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### *The Distributional Impact of Pension Auto-enrolment*

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**Abstract:** The Irish government plan to introduce pension auto-enrolment in the coming years. Subject to certain age and earnings thresholds, employees not covered by a supplementary pension will be auto enrolled into a retirement savings scheme. It is anticipated the initial employee contribution rate will be 1.5% rising to 6% after a number of years. While individuals can opt out of the scheme, this can only be done after an initial 6-month period. Those opting out of the scheme can receive a refund of their contributions after this 6-month period, however affordability issues may arise for some during these initial 6 months. In this paper we examine the distributional, poverty and inequality impacts of pension auto-enrolment. We find that the largest negative impact will be felt in quintile 4, followed by quintile 3 – i.e. the middle income ranges. The bottom two income quintiles will see the smallest fall in disposable income. These results are driven by the fact that only 1% of family units in the lowest quintile and 7% in the second quintile will actually be affected by auto-enrolment due to lower employment incomes in these quintiles. There is no notable differing impact by gender, if anything women in lower income deciles face smaller losses – either because they do not work, do not earn enough to be auto-enrolled or are more likely to be covered already by an occupational pension due to their higher concentration in the public sector. 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 1.5% contribution rate examined is not sufficient to push them below the poverty line. These findings also hold for a higher 6% contribution rate.

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## 1. 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) have 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 estimate that 65% 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%. Coverage was lowest in the '*Accommodation and food service activities*;' sector at 21%.<sup>2</sup> Burke and Gilhawley (2018) estimated that in 2017, only 30% of the private sector in Ireland had a supplementary (i.e. non-state) pension in 2017.

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' 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 AE 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 7th and the end of the 8th 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.

Most recently, the 2020 Programme for Government includes a commitment to introduce a pension auto-enrolment (AE) system on a phased basis while the Economic Recovery Plan (Department of the Taoiseach, 2021) provides for the scheme to be implemented over the course of 2022 and 2023. 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 McDonald 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-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.

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<sup>2</sup> See <https://www.cso.ie/en/releasesandpublications/ep/p-pens/pensioncoverage2020/>

On the basis of the model approved by the then Government in October 2019, this paper considers the distributional and poverty impact of mandatory participation on lower income groups who may be less able to cope with the financial burden of contributing during the initial 6 months of mandatory participation. While these groups will receive a refund of their contributions should they choose to opt-out after the initial 6-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 lower income groups 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 6 month period (see CSO 2020, Corrigan et al., 2020). In this paper we focus on the impact on disposable incomes during the initial 6 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<sup>3</sup>, who earn over €20,000 a year and who do not already contribute to a supplementary pension.<sup>4</sup> It is envisaged that contribution rates would start at 1.5% and eventually rise to 6% with matching contributions from employers. A State contribution to incentivise participation is envisaged.<sup>5</sup> In this study, we examine an initial 1.5% contribution rate along with the final proposed 6% rate.<sup>6</sup> 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 incomes. It also found that men were more likely to be auto-enrolled than women (making up 57% of the auto-enrolment population). This is due to a variety of reasons – such as women are less likely 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 income individuals will be most affected once auto-enrolment begins. The overall distributional and gender impact of auto-enrolment during the initial mandatory 6 month period is unclear however. Distributional analysis focusses not on individual incomes 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 income individuals may be partnered with higher income individuals, that younger, lower income workers 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 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. In addition, the income reference period for auto-enrolment has not yet been decided – those whose income fluctuates over the year may not be auto-enrolled if assessed on

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<sup>3</sup> 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.

<sup>4</sup> Current contribution levels by income decile are presented in Appendix 2.

<sup>5</sup> The Strawman document mentions a State contribution of €1 per every €3 the employee contributes but this has not been finalised.

<sup>6</sup> Results presented in Appendix 1 for a the final rate of 6%.

income over a 12-month period but may be assessed on, for example, last month's income. 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 2 examines relevant literature regarding pension auto-enrolment (PAE), section 3 discusses the data and methodology used in the analysis while section 4 presents the results. Section 5 concludes.

