quintiles are based on equivalised family unit income, using the CSO national equivalence scale of 1 (first adult)/.66 (subsequent adult) /.33 (children aged <14).

Table 1 provides some clarity on what drives this overall pattern. Here it can be observed that quintile 3 has the highest proportion of families affected by auto-enrolment, followed by quintile 4, with roughly one-third of these quintiles containing someone who is auto-enrolled. Around one-fifth of quintiles 2 and 5 contain someone auto-enrolled. We know from Bercholz *et al.* (2019) that supplementary pension coverage was highest amongst higher income individuals who will be more likely to be located in the highest income quintile and are therefore less likely to be auto-enrolled. Despite the fact that a lower proportion of

quintile 5 is auto-enrolled, the strongly progressive tax system in Ireland means that this group faces the largest loss as a percentage of their disposable/after-tax income. Quintile 1 has the lowest proportion of families affected by auto-enrolment with just 2 per cent of families in this quintile affected. Many of those in the lower income quintiles will either be mainly in receipt of social welfare[12] or will have employment incomes below the €20,000 auto-enrolment cut-off. This quintile will therefore have lower proportions of families affected by auto-enrolment.

Auto-enrolment will also affect social welfare expenditure, as pension contributions are often deductible from income in the calculation of means for benefit purposes. Therefore, some families may qualify for a means tested benefit and those receiving a means tested benefit may receive a higher amount due to this reduction in their means. The impact, however, is modest. Expenditures on Disability Allowance, Working Family Payment, One-Parent Family Payment, Jobseekers Allowance and Carer's Allowance each rise, although the only benefit whose percentage increase in expenditure exceeds 2 per cent is the Working Family Payment (+8 per cent).

Table 1: Proportion of Income Quintile Affected by PAE, Quintile Distribution of Affected

Quintile	*% of Income Quintile affected*	*Distribution of Affected*
1	2%	2%
2	18%	18%
3	33%	32%
4	30%	30%
5	17%	17%
Total	20%	100%

Source: SWITCH based on SILC 2019 adjusted to projected 2023 income levels.

4.2 Gender Impact

In this section we examine the overall distributional impact of pension auto-enrolment by gender. It is difficult to disentangle the impact of a policy such as pension auto-enrolment on men and women separately due to the fact that a substantial proportion of men and women live together as a couple. Most distributional analysis simply assumes that members of a couple share income fully and, therefore, would share any losses in income from PAE. Any gender difference would, therefore, be driven by any differing impact on single men and women.

[12] For example according to the CSO, State transfers are the main income source for those in lower income groups making up 86 per cent of the average gross income of in the lowest income decile and 65 per cent in the second income decile. See https://www.cso.ie/en/releasesandpublications/ep/p-hbs/hbs20152016/hinc/.

Keane *et al.* (2014) developed a gender impact assessment framework to allow distributional impact by gender. This follows standard distributional analysis by firstly examining the impact of a policy change on men and women assuming they share income fully and then, secondly, looking at the distributional impact on men and women assuming no income sharing.

