Labour supply of older workers in the UK: Is there a link with pension provision?

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Abstract This paper reviews the potential effect of the recent increase in defined contribution (DC) pensions on the labour supply planning of older workers in the UK. The recent increase in the labour force participation rate of older workers in the UK could possibly be explained, in part, by the increasing number of employers that are shifting their pension arrangement from defined benefit (DB) to pure DC schemes. Our results suggest that workers with DC pension coverage are more likely to plan a later retirement relative to workers in DB pension schemes and, at least in terms of planning, pension coverage plays an important role in terms of retirement age. Also, factors explaining women planned retirement would be different than that of men. In particular, while married women are more likely to expect to be out of paid work in five years; marital status does not play a significant role in explaining men planned retirement. Finally, both the decreasing generosity of state pension provision and the high percentage of workers in contracted out schemes may explain, particularly for men, why private pension wealth prevails over state pension wealth in terms of the retirement decision.

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Introduction

Developed countries in general and the UK in particular have experienced a trend towards early retirement over the last couple of decades. As the retirement decision is commonly influenced not only by individual characteristics but also by institutional arrangements, changes in pension coverage and design may lead to changes in the nature and time of retirement.

In particular, the increasing importance of defined contribution (DC) schemes in the UK

since the introduction of personal pensions in 1988 may result in alterations of retirement incentives and hence in the labour supply decisions of older workers. This paper reviews the potential effect of the recent increase in DC pensions on the labour supply planning of older workers in the UK.

The paper follows with a description of recent changes in the UK labour market. The following section looks at the potential link between labour supply planning of older workers and pension schemes, using recent survey data. Finally, the last section concludes.

Labour market in the UK

Two major changes have been observed in the UK labour market over the last decade. First, as a

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consequence of both the increase in the labour force participation of women and the decrease of men, the share of women in the workforce has increased from 41 to 47 per cent between 1980 and 2006.¹ Indeed, while the labour force participation rate of women in almost all age cohorts has increased between 1992 and 2006, the labour force participation rate of men below 49 years old has fallen in the same period. In other words, whereas the number of women in the workforce has increased 10 per cent between 1992 and 2006, the number of men has increased just above 3 per cent.

Secondly, the UK is experiencing an ageing of its workforce. This pattern is a consequence not only of the increasing activity rate of older workers² but also of the decreasing labour activity of younger workers in the last five years.

While in 1992 some 61 per cent of men between 16 and 17 years old were in the labour force; by 2006 this percentage decreases to 45 (Figure 1). Moreover, labour force participation rate of men between 18 and 24 years old has declined 5 percentage points in that period. Conversely, the only age groups that had increased their labour force participation is that of 50–64 and more than 64 with increases of 1.4 and 0.9 percentage points, respectively.

When it comes to women, labour force participation rate has increased between 1992

and 2006 for all age groups above 25 years old. This increase is particularly sharp for older age cohorts. Indeed, labour force participation has increased 8 percentage points for the age cohort 50–59 and 3.5 percentage points for the group of women above 60 in the period under analysis.

Figure 2 shows quarterly labour force participation rate by sex for those aged above State Pension Age (SPA), that is, 60 for women and 65 for men. First, the labour force participation rate of men aged above 65 has been steadily increasing since 2002. Whereas 8 per cent of men aged more than 65 were in the labour market at the end of 2001, the figure is 10 per cent by the third-quarter of year 2006. Secondly, the increase in the labour force participation of women aged above SPA was even more pronounced than that of men. Indeed, it has increased 4 percentage points between the first-quarter of 1999 and third-quarter of 2006.

A similar pattern is verified in other developed countries. As shown in Figure 3, even though there are country-specific differences, labour force participation of men aged 60–64 has increased during the last five years in almost all countries with the exemptions of Japan and Italy. The recovery varies from country to country, with the highest increase in Germany (10 per cent) followed by Canada (8 per cent) and the UK (5 per cent).

Figure 1: Labour force participation rate by age cohort (in per cent, 1992, 2000, 2006)

Source: UK Office for National Statistics, Labour Force Survey.

Figure 2: Labour force participation rate after State Pension Age (in per cent, quarterly: 1992–2006)
Source: UK Office for National Statistics, Labour Force Survey.

Figure 3: Labour force participation rate of men: 60–64 (in per cent, 1992–2005)
Source: Organisation for Economic Cooperation and Development, 2006 Labour market statistics — data.

In sum, together with the increasing presence of women in the UK labour market over the last 15 years, we have seen an increase in the retained or new employment of older workers. In what follows, we are going to focus our attention on the recent changes in labour behaviour of older people and relate those changes with changes in the pension provision that have been taking place in the UK.