## 2. 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 (2016) 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% to 88% following auto-enrolment, while an increase from 55% to 93% was observed in the 51-55-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%, compared to 22% 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 (2016) 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.

### 3. 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 2017 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 2021 levels. Given the uncertainty surrounding COVID and the speed at which employment should return to more normal levels once the pandemic has eased, we retain the employment structure of the 2017 SILC data i.e. we do not implement a COVID unemployment shock. This also allows for a more informative analysis of the distributional effects of auto-enrolment since it is not intended to introduce the scheme before the economy has recovered.

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<sup>7</sup> when they retire<sup>8</sup>. We then implement a 1.5% pension auto-enrolment contribution and examine the impact this has on the income distribution. As is the case with current pension contributions, we take account of the fact that these new contributions will likely benefit from income tax relief.<sup>9</sup> We also 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 for both 'household' and 'family unit' level. Household level analysis groups together all those living in the same household and assumes income is shared equally amongst all household members. 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.

## 4. Results<sup>10</sup>

### Distributional Impact

We begin by examining the distributional impact of a 1.5% AE contribution by income quintiles as shown in Figure 1. The population is split into 5 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.<sup>11</sup> 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.

The pattern of overall losses by income quintile will be influenced by a combination of factors. First, the proportion of families/households actually affected by AE 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 AE contribution analysed is 1.5% 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

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<sup>7</sup> This will capture individuals who will be entitled to a supplementary pension when they retire but do not pay contributions themselves.

<sup>8</sup> Some of this information was missing in 70 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.

<sup>9</sup> As the exact form of State incentive for auto-enrolment is not yet confirmed, we assume the current incentive i.e. tax relief, will continue.

<sup>10</sup> All tables and figures shown here for a 1.5% PAE contribution are replicated in Appendix 1 for a 6% contribution.

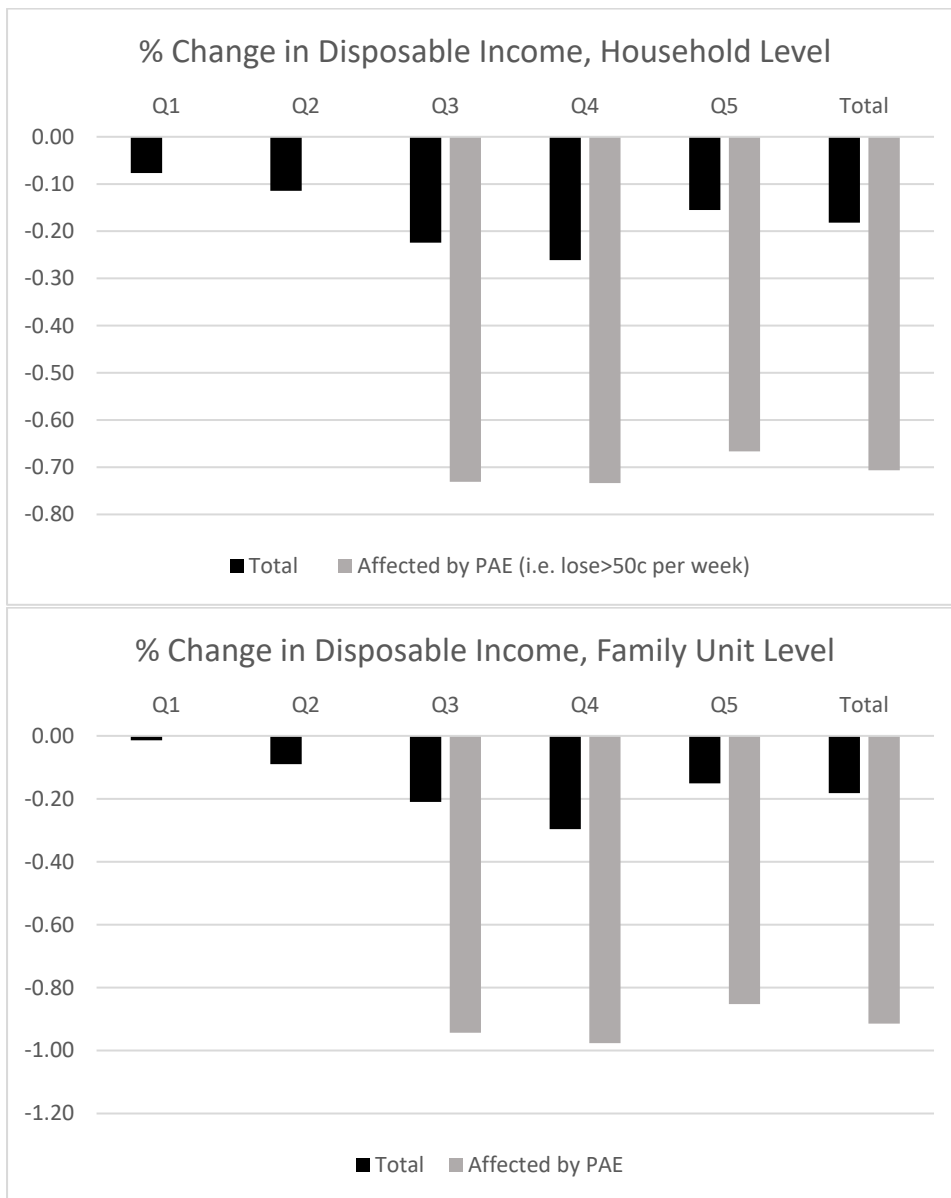
<sup>11</sup> Income quintiles are calculated, as standard, using equivalised disposable income. Income cutoffs for each quintile are shown in Table 7 in Appendix 2.

