Socio-Economic Review, 2025, Vol. 00, No. 00, 1–32
https://doi.org/10.1093/ser/mwaf068
Article

OXFORD

Article

Pension financialization and workplace pension wealth inequality: evidence from Britain

Bruno Bonizzi [1,*], Hulya Dagdeviren [2], Benjamin Tippet [3]

[1]Department of International Politics, City St George's, University of London, London, EC1V 0HB, UK
[2]Hertfordshire Business School, University of Hertfordshire, Hatfield, AL10 9EU, UK
[3]Department of International Development, King's College London, London, WC2R 2LS, UK

*Corresponding author. Department of International Politics, City St George's, University of London, Northampton Square, London EC1V 0HB, UK. E-mail: bruno.bonizzi.3@city.ac.uk

Abstract

The growth of Defined Contribution (DC) pensions, in which retirement depends on individual savings and financial market investments, has been a key aspect of household financialization. This article examines the impact of the shift from Defined Benefit to DC pensions on workplace pension wealth inequality in Britain. We propose a conceptual framework to interpret the effect of this shift, highlighting four key channels through which DC pensions can aggravate pension wealth inequality: the greater inequality of pension contributions, lack of redistributive mechanisms within pension schemes, the compounding effects of (missed) contributions over time, and unequal capacity to take on risks. Using data from the UK Wealth and Assets Survey, along with quantile regression and decomposition analysis, we find corroborating evidence that reliance on DC pensions exacerbates workplace pension wealth inequality, supporting the plausibility of our proposed four channels.

Key words: pensions; financialization; wealth inequality; quantile regressions.

JEL classification: D31, G51, J32

1. Introduction

Pension systems have seen significant changes over the past two decades. A key trend has been the gradual move from Defined Benefit (DB) pensions to Defined Contribution (DC) pensions. This transformation is significant because, while DB pensions guarantee a certain level of income at retirement, DC pension outcomes depend entirely on individual

contributions and their performance as financial market investments. The rise of DC pensions has been uneven across countries, but globally, pension assets in DC schemes have grown from 37 per cent to 58 per cent of the total between 2003 and 2023 (Thinking Ahead Institute 2024).

The rise of DC pensions has been analysed in the political economy scholarship on pensions. Alongside the shift from unfunded to funded pensions, and the changing asset allocations of pension funds, it is generally seen as a key dimension of the financialization of pensions (van der Zwan 2017; Hassel et al., 2019). In DC pensions, individuals treat their retirement as a personal responsibility that must be managed through saving and financial investment (Langley 2006). The literature on financialization and pensions highlights how the individualization of pensions, as part of neoliberal self-governance, reshapes individuals into financial subjects who manage their risks through markets, creating a process which reinforces existing class and gender inequalities (Langley 2006, 2020; Erturk et al., 2007; Fligstein and Goldstein 2015; Adkins et al., 2020; Aitken 2020; Lin and Neely 2020; Bobek et al., 2023). Individualized financial responsibilities generate unequal opportunities and outcomes, benefiting a small section of the population, while increasing indebtedness and housing insecurity for others (Fligstein and Goldstein 2015; Hillig 2019; Sgambati 2022; Bobek et al., 2023). These inequalities are evident in workplace pensions, shaped by factors such as gender, class, and financial attitudes, which mediate individuals' ability and opportunities for financialized self-governance (Warren 2006; Gardiner et al., 2016; Foster 2017; James 2021; Agunsoye and James 2022; James and Agunsoye 2023; Gonzales and Fernández 2024). However, the literature does not focus on the distinctive effect of pension individualization—a key dimension of household financialization—on pension wealth inequality, particularly its quantitative measurement.

This article therefore contributes to this literature in three ways. First, it provides a framework for understanding how the individualization of pensions can increase pension wealth inequality—where pension wealth is defined as the value of individual pension entitlements—, by showing how the distinctive design of DC pensions can amplify disparities in workplace pension wealth accumulation. This distinctiveness operates through four key channels: the greater inequality of pension contributions, the lack of redistributive mechanisms within DC schemes, the compounding effects of (missed) contributions over time, and the unequal capacity to take on risks and benefit from the compounding of financial returns. Second, based on the UK Wealth and Assets Survey, the article provides comprehensive empirical evidence about workplace pension wealth in Britain between 2008 and 2020, including its distribution across workplace divides such as occupational class. Third, using quantile regressions and decomposition analysis, it shows how DC pensions in Britain are systematically associated with increasing pension wealth inequality. The findings provide evidence corroborating the plausibility of our proposed channels, even after controlling for the different characteristics of DB and DC pension members.

Finally, our article also has important policy implications. Britain is a crucial case study, as it is the country where the importance of DC relative to DB has been growing fastest in the last decade, following the introduction of its automatic enrolment policy in 2012. This policy requires employers to register all employees in a pension scheme if their annual earnings exceed a pre-defined threshold. While autoenrolment has significantly increased pension coverage, the evidence suggests that it has not reduced pension wealth inequality. Our article shows that the transition to DC can partly explain this trend. As DC pensions are

growing in importance in many countries–sometimes as the result of explicit policies, such as Germany, Ireland, and the Netherlands–our study serves as a reminder that relying entirely on DC pensions may limit the positive effects of the increasing pension coverage on pension wealth distribution.

The article is structured into six further sections. The second section provides an overview of the evolution of pension systems internationally, the current structure of the UK pension system, and a review of existing research on pension individualization, financialization, and pension wealth inequality. The third section offers a conceptual framework to understand the impact of pension individualization on workplace pension wealth inequality. The fourth section discusses our methodology, data, and empirical hypotheses. The fifth section presents descriptive evidence on the nature of workplace pension inequality in Britain. The sixth section conducts a quantile regression and decomposition analysis of pension wealth inequality before outlining the conclusions in the final section.

2. Pension financialization and inequality

2.1 The evolution of pension systems

Pension systems have seen significant long-term changes over the past three decades. Giving impetus to such reforms globally was the publication of the *Averting the Old Age Crisis* report by the World Bank (1994). The report argued that, to mitigate the risks posed by ageing populations, a sustainable pension system should be based on three pillars: a scaled-back public pension system to provide a minimum pension to avoid poverty, a second pillar based on mandatory private funded pensions linked to work earnings, and a third voluntary individual pillar. The multi-pillar system has since become the dominant policy paradigm (Orenstein 2013). While its application has been uneven and adapted to national contexts, the overall trend has been the growth of funded private pensions and retrenchment of pay-as-you-go public pensions (Whiteford and Whitehouse 2006; Ebbinghaus 2015; Bonizzi et al., 2021; Guardiancich and Guidi 2022).

These changes have led to three key developments, collectively understood as the financialization of pensions (van der Zwan 2017; Hassel et al., 2019). First, the expansion of both workplace and voluntary funded pensions has increased workers' reliance on financial markets, as funding requires the accumulation of savings to be invested. Second, the continuous search for returns and assets to fill the growing portfolios of pension funds has resulted in an increasing sophistication of pension fund investment strategies. The principal beneficiaries of this development have been asset managers, who now predominantly intermediate pension funds' investments across a diversified array of asset classes (Berry 2021; Braun 2022; Bonizzi et al., 2023). The third development is the increasing individualization of pensions, which links individual pension outcomes and risks to financial market dynamics. A key element of this has been the significant transition from DB pensions, where the retirement incomes are guaranteed—typically by employers—and risks are managed collectively within pension schemes, to DC pensions, where contributions invested in financial markets entirely determine the size of individual savings pots and eventual retirement income.

The growth of DC pensions has been a significant trend across OECD countries. Globally pension assets in DC schemes have grown from 37 per cent to 58 per cent of the total (Thinking Ahead Institute 2024). Focussing on the four countries with the largest workplace pension systems (the USA, Canada, the UK, and the Netherlands), Fig. 1 shows

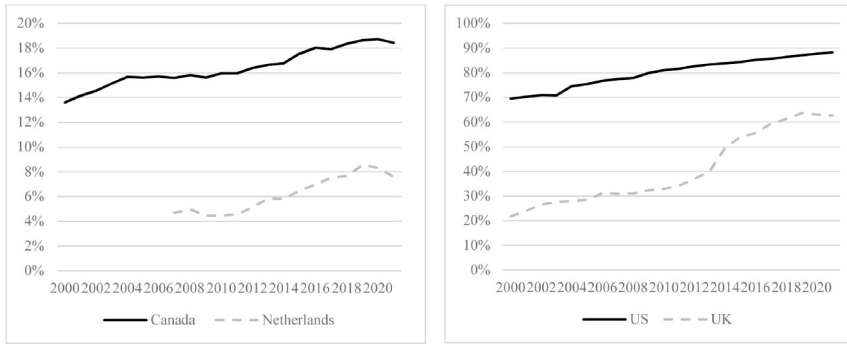

Figure 1. Proportion of active members of a DC scheme. Authors' elaboration based on Statistics Canada, DNB, USA Department of Labor, Office for National Statistics.

that active members are increasingly likely to be enrolled in a DC rather than DB scheme. The USA started early with the establishment and growth of 401k accounts at the expense of DB schemes (McCarthy 2017). In contrast, some European countries also introduced DC schemes but retained more significant guarantees (Hassel et al., 2019). Even in countries where DB schemes continue to dominate, such as Canada and the Netherlands, the proportion of DC schemes has increased, and reforms are taking in place in the Netherlands, which will convert its DB schemes into DC schemes from 2028. In other countries, such as Australia and most Latin American countries, new funded schemes–almost exclusively DC–were established in the 1990s, with no sign of a countermovement towards DB schemes (Bonizzi et al., 2021; Clark and O'Neill 2023). In sum, while the process has not been uniform, the overall trend towards individualization can be observed globally.

These developments, including the very rapid transition to DC schemes, have been significant in the UK. The current structure of the UK pension system, in line with the prevalent policy paradigm, is based on three pillars: the state pension, workplace pensions, and private personal pensions. The UK State pension covers all citizens above retirement age who have paid national insurance contributions for at least ten years and is funded on a pay-as-you-go basis through national insurance and taxation. The amount received covers basic needs rather than offering a replacement for employment-based pension income, making private pension wealth very 'important' for income security in retirement (Beckert 2024). As a result, UK workers are heavily reliant on workplace pensions for retirement: OECD projections (OECD 2023) show that the UK State pension offers one of the lowest replacement rates for average income earners (21.6 per cent). Only through 'quasi-mandatory' workplace pensions does the total replacement rate reach 49 per cent, broadly in line with the OECD average. With the introduction of automatic pension enrolment (autoenrolment) in 2012, which requires employers to enrol all employees in a workplace pension scheme if their annual earnings exceed a pre-defined threshold, workplace pensions in the UK have become ubiquitous in their importance to retirement. Workplace pensions (whether DB or DC) are also supported by a tax-relief mechanism, whereby workers can make tax-free pension contributions up to an annual allowance of £60,000. This particularly benefits higher earners as they can obtain tax relief on their higher tax payments (Adam et al., 2024), especially in the past when tax relief allowances were more generous,

allowing higher earners to make additional voluntary contributions (AVCs) on top of their normal workplace contributions. Furthermore, wealthier individuals are able to avoid capital gains tax, by saving into a DC pension account.

Crucially, the workplace schemes set up to support autoenrolment have been exclusively DC, which explains the trend seen in Fig. 1 since 2012. Therefore, the UK has marked signs of pension financialization, with a large and growing importance of workplace pensions, and increasing individualization of pension provision.