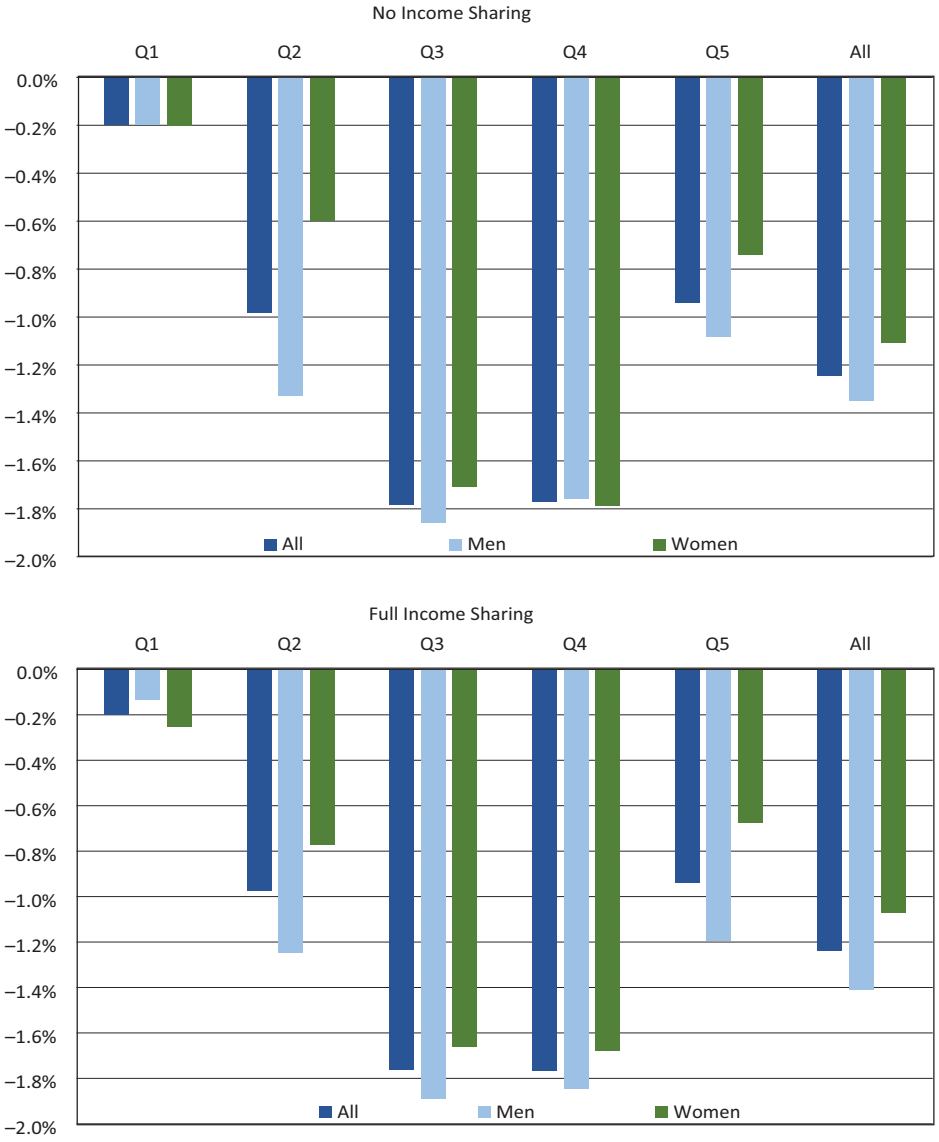
Research by Watson *et al*. (2013) suggests that Irish couples do indeed pool a large proportion of their income and therefore suggests that the 'full income pooling' results are more realistic. The alternative assumption, with its focus on impacts on individual income, is also informative, however, as there is evidence to suggest that household consumption patterns and bargaining power between spouses are influenced by who receives the income.

We present results for the distributional impact of auto-enrolment on men and women under both of these assumptions in Figure 2. Under both the assumption of full or no income sharing between members of a couple, men, on average, experience larger income losses due to auto-enrolment than women. The average loss for men is one-third higher assuming full income sharing and one-fifth higher if we assume couples do not share their income. Larger losses by men are to be anticipated for a few reasons; women are less likely to be auto-enrolled as they are less likely to be in employment and, when they are, their earnings are more likely to be under the €20,000 auto-enrolment threshold. Women in employment are also less likely to be auto-enrolled when earning above the threshold due to their higher concentration in the public sector which has a significantly higher supplementary pension coverage rate. Men experience larger losses at every quintile bar the lowest one, with the gender gap being generally larger under the assumption of full income sharing. Losses due to auto-enrolment are roughly equal in the lowest income quintile if we assume income is not shared between couples while, if we assume income is fully pooled, women in the lowest income quintile face a sharper income loss. In quintiles 3-5 the gender gap is less pronounced when we examine individual income impacts (i.e. assume no income sharing) – this is likely to be driven by these quintiles containing higher earning women with less of a disparity in male/female individual incomes.

4.3 Impact by Part-time/Full-time Employment Status

Table 2 shows the average percentage change in disposable income by employment status. Results are shown for the overall population as well as for just those who are affected by auto-enrolment. As discussed earlier, the living arrangements of those auto-enrolled will have an impact on the overall change in income. We therefore show results for the individual income of the part-time/full-time worker but also the impact on their family unit level income, which perhaps more accurately reflects the impact on their standard of living. Results are shown for the overall population as well as for just those who will be auto-enrolled. Overall, losses for part-time workers stand at around 1 per cent of their individual or family income

Figure 2: Percentage Change in Disposable Income due to Pension Auto-enrolment by Gender



Source: SWITCH based on SILC 2019 adjusted to projected 2023 income levels.
Notes: Quintiles are based on equivalised family unit income, using the CSO national equivalence scale of 1 (first adult)/.66 (subsequent adult) /.33 (children aged <14). In the 'full income sharing' scenario we assume couples pool their incomes fully. In the 'no income sharing' scenario couples incomes are analysed at an individual level with only certain family level benefits assumed to be split equally between couples (for example Child Benefit, Working Family Payment).

while losses for full-time workers will be roughly double this. The overall higher average losses of those working full-time reflect the fact that part-time workers are less likely to be auto-enrolled because a lower proportion will be above the auto-enrolment income threshold.