households may be more affected as a proportion of disposable income due to the highly progressive nature of the tax system in Ireland. Given that tax relief for pension contributions is given at a person's marginal rate of income, those in the higher tax bracket will, however, receive the most tax relief.

The black 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 quintile 4 facing the largest overall loss (-0.26%/-0.3% at family unit/household level) followed by quintile 3 (-0.21%/-0.22% at family unit/household level). Losses in quintile 5 are closer to the overall average loss of -0.06%. Losses are smallest in the bottom, lowest income, quintile followed by the second quintile. These losses represent the average loss for the quintile overall and will include family units and households that are unaffected by auto-enrolment as they contain no one in the target group. The grey bars show the average loss in disposable income for those people actually auto enrolled. Deciles 3, 4 and 5 experience a similar reduction in income due to auto-enrolment, hovering around -0.7% at a household level and at around -1% at a family unit level. Income reductions in quintile 5 are slightly below those of quintiles 3 and 4 as this quintile will benefit most from assumed tax relief on pension contributions. In the bottom two quintiles, the sample sizes are 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, these deciles are less likely to benefit from tax relief on pension contributions but the fact that they pay less income tax than higher income deciles will mean that the 1.5% deduction from gross income will be a smaller percentage of their disposable income 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 3.

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 (1.5%)**



Source: SWITCH based on SILC 2017 adjusted to projected 2021 income levels.

Notes:

Results based on a 1.5% auto-enrolment rate.

Figures for those affected by PAE are not provided for quintiles 1 and 2 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 – at both a family unit and household unit level. Here it can be observed that quintile 4 has the highest proportion of families affected by auto-enrolment. This is followed by quintile 3, then quintile 5. 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. Quintile 1 has the lowest proportion of families affected by auto-enrolment followed by quintile 2. Many of those in the lower income quintiles will either be mainly in receipt of social



welfare<sup>12</sup> or will have employment incomes below the €20,000 auto-enrolment cut-off. These two quintiles 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 the National Childcare Scheme, Disability Allowance, Working Family Payment, One-Parent Family Payment and Jobseekers Allowance each rise, although the only benefit whose percentage increase in expenditure exceeds 0.5% is the One-Parent Family Payment (1.88%).