2.2 Existing literature on pension financialization and inequality

In the financialization literature, the individualization of pensions has been primarily studied as a dimension of everyday life financialization. Individualized pensions are understood as part of a new neoliberal self-governance, where individuals are expected to take responsibilities for their own wellbeing by saving and managing their risk through financial markets (Langley 2006, 2020; Erturk et al., 2007). A new financial culture emerges, reshaping individuals as financial subjects that (re)configure objects as assets producing financial returns, and subjects as risk-taking investors (van der Zwan 2014; Fligstein and Goldstein 2015; Adkins et al., 2020; Aitken 2020). In this world, active financial management becomes necessary, and alongside housing and borrowing, pension saving and investment become a key dimension of asset-based welfare (Langley 2006; Finlayson 2009; Hillig 2019).

Importantly, the financialization of everyday life is associated with significant inequalities among households. Asset ownership and access to leverage are highly unevenly distributed, with increasing concentration of wealth in housing and especially financial assets, so that the opportunities of investor citizens are highly concentrated within a small section of the population (Lin and Neely 2020; Bobek et al., 2023). This creates significant disparities between those who benefit from financialization, through wealth accumulation and leverage, and those who experience financialization through higher indebtedness and housing insecurity (Fligstein and Goldstein 2015; Hillig 2019; Adkins et al., 2020, 2021; Sgambati 2022; Bobek et al., 2023). Financialization of everyday life, seen as the individualization of financial responsibilities, generate significant inequalities in opportunities and outcomes.

These inequalities are evident for workplace pensions, where the existing literature has highlighted the importance of workplace divides as key mediating factors. Entitlements to workplace pensions are based on individual and employer contributions, whether directly, for DC pensions, or indirectly, for DB pensions. This can generate worse outcomes for groups who are at a disadvantage in the workplace (James 2021). A significant dimension of this is gender with women being disadvantaged by their lower pay as well as a higher likelihood of taking employment breaks or working part-time due to the uneven distribution of care work (Frericks et al., 2009; Grady 2015; Gardiner et al., 2016; Foster 2017; Saritas 2020; James and Agunsoye 2023; Bessière and Pugliese 2025). Workplace pensions are also unevenly distributed across occupational social classes: individuals in routine/manual, low-paid occupations, or less secure employment terms tend to experience worse outcomes, given the limited access to workplace pensions and lower incomes to contribute to them (Warren 2006; Gardiner et al., 2016; Foster 2017; Gonzales and Fernández 2024). Gender and class are important dimensions of pension inequalities, both as structuring factors that determine access to and accumulation of pension wealth, and as drivers of

different attitudes to financial decisions and risk taking, which are shaped by social and cultural norms (Collard and Breuer 2009; Alserda et al., 2019; James 2021; Agunsoye and James 2022; James and Agunsoye 2023).

Existing research, in sum, highlights the unequal character of everyday life financialization, including in the accumulation of workplace pension wealth. However, while recognizing the individualization of pensions as a key dimension of household financialization, the literature does not always distinguish clearly between the different impacts in workplace DB and DC pensions and has not yet conceptualized the specific channels through which DC pensions can lead to greater workplace pension wealth inequality. This is an important gap, since DC pension crystallize the full individualization of pension responsibilities, whereby individual choices about the amount and timing of saving, as well as risk taking, will determine the value of pensions. Additionally, the literature has not systematically analysed such links through empirical quantitative data analysis.

Outside the financialization literature there is a smaller body of work focussing on the quantitative analysis of pension wealth distribution. Studies in the USA, Germany, and Denmark found that pension wealth is less unequally distributed than other wealth forms, reducing total wealth inequality (Wolff 2014; Bönke et al., 2019; Jakobsen 2020). In contrast in Britain, private pension wealth inequality has been higher than total wealth inequality (ONS 2019). Second, there is evidence that state/public pensions have greater effects on reducing inequalities than private pensions (Manduca 2025). Evidence from Switzerland (Kuhn 2020), Poland (Wroński 2023), and a comparative analysis of the USA and Germany (Bönke et al., 2020) shows that public pensions have greater positive influence on reducing overall wealth inequality than private workplace pensions. A wider study, covering 26 European countries confirmed these results: the public pension pillar reduced wealth inequality but the private pillar in most countries did not (Olivera 2019).

More important for this study is the question of how inequality of pension wealth differs between DB and DC schemes. The existing literature focuses primarily on the USA, where the move from DB to DC pensions began earlier. Johnson and Uccello (2003, p.745) predicted a redistribution of average pension wealth 'from those with long-term jobs to those with multiple short-term jobs and from those with substantial pension benefits to those with more limited benefits' after the replacement of DB with cash balance schemes in the USA. In contrast, a later study by (Even and Macpherson 2007) found that the transition to DC schemes increased average pension wealth but resulted in greater inequality at retirement for workers in low-income groups at the bottom of the income distribution. More recent studies in the USA showed that DC pension wealth is more unequally distributed than DB wealth (Wolff 2015; Ghilarducci et al., 2022) and that the transition from DB to DC accounts for about a fifth of the total increase in wealth concentration in the USA (Karamcheva and Perez-Zetune 2023).

The existing evidence, in sum, points to increased wealth inequalities as a result of the transition to DC pensions in the USA, but do not highlight the mechanisms through which such inequalities occur. There are no existing studies on Britain, where the transition to DC has arguably been the most significant over the past decade. Our article therefore complements this literature by making these channels explicit and presenting corroborating evidence, and focusing on an important case study.

3. How pension individualization can generate wealth inequality

Building on the scholarship above, we argue in this article that the growth of DC pensions relative to DB pensions is likely to increase workplace pension wealth inequality. The increase in pension coverage in Britain, due to autoenrolment, is likely to boost the pensions of those previously excluded, and therefore at the bottom of the wealth distribution. However, the individualization of financial responsibilities inherent in DC pensions, a key dimension of household financialization, is likely to increase pension wealth inequalities and at least partly offset any gain due to increase coverage. While the reviewed literature recognizes this, it has not yet provided a systematic framework to assess how the transition to DC can increase workplace pension wealth inequality. This is our task in this section.

There are four key channels that can make DC pensions more unequally distributed. The first is the effect of increased inequality in contributions. In line with the financialization of everyday life, DC pensions place greater responsibility on individuals to decide how much to contribute, thereby amplifying the potential for increased inequalities. Under DC schemes, it is the employee who chooses the level of monthly pension contributions which are then matched by the employer, according to pre-defined rules within each pension scheme. While there are minimum contribution rates set by law (at 8 per cent with a minimum of 3 per cent from employers), workers with lower incomes are much more likely to stick to the lowest possible contributions, resulting in a lower matching by the employer as well. Under DB schemes on the other hand, required contributions are pre-determined and employers' contributions are usually significantly larger than that of workers. This is what can be observed in Table 1, which shows how employer contribution rates are roughly constant across the income distribution in DB pension schemes but rising significantly in DC schemes. This effect is also compounded by the ability of higher-income workers to make AVCs, which are channelled to separate DC pension pots, to benefit from full tax relief, as well as the capital gains tax exemption that pension savings benefit from. Gender and class divisions, as highlighted in the previous section (Warren 2006; Gardiner et al., 2016; Gonzales and Fernández 2024), can play a significant role in this, as women and those working in manual/routine sectors or with less secure contracts, are more likely to fall below the pre-defined thresholds for eligibility, limit their contributions, and be offered less generous pension terms (e.g. sticking to minimum contribution rates) by their employers.

Second, DC schemes also increase inequalities by significantly reducing the scope for redistribution. While, as the literature reviewed in the previous section highlights (Warren 2006; Gardiner et al., 2016; Gonzales and Fernández 2024), all workplace pension schemes

Table 1. Employer contribution rates by earning bands, 2019.

	>£10,000 to £15,000	>£15,000 to £20,000	>£20,000 to £25,000	>£25,000 to £30,000	>£30,000 to £50,000	>£50,000 to £75,000	>£75,000 to £100,000
DB	17.2	16.5	16.7	16.6	17.6	18.1	16.7
DC	3.8	4.1	4.5	5.0	6.4	8.0	8.6
Group personal	5.2	4.5	5.0	5.4	6.0	6.8	7.4

ONS Annual Survey of Hours and Earnings (ASHE). Group personal pensions are DC schemes.

reflect existing workplace inequalities, with higher earners building up larger pensions, the fully individualized nature of DC schemes makes the link between contributions and benefits much tighter: members get what they contribute plus returns at retirement. In DB schemes on the other hand, pensions are set by pre-determined rules based on factors such as income and inflation, which makes it possible for different individuals to accrue pensions at the same rate with different contribution rates. This opens the possibility of creating a 'progressive' contribution structure, whereby lower earners contribute less for the same accrual rate. Most public-sector DB schemes in the UK, such as the Local Government Pension Scheme and the Teachers' Pension Scheme, have these contribution structures.

Third, there is greater lifetime compounding effects in DC pensions. The full individualization of responsibilities concerns not only the level but the timing of contributions. As the reviewed literature highlights, career breaks and irregular contributions can lead to unequal pensions under any contributory workplace pension schemes (Warren 2006; Frericks et al., 2009; Grady 2015; James and Agunsoye 2023). However, while under DB schemes, pension wealth depends on salary accruals during membership, under DC schemes it compounds over time based on returns to assets in which they are invested. A gap in contributions earlier in life can have a larger compounded negative effect over time on the build-up of a pension wealth under DC schemes vis-à-vis DB schemes. Thus, while 'opting out' and irregular employment patterns are a disadvantage in all types of pension schemes, they are likely to have greater negative effects on DC pensions. Data in Fig. 2 show that employee contribution rates increase over the life cycle, particularly after the age of 35 years, thus implying that DC pension wealth inequalities could compound over time. This also reflects negatively on the gendered dimension of inequality, as women contributions decline in the 25–34 group, likely reflecting career dynamics relating to childbearing and rearing.

Finally, DC pension wealth is likely to be more unequally distributed due to differences in risk bearing and asset allocation. The individualization of pension responsibilities also concerns asset allocation, which depends to a large extent on the capability to take risks. Although both DB and DC schemes are subject to market volatility as they are invested in a portfolio of financial products to maximize the value and rate of return on the assets, volatility risks are entirely born by members under the DC schemes. DB schemes, on the other hand, assign this risk to employers (or other social partners) while guaranteeing a defined

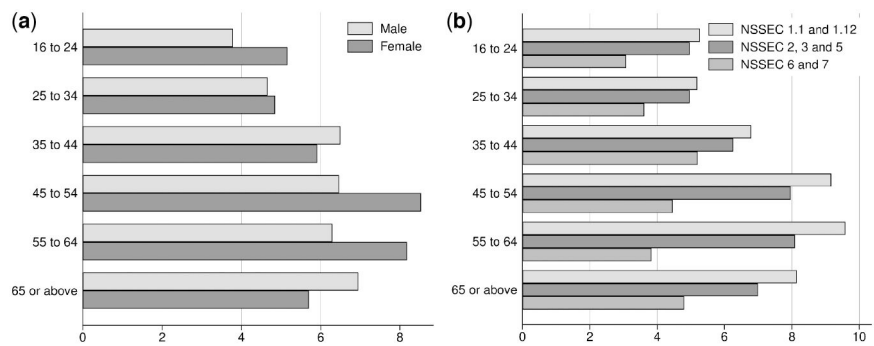

Figure 2. Average contribution rates, by age group. ONS Wealth and Assets Survey, Round 7. X-axis measured in percentage to annual income.