Those working full-time who will be auto-enrolled will experience a 6.8 per cent reduction in their individual level disposable income. This equates to a 5.9 per cent reduction in their family income. For part-time workers, losses are reduced once the impact on their family income is examined: part-time workers auto-enrolled will see a 6.2 per cent fall in their individual level disposable income which falls to 4.6 per cent of their family level income. This suggests that part-time workers tend to be part of a couple where the partner is in receipt of a higher income, thus reducing the losses of auto-enrolment at a family unit or household level.

Table 2: Average Percentage Change in Disposable Income by Employment Status

	Part-time		*Full-time*	
6% deduction	Individual	Family income	Individual	Family income
Overall	–0.9	–1.0	–2.1	–2.0
Of those auto-enrolled	–6.2	–4.6	–6.8	–5.9

Source: SWITCH based on SILC 2019 adjusted to projected 2023 income levels.
Notes: Part-time is defined as working less than 30 hours per week.

4.4 Poverty Rate Impact

Finally, we examine the impact that auto-enrolment is expected to have on the at-risk-of-poverty (AROP) rate. The poverty line is calculated as 60 per cent of the national median disposable income. The AROP rate shows the proportion of people whose equivalised income is below this level. The first column in Table 3 shows the projected AROP rate for 2023 assuming no pension auto-enrolment. As auto-enrolment will result in a reduction in disposable income in the population as a whole the poverty line actually falls as a result. For this reason we show two AROP rates – the first where we keep the poverty line fixed at the level before the contribution is introduced ('fixed AROP') and the second where the poverty line is recalculated using incomes post auto-enrolment (known as a 'floating AROP'). The fixed AROP rate (column 2 in Table 3) for the whole population increases by 0.3 percentage points due to auto-enrolment with a rise of 0.2 percentage points amongst the adult population and a rise of 0.5 percentage points for the child population. There is no impact on elderly poverty as would be expected, given that they do not form part of the target group. When the poverty line is allowed to fall, the AROP rate (column 3 in Table 3) for the whole population actually falls slightly by –0.3 percentage points due to auto-enrolment. Adult and child AROP rates fall

by –0.1 and –0.4 percentage points respectively. The elderly poverty rate falls by 1.7 percentage points. The elderly poverty rate is often sensitive to small changes (in this case, fall) in the poverty line as elderly incomes tend to be more concentrated than those of working age.

Table 3: At-Risk-of-Poverty Rates

	AROP pre PAE	*Fixed AROP post PAE*	*Floating AROP post PAE*
Whole population	13.1%	13.4%	12.8%
Adult Population	11.9%	12.1%	11.8%
Elderly Population	14.2%	14.2%	12.5%
Child Population	15.6%	16.1%	15.2%

Source: SWITCH based on SILC 2019 adjusted to projected 2023 income levels.

Overall, we can see there is a very minimal impact of auto-enrolment on the AROP rate using any of these measures. The reasons for this have been touched on earlier in this paper. We saw in Figure 1 that the negative impact of auto-enrolment is larger at the higher end of the income distribution with smaller average impacts in the bottom quintiles. The further up the income distribution a family is, the further away they are from the poverty line, and therefore the lower the likelihood that auto-enrolment will push them into poverty.

While SWITCH allows us to estimate directly the impact of auto-enrolment on poverty, as this is calculated based on income, it is harder to predict the impact auto-enrolment will have on other poverty measures such as consumption poverty or deprivation. The distributional analysis has shown that the decline in incomes experienced by those auto-enrolled will, to an extent, be cushioned for those living with higher income/non-auto-enrolled partners. Those auto-enrolled may keep their consumption constant, for example by reducing other savings. In addition, poverty and deprivation do not always go hand in hand – for example in recent years poverty has fallen/remained stable while deprivation increased greatly in the wake of the Great Recession, therefore the two do not have a linear relationship (see Doorley *et al.*, 2022).