**Table 1: Proportion of Income Quintile Affected by AE, Quintile Distribution of Affected**

Quintile	% of Income Quintile Affected		Distribution of Affected	
	HH Level	Family Level	HH Level	Family Level
1	6%	1%	7%	1%
2	12%	7%	12%	9%
3	26%	20%	27%	26%
4	30%	30%	31%	39%
5	22%	19%	23%	25%
Total	19%	15%	100%	100%

Source: SWITCH based on SILC 2017 adjusted to projected 2021 income levels.

In general, average losses are smaller when the unit of analysis is the household rather than the family unit. This is due to the fact, for example, that some of those on lower incomes who are auto-enrolled live with their parents or other higher income individuals, so that individual losses get reduced when combined with the income of the entire household.

## 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 AE. Any gender difference would, therefore, be driven by any differing impact on single men and women. 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

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

evidence to suggest that household consumption patterns and bargaining power between spouses is influenced by who receives the income.

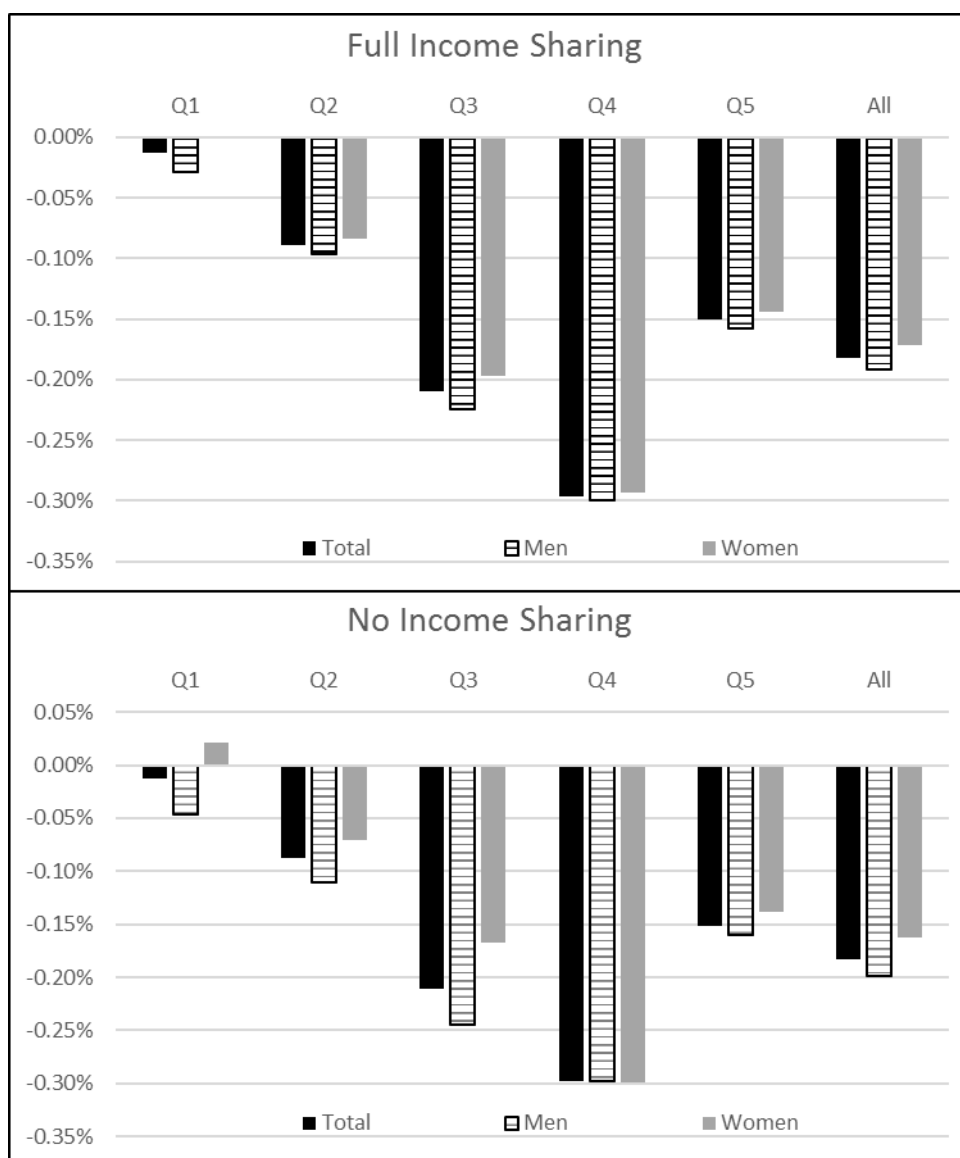
We present results for the distributional impact of AE on men and women under both of these assumptions in Figure 2. Overall, assuming full income sharing, losses due to AE do not differ greatly by gender, the average losses for both genders are just under 0.2%. Some small differences are observed in lower income quintiles with men more likely to have a larger negative impact than women. These findings are more pronounced when we focus on the impact on individual incomes (i.e. assuming no income sharing).