Is there a link with pension provision?

The number of active members of occupational pension schemes in the UK has decreased since 1979. As shown in Figure 4, this decrease is primary consequence of a lower number of private pension scheme members³ as it declines from six million by year 1975 to below five million by 2004. The total number of active members of occupational pension schemes has

decreased by 14 per cent, from 11.4 to 9.8 million, between 1975 and 2004.

In hand with this decrease in the number of active members, pension provision in the UK has changed over the last decades. An increasing number of employers shifting from defined benefit (DB) to pure DC together with the fact that many UK workers are members of private — occupational or personal — pension schemes imply that future retirees will rely more on DC arrangements than at present. As shown in Figure 5, an increasing percentage of UK private-sector

Figure 4: Active members of occupational pension schemes (in millions)
Source: Occupational pension schemes surveys, Government Actuary's Department.

Figure 5: Number of private-sector members according to pension scheme (in per cent, selected years)
Source: Calculations based on occupational pension schemes surveys, Government Actuary's Department.

workers are in DC plans. Indeed, while in 1975 only 2 per cent of private-sector members held a DC scheme, the percentage increased to 14 per cent by the early 1990s and to 25 per cent by the year 2004. Today one in four private pension scheme members belong to a DC plan.

Generally, private-sector DB pension schemes tend to have a greater number of members than DC ones. Indeed, as shown in Figure 6, DB pension members are concentrated in large schemes as 63 per cent of them belong to plans with more than 10,000 members and only 12 per cent to schemes with less than 1,000 members. Conversely, 50 per cent of DC scheme members belong to medium (100–999 members) and small (less than 100 members) schemes.

Not only there is a trend towards a higher percentage of private workers with DC schemes but also an important number of active members belong to DB schemes that are closed to new entrants. Among DB schemes, membership split almost equally between open and closed schemes while only 16 per cent of DC members belong to closed schemes. Even though figures vary with scheme size, percentages of DB active members belonging to closed schemes are high for all size bands considered (see Figure 7).

Figure 6: Active members of private-sector schemes by scheme size band and benefit type (in per cent, 2004)
Source: Calculations based on occupational pension schemes surveys, Government Actuary's Department.

Figure 7: Active members of private-sector schemes by scheme size band, benefit type and status (in per cent, 2004)
Source: Calculations based on occupational pension schemes survey, Government Actuary's Department.

As retirement decisions are not only influenced by individual matters but also by institutional arrangements, this change in the pension structure has a deep impact on retirement decisions. In particular, we might expect an increase in the incentives to work past normal retirement age as occupational pension coverage shifts from DB to DC. Under a typical DB scheme, an employee is entitled to a pension that depends on the number of years of service and his salary over the last years of work. By contrast, under a DC scheme, pension amount depends on the contributions made to the fund over the entire work history, the rate of return of the fund and the annuity rate at retirement. Generally speaking and according to Banks *et al.*⁴ 'one can argue that not only are labour market incentives smooth across ages in a DC plan but that accrual rates are higher at later ages than pensions based on either final salary or average earnings'. Then, an increasing number of workers holding DC plans would imply a higher labour participation rate of older workers or, in other words, a later retirement.

In order to study more deeply the association between pension coverage and retirement decision in the UK, we use data from the English Longitudinal Study of Ageing (ELSA). The ELSA

is a multidisciplinary survey whose aim is to allow the study of older people in terms of health, retirement, work, wealth, income, pensions and many other aspects of ageing in the UK. Two waves of the ELSA have already been collected, the first between March 2002 and March 2003 and the second wave between June 2004 and July 2005. The use of ELSA data will allow us to analyse in a microeconomic approach the relationship between pension provision and labour supply of older workers in the UK.

First, data in Table 1 confirm the already highlighted idea of the recent increase in labour force participation of older workers in the UK. Labour participation in the second wave is higher than in the first wave for both sexes and all age cohorts above 50. Indeed, the percentage of men in the labour market has increased 3 percentage points for both age cohorts 60–64 and 65–69 between wave 1 and wave 2. Also, the percentage of women in the labour market has increased 3 percentage points and 6 percentage points for age cohorts 50–54 and 55–59, respectively. Besides the shift from DB to DC pension arrangements, earlier studies have highlighted a number of possible reasons to explain the recently increase in labour participation of older workers in the UK. Among them: the change in legislation towards

access to disability benefits before SPA, the inclusion of anti-age discrimination policies, the New Deal 50 Plus programme to help those above 50 to get back to work, the abolition of mandatory early retirement and the improved economic condition.^{5–8}

Secondly, Figures 8 and 9 support the idea of the potential later retirement of DC members relative to DB ones. Considering only those who are employed and hold an occupational pension scheme in ELSA wave 2, some 46 per cent of DB plan members respond that they expect to retire at age 60 and almost 20 per cent at 65. By contrast, the figure is 41 and 30 per cent for those holding a DC pension scheme. Indeed, mean expected retirement age is 60.8 and 62.2

for those with a DB plan and those with a DC plan, respectively. In sum, our analysis suggests that DB plan members tend to expect an earlier retirement than DC plan members.

