The Effect of Tax Incentives on Private Pension Saving

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Motivation

- Private pensions enjoy favourable tax treatment in UK and many other countries

- Government revenue foregone is significant (approx. £40bn per year in UK)

- Potentially more beneficial for higher earners

- **This paper:** how responsive is private-sector employees' pension saving to tax incentives in the UK?

This paper

- Use UK panel data for private-sector employees between 2005 and 2019

- Estimate the responsiveness of private pension saving with respect to the up-front tax price of pension saving (1 - marginal tax rate)

- Identification from individuals either side of a change in the marginal income tax rate, where the "tax price" of pension saving changes discontinuously

- **Key finding:** Private pension saving does not respond much to this tax incentive

- Contrasts with previous literature, which typically finds pension saving does respond to tax incentives, even if total saving unchanged (Chetty et al., 2014; Andersen, 2018)

Outline

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Institutional background

- State pension gives only low replacement rate in UK $\implies$ private pension saving is particularly important

- Most private pension saving by private-sector employees is in employer-facilitated pension schemes

- Two important changes over the course of our sample period:
    1. Automatic Enrolment into these schemes rolled out from late 2012 on - led to large increase in membership (Cribb and Emmerson, 2020)
    2. A continued shift away from DB schemes towards DC schemes

How are pensions taxed in UK?

- Private pension income taxation in UK is EET:
    - **Exempt contributions**: Income paid into pensions is exempt from income taxes
    - **Exempt accumulation**: Interest/returns/capital gains are exempt from taxes
    - **Taxable withdrawals**: Income tax paid on withdrawal (but 25% lump sum tax free in UK)

- This contrasts with standard savings accounts, which are TTE/TEE

- Crossing a kink in the income tax rate schedule increases the incentive to save in EET plans

- Question: to what extent do people save more into a pension in response to this tax incentive?

Income tax schedule (2019-20)
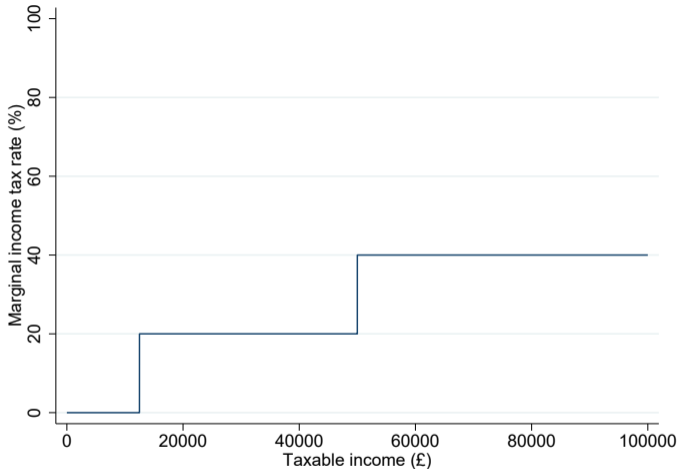
Notes: This figure shows the income tax schedule in England, Wales and Northern Ireland. Since 2017-18, the income tax schedule in Scotland is slightly different.

Data

- Use Annual Survey of Hours and Earnings (ASHE) data from 2005 to 2019

- Survey of 1% of UK employees completed by employers (so high accuracy)

- Detailed info on earnings and pension savings, measured in April each year, which we aggregate to annual level

- Throughout, we focus on private-sector employees, and we split period into 2005-12 and 2013-19

Outline
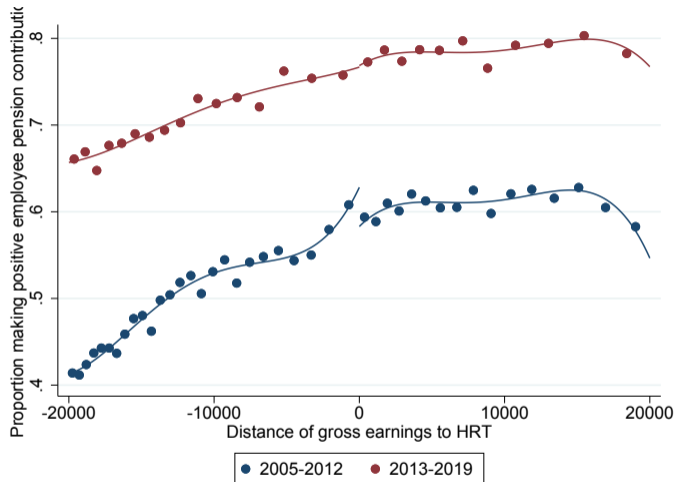
How do we measure the tax incentive to start saving in a pension?