Women in the bottom income quintile actually experience a small rise in their individual income while men experience a loss. This is driven by some men in this income quintile being auto-enrolled and, as pension contributions can be deducted in the calculation of means for various benefits, their female partners receiving benefits see a small rise in their individual social welfare income.

In quintiles 2 and 3, men experience larger losses in income than women due to auto-enrolment. This is in part driven by the fact that women are less likely to be auto-enrolled as they are less likely to be in employment and, when they are, they are more likely to earn 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.

Results for the gender impact of AE in the upper two quintiles under both income sharing assumptions show a relatively even impact on men and women with slightly lower losses for women. This is likely to be driven by these quintiles containing higher earning women with less of a disparity in male/female individual incomes.

**Figure 2: Percentage Change in Disposable Income due to Pension Auto-enrolment (1.5%) by gender**



Source: SWITCH based on SILC 2017 adjusted to projected 2021 income levels.

Notes:

Results based on a 1.5% auto-enrolment rate.

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).

### 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<sup>13</sup>

<sup>13</sup> We define part-time as working less than 25 hours per week.

worker but also the impact on their household and 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 -0.08% of their individual income or -0.10% (-0.14%) of their family unit (household) income. Losses for full-time workers stand at -0.39% at an individual level or -0.36% (-0.32%) at family unit (household) level. 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 AE income threshold.

Those working full-time who will be auto-enrolled will experience a 1.25% reduction in their individual level disposable income. This equates to a 1.03% (0.83%) reduction in their family unit (household) level income. For part-time workers, losses are reduced once the impact on their tax-unit or household level income is examined: part-time workers auto-enrolled will see a 1.26% fall in their individual level disposable income which falls to -0.83% (0.69%) of their tax-unit (household) 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 or live with other higher income people in their household (for example, parents), 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		
	Individual income	HH income	Family income	Individual income	HH income	Family income
Overall	-0.08	-0.14	-0.10	-0.39	-0.32	-0.36
Of those auto -enrolled	-1.26	-0.69	-0.83	-1.25	-0.83	-1.03

*Source: SWITCH based on SILC 2017 adjusted to projected 2021 income levels.*

*Notes: part-time is defined as working less than 30 hours per week*

### 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% 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 2021 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 0.01 percentage points due to auto-enrolment with a rise of 0.02 percentage points amongst both the adult and 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 falls slightly by -0.2 percentage points due to auto-enrolment. Adult and child AROP rates fall by -0.2 and -0.4 percentage points respectively. Again, the elderly poverty rate is unchanged.