V CONCLUSIONS

This study follows on from the work by Bercholz *et al.* (2019) that profiled the pension auto-enrolment population as well as examining potential macroeconomic effects of auto-enrolment. While the current plan for pension auto-enrolment is to allow for people to opt out, the proposed scheme is quasi-mandatory whereby those falling into the target population will be required to participate for a six-month

period. While anyone opting out after this six-month period (in months seven and eight) will receive a refund of their contributions, there are concerns that individuals, particularly those on lower incomes, may struggle financially during these six months. It is worth bearing in mind, however, that contributing towards a pension will help increase incomes of such individuals upon retirement, therefore the contributions can be seen as a form of savings.

We have examined the distributional impact of a 6 per cent auto-enrolment contribution rate and find that, overall, the largest negative impact will be felt in quintiles 3 and 4 (–1.8 per cent of disposable income); i.e. the middle-income ranges. The lowest income quintile will see the smallest average fall in disposable income while percentage losses are roughly equal in quintiles 2 and 5. These results are driven by the fact that only 2 per cent of family units in the lowest quintile will actually be affected by auto-enrolment due to lower employment incomes in these quintiles. The 3rd and 4th income quintiles contain the highest proportion of family units affected by auto-enrolment, with around one-third of family units in these quintiles being auto-enrolled compared to around one-fifth of families in quintiles 2 and 5. Focussing on the reduction in incomes for those family units actually affected by auto-enrolment, the percentage reduction in incomes is progressive ranging from 4.5 per cent for quintile 2 up to 6.1 per cent for quintile 5. This reflects the fact that the 6 per cent auto-enrolment charge on gross salary equates to a higher percentage of disposable income for high income groups who pay more tax etc. and therefore have a larger gap between their gross and disposable income. There are not significant numbers affected by auto-enrolment in the bottom quintile to show results for this group.

Overall, the impacts by gender do not differ greatly. Men face a slightly larger overall percentage loss in income due to auto-enrolment, with the gender gap larger assuming full income sharing. Focussing on the gender impact *across* income groups we see little difference by gender in the middle part of the income distribution. Differences do emerge lower down the income distribution with smaller losses for women in the second income quintile, particularly when we assume no income sharing amongst couples. Women in the upper income quintile also face smaller losses due to auto-enrolment. These effects are likely driven by a variety of factors – women are less likely to be auto-enrolled due to a number of reasons: they are less likely than men to work in the first place; if they are in employment, they are more likely to have incomes below the €20,000 threshold point; finally, they are more often employed in the public sector where supplementary pension coverage tends to be high. Therefore, pension auto-enrolment is unlikely to reduce the gender pensions gap. Nolan *et al*. (2019) point out that the gender gap in pensions is driven by gaps in entitlements to occupational pensions due to the fact that women work significantly less years over their lifetime than men.

Regarding work status, those in full-time employment will face larger reductions in their disposable income than those in part-time employment, a reflection of the fact that those in part-time employment will be less likely to be auto-enrolled as their earnings are more likely to be under the €20,000 auto-enrolment threshold point.

There will be little impact on the at-risk-of-poverty rate. This is explained by the distributional impact findings whereby the largest negative impacts on disposable income were found for the upper income quintiles, for whom the 6 per cent contribution rate examined is not sufficient to push them below the poverty line.

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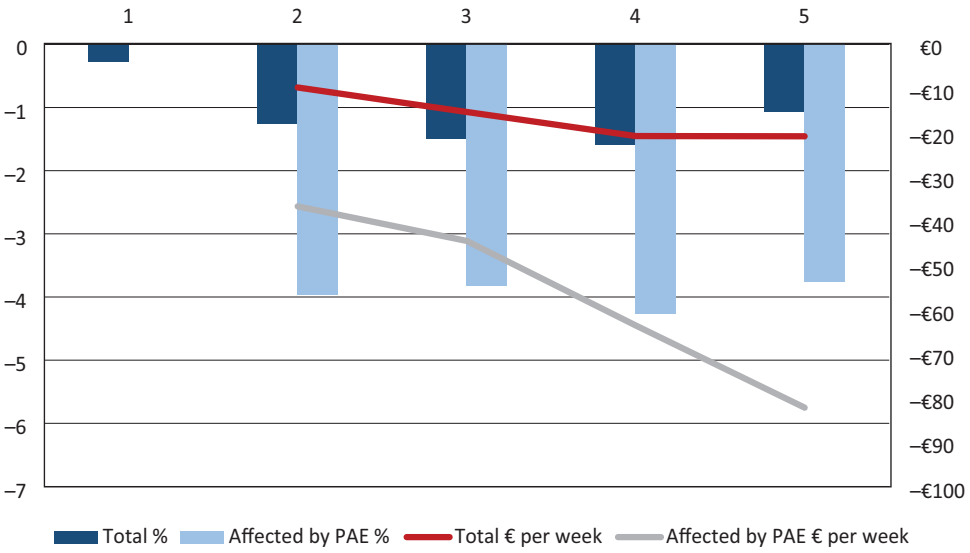
APPENDIX 1:

