

## **Appendix 1 Classification of women into involuntary and voluntary transition groups**

A self-reported employment status is used, in which participants are asked to select which of the following best describes their current situation: employed, self-employed, retired, unemployed, permanently sick or disabled or looking after home and family. A transition is designated as involuntary if a woman exits employment and reports a not working, nor retired position of permanent illness, unemployment or caring. A voluntary transition is indicated where a woman identifies as retired. This classification is supported by ELSA data relating to reasons for retirement, as detailed here. ELSA participants are asked to give reasons why they stopped work, and responses are available for 104 of the 287 (36%) women who have a recorded transition. The high level of missingness in these items prevents them from being directly incorporated into the models. Of the 104 women with known reasons, 82 are allocated to the involuntary exit group and the remainder into the voluntary, based on their post-transition employment status. The table below shows the number and proportion of responses for each type of transition and category of reason. Thirty-one (37.8%) of women in the involuntary exit group gave either their own ill health or that of a friend or family member as their reason for leaving work, whereas no participants who reported as retired gave these reasons. A further 37.8% of the involuntary group stated one of work stress, business closure, redundancy or dismissal as their reason for exit, compared to 9.1% of the voluntary group. The remaining 91% of voluntary exit women stated time with family, coordination of retirement timing with their partner, wanting to enjoy life, wanting a change or having been offered reasonable terms to retire early as their rationale for leaving. These reasons account for only one quarter of involuntary transitions.

Reason for retirement by transition type. Source: English Longitudinal Study of Ageing.

Reason for leaving work	Involuntary exit group N = 153		Voluntary exit group N = 134	
	Number of responses	% of responses	Number of responses	% of responses
Ill health of self/family member/friend	31	37.8	0	0
Work stress/business closure/redundancy/dismissal	31	37.8	2	9.1
Time with family/coordinated time with partner/wanting to enjoy life/wanting change/offered reasonable terms for early retirement	20	24.3	20	90.9
	82		22	

## **Appendix 2 Configuration of the pension wealth variable**

Pension wealth is measured as the total accumulated private and state pension wealth for both members of a couple. Pension wealth is available as a continuous measure in ELSA, but it has a highly skewed distribution in the selected sample; the lowest level of total pension wealth recorded for the households is £25 390, the highest is £8 108 000, and the median value is approximately £35 000. Structuring the variable as categorical facilitates easier interpretation of the impact of wealth, but