**Table 3: At-risk-of-poverty rates**

	AROP pre PAE	Fixed AROP post PAE	Floating AROP post PAE
Whole population	14.85%	14.86%	14.62%
Adult Population	15.73%	15.75%	15.55%
Elderly Population	1.38%	1.38%	1.38%
Child Population	19.26%	19.28%	18.82%

Source: SWITCH based on SILC 2017 adjusted to projected 2021 income levels.

Notes: results are based on a 1.5% AE contribution rate.

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. Firstly, 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. Secondly, the rate examined here, at 1.5% of earnings, is relatively modest. However, even when examining the impact of a 6% contribution rate (see Table 5 in the Appendix) impacts on AROP rates are small.

## 5. 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 6-month period. While anyone opting out after this 6-month period (in months 7 and 8) will receive a refund of their contributions, there are concerns that individuals, particularly those on lower incomes, may struggle financially during these 6 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 1.5% auto-enrolment contribution rate and find that, overall, the largest negative impact will be felt in quintile 4 (-0.26% of disposable income), followed by quintile 3 (-0.22% of disposable income) – i.e. the middle income ranges. The bottom two income quintiles will see the smallest average fall in disposable income. These results are driven by the fact that only 1% of family units in the lowest quintile and 7% in the second quintile will actually be affected by auto-enrolment due to lower employment incomes in these quintiles. The 4<sup>th</sup> income quintile contains the highest proportion of family units affected by auto-enrolment, 40% of family units in that quintile will be auto-enrolled. Focussing on the reduction in incomes for those family units actually affected by auto-enrolment, the percentage reduction in incomes is broadly similar across quintiles 3 to 5. There are not significant numbers affected by auto-enrolment in the bottom two quintiles to show results for these two groups.

Overall, the impacts by gender do not differ greatly. Men face a slightly larger overall percentage loss in income assuming full income sharing while the assumption of no income sharing has little effect on the overall results. Focussing on the gender impact *across* income groups we see little differences by gender in the upper two quintiles. Differences do emerge lower down the income distribution with smaller losses for women in lower income deciles, particularly when we assume no income sharing

amongst couples. These effects are driven by the fact that women in these income quintiles are less likely to be auto-enrolled. This is because of 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 (family unit) 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 they will be more likely to earn under the €20,000 auto-enrolment threshold point.

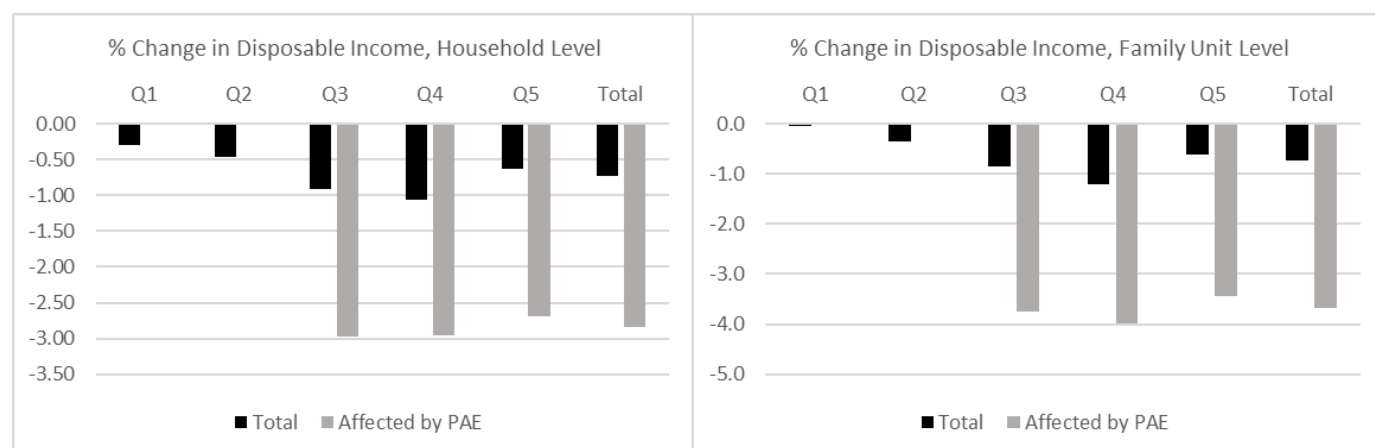
There will be little impact on the at-risk-of-poverty rate. This is explained by the distributional impact findings whereby the largest negative impacts on disposable income were found for the upper income quintiles, for whom the 1.5% contribution rate examined is not sufficient to push them below the poverty line. These findings also hold for a higher 6% contribution rate.