In hand with a later retirement, we might expect a higher labour supply of older workers with a DC plan relative to those with a DB. Indeed, as shown in Figure 9, 14 per cent of DB members respond that there is no chance of being in paid work in five years, while 19 per cent respond that they will be definitely working. By contrast, the figure is 10 and 25 per cent when considering only DC plan members.

In sum, ELSA data suggest the idea of an expected earlier retirement age or higher labour supply of older workers with a DB plan relative

Table 1: Percentage of people in the labour market^a by age and sex (in %)

Age	Male		Female	
	2002–2003	2004–2005	2002–2003	2004–2005
50–54	84	84	72	75
55–59	73	75	56	62
60–64	47	50	23	25
65–69	9	12	7	8
+70	3	3	1	2

^aWe consider as active those who were Employed, Self-Employed or Unemployed at the moment of the interview.

Source: English Longitudinal Study of Ageing, Wave 1 and Wave 2.

Figure 8: Expected age of retirement according to type of pension scheme

Source: ELSA, Wave 2.

Figure 9: Chances of being in work according to type of pension scheme
Source: ELSA, Wave 2.

to those with a DC. In order to analyse the association between labour force participation of older workers and pension coverage, we, however, regress⁹ expectation of being in paid work¹⁰ for total sample, and for men and women separately on several covariates: pension coverage,¹¹ gender, age, marital status, education level, health condition, employment income, and measures of savings and both private and state pension wealth. Holding constant pension wealth implies that the effect captured by the dummy variable DC–DB reflects not only a pension amount effect but also the different incentives — financial, risks and benefit payments¹² — associated with each type of plan. Table 2 summarises the results.

Our primary interest is on the coefficient associated with pension coverage. As expected, those workers with DC pension coverage are more likely to answer that they definitely will be in paid work in the next years relative to workers with DB coverage. Indeed, those with a DC plan are 4 per cent less likely to answer that they are not going to be in paid work in the next years and 6 per cent more likely that they definitely will be working relative to those with a DB plan. Hence, our analysis suggests that as DC pensions are expected to increase we may expect to see a

continuing augment in labour participation rates at older ages.

Moreover, our results are consistent with early evidence for the US. Certainly, Munnell *et al.*¹³ found that both the amount of DB pension wealth and the institutional characteristics of such plans tend to reduce in more than one year the expected retirement age of workers with DB relative to those with DC pension coverage. Also, Friedberg and Webb¹⁴ estimate that workers with DC pension schemes are retiring later and that the increasing trend of labour activity of older workers in the US may be partly explained by the spread in DC pension coverage.

When analysing men and women separately, we, however, found that type of pension would not be an important factor when planning for retirement in the case of women. Indeed, while men in a DB plan expect to retire on average 2.2 years earlier than those in a DC plan the figure is just half a year for women. Then, our results suggest that pension provision would not be as important for retirement planning of older women as it is for older men. Certainly, age, marital status and having a child in household seem to be more significant for

Table 2: Ordered probit regression: Chance of being in paid work (No Chance, Intermediate, Definitely)

<i>Regressor</i>	<i>Total</i>	<i>Men</i>	<i>Women</i>
<i>Pension coverage</i>			
Defined contribution	0.214* (0.080)	0.247** (0.109)	0.135 (0.123)
<i>Individual characteristics</i>			
Female	0.203* (0.072)	—	—
Age	−0.038* (0.009)	−0.044* (0.014)	−0.358* (0.011)
Married	−0.236** (0.084)	−0.383 (0.128)	−0.411* (0.115)
No child in household	0.249* (0.069)	0.186** (0.096)	0.278* (0.103)
Degree or above	0.107 (0.075)	0.152 (0.100)	0.071 (0.012)
Fair or poor health	−0.168 (0.104)	−0.130 (0.144)	−0.190 (0.151)
Employment income	0.183 (0.146)	0.232 (0.153)	0.156 (0.466)
<i>Wealth</i>			
Savings	−0.022* (0.007)	−0.024* (0.008)	−0.193** (0.010)
Private pension	−0.004** (0.002)	−0.004** (0.003)	−0.008*** (0.047)
State pension	0.031* (0.012)	0.035 (0.023)	0.032** (0.014)
Observations	1,344	716	628
P-seudo R^2	0.0491	0.0388	0.0458