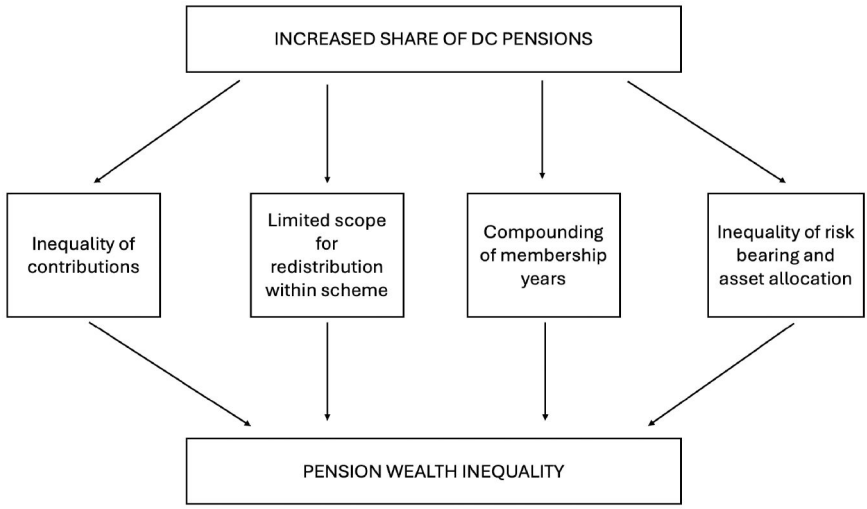

Figure 3. The relationship between DC pensions and inequality.

income stream for workers. DC pension outcomes are therefore significantly more uncertain, with the potential for greater upside wealth effects but also the risk that financial downturns may significantly reduce pension pots. Risk taking therefore is a much more significant determinant of pension outcomes in DC pensions. As the reviewed literature highlights, this is likely to put lower earners and other disadvantaged groups in DC pensions schemes at a further disadvantage, given their higher risk aversion (Collard and Breuer 2009; Foster 2017; Alserda et al., 2019; Agunsoye and James 2022; Bobek et al., 2023).

Overall DC pensions are likely to produce a more unequal pension wealth distribution through these four channels which are summarized in Fig. 3. Specific empirical hypotheses are derived for each of these channels in the next section once the empirical measures of each of these are introduced. These hypotheses are summarized in Table 2.

4. Method and data

The article conducts three empirical exercises to analyse the link between DC pensions and wealth inequality. First, it presents descriptive data on the levels and trends in pension composition and inequality for the UK over the last decade, focusing on both the overall pension wealth inequality and inequality between socioeconomic classes. Second, the article estimates quantile regressions to analyse the extent to which DC pensions are associated with an increase in pension wealth inequality, controlling for the influence of relevant confounding factors such as years of membership, age, gender, occupational class and contribution levels. Finally, we estimate Oaxaca-Blinder decompositions to test the empirical support for each of the four channels discussed in the previous section. In other words, the quantile regressions analyse whether there is a statistically significant relationship between DC pensions and pension wealth inequality, while the decomposition examines why this may be happening.

The quantile regression estimations are based on the Recentred Influence Function (RIF) (Firpo et al. 2009; Rios-Avila 2020). RIFs measure the influence of each observation in a sample on the construction of a particular statistic of a distribution (e.g. median, mean, Gini coefficient, etc.). RIF regressions allow us to capture the relative influence of changes in population characteristics on the distribution of a certain dependent variable. The estimation process involves two steps: first, the RIFs are calculated for each observation; second, an OLS regression is estimated with RIFs as the dependent variable.

Formally:

$$RIF\big(y, \nu(F_Y)\big) = \boldsymbol{X}'\boldsymbol{\beta} + \varepsilon_i$$

With $\nu(F_y)$ being the statistic of interest. The interpretation of these regressions is based on the unconditional means of both sides of the equation:

$$E\big[RIF\big(y, \nu(F_Y)\big)\big] = E\big(\boldsymbol{X}'\boldsymbol{\beta}\big) + E(\varepsilon_i)$$
$$\nu(F_Y) = \boldsymbol{\beta}\boldsymbol{E}(\boldsymbol{X})$$

The interpretation of the results is based on the unconditional means of the dependent and independent variables of the RIF regression. For instance, in the RIF regression $RIF(Y) = \beta_0 + \beta_1 X_1 + \varepsilon$ the estimated coefficient β_1 would be interpreted as the expected change in a statistic for Y (e.g. median pension wealth) if the average of X (e.g. the proportion of females) changes by one unit. This approach allows for the direct estimation of the impact of certain pensions characteristics (e.g. membership of DC vs DB pensions) not only on the average level of pension wealth but also at different points of the pension wealth distribution. Our analysis focuses on three points in the distribution: the bottom decile (bottom 10^{th}), the median, and the upper decile (90^{th}), as well as the interquartile range (i.e. the differences between the bottom and top decile).

The results should nonetheless be interpreted with care. They measure the relative influence of a small change in some characteristics of interest (e.g. the proportion of people enrolled in DC vs DB pensions) on the overall distribution. They do not allow for the identification of specific effects on individuals or effects of large changes (Rios-Avila and Maroto 2024). For example, our regression will measure the effect on pension wealth distribution of a small (e.g. 1 per cent) increase in the proportion of workers enrolled in DB pensions but cannot provide precise causal inferences for individuals or for a complete move from DC to DB pensions.

The Oaxaca-Blinder decomposition is used to test the empirical support for the four channels discussed above. It assesses the difference between DB and DC pension wealth and decomposes this difference into two parts: an 'explained' portion which accounts for the differences in the characteristics of individuals with DB and DC pension wealth, and an 'unexplained' part, which reflects differences in the coefficients associated with those characteristics. This approach allows us to assess the extent to which the higher levels of wealth in DB vis-à-vis DC pensions, reflect differences in the composition of DB and DC pension membership (e.g. differences in years of membership), and the extent to which they stem from differences in 'rewards' to different characteristics. While decomposition analysis is typically used to evaluate differences between social groups (most commonly gender), it has also been deployed to compare other groups, such as unionized and non-unionized workers (Rios-Avila and Hirsch 2014), workers in different countries (Brzezinski and Sałach 2021),

Table 2. Understanding the channels with the Oaxaca-Blinder decomposition.

Channel	10%	50%	Top 10%	Interquantile range
Explained				
Inequality of contribution rates	Contribution rate (+) and greater than contribution rate at the top	Contribution rate (+) and smaller than contribution rate at the bottom	Contribution rate (+) and smaller than contribution rate at the bottom	Contribution rate (−)
Unexplained				
Limited scope for redistribution	Contribution rate (−)	Contribution rate (−)	Contribution rate (−)	Contribution rate (−)
Compounding	Membership years (−)	Membership years (−)	Membership years (−) and more negative than poorer households	Membership years (−)
Risk taking	Attitude to risk (−)	Attitude to risk (−)	Attitude to risk (−) and more negative than poorer households	Attitude to risk (−)

rural–urban divides (Skoufias and Katayama 2011) and the distribution of wages or household wealth at different points in time (Davies et al., 2017; Rios-Avila 2019). Most closely related to our study Karamcheva and Perez-Zetune (2023) use it to compare DB and DC pension membership in the USA. However, their study differs from ours, as it focuses on the construction and projection of counterfactuals, while we analyse the factors explaining the difference between DB and DC, controlling for relevant confounding factors.

The four channels described in Section 3 imply specific hypotheses that can be corroborated (or not) using the decomposition. These hypotheses are summarized in Table 2. The first channel regarding the inequality of contributions implies that the gap between DB and DC pensions arises because poorer individuals have higher contribution rates in DB schemes. This should be observed in the *explained* part of the decomposition for the bottom 10 per cent: the coefficient for contribution rates should be positive and significant for the bottom 10 per cent, and it should be higher for the bottom 10 per cent than for the top 10 per cent. This would indicate that the DB-DC contribution rate gap is wider and more impactful in explaining the DB-DC wealth gap for those with lower pension wealth vis-à-vis those with higher pension wealth. Furthermore, the coefficient for the interquantile range should be negative, indicating that the DB-DC contribution rate gap generates higher inequality in DC vis-à-vis DB pension wealth.

The second channel regarding the limited scope for redistribution within DC schemes implies that because of the individualized nature of DC schemes, the link between

contributions and benefits tends to be much tighter in DC schemes. The unexplained part of contribution rates is expected to be negative across the distribution, as this captures the fact that contribution rates have a smaller impact on DB pension wealth accumulation than DC pension wealth accumulation due to redistribution within DB schemes. If the contribution rate coefficient is negative in the unexplained part of the decomposition, it means that the reward to this variable is lower in DB schemes relative to DC schemes. We would expect this negative coefficient to be larger for individuals with greater pension wealth reflecting their higher ability to benefit from the higher returns to contributions in DC schemes. The interquantile range coefficient is expected to be negative so that the difference in rewards to contributions generates higher inequality in DC vis-à-vis DB pension wealth.

The third channel on lifetime compounding effects implies that years of membership in a pension scheme will have a bigger impact on pension wealth in DC schemes than in DB schemes, due to the longer time for compounded effects in DC schemes. This implies that the unexplained part of years of membership should be negative, as DB schemes have lower returns on additional years of membership relative to DC schemes. This negative effect should be present across the distribution but should be larger for higher earners. As a result, the interquantile range coefficient should also be negative, since the higher reward to years of membership due to compounding effects would increase pension wealth inequality in DC schemes relative to DB schemes.

The last channel on risk appetite is the hardest to capture using available data, as there is no direct way to link individual pension wealth holdings with the composition of assets in pension funds and their relative risk levels. However, as a proxy for the degree of risk taking we can directly measure individuals' attitudes towards risk taking. This channel implies that being a risk taker in a DB compared with a DC scheme should generate lower returns. This should particularly be true for the top 10 per cent, whose risk seeking behaviour is more likely to lead to greater financial returns due to their access to wealth management institutions and networks. Therefore, the unexplained part of the risk measure should be negative–and potentially more negative for the top 10 per cent–as returns to risk should be higher in a DC than a DB scheme.

We used the Wealth and Assets Survey (WAS) data for all estimations. The WAS is a longitudinal survey across Great Britain (excluding North of the Caledonian Canal and the Isles of Scilly), providing the main source of information regarding the distribution of wealth. Since its inception in 2006, there have been seven Waves/Rounds: Wave 1: 2006–2008; Wave 2: 2008–2010; Wave 3: 2010–2012; Wave 4: 2012–2014; Round 5: 2014–2016; Round 6: 2016–2018; Round 7: 2018–2020. The difference between waves and rounds is the start and end month: in 2016–2018, WAS changed its sampling dates from July to June to April to March, to integrate the survey with other household financial surveys that report on financial years. This article uses the person level file throughout as pension wealth is an individual variable.

The analysis focuses on workplace DB and DC schemes. A full list of variables used in the regression estimations is shown in Table 3. Our key dependent variable is *Pension Wealth*, as reported in the WAS. For DB pensions, pension wealth is calculated as the present value of future pension entitlements. The Office for National Statistics (ONS) estimates the DB pension wealth, taking account of the age- and sex-specific annuity factor at normal pension age, assuming average age-specific life-expectancies. The estimate is discounted by the Superannuation Contributions Adjusted for Past Experience (SCAPE) rate, which is set

Table 3. Variables list.

Variable	Description
Pension Wealth	Total value of workplace pension wealth in logarithmic form
DB	Whether respondent has a DB pension (=1 DB pension)
Member Years	Years of membership
Female	Whether respondent is female (=1 if female)
Full-time	Whether respondent is employed full time (=1 if full time)
Permanent	Whether respondent has a permanent contract (=1 if permanent)
Secondary educ.	Whether respondent has secondary education
Tertiary educ.	Whether respondent has tertiary education
Class-high	Higher manager and professionals (NSSEC is 1.1 and 1.2)
Class-routine	Routine and semi-routine workers (NSSEC 6 and 7)
Autoenrolment	Whether respondent has been autoenrolled into a workplace pension
Contribution	Monthly contribution rate to pension scheme
Risk appetite	Whether individual would prefer a 1 in 5 chance to earn 10,000 over a guaranteed £1,000 (=1 if choosing the 1 in 5 chance 10,000 payoff)
Income	Annual gross income in logarithmic form
DB_avc	Whether the individual has a DB pension and has accumulated pension wealth due to annual voluntary contributions (=1 if yes)
DB_noavc	Whether the individual has a DB pension and has no accumulated pension wealth due to annual voluntary contributions (=1 if yes)
DC_high	Whether the individual has a DC pension and is in the top 5% of income and contribution rates
DC_low	Whether the individual has a DC pension and is not in the top 5% of income and contribution rates

at 3 per cent above CPI (ONS 2025). DC pension wealth reflects the current fund value reported by the respondent at the time of interview. The wealth for each scheme is calculated separately and then summed up to derive total wealth in DB or DC, respectively.

Most of the other dependent variables focus on key individual characteristics such as gender, occupational social class, education and income. Years of membership (*Member Years*) measures how long the individual has been a member of a pension scheme. The inclusion of this variable restricts the *Pension Wealth* variable to active current pension membership for the regression and decomposition analysis in Section 6. Our results must therefore be interpreted with caution, as they only examine the variation in the distribution of existing workplace pension wealth, rather than attempting to identify causal determinants of pension wealth in general. Finally, the very few workers who were active members of both a DC and DB pension are excluded so that membership of DB and DC schemes is mutually exclusive. We use NSSEC as measures of occupational social class, which, despite criticisms, remain a useful tool for understanding the factors that generate inequality (Williams 2017). We also include variables for the monthly contribution rate, whether the individual has been autoenrolled in a scheme, and risk appetite, as measured by a standard lottery-type survey question, as commonly done in the literature (Ding et al., 2010; Coppola 2014). To check for effect of additional voluntary contributions, providing income and capital gains tax relief to higher earners, described in Section 3, we also split DB and

DC membership, respectively between those with AVCs (DB_avc) and those without (DB_noavc), and those in the top 5 per cent of income and contribution rates (DC_high) and those that are not (DC_low). Further details are provided in Section 6.3.

Despite WAS being the primary data source on individual pension wealth and characteristics in Britain there are some limitations with the dataset. First, wealth surveys such as the WAS tend to suffer from differential non-response bias where wealthier households are less likely to respond to the survey. This bias however is primarily a concern at the very top of the distribution for which pension wealth makes up a smaller share of overall wealth. Second, the WAS pension data is self-reported which means it may also be subject to item response biases. However, the Office for National Statistics (ONS) takes extensive measures to ensure the highest data quality is collected, including encouraging participants to reference documentation (such as mortgage and pension statements) whenever possible.

5. An overview of UK pension inequality and individual characteristics

5.1 Pension coverage, composition, and inequality

Workplace pension schemes in Britain are characterized by significant inequalities. One manifestation of this is the gaps in the coverage of the workplace pension system. In Britain, close to 43 per cent of the working-age population was not covered by a pension scheme before the introduction of autoenrolment, which helped increase coverage to 71 per cent. The Annual Survey of Hourly Earnings (ASHE) data yields a slightly higher coverage rate of 79 per cent for 2021; the difference is partly accounted for by the fact that the ASHE data does not cover self-employed individuals, who are not affected by autoenrollment (ONS 2025), and a small part of the difference arises from voluntary or personal pensions. The increase in coverage has also led to a remarkable change in the composition of membership, with the vast majority of new pension entries taking place in DC schemes as shown in Fig. 4a. The proportion of the working population covered by these schemes tripled from the first wave to the most recent wave.

However, more than a quarter of the working population continues to remain uncovered. One of the most important reasons for the lack of coverage is self-employment, a potentially precarious labour market status for many people. The WAS data shows that there has been a significant increase in the number of self-employed individuals who are not contributing to a pension. Around 19 per cent of the self-employed were contributing to a scheme prior to the introduction of mandatory autoenrolment. By 2018–20, this rate went down to 15 per cent. The median gross personal income for the self-employed was £16,880 in the most recent WAS wave, which probably provides limited scope for contributing to a pension scheme after taxes. The ONS' own estimates show that some self-employed respondents without pension membership save for old age through other means (17 per cent), especially through investment in property. Almost two-thirds of those without a pension scheme indicated that their employer does not offer a pension scheme. Given the mandatory nature of autoenrolment, this is likely to reflect those working with contracts which do not qualify for pension enrolment, such as self-employed and gig economy workers whose earnings are lower than the threshold set for mandatory autoenrolment.

The final diagram (Fig. 4c) shows that despite the expansion in pension coverage, overall workplace pension wealth inequality—as measured by the Gini coefficient—increased significantly and much of this change is accounted for by the DC schemes that accommodated

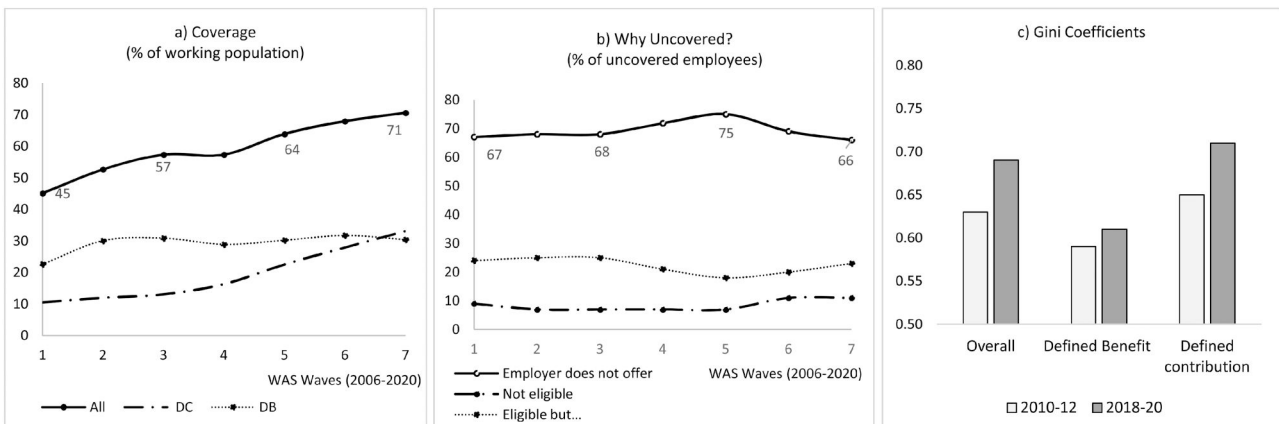

Figure 4. Pension coverage and overall workplace pension wealth inequality (16+ working population). Pension wealth reflects the sum of the current as well as retained rights in workplace pension schemes for the currently active population. Minimum number of observations is 16,552 for Fig. 4a and c and 4,297 for Fig. 4b.

the greatest expansion in coverage. Some of this could be driven by the lower years of accumulated contributions into autoenrolment schemes compared with established DB schemes. In Section 6, we show that DC schemes do however aggravate inequality even after accounting for differences in the maturity of pension schemes. Thus, the increasing financialization of UK pensions appears to go hand in hand with increasing inequalities.

5.2 Workplace divides and pension wealth inequality

In addition to the gaps in coverage and increasing pension individualization, pension wealth inequality cuts across other dimensions. While Gini coefficients are useful for understanding overall inequality, they provide limited insight into cross sectional dimensions, especially regarding labour market cleavages. Therefore, we zoom in on pension inequalities by different divides. First, workplace pension wealth inequality is evaluated by employees' gross earnings. Figure 5a provides weighted estimates of average pension wealth of different employees from those with the lowest pay (bottom 10 per cent) to those with the highest pay (top 1 per cent). The estimates reflect gross earnings, combining income from employment, self-employment, investment and welfare benefits. Inevitably, higher paid employees have higher pension wealth. For example, the pension wealth gap is 7-fold between the top 1 per cent and bottom 10 per cent in the case of DB systems. Moreover, the average pension wealth is always higher under DB schemes in comparison with DC schemes irrespective of earnings. In other words, on average, contributors are better off with DB schemes than DC schemes.

Second, pension wealth inequality is examined by occupational class, based on the National Statistics Socio-economic Classification (NSSEC). Using the NSSEC 8-digit classification in the WAS, we grouped active population into four categories: higher managers (NSSEC 1.1), higher professionals (NSSEC 1.2), lower managers (NSSEC 2,3,5), and routine and semi-routine workers (NSSEC 6,7). Unsurprisingly, we find that routine and semi-routine workers, technicians, lower supervisors or managers have much smaller pension pots in comparison with higher professionals and higher managers, irrespective of the pension scheme (Fig. 5b). Again, DB pension pots are larger than DC pots for each occupational class. It is also important to note that within-scheme inequality, when measured by the pension wealth of higher managers against other occupational classes, is greater for DC schemes. For example, higher managers' pension pots are around five times larger than the pension pots of routine workers under DB schemes and 6.8 times larger under DC schemes.

Third, pension wealth differences are examined by security of work, using contractual status as a proxy. We were able to distinguish employees on permanent, temporary and fixed term contracts. Evidence corresponding to each of these categories is presented in Fig. 5c. Predictably, pension wealth on temporary contracts is the lowest, followed by fixed term contracts. Within each group, the DB schemes once again provide two to 5-fold more generous pots across the board than DC schemes.

Finally, pension wealth differences are analysed according to source of earnings, whether from investment, employment, or self-employment (Fig. 5d). The investor category includes respondents whose investment income constitutes at least half of their total income. Bear in mind that the last category is likely to reflect a precarious working-class status in the highly flexible segment of the labour market and the growing 'gig economy'

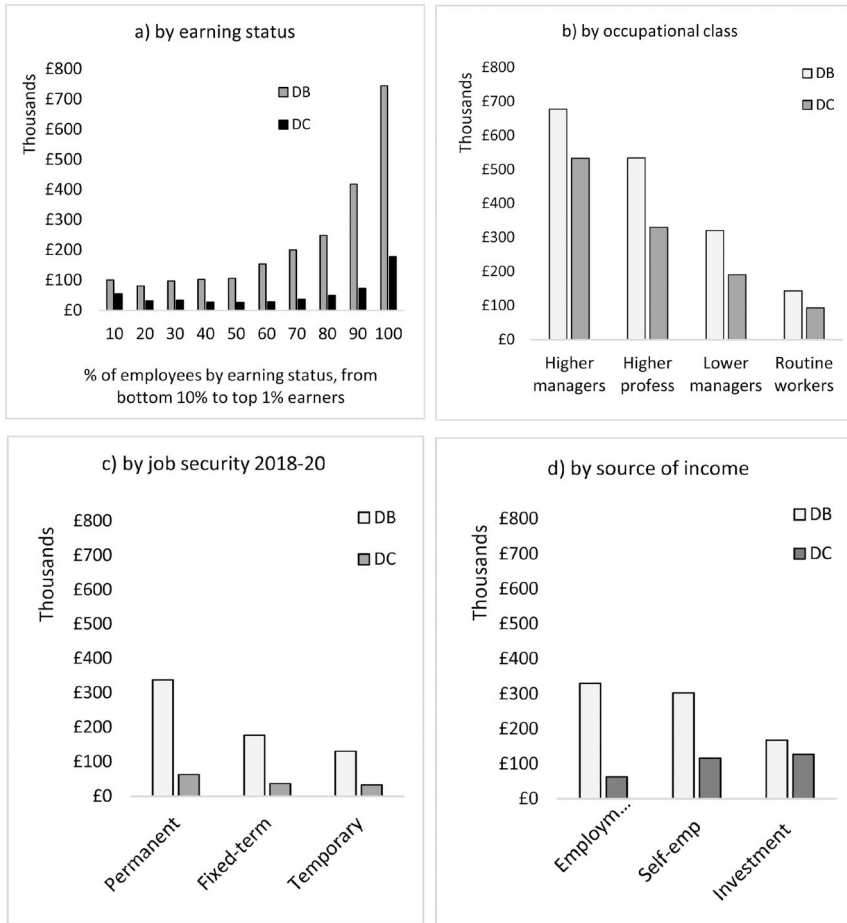

Figure 5. Average pension wealth by labour market cleavages: 2018–2020 (16+, £'000, active population, mean, weighted). Workplace pension wealth reflects the pension wealth of working population in DB and DC schemes, including their retained rights in previous positions. Number of observations vary by the differential response rate for each question. Thus, the number of observations are: (a) 5,853; (b) 4,914; (c) 7,244; (d) 5,587.

(Sutherland et al., 2019, Behling and Harvey 2015). It is interesting to note that DC schemes provide better pension pots for investors and the self-employed. This is again indicative of the financialized nature of DC pensions, whereby individuals with significant investment income, are able to build greater pension pots, possibly due to their greater ability to bear and manage risks, and actively manage their financial portfolios.

In summary, the compositional shift in favour of DC pensions has raised overall pension wealth inequality. While pension coverage has increased, the more financialized pensions on which British citizens rely deepen inequalities along existing workplace divides.

6. Regression analysis: DC and wealth inequality

6.1 Quantile regressions

This section analyses whether DC or DB schemes have intrinsic tendencies to aggravate or moderate pension wealth inequality after accounting for the influence of factors such as income, occupational class, gender, education, and years of membership. To do this, we use a RIF regression analysis. This method allows us to control for confounding factors, particularly years of membership, as discussed in Section 4. For example, in the previous descriptive charts, differences in pension inequality between DB and DC, or disparities along workplace divides, may simply reflect variations in years of membership between groups. The regression analysis enables us to control for this, allowing for comparison of scheme types while holding membership constant, alongside other factors.

The results of RIF regressions are presented in Table 4 for the following categories: the bottom 10 per cent with the least pension wealth, the median wealth group and the top 10 per cent with the highest pension wealth, and $IQR_{90/10}$, the interquantile range, which represents the pension wealth of the top 10 per cent relative to bottom 10 per cent with the lowest pension wealth.

The results in Table 4 show that an increase in the proportion of members enrolled in DC schemes lowers pension wealth across the entire distribution. However, the 90th percentile stands to lose less than the bottom decile or the median. This finding indicates that not only is DC pension wealth, in general, lower, but also it has an inequality-increasing effect vis-à-vis DB pensions. The results on interquantile differences show that a one per cent change in the composition of membership in favour of DC schemes is associated with a 1.18 per cent increase in the pension wealth of the top 10 per cent wealth holders relative to the bottom 10 per cent. This confirms our general argument that the transition to DC schemes tend to increase overall pension wealth inequality.

Our results largely confirm the importance of key workplace divides in shaping pension wealth. Gender effects are in favour of men and against women: an increase in the proportion of women reduces workplace pension wealth, indicating the presence of a pension wealth gender gap across the entire distribution. Occupational social class also matters. A larger population of higher managers and professionals boosts pension wealth at all levels, and especially at the median level. Conversely, a similar change in the population of routine and semi-routine workers has a negative impact on pension wealth, especially, of the bottom 10 per cent. Job security and stability associated with full-time and permanent contracts positively affect pension wealth of the entire distribution, and are inequality-reducing, insofar as they boost the pension wealth of those at the bottom of the distribution more so than those at the top. This confirms that inequalities in pension wealth reflect inequalities in the workplace.

Higher contribution rates and years of membership are associated with greater pension wealth across the entire distribution. This is not surprising, since both contribute to the accumulation of pension wealth. Income plays a similar role by boosting the pension wealth of the entire distribution in similar proportions. Interestingly, the coefficients for years of membership are larger as we move from the bottom to the top of the distribution, implying that higher years of membership can therefore be inequality-increasing. This suggests the presence of compounding effects, as pension wealth inequality widens with longer membership periods. Importantly, controlling for years of membership and contribution rates does

Table 4. RIF regression results.

Variables	(1) Bottom 10%	(2) Median	(3) Top 10%	(4) $IQR_{90/10}$
DB	2.14***	2.22***	0.96***	–1.18***
	(0.10)	(0.07)	(0.06)	(0.12)
Female	–0.02	–0.06	–0.09	–0.06
	(0.12)	(0.06)	(0.06)	(0.14)
Secondary educ.	–0.32	–0.04	0.06	0.37
	(0.29)	(0.13)	(0.11)	(0.32)
Tertiary educ.	–0.48	–0.08	0.06	0.53
	(0.30)	(0.14)	(0.12)	(0.34)
Member years	0.05***	0.12***	0.18***	0.13***
	(0.00)	(0.00)	(0.01)	(0.01)
Full-time	0.21	–0.12	0.20***	–0.00
	(0.17)	(0.08)	(0.08)	(0.19)
Permanent	0.95**	0.62***	–0.15	–1.10***
	(0.39)	(0.16)	(0.12)	(0.42)
Class-high	0.18	0.30***	0.10	–0.08
	(0.12)	(0.08)	(0.09)	(0.15)
Class-routine	–0.69***	–0.16**	0.28***	0.97***
	(0.18)	(0.08)	(0.06)	(0.20)
Auto-enrolled	0.07	–0.06	0.05	–0.02
	(0.11)	(0.06)	(0.05)	(0.13)
Contribution	0.06***	0.09***	0.04***	–0.02
	(0.01)	(0.01)	(0.01)	(0.02)
Risk appetite	–0.02	–0.09	–0.08	–0.06
	(0.14)	(0.08)	(0.07)	(0.17)
Income	0.90***	1.16***	0.80***	–0.10
	(0.13)	(0.06)	(0.07)	(0.15)
Intercept	–4.95***	–4.87***	2.13***	7.08***
	(1.33)	(0.65)	(0.68)	(1.56)
No of observations	8,498	8,498	8,498	8,498
R^2	0.15	0.49	0.41	0.05

The dependent variable is workplace pension wealth on a logarithmic scale. The estimations are based on data from WAS Round 7 (2018–20). Standard errors are in parentheses.
*** $P < .01$, ** $P < .05$, * $P < .1$.

not weaken the other drivers of pension wealth distribution, such as DC vs DB or occupational class, suggesting these results are not simply driven by differences in membership years and contributions. Risk appetite and education, on the other hand, do not have a significant impact on pension wealth. This suggests that they may play a secondary role in driving pension wealth inequality, once other factors are taken into account.

6.2 Decomposition analysis

In the second step of our analysis, we examine if the differences between DC and DB pension wealth reflect differences in the socio-economic characteristics (e.g. gender,

occupational class, education and years of membership) of individuals or rewards in those characteristics. This allows us to assess if the evidence is consistent with the four channels discussed in Section 3 and the hypotheses summarized in Table 2. We do this using an Oaxaca-Blinder decomposition, which evaluates the average difference between DB and DC pension wealth at different points of the distribution, as discussed in Section 4.

The results of the decomposition analysis are presented in Table 5. Once again, they confirm that the current workplace pension wealth is higher on average for DB schemes relative to DC schemes at all levels of the pension wealth distribution. This difference is much larger at the bottom than at the top of the distribution, reinforcing the finding that those at the bottom of the distribution gain relatively more from DB schemes. The results of specification (4) indicate that pension wealth inequality in DC schemes is higher, in a statistically significant way.

Importantly, a significant part of this difference remains unexplained by socio-economic characteristics, indicating that there are other factors at play. The explained proportion of DB-DC pension wealth gap increases across the pension wealth distribution. In other words, individual characteristics explain a greater proportion of the difference between DB and DC wealth for those with higher pension wealth. These findings are consistent with our hypothesis that the structure of DC pensions has disproportionately negative effect on those with lower pension wealth, aside from differences in socio-economic characteristics.

Most importantly, the results of the decomposition largely corroborate the hypotheses outlined in Table 2. First, the coefficient for contributions in the explained part of the decomposition is positive for the bottom 10 per cent and median pension wealth, null for the top 10 per cent, and negative for the interquantile range. This suggests that higher contribution rates to DB schemes vs DC are an important determinant of the DB-DC pension wealth gap among the bottom 10 per cent and median-wealth workers, but not among the top 10 per cent, and that this partly explains the higher inequality in DC-DB pension wealth. This result is explained by the smaller difference in contribution rates between DB and DC schemes among the top 10 per cent compared with lower-wealth groups, in line with the inequality of contributions channels discussed in Sections 3 and 4: less pension wealthy workers enrolled in DC schemes have lower contribution rates than those enrolled in DB schemes, generating a significant DB-DC pension wealth gap. On the other hand, among the top 10 per cent the contribution gap between DB and DC members is smaller, and returns to DC pension contributions are higher, resulting in less pronounced differences in pension wealth between the two schemes. Overall, this corroborates the point that the higher inequality of contributions in DC schemes is associated with higher pension wealth inequality.

Second, the coefficient for contribution rates in the unexplained part of the decomposition is negative and significant for the median, the top 10 per cent and for the interquantile range equation. This suggests that returns on pension contributions are higher for DC schemes among those with greater pension wealth, but not among those with lower pension wealth and that this increases the inequality of DC vis-à-vis DB pension wealth. This finding aligns with the limited scope for redistribution channel discussed in Section 3 and 4: in DC schemes, the contribution-benefit link is much tighter than in DB schemes, meaning that an increase in contributions directly boosts pension wealth. In DB schemes however higher contributions do not necessarily translate into higher pension accruals, particularly if the scheme employs a progressive contribution structure, where higher earners are required to

Table 5. Oaxaca-blinder decomposition: Defined Benefits vs Defined Contributions pension wealth.

	(1) Bottom 10%	(2) Median	(3) Top 10%	(4) $IQR_{90/10}$
Defined Benefit group	8.98***	11.04***	13.05***	4.07***
	(0.05)	(0.04)	(0.04)	(0.06)
Defined Contribution group	5.76***	8.49***	11.25***	5.49***
	(0.08)	(0.05)	(0.06)	(0.09)
Difference	3.23***	2.56***	1.81***	–1.42***
	(0.09)	(0.06)	(0.07)	(0.11)
Explained	0.35***	0.59***	0.48***	0.12**
	(0.04)	(0.04)	(0.04)	(0.04)
Unexplained	2.87***	1.97***	1.33***	–1.54***
	(0.10)	(0.06)	(0.06)	(0.12)
Explained (difference in characteristics)				
Female	–0.01	–0.00	–0.02*	–0.01
	(0.01)	(0.01)	(0.01)	(0.01)
Secondary educ.	0.00	0.00	–0.01	–0.01
	(0.02)	(0.01)	(0.01)	(0.03)
Tertiary educ.	–0.00	–0.01	0.00	0.00
	(0.03)	(0.01)	(0.01)	(0.03)
Member years	0.28***	0.55***	0.55***	0.27***
	(0.02)	(0.03)	(0.03)	(0.03)
Full-time	–0.01	0.00	–0.00	0.01
	(0.01)	(0.00)	(0.00)	(0.01)
Permanent	–0.00	–0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.01)
Class-high	0.00	–0.00	–0.00	–0.01
	(0.00)	(0.00)	(0.00)	(0.01)
Class-routine	0.03	–0.01	–0.02**	–0.05*
	(0.02)	(0.01)	(0.01)	(0.02)
Auto-enrolled	–0.01	–0.00	–0.01	0.00
	(0.01)	(0.00)	(0.00)	(0.01)
Contribution	–0.01	–0.01	–0.01	0.00
	(0.01)	(0.02)	(0.01)	(0.00)
Risk appetite	0.00	–0.00	0.00	–0.00
	(0.00)	(0.00)	(0.00)	(0.00)
Income	–0.01	–0.01	–0.01	0.00
	(0.01)	(0.02)	(0.01)	(0.00)
Unexplained (difference in coefficients)				
Female	–0.05	–0.00	–0.08	–0.03
	(0.09)	(0.05)	(0.06)	(0.11)
Secondary educ.	0.06	–0.01	–0.01	–0.07
	(0.26)	(0.13)	(0.12)	(0.29)

continued

Table 5. *Continued*

	(1) Bottom 10%	(2) Median	(3) Top 10%	(4) $IQR_{90/10}$
Tertiary educ.	–0.01	–0.03	–0.08	–0.07
	(0.20)	(0.10)	(0.10)	(0.23)
Member years	–0.15*	–0.17***	–0.30***	–0.15
	(0.06)	(0.04)	(0.08)	(0.10)
Full-time	–0.40	–0.04	0.57***	0.95***
	(0.25)	(0.12)	(0.13)	(0.28)
Permanent	–0.50	–0.65**	–0.08	0.38
	(0.73)	(0.23)	(0.19)	(0.78)
Class-high	–0.07*	–0.04	–0.02	0.05
	(0.03)	(0.03)	(0.04)	(0.05)
Class-routine	–0.00	0.07	0.05	0.05
	(0.08)	(0.04)	(0.03)	(0.09)
Auto-enrolled	–0.02	0.09	0.14**	0.16
	(0.08)	(0.05)	(0.05)	(0.10)
Contribution	–0.02	–0.24***	–0.64***	–0.61***
	(0.10)	(0.07)	(0.10)	(0.14)
Risk appetite	–0.03	–0.02	–0.01	0.02
	(0.04)	(0.03)	(0.03)	(0.05)
Income	0.97	0.45	–6.53***	–7.40**
	(2.07)	(1.13)	(1.59)	(2.66)
Intercept	3.64***	2.75***	2.17***	–1.44
	(0.95)	(0.38)	(0.32)	(1.02)
N	Group 1 (DB): 4,203 Group 2 (DC): 4,295			

The estimations are based on data from WAS Round 7 (2018–20). The results show the difference between logarithmic pension wealth between individuals with DB and DC pensions. Standard errors are in parentheses.
*** $P < .01$, ** $P < .05$, * $P < .1$.

contribute more than lower earners for the same level of pension accruals. This mechanism implies that the top 10 per cent particularly benefits from DC pensions as they can generate higher returns to their contributions, widening the pension wealth gap between top and bottom 10 per cent. The negative coefficients for income for the top 10 per cent and the interquartile range suggest that higher income boosts DC pension wealth relative to DB pension wealth among wealthier individuals.

Third, the coefficients for years of membership are positive for both the explained and unexplained part of the decomposition. Unsurprisingly, years of membership almost entirely account for the gap between DB and DC pension wealth explained by different characteristics: the longer periods of pension membership in DB schemes compared with DC schemes contribute to the widening gap between DB and DC pension wealth, in significant part due to autoenrolment, which boosted DC schemes membership in the last decade. At

the same time, the negative unexplained coefficient for years of membership suggests that years of membership boost pension wealth by a lesser proportion in DB than DC schemes, and this difference is larger for the median and top 10 per cent. Furthermore, this gap in the rewards to years of membership contributes to higher pension wealth inequality in DC schemes, as shown by the negative coefficient for the interquantile range model. The implication is that the wealth gap between members depends to a larger extent on years of contribution in DC schemes, thereby amplifying pension wealth inequality. This aligns with our hypotheses that DC pension wealth compounds over time, so that longer periods of contributions generate more than proportional increases in pension wealth compared with DB pensions.

Finally, the coefficients for the risk appetite variable are negative in the unexplained part of the decomposition. This suggests that higher risk appetite boosts DC pension wealth more than DB pension wealth, thus potentially reducing the DB-DC pension wealth gap. While negative, these coefficients are not statistically significant, so it is likely that this channel plays a limited role.

6.3 Additional results and robustness checks

In this section, we estimate three new sets of regressions to present additional findings and test the robustness of our previous results. First, we investigate the mechanism discussed in Section 2 regarding the tax advantages of DC schemes. One concern is that the link between DC schemes and higher inequality may stem not from the specific channels identified earlier, but rather from features of the UK tax system, potentially limiting the broader applicability of our results. To address this, we split our DB variable between DB pension members with AVCs (DB_avc) and (DB_noavc). WAS does not collect data on AVCs for members of DC schemes, as members can directly increase their contributions to their main DC pension pot, therefore we sought to capture the tax-incentive for higher earners by splitting the DC membership between those in the top 5 per cent of income and contribution rates (DC_high) and the rest (DC_low). The rationale for this is that higher earners are more likely to increase their contribution rates to gain tax relief on contributions and on capital gains taxes on their pension savings. If the tax treatment is primarily driving the result, we would expect DB_avc and DC_high to have a significant effect on pension wealth distribution, while DB_nonavc and DC_low to become insignificant. These binary variables are then incorporated into the main regression model, with DC_low serving as the reference category.

The results of these regressions, displayed in Appendix Table A.1, show that an increase in the proportion of DB members with AVCs boosts the pension wealth of the top 10 per cent vis-à-vis the median and bottom 10 per cent, thereby aggravating pension wealth inequality. This contrasts with DB membership without AVCs, which continues to show qualitatively and quantitatively similar effects to the main results, namely a reduction in pension wealth inequality. An increase in the proportion of high DC contributors has a similar effect—reducing pension wealth for the bottom 10 per cent and increasing it for the top 10 per cent—although these results are not statistically significant. Overall, this is suggestive evidence, corroborating the argument that the tax incentives encouraging higher earners to make additional contributions aggravate pension wealth inequality. However, the coefficient results DB_noavc show that the main results of this article remain valid and that DB pensions tend to reduce pensions wealth inequality vis-à-vis DC pensions, notwithstanding these tax incentives.

Second, to test whether these results can be consistently obtained overtime, the estimations for the 90/10 inter-quantile range have been repeated for all waves/rounds of the WAS data. These specifications include a smaller number of variables, as some were not available in previous waves/rounds. We find that the main results are remarkably consistent over time (Appendix Table A.2). In particular, active membership of DB schemes is associated with a reduction in pension wealth inequality across all waves/rounds between the top and bottom ten per cent of the wealth holders. Another interesting result is the coefficient for the income variable, which is statistically significant and negative in wave 1, 4, and 5, but is no longer significant in round 6 and 7 (and positive for round 6). This may indicate that the effect of an increase in income no longer results in increases of pension wealth for the bottom 10 per cent vis-à-vis the top 10 per cent. A possible interpretation is that increases in income inequality favours wealthier individuals in accumulating pension wealth at a higher rate.

Finally, as noted in Section 4, our main regression results exclude those with both active DB and DC pension wealth. This operation is unlikely to distort our results given the small number of individuals involved ($n = 158$), but to ensure the robustness of our results, we estimate our model including those with double pension membership. The results, shown in Appendix Table A.3, are largely unchanged.

7. Conclusions

Pension systems in many parts of the world are increasingly exposing the future incomes of people to the vagaries of financial markets. The individualization of pensions, a hallmark of everyday life financialization, is creating a stronger link between financial markets and individual insecurity, as people bear greater responsibility for their financial futures. In the UK, this was significantly bolstered by the introduction of pension autoenrolment, which has increased pension coverage largely through DC pensions. However, concerns already exist about the adequacy of this new system, which has so far been based on very low contributions casting question about the future retirement of British workers (DWP 2023).

Our article shows that an additional underappreciated concern in the transition to DC pensions is its impact on pension wealth inequality. We have offered a conceptual framework to explain why this is the case based on four factors: the greater inequality of pension contributions, the lack of redistributive mechanisms within DC schemes, the compounding effects of (missed) contributions over time and the unequal capacity to take on risks.

Our results show that the individualization of pensions can exacerbate workplace pension inequality. A greater proportion of DC scheme membership is associated with a higher pension wealth inequality, by boosting the pension wealth of the top 10 per cent vis-à-vis the median and bottom 10 per cent: not only is DC pension wealth, in general, lower, but it also has an inequality-increasing effect vis-à-vis DB pensions. The results of the decomposition analysis show the plausibility of our proposed channels in explaining the difference between DB and DC pension wealth and its consequences for pension wealth inequality. The inequality in contributions is significantly larger in DC than DB schemes and is associated with greater pension wealth inequality. The lack of redistributive effects within DC schemes favours the pension-wealthy who benefit more from higher returns on contributions in DC schemes. Lifetime compounding effects also appear to be higher in DC schemes, amplifying pension wealth inequality. Higher risk appetite boosts DC pension wealth vis-à-vis DB pension wealth but this effect is not statistically significant. Finally, we show that traditional

workplace divides, most importantly gender, occupational class, and job security are reflected in pension wealth.

Further analysis is needed to identify more precise causal inferences about these channels and the overall relationship between the individualization of pensions and wealth inequalities. This could include additional factors such as immigration status and geographical location. Moreover, the staggered introduction of the autoenrolment scheme could potentially identify the impact of entering a DC or a DB scheme on general savings behaviour. Moreover, our analysis is limited to active workplace pension membership and does not consider its relationship to other forms of wealth inequalities. Further research is also needed to compare the UK case with other countries, which would allow assessing the generalizability of these findings beyond the UK context. Nevertheless, our analysis points towards the fact that a more financialized and individualized future for pensions is likely to be also a more unequal one.

Conflict of interest statement. None declared.

Funding

None declared.

References

Adam, S. et al. (2024) *Raising Revenue from Reforms to Pensions Taxation*. The IFS. https://ifs.org.uk/articles/raising-revenue-reforms-pensions-taxation. https://doi.org/10.1920/co.ifs.2024.0057, accessed 5 Feb. 2025.

Adkins, L., Cooper, M., and Konings, M. (2020) *The Asset Economy: Property Ownership and the New Logic of Inequality*, 1st edn. Cambridge: Polity.

Adkins, L., Cooper, M., and Konings, M. (2021) 'Class in the 21st Century: Asset Inflation and the New Logic of Inequality', *Environment and Planning A: Economy and Space*, **53**: 548–72. https://doi.org/10.1177/0308518X19873673

Agunsoye, A., and James, H. (2022) '"I Had to Take Control": Gendered Finance Rationality in the UK', *Review of International Political Economy*, **30**: 1–24. https://doi.org/10.1080/09692290.2022.2113114

Aitken, R. (2020) '"A Machine for Living": The Cultural Economy of Financial Subjectivity'. In: Mader, P., Mertens, D., and Van der Zwan, N. (eds) *The Routledge International Handbook of Financialization*, pp. 369–79. Abingdon, Oxon: Routledge.

Alserda, G. A. G. et al. (2019) 'Individual Pension Risk Preference Elicitation and Collective Asset Allocation with Heterogeneity', *Journal of Banking and Finance*, **101**: 206–25. https://doi.org/10.1016/j.jbankfin.2019.02.014

Beckert, J. (2024) 'Varieties of Wealth: Toward a Comparative Sociology of Wealth Inequality', *Socio-Economic Review*, **22**: 475–99. https://doi.org/10.1093/ser/mwad068

Behling, F., and Harvey, M. (2015) 'The Evolution of False Self-employment in the British Construction Industry: A Neo-Polanyian Account of Labour Market Formation', *Work, Employment and Society*, **29**: 969–88. https://doi.org/10.1177/0950017014559960

Berry, C. (2021) *Pensions Imperilled: The Political Economy of Private Pensions Provision in the UK*. Oxford, New York: Oxford University Press.

Bessière, C., and Pugliese, M. (2025) 'Gender and Wealth Accumulation: An International Perspective', *Socio-Economic Review*, **23**: 479–512. https://doi.org/10.1093/ser/mwaf022

Bobek, A., Mikuš, M., and Sokol, M. (2023) 'Making Sense of the Financialization of Households: State of the Art and Beyond', *Socio-Economic Review*, **21**: 2233–58. https://doi.org/10.1093/ser/mwad029

Bonizzi, B., Churchill, J., and Guevara, D. (2021) 'Variegated Financialization and Pension Fund Asset Demand: The Case of Colombia and Perú', *Socio-Economic Review*, **19**: 789–815. https://doi.org/10.1093/ser/mwaa033

Bonizzi, B., Churchill, J., and Kaltenbrunner, A. (2023) 'UK Pension Funds' Patience and Liquidity in the Age of Market-Based Finance', *New Political Economy*, **28**: 780–98. https://doi.org/10.1080/13563467.2023.2184469

Bönke, T. et al. (2019) 'The Joint Distribution of Net Worth and Pension Wealth in Germany', *Review of Income and Wealth*, **65**: 834–71. https://doi.org/https://doi.org/10.1111/roiw.12371

Bönke, T. et al. (2020) 'A Head-to-Head Comparison of Augmented Wealth in Germany and the United States', *The Scandinavian Journal of Economics*, **122**: 1140–80. https://doi.org/10.1111/sjoe.12364

Braun, B. (2022) 'Fueling Financialization: The Economic Consequences of Funded Pensions', *New Labor Forum*, **31**: 70–9. https://doi.org/10.1177/10957960211062218

Brzezinski, M., and Sałach, K. (2021) 'Factors That account for the Wealth Inequality Differences between Post-Socialist Countries', *Economic Modelling*, **105**: 105649.https://doi.org/10.1016/j.econmod.2021.105649

Clark, G. L., and O'Neill, P. (2023) 'An Economic and Financial Geography of the Australian Superannuation Industry', *Geographical Research*, **61**: 443–57. https://doi.org/10.1111/1745-5871.12611

Collard, S., and Breuer, Z. (2009) 'Attitudes towards investment choice and risk within the personal accounts scheme: Report of a qualitative study (DWP Research Report No. 565).' Department for Work and Pensions.

Coppola, M. (2014) 'Eliciting Risk-Preferences in Socio-Economic Surveys: How Do Different Measures Perform?', *The Journal of Socio-Economics*, **48**: 1–10. https://doi.org/10.1016/j.socec.2013.08.010

Davies, J. B., Fortin, N. M., and Lemieux, T. (2017) 'Wealth Inequality: Theory, Measurement and Decomposition', *Canadian Journal of Economics/Revue Canadienne D'économique*, **50**: 1224–61. https://doi.org/10.1111/caje.12313

Ding, X., Hartog, J., and Sun, Y. (2010) '*Can We Measure Individual Risk Attitudes in a Survey?*' (IZA Discussion Paper No. 4807). Institute of Labor Economics (IZA). https://econpapers.repec.org/paper/izaizadps/dp4807.htm, accessed 16 Jan. 2025

DWP. (2023) '*Analysis of future pension incomes*.' Department for Work and Pensions. https://www.gov.uk/government/statistics/analysis-of-future-pension-incomes/analysis-of-future-pension-incomes, accessed 14 Apr. 2023

Ebbinghaus, B. (2015) 'The Privatization and Marketization of Pensions in Europe: A Double Transformation Facing the Crisis', *European Policy Analysis*, **1**: 56–73. https://doi.org/10.18278/epa.1.1.5

Erturk, I. et al. (2007) 'The Democratization of Finance? Promises, Outcomes and Conditions', *Review of International Political Economy*, **14**: 553–75. https://doi.org/10.1080/09692290701475312

Even, W., and Macpherson, D. (2007) 'Defined Contribution Plans and the Distribution of Pension Wealth', *Industrial Relations: A Journal of Economy and Society*, **46**: 551–81. https://doi.org/10.1111/j.1468-232X.2007.00480.x

Finlayson, A. (2009) 'Financialisation, financial literacy and asset-based welfare', *The British Journal of Politics and International relations*, **11**: 400–21.

Firpo, S., Fortin, N. M., and Lemieux, T. (2009) 'Unconditional Quantile Regressions', Econometrica, **77**: 953–73. https://doi.org/10.3982/ECTA6822.

Fligstein, N., and Goldstein, A. (2015) 'The Emergence of a Finance Culture in American Households, 1989–2007', *Socio-Economic Review*, **13**: 575–601. https://doi.org/10.1093/ser/mwu035

Foster, L. (2017) 'Young People and Attitudes towards Pension Planning', *Social Policy and Society*, **16**: 65–80. https://doi.org/10.1017/S1474746415000627

Frericks, P., Knijn, T., and Maier, R. (2009) 'Pension Reforms, Working Patterns and Gender Pension Gaps in Europe', *Gender, Work & Organization*, **16**: 710–30. https://doi.org/10.1111/j.1468-0432.2009.00457.x

Gardiner, J., Robinson, A. M., and Fakhfakh, F. (2016) 'Exploring the Private Pension Gender Gap and Occupation in Later Working Life', *Work, Employment and Society*, **30**: 687–707. https://doi.org/10.1177/0950017015575868

Ghilarducci, T., Radpour, S., and Webb, A. (2022) 'Retirement Plan Wealth Inequality: Measurement and Trends', *Journal of Pension Economics and Finance*, **21**, 119–39. https://doi.org/10.1017/S1474747220000074

Gonzales, S., and Fernández, J. J. (2024) 'Socio-Economic Gaps in Workers' Participation in Private Pension Programmes in Ten European Countries', *Journal of Social Policy*, **53**: 1187–219. https://doi.org/10.1017/S0047279422000897

Grady, J. (2015) 'Gendering Pensions: Making Women Visible', *Gender, Work & Organization*, **22**: 445–58. https://doi.org/10.1111/gwao.12096

Guardiancich, I., and Guidi, M. (2022) 'The Political Economy of Pension Reforms in Europe under Financial Stress', *Socio-Economic Review*, **20**: 817–40. https://doi.org/10.1093/ser/mwaa012

Hassel, A., Naczyk, M., and Wiß, T. (2019) 'The Political Economy of Pension Financialisation: Public Policy Responses to the Crisis', *Journal of European Public Policy*, **26**:483–500. https://doi.org/10.1080/13501763.2019.1575455

Hillig, A. (2019) 'Everyday Financialization: The Case of UK Households', *Environment and Planning A: Economy and Space*, **51**: 1460–78. https://doi.org/10.1177/0308518X19843920

Jakobsen, K et al. (2020) 'Wealth Taxation and Wealth Accumulation: Theory and Evidence from Denmark*', *The Quarterly Journal of Economics*, **135**: 329–88. https://doi.org/10.1093/qje/qjz032

James, H. (2021) 'Individual Pension Decision-Making in a Financialised Landscape: A Typology of Everyday Approaches', *Journal of Cultural Economy*, **14**: 627–43. https://doi.org/10.1080/17530350.2021.1927146

James, H., and Agunsoye, A. (2023) 'The Gendered Construction of Risk in Asset Accumulation for Retirement', *New Political Economy*, **28**: 574–91. https://doi.org/10.1080/13563467.2022.2149720

Johnson, R. W., and Uccello, C. E. (2003) 'Cash Balance Plans and the Distribution of Pension Wealth', *Industrial Relations: A Journal of Economy and Society*, **42**: 745–73. https://doi.org/10.1111/1468-232X.00314

Karamcheva, N., and Perez-Zetune, V. (2023) *Working Paper Series Defined Benefit and Defined Contribution Plans and the Distribution of Family Wealth* (Working Paper No. 2023–02). Washington, D.C.: Congressional Budget Office. www.cbo.gov/publication/58305

Kuhn, U. (2020) 'Augmented Wealth in Switzerland: The Influence of Pension Wealth on Wealth Inequality', *Swiss Journal of Economics and Statistics*, **156**: 1–16. https://doi.org/10.1186/s41937-020-00063-9

Langley, P. (2006) 'The Making of Investor Subjects in Anglo-American Pensions', *Environment and Planning D: Society and Space*, **24**: 919–34. https://doi.org/10.1068/d405t

Langley, P. (2020) 'The Financialization of Life', In: Mader, P., Mertens, D., and Van der Zwan, N. (eds) *The Routledge International Handbook of Financialization*, pp. 68–78. Abingdon, Oxon: Routledge.

Lin, K.-H., and Neely, M. T. (2020) *Divested: Inequality in the Age of Finance*. New York: Oxford University Press.

Manduca, R. (2025) 'Should Social Insurance Programs Count as Wealth? Augmented Wealth in Research and Policy', *Socio-Economic Review*, mwaf020. https://doi.org/10.1093/ser/mwaf020

McCarthy, M. A. (2017) *Dismantling Solidarity: Capitalist Politics and American Pensions since the New Deal*. Ithaca ; London: Cornell University Press.

OECD. (2023) *Pensions at a Glance 2023: OECD and G20 Indicators*. Paris: Organisation for Economic Co-operation and Development. https://www.oecd-ilibrary.org/finance-and-investment/oecd-pensions-at-a-glance_19991363, accessed 5 Dec. 2024.

Office for National Statistics. (2025) Wealth and Assets Survey User Guide Round 8. https://doc.ukdataservice.ac.uk/doc/7215/mrdoc/pdf/7215_was_userguide_round_8.pdf, accessed 5 Dec. 2024.

Olivera, J. (2019) 'The Distribution of Pension Wealth in Europe', *The Journal of the Economics of Ageing*, **13**, 30–42. https://doi.org/10.1016/j.jeoa.2018.06.001

ONS. (2019) *Total Wealth in Great Britain—Office for National Statistics*. Office for National Statistics. https://www.ons.gov.uk/peoplepopulationandcommunity/personalandhouseholdfinances/incomeandwealth/bulletins/totalwealthingreatbritain/april2016tomarch2018, accessed 17 Jun. 2021

Orenstein, M. A. (2013) 'Pension Privatization: Evolution of a Paradigm', *Governance*, **26**: 259–81. https://doi.org/10.1111/gove.12024

Rios-Avila, F. (2019) *Recentered Influence Functions in Stata: Methods for Analyzing the Determinants of Poverty and Inequality* (Economics Working Paper Archive). Levy Economics Institute. https://www.levyinstitute.org/pubs/wp_927.pdf, accessed 10 Jan. 2025

Rios-Avila, F. (2020) 'Recentered Influence Functions (RIFs) in Stata: RIF Regression and RIF Decomposition', *The Stata Journal: Promoting Communications on Statistics and Stata*, **20**: 51–94. https://doi.org/10.1177/1536867X20909690

Rios-Avila, F., and Hirsch, B. T. (2014) 'Unions, Wage Gaps, and Wage Dispersion: New Evidence from the Americas', *Industrial Relations: A Journal of Economy and Society*, **53**: 1–27. https://doi.org/10.1111/irel.12044

Rios-Avila, F., and Maroto, M. L. (2024) 'Moving beyond Linear Regression: Implementing and Interpreting Quantile Regression Models with Fixed Effects', *Sociological Methods and Research*, **53**: 639–82. https://doi.org/10.1177/00491241211036165

Saritas, S. (2020) 'Financialisation of Pensions: The Case of Turkey', *Global Social Policy*, **20**: 60–79. https://doi.org/10.1177/1468018119856042

Sgambati, S. (2022) 'Who Owes? Class Struggle, Inequality and the Political Economy of Leverage in the Twenty-First Century', *Finance and Society*, **8**: 1–21. https://doi.org/10.2218/finsoc.7115

Skoufias, E., and Katayama, R. S. (2011) 'Sources of Welfare Disparities between and within Regions of Brazil: Evidence from the 2002–2003 Household Budget Survey (POF)', *Journal of Economic Geography*, **11**: 897–918. https://doi.org/10.1093/jeg/lbq030

Sutherland, W., Jarrahi, M. H., Dunn, M., and Nelson, S. B. (2019) 'Work Precarity and Gig Literacies in Online Freelancing', *Work, Employment and Society*, **34**: 457–75. https://doi.org/10.1177/0950017019886511

Thinking Ahead Institute. (2024) *Global Pension Assets Study 2024*. Thinking Ahead Institute, WTW. https://www.thinkingaheadinstitute.org/research-papers/global-pension-assets-study-2024/, accessed 23 May 2024.

Warren, T. (2006) 'Moving beyond the Gender Wealth Gap: On Gender, Class, Ethnicity, and Wealth Inequalities in the United Kingdom', *Feminist Economics*, **12**: 195–219. https://doi.org/10.1080/13545700500508502

Whiteford, P., and Whitehouse, E. (2006) 'Pension Challenges and Pension Reforms in OECD Countries', *Oxford Review of Economic Policy*, **22**: 78–94. https://doi.org/10.1093/oxrep/grj006

Williams, M. (2017) 'An Old Model of Social Class? Job Characteristics and the NS-SEC Schema', *Work, Employment and Society*, **31**: 153–65. https://doi.org/10.1177/0950017016653087

Wolff, E. N. (2014) 'Household Wealth Trends in the United States, 1983–2010', *Oxford Review of Economic Policy*, **30**: 21–43. https://doi.org/10.1093/oxrep/gru001

Wolff, E. N. (2015) 'U.S. Pensions in the 2000s: The Lost Decade?', *Review of Income and Wealth*, **61**: 599–629. https://doi.org/https://doi.org/10.1111/roiw.12123

World Bank. (1994) *Averting the old age crisis : Policies to protect the old and promote growth* (No. 13584). pp. 1–436. The World Bank. http://documents.worldbank.org/curated/en/1994/09/698030/averting-old-age-crisis-policies-protect-old-promote-growth, accessed 25 Feb. 2016

Wroński, M. (2023) 'The Impact of the Public Pension System on Wealth Inequality. The Distribution of Augmented Wealth in Poland', *Applied Economics Letters*, **30**: 355–59. https://doi.org/10.1080/13504851.2021.1985719

van der Zwan, N. (2014) 'Making Sense of Financialization', *Socio-Economic Review*, **12**: 99–129. https://doi.org/10.1093/ser/mwt020

van der Zwan, N. (2017) 'Financialisation and the Pension System: Lessons from the United States and The Netherlands', *Journal of Modern European History/Zeitschrift Für Moderne Europäische Geschichte/Revue D'histoire Européenne Contemporaine*, **15**: 554–78.

Appendix

Table A.1. RIF regression results, round 7, with AVCs and DC split

Variables.	(1) Bottom 10%	(2) Median	(3) Top 10%	(4) $IQR_{90/10}$
DB_avc	1.60***	1.61***	1.79***	0.19
	(0.27)	(0.17)	(0.24)	(0.38)
DB_noavc	2.60***	1.64***	0.58***	–2.01***
	(0.12)	(0.07)	(0.05)	(0.14)
DC_high	–0.25	0.33	0.68	0.93
	(0.37)	(0.30)	(0.63)	(0.76)
Female	–0.34**	–0.07	–0.11*	0.23
	(0.15)	(0.06)	(0.06)	(0.16)
Secondary educ.	0.08	0.07	0.13	0.04
	(0.35)	(0.13)	(0.08)	(0.38)
Tertiary educ.	–0.09	–0.02	0.10	0.19
	(0.37)	(0.14)	(0.09)	(0.39)
Member years	0.06***	0.10***	0.12***	0.07***
	(0.01)	(0.00)	(0.00)	(0.01)
Full-time	0.12	–0.37***	–0.02	–0.14
	(0.20)	(0.08)	(0.07)	(0.22)
Permanent	0.86*	0.19	–0.09	–0.95**
	(0.45)	(0.17)	(0.11)	(0.48)
Class-high	0.12	0.36***	0.09	–0.03
	(0.14)	(0.09)	(0.08)	(0.17)
Class-routine	–0.59***	–0.22***	0.21***	0.80***
	(0.22)	(0.08)	(0.06)	(0.23)
Auto-enrolled	0.22	0.02	0.05	–0.17
	(0.14)	(0.06)	(0.05)	(0.15)
Contribution	0.09***	0.09***	0.04***	–0.05**
	(0.02)	(0.01)	(0.01)	(0.02)
Risk appetite	0.32**	0.06	0.03	–0.29
	(0.16)	(0.08)	(0.07)	(0.18)
Income	1.27***	1.28***	0.83***	–0.44***
	(0.15)	(0.06)	(0.07)	(0.17)
Intercept	–8.87***	–4.75***	2.71***	11.58***
	(1.63)	(0.64)	(0.67)	(1.81)
No of observations	8,533	8,533	8,533	8,533
R^2	0.15	0.40	0.33	0.05

Note: the dependent variable is workplace pension wealth on a logarithmic scale. The estimations are based on data from WAS Round 7 (2018-20). Standard errors are in parentheses.
*** $P < .01$, ** $P < .05$, * $P < .1$.

Table A.2. RIF regression results, by wave/round.

Variables	(1) wave 1	(2) wave 2	(3) wave 3	(4) wave 4	(5) round 5	(6) round 6	(7) round 7
DB	–1.68***	–1.50***	–0.40	–3.61***	–3.37***	–1.91***	–1.18***
	(0.16)	(0.24)	(0.48)	(0.27)	(0.22)	(0.16)	(0.12)
Female	–0.38***	–0.30*	0.13	–0.30	–0.23	0.25	–0.06
	(0.13)	(0.17)	(0.43)	(0.24)	(0.22)	(0.19)	(0.14)
Secondary educ.	0.68***	0.27	0.40	0.27	–0.60	0.16	0.37
	(0.21)	(0.35)	(0.84)	(0.52)	(0.62)	(0.42)	(0.32)
Tertiary educ.	0.92***	–0.25	–0.05	0.12	–0.91	–0.06	0.53
	(0.22)	(0.38)	(0.84)	(0.54)	(0.64)	(0.44)	(0.34)
Member years	0.06***	0.08***	0.10***	0.04***	0.06***	0.16***	0.13***
	(0.01)	(0.01)	(0.03)	(0.01)	(0.01)	(0.01)	(0.01)
Full-time	0.03	1.01***	0.45	0.54*	0.31	0.27	–0.00
	(0.16)	(0.27)	(0.63)	(0.30)	(0.31)	(0.25)	(0.19)
Permanent		–2.37***	–2.11*	–1.53**	–0.21	–1.77***	–1.10***
		(0.67)	(1.17)	(0.66)	(0.55)	(0.61)	(0.42)
Class-high	0.02	0.27	0.10	–0.57**	–0.02	–0.29	–0.08
	(0.15)	(0.21)	(0.46)	(0.28)	(0.24)	(0.19)	(0.15)
Class-routine	0.33	–0.42	–0.49	1.42***	1.30***	0.65**	0.97***
	(0.21)	(0.28)	(1.03)	(0.42)	(0.35)	(0.26)	(0.20)
Auto-enrolled						0.38**	–0.02
						(0.18)	(0.13)
Contribution	–0.01	–0.03	0.07	–0.16***	–0.16***	–0.14***	–0.02
	(0.02)	(0.03)	(0.07)	(0.03)	(0.03)	(0.02)	(0.02)
Risk appetite							–0.06
							(0.17)
Income	–0.25*	–0.11	–0.15	–0.84***	–0.73***	0.13	–0.10
	(0.13)	(0.18)	(0.33)	(0.25)	(0.24)	(0.18)	(0.15)
Intercept	6.89***	8.21***	5.85	17.89***	16.60***	6.45***	7.08***
	(1.30)	(1.94)	(3.81)	(2.58)	(2.52)	(1.91)	(1.56)
Observations	4,278	2,361	358	4,204	6,026	6,628	8,498
R^2	0.05	0.07	0.08	0.12	0.10	0.07	0.05

The dependent variable is workplace pension wealth on a logarithmic scale. Standard errors are in parentheses. *** $P < .01$, ** $P < .05$, * $P < .1$.

Table A.3. RIF regression results, including individuals with both DB and DC pensions.

Variables	(1) Bottom 10%	(2) Median	(3) Top 10%	(4) $IQR_{90/10}$
DB	2.19***	2.25***	0.97***	–1.22***
	(0.10)	(0.07)	(0.05)	(0.12)
Female	–0.03	–0.06	–0.08	–0.05
	(0.12)	(0.06)	(0.06)	(0.14)
Secondary educ.	–0.29	–0.04	0.05	0.35
	(0.29)	(0.13)	(0.11)	(0.32)
Tertiary educ.	–0.45	–0.08	0.03	0.48
	(0.30)	(0.14)	(0.12)	(0.34)
Member years	0.05***	0.12***	0.17***	0.12***
	(0.00)	(0.00)	(0.00)	(0.01)
Full-time	0.21	–0.12	0.20***	–0.01
	(0.17)	(0.08)	(0.07)	(0.19)
Permanent	0.86**	0.50***	–0.17	–1.03**
	(0.38)	(0.16)	(0.12)	(0.41)
Class-high	0.17	0.31***	0.14	–0.03
	(0.12)	(0.08)	(0.09)	(0.15)
Class-routine	–0.67***	–0.16**	0.28***	0.95***
	(0.18)	(0.08)	(0.06)	(0.20)
Auto-enrolled	0.06	–0.05	0.05	–0.01
	(0.11)	(0.06)	(0.05)	(0.13)
Contribution	0.06***	0.09***	0.04***	–0.02
	(0.01)	(0.01)	(0.01)	(0.02)
Risk appetite	–0.02	–0.10	–0.06	–0.03
	(0.14)	(0.08)	(0.07)	(0.16)
Income	0.90***	1.15***	0.81***	–0.09
	(0.12)	(0.06)	(0.07)	(0.15)
Intercept	–4.89***	–4.66***	2.09***	6.99***
	(1.32)	(0.65)	(0.67)	(1.55)
No of observations	8,608	8,608	8,608	8,608
R^2	0.15	0.49	0.40	0.05

The dependent variable is workplace pension wealth on a logarithmic scale. The estimations are based on data from WAS Round 7 (2018–20). Standard errors are in parentheses. These results are the same as in Table 4, but include a slightly larger sample since they do not exclude those with active membership of both a DC and DB pension.

*** $P < .01$, ** $P < .05$, * $P < .1$.

Socio-Economic Review, 2025, 00, 1–32
https://doi.org/10.1093/ser/mwaf068
Article