## 6. Appendices

### Appendix 1: Results with a 6% PAE contribution rate.

This appendix sets out the results of the micro-simulation of the final proposed 6% rate. Figure 3 shows the distributional impact of the anticipated final auto-enrolment contribution rate of 6%. The pattern of income reductions in both cases is similar to the 1.5% rate examined in the main text, only the magnitude differs. Under a 6% auto-enrolment rate, overall losses (black bars) at family unit level are largest in the middle of the income distribution with quintile 4 having the largest average loss of 1.05% with a 6% rate. Again, too few family units lose income under auto-enrolment in quintiles 1 and 2 to show the losses for those affected. For those family units affected by auto-enrolment a 6% contribution rate gives an average disposable income loss of 2.84%. Losses are broadly similar across deciles 3 and 4 and slightly smaller for decile 5.

**Figure 3: Percentage Change in Disposable Income due to Pension Auto-enrolment (6% contribution rate)**



Source: SWITCH based on SILC 2017 adjusted to projected 2021 income levels.

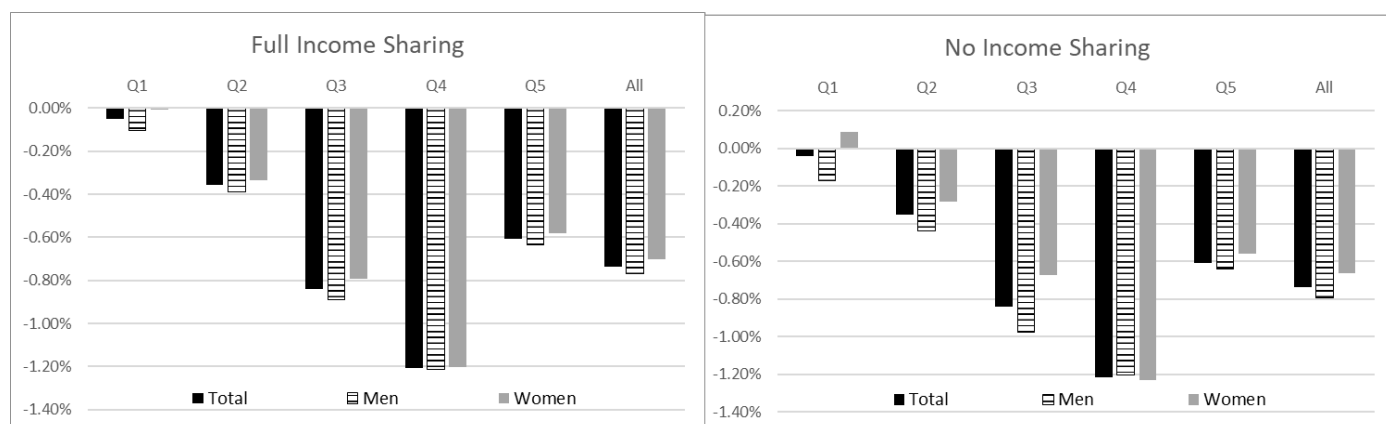
Notes:

Results based on a 6% auto-enrolment contribution rate.

Figures for those affected by PAE are not provided for quintiles 1 and 2 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).