- Consider someone earning **more** than the higher rate threshold:
    - Saving £1 in a pension reduces their taxable income by £1, and reduces their income tax bill by 40p

    - $\implies$ First pound saved in a pension costs **60p** of current disposable income

- Consider someone earning **less** than the higher rate threshold:
    - Saving £1 in a pension reduces their taxable income by £1, but reduces their income tax bill by just 20p

    - $\implies$ First pound saved in a pension costs **80p** of current disposable income

- $\implies$ Higher incentive to make positive employee pension contributions above HRT

- $\implies$ Expect a jump in share making positive employee contribution above HRT

No evidence of jump in pension membership at HRT

Notes: Private sector workers only, real 2019£ earnings.

How do we measure the tax incentive to save more in a pension?

- Consider someone earning £55,000 in a year:
    - Initially, saving £1 in a pension costs 60p of contemporaneous disposable income

    - But, saving more in their pension reduces their taxable income

    - Eventually they contribute so much that their taxable income = HRT

    - From this point on, saving an extra £1 in pension saves only 20p of income tax

    - So, saving £1 in a pension costs 80p of contemporaneous disposable income from this point

- So the up-front tax price of pension saving **increases discontinuously** at HRT as taxable income decreases

- $\implies$ If people are responding to tax incentive, we would expect **bunching** of people choosing their pension contributions so their taxable income = HRT

No evidence of people using pension contributions to bunch at HRT in 2005-12

Density vs Distance of gross earnings to HRT

Legend: Gross income — Gross income - employee contr.

Notes: 2005-12 private sector workers only. Real earnings (2019 £).

Similar lack of bunching in 2013-19

Notes: 2013-19 private sector workers only. Real earnings (2019 £).

Outline

Panel-data: empirical strategy

- Cross-sectional evidence suggests little responsiveness of employee pension contributions to tax price of pension saving around HRT

- Use panel-data regression analysis to calculate what happens to pension saving when the same person, in same job, is above and below HRT (controlling for earnings)

Panel-data: empirical strategy

- Regress pension saving z_{it} (either membership or log employee contributions) on pension saving price p_{it}:

$$z_{it} = \varepsilon \ln p_{it} + \eta \ln y_{it} + \delta X_{it} + \alpha_i + \alpha_t + u_{it} \qquad (1)$$

- Control for:
    - Income y_{it}
    - Employee-employer fixed effects α_i, i.e. people's underlying preferences for saving while in a given job
    - Year fixed effects α_t, i.e. any particular reasons why aggregate pension saving might have been higher or lower in a given year (e.g. recession)
    - Other individual characteristics X_{it} e.g. age^2

- We instrument the actual tax price with the tax price on first pound of pension saving due to endogeneity of price of pension saving (Feldstein and Taylor, 1976)

Results 2005-12

Effect of 1% increase in pension price on	Overall	Occ DB	Occ DC	Other DC
Membership	-0.05	0.01	-0.21	0.06
Contributions (conditional on membership)	-0.10***	-0.01	-0.17***	-0.19***

Notes: Samples are private sector employees with real annual earnings £30-70K (2019£). All columns include year FE, employee-employer FE and controls for age^2. *** indicates statistical significance at 1% level.

- Intepretation: 1% increase in pension price decreases the probability of saving in a workplace pension by 0.05%
- And, conditional on saving in a workplace pension, it decreases the avg. employee contribution by 0.1%

Results 2013-19

Effect of 1% increase in pension price on	Overall	Occ DB	Occ DC	Other DC
Membership	-0.01	0.24	-0.17	-0.06
Contributions (conditional on membership)	-0.02	-0.01	-0.06	-0.04

Notes: Samples are private sector employees with real annual earnings £30-70K (2019£). All columns include year FE, employee-employer FE and controls for age^2. *** indicates statistical significance at 1% level.

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Results summary

- We estimate a very small elasticity of pension contributions with respect to the up-front tax price of pension saving at HRT in UK

- Our results imply, if up-front income tax relief was changed from 40% to 20% at 60K:
    - Pension membership would be about **0.9ppt lower** (70% → 69.1%)

    - Average employee contributions (among members) would **fall by around £75** per year (£3000 → £2925)

- Small responsiveness to tax incentives $\implies$ policy not substantially affecting saving decisions for those around the HRT