Household Level Analysis

The results contained in the main part of this paper were based on analysis at a family unit level. This appendix sets out the results at a household level. Figure A.1 shows the distributional impact of an auto-enrolment contribution rate of 6 per cent.

In general, average losses are smaller when the unit of analysis is the household rather than the family unit. Losses are also more even across the income quintiles for those affected by auto-enrolment with an average loss close to 4 per cent for quintiles 2-5. This is due to the fact that losses from auto-enrolment are shared even more widely at a household level, for example, some of those on lower incomes who are auto-enrolled likely live with their parents, so that individual losses get reduced when combined with the income of the entire household. This is highlighted by the fact that the proportion of the income quintile affected is spread more evenly across quintiles 2-5 at a household level (see Table A.1) than at a family unit level (see Table 1).

Figure A.1: Percentage Change in Disposable Income due to Pension Auto-enrolment, Household Level



Source: SWITCH based on SILC 2019 adjusted to projected 2023 income levels.
Notes: Results based on a 6 per cent auto-enrolment contribution rate. Figures for those affected by PAE are not provided for quintile 1 due to too low a sample size (<100 cases). Quintiles are based on equivalised family unit income, using the CSO national equivalence scale of 1 (first adult)/.66 (subsequent adult) /.33 (children aged <14).

Table A.1: Proportion of Income Quintile Affected by PAE, Quintile Distribution of Affected – Household level

Quintile	*% of Income Quintile affected HH*	*Distribution of Affected HH*
1	6%	5%
2	27%	21%
3	34%	28%
4	33%	26%
5	25%	20%
Total	25%	100%

Source: SWITCH based on SILC 2019 adjusted to projected 2023 income levels.

Table A.2 again shows the impact of auto-enrolment contribution rates by employment status, this time assuming income is shared at a household level. Similar to the findings just discussed, the impact on the income of those actually auto-enrolled is smaller at a household level compared to a family unit level (–3.8 per cent for part-time employees compared to –4.6 per cent at a family unit level and –4.8 per cent for full-time employees compared to –5.9 per cent at a family level) reflecting a greater dilution of individual level losses once the reduction in income is shared amongst other individuals in the household.

Table A.2: Average Percentage Change in Disposable Income by Employment Status (6% contribution rate)

	Part-time		*Full-time*	
6% deduction	Individual	Household income	Individual	Household income
Overall	–0.94	–1.10	–2.14	–1.80
Of those auto-enrolled	–6.18	–3.76	–6.84	–4.75

Source: SWITCH based on SILC 2019 adjusted to projected 2023 income levels.
Notes: Part-time is defined as working less than 30 hours per week.

Appendix 2: Additional Statistics

Table A.3: Average Pension Contribution (Employee) by Quintile

Quintile:	*Family level* *%*	*HH level* *%*	*Family level* *%*	*HH level* *%*
1	n.a.	n.a.	n.a.	n.a.
2	5.2	4.8	207	213
3	4.1	3.6	218	228
4	3.9	4.0	259	324
5	5.3	5.7	456	541
Total	4.8	4.8	337	363

Source: SILC 2019.
Notes: n.a. indicates not available due to too low a sample size (<100 cases). The columns labelled '%' show the average current pension contribution (for those currently contributing) as a proportion of employment income. The columns labelled '€' show the average current pension contribution (for those currently contributing) in euro, monthly terms. 'Family level' indicates the results are at family unit level, 'HH level' indicates the results are at household level.

Table A.4: Disposable Income Cut-off (Monthly, Equivalised) Amounts by Quintile

	Monthly Disposable Income €	
Quintile	*Family level*	*HH level*
1	0-286	0-323
2	286-403	323-442
3	403-543	442-578
4	543-713	578-780
5	> 713	> 780

Source: SILC 2019 adjusted to projected 2023 income levels.
Note: Rounded to the nearest euro.