Figure 4 shows the distributional impact of the anticipated final auto-enrolment contribution rate of 6% by gender. Again, the pattern matches that of the 1.5% rate examined in the main text. Assuming full sharing of income between couples, there is little differing distributional impact by gender with an average loss of 0.77% for men and 0.7% for women. Any gender differences are most noticeable in the lower income quintiles where men, on average, experience a larger reduction in disposable income due to auto-enrolment. When focussing on individual incomes received by men and women (i.e. assuming no income sharing between members of a couple) some larger gender differences emerge but the gaps are still small – the average loss for men is 0.8% compared to 0.66% for women. Gender differences in losses are similar in the higher income quintiles with the gender gap more apparent in the bottom 3 quintiles.

**Figure 4: Percentage Change in Disposable Income due to Pension Auto-enrolment (6% contribution rate) by gender**



Source: SWITCH based on SILC 2017 adjusted to projected 2021 income levels.

Notes:

Results based on a 6% auto-enrolment contribution rate.

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)

Table 4 shows the impact of auto-enrolment contribution rates of 6% by employment status. As was the case with a 1.5% rate, overall losses for those in part-time employment are smaller than those in full-time employment (0.33% compared to 1.56%). This is due to those in part-time employment being less likely to reach the €20,000 auto-enrolment threshold. Looking at just those individuals who are auto-enrolled, percentage losses are similar between part-time and full-time employees (5.2% of disposable income with a 6% rate) with the results at household and family unit level showing a dilution of these individual level losses as the reduction in income is shared amongst other individuals in the family unit/household.

**Table 4: Average Percentage Change in Disposable Income by Employment Status (6% contribution rate)**

	part-time			full-time		
	Individual income	HH income	Family income	Individual income	HH income	Family income
<b>6% deduction</b>						
Overall	-0.33	-0.56	-0.42	-1.56	-1.27	-1.44
Of those auto-enrolled	-5.17	-2.87	-3.44	-5.17	-3.33	-4.17

Source: SWITCH based on SILC 2017 adjusted to projected 2021 income levels.

Notes: part-time is defined as working less than 30 hours per week

Finally, analysis of a 6% auto-enrolment contribution rate shows little impact on poverty rates (see Table 5) – a 6% rate results in a slightly higher poverty rate when measured using a fixed poverty line but only marginally so.



**Table 5: At-risk-of-poverty rates (6% contribution rate)**

	AROP pre PAE	Fixed AROP post PAE	Floating AROP post PAE
Whole population	14.85%	14.90%	14.36%
Adult Population	15.73%	15.80%	15.31%
Elderly Population	1.38%	1.38%	1.38%
Child Population	19.26%	19.31%	18.38%

*Source: SWITCH based on SILC 2017 adjusted to projected 2021 income levels.*

*Notes:*

*Results based on a 6% auto-enrolment contribution rate.*

## Appendix 2: Additional Statistics

**Table 6: Average pension contribution (employee) by quintile**

Quintile:	Family level	HH level	Family level	HH level
	%	%	€ monthly	€ monthly
1	n.a.	n.a.	n.a.	n.a.
2	n.a.	n.a.	n.a.	n.a.
3	4.8	4.5	224	217
4	4.6	4.3	238	260
5	4.9	4.9	397	453
Total	4.8	4.7	318	333

Source: SILC 2017

Notes:

*n.a.* indicates not available due to too low a sample size (<100 cases).

The column labelled '%' shows the average current pension contribution (for those currently contributing) as a proportion of employment income.

The column labelled '€' shows 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 7: Disposable income cut-off (monthly, equivalised) amounts by quintile**

Quintile	Monthly Disposable Income €	
	Family level	HH level
1	0 - 215	0 - 267
2	216 - 308	267 - 335
3	309 - 409	336 - 445
4	410 - 569	446 - 600
5	> 569	> 600

Source: SILC 2017

Rounded to the nearest euro

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