

# Some reflections on Monetary Policy past, present and future – speech by Michael Saunders

Speech appendix

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# Effects on Labour Supply of Changes in the State Pension Age 2010-22

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From April 2010, the female state pension has risen in stages until, as of the first quarter of this year, it sits at 66. This variation in the state pension age (SPA) allows us to estimate how extending the SPA by one more year affects labour supply (**Table 1**).

All our analysis is based on the individual responses to the Labour Force Survey.

Our models are estimated from 2009 Q2 up to 2022 Q1. We follow Cribb et al's (2013) lead and begin our sample roughly one year before the SPA escalator commenced. Therefore, our estimates provide the average marginal effect on participation of raising the female SPA over different age cohorts.

Relative to Cribb et al (2013), we estimate a parsimonious specification, but find results that lie in the same ballpark. We control for individuals' age in quarters using dummies. Likewise, we control for macroeconomic conditions using quarterly time dummies. We also include dummies for educational attainment, where the baseline case is an individual with GCSE or lower educational attainment.

We limit our sample to the age range affected by the reforms.

We estimate both a linear and probit model to estimate the marginal effect. As the probit model relies on a non-linear specification, we compute the marginal effect of the SPA at the sample means. Under both specifications, we find that being above the SPA lowers female participation, on average, by 8-9pp. By including interactions, we can see that reaching the SPA has around a 5-7pp smaller effect on women with degree or higher education attainment than those with GCSE or lower education attainment. This may reflect the fact that people with higher education attainment on average have higher incomes, and hence are less reliant on the state pension. There is no difference in the effect of reaching the SPA for those with A-level or equivalent education attainment, relative to those with GCSE or lower.

**Table 1. OLS and Probit regression results estimating the effects of changes in the SPA on labour supply**

	Participation			
	(i)	(ii)	(iii)	(iv)
Estimation technique	OLS	Probit	OLS	Probit
Above <i>female</i> state pension age	-0.09*** (0.004)	-0.21*** (0.01)	-0.10*** (0.004)	-0.25*** (0.012)
Degree level or higher education	0.09*** (0.003)	0.25*** (0.008)	0.06*** (0.004)	0.15*** (0.012)
A-level or equivalent education	0.06*** (0.002)	0.16*** (0.007)	0.06*** (0.004)	0.15*** (0.011)
SPA – degree level or higher education interaction			0.05*** (0.006)	0.17*** (0.016)
SPA – A-level or equivalent education interaction			0.00 (0.005)	0.02 (0.014)
	Sample			
Gender	Female			
Age group	60-66			
Time period	2009 Q2 – 2022 Q1			
	Marginal effect at sample average			
Estimation technique	OLS	Probit	OLS	Probit
All	-0.09	-0.08		
Degree level or higher education			-0.05	-0.03
A-level or equivalent education			-0.10	-0.10
GCSE or lower education			-0.10	-0.10

Note: \* significant at 10% level; \*\* significant at 5%; \*\*\* significant at 1%. Standard errors in brackets.

Source: Bank of England.