Notes: Employment income, savings, private and state pension measures are in £10,000. Robust Standard Errors in parentheses. The coefficient on DC is with respect to DB. The coefficient on Female is with respect to Male. The coefficient on Married is with respect to the omitted category: Not Married. The coefficient on No Child in Household is with respect to Child in Household. The coefficient on Degree or Above education is with respect to the omitted category Below Degree education. The coefficient on Fair or Poor Health is with respect to Good or Excellent Health.

*Indicates significance at 1 per cent confidence level.

**Indicates significance at 5 per cent confidence level.

***Indicates significance at 10 per cent confidence level.

women than that for men in explaining retirement planning. In particular, while married women are 14 per cent less likely to expect to be in paid work in five years; marital status is not statistically significant to explain labour supply planning of older men. Coefficients on employment income, level of education and self-reported health status are not statistically significant for both sexes.

We also find that women are more likely to answer that they definitely will be in paid work relative to men. Being a woman increases 6 per cent the likely of answering that definitely will be working relative to men. It is worth noting that question regarding expectation of being in paid work was asked to workers under SPA: 60 for women and 65 for men. The higher propensity of women to answer that they expect to continue working is a consequence of the fact that more than 55 per cent of the women included in the sample are aged below 54 and more likely to answer that they expect to be working at age 55. Indeed, this result is in hand with the fact that while mean expected age of retirement for men is 63.4, more than a year and a half under SPA, the figure is 61.5 for women, year and a half above SPA. Also, as stated above, labour force participation rate for women is higher than for men above SPA: while 25 per cent of women aged 60–64 are in the labour market, the figure is 12 per cent for men aged 65–69.

In general, both financial and related pensions wealth are expected to have a positive effect on retirement: a higher wealth would imply an earlier date of retirement. First, coefficient associated with total savings¹⁵ is positive implying that a higher amount of savings implies a higher likely of responding that there is no chance of being in paid work in the next years. Assuring a high amount of wealth besides that accumulated in pension related funds might allow an earlier retirement date.

Secondly, when it comes to pension wealth^{16,17} results are ambiguous. While a higher private pension wealth implies a higher likely of expect to be retired, the effect is the contrary for state pension. Certainly, an increase of £10,000 in private pension wealth implies an increase of just 0.1 per cent of the likely of expect to be retired and an increase of that amount in state pension implies a decrease of 0.6 per cent. In the case of the UK, a high percentage of retirees depend on pension income from occupational pension schemes rather than from state pension. Indeed, according to our sample while mean private pension wealth is above £100,000 with a maximum of more than £8m, mean state pension

wealth is £78,000 with a maximum of £190,000. Moreover, when considering total pension wealth as the sum of private and state pension wealth, the overall effect is negative suggesting that private pension wealth effect prevail for retirement decision.

Another possible explanation is that many workers have the chance to be contracted out of the state scheme, that is, National Insurance contributions are paid to the private pension scheme instead of to the State Earnings Related Pension Scheme. In that sense, the fact that state pension wealth is not significant to explain labour supply planning of older men could be associated with the fact that 42 per cent of men belong to contracted out schemes.¹⁸ Conversely, when it comes to women, 30 per cent belong to contracted out plans, 50 per cent belong to plans that are not contracted out and 20 per cent do not know their type of scheme.

In sum, our results suggest that DC pension plans tend to encourage workers to stay in the labour market longer, at least when considering planned retirement. Hence, we might state that workers with DC pension coverage are more likely to plan a later retirement compared to workers with DB pension plans. The pattern, however, does not hold when considering men and women separately as age, marital status and having a child in household are more important for women than for men to explain planned retirement. Finally, results related to pension wealth suggest the idea of the prevalence of private pension over state pension wealth effect in terms of retirement decision.

Concluding remarks

We have analysed how changes in pension coverage arrangements may lead to changes in the pattern of retirement among UK workers over the last couple of years. The increase in the labour supply of older workers since year 2000 has been accompanied by an increasing percentage of workers with DC occupational plans. Contrary to DB schemes that usually provide incentives for an early retirement, and greater certainty at the very least, DC schemes may encourage a progressive and later retirement.

In order to study more deeply the association between pension coverage and retirement decision in the UK, we have used data from the ELSA. Our results suggests that workers in DC pension plans are more likely to answer that they definitely will be in paid work in the next years relative to workers in DB schemes. Therefore, our estimations suggest that workers with DC pension coverage are more likely to plan a later retirement relative to workers in DB pension schemes and, at least in terms of planning, pension coverage plays an important role in terms of retirement age. Also, as arises from our results, factors explaining women planned retirement would be different from than that of men. In particular, while married women are more likely to expect to be out of paid work in five years; marital status does not play a significant role in explaining men planned retirement. Finally, both the decreasing generosity of state pension provision and the high percentage of workers in contracted out schemes may explain, particularly for men, why private pension wealth prevails over state pension wealth in terms of the retirement decision.

To summarise, the recent increase in the labour force participation rate of older workers in the UK could possibly be explained, in part, by the increasing number of employers that are shifting their pension arrangement from DB to pure DC. The change in pension coverage is, however, only one of many factors that may result in later retirement of UK workers. Besides the increasing importance of DC schemes, the decreasing generosity of state pension, the gradual increase of women's SPA from 60 to 65 by year 2020, and the elimination of mandatory early retirement and age discrimination, are features that may lead to an increasing labour market activity rate of older workers or to a later retirement. Further analysis that focuses on actual rather than expected labour supply may give a better understanding of current retirement decision drivers among older workers in the UK.

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References and Notes

- 1 According to International Labour Organization (ILO) Economically Active Population Projections.
- 2 As the purpose of our analysis is to give one of the features that could explain recent changes in older workers labour participation, it refers to the period between 1992 and 2006. Extending data series to early seventies would show that in a longer run perspective labour force participation rate of older workers has decreased dramatically.
- 3 The decline would be even more pronounced if we take into account that figures for the private sector in year 2000 and 2004 include employees of the Post Office, the British Broadcasting Corporation and the Bank of England, while they were considered in the public sector in the previous surveys.
- 4 Banks, J., Blundell, R. and Emmerson, C. (2005a) 'The balance between defined benefit, defined contribution, and state provision', *Journal of the European Economic Association*, Vol. 3, No. 2–3 (April–May), pp. 466–476.
- 5 See Hotopp,⁶ Disney and Hawkes,⁷ Banks and Blundell⁸.
- 6 Hotopp, U. (2005) 'The Employment Rate of Older Workers'. Labour Market Trends, Office for National Statistics, February 2005, pp. 73–88.
- 7 Disney, R. and Hawkes, D. (2003) 'Why has Employment Recently Risen Among Older Workers in Britain? In Dickens, R., Gregg, P. and Wadsworth, J. (eds.) 'The Labour Market Under New Labour: The State of Working Britain II', Palgrave Macmillan, Basingstoke.
- 8 Banks, J. and Blundell, R. (2005) 'Private pension arrangements and retirement Britain', *Fiscal Studies*, Vol. 26, No. 1 (March), pp. 35–53.
- 9 We perform an ordinal probit model with three orders according to expectation of being in paid work: no chance, intermediate and definitely.
- 10 Women between 50 and 54 years old were asked about chances of being in paid work at age 55, women aged 55 to 59 and men aged 50 to 59 were asked about chances of being in paid work at age 60 and men aged 60 to 64 were asked about chances of being in paid work at age 65.
- 11 Dummy variable that takes 1 if the respondent is member of a DC pension plan, and 0 if member of DB.
- 12 See Munnell *et al.*¹³ and Banks, J. and Smith, S. (2006) 'Retirement in the UK', Working Paper 06/140, Centre for Market and Public Organisation (CMPO), University of Bristol for a more detailed discussion about retirement incentives associated with each type of plan.
- 13 Munnell, A., Triest, R. K. and Jivan, N. A. (2004) 'How do pensions affect expected and actual retirement ages'. Working Paper 2004–27, Centre for Retirement Research at Boston College.
- 14 Friedberg, L. and Webb, A. (2003) 'Retirement and the evolution of pension structure'. Working Paper 9999, National Bureau of Economic Research (NBER).
- 15 It includes savings in: cash, bonds, shares, trusts and life insurance.
- 16 See Banks *et al.*¹⁸ for more details on pension wealth estimation from the ELSA.
- 17 Banks, J., Emmerson, C. and Tetlow, G. (2005b) 'Estimating pension wealth of ELSA respondents'. Working Paper 05/09, The Institute for Fiscal Studies (IFS).
- 18 44 per cent belong to plans that are not contracted out and 14 per cent answer that they do not know the type of pension scheme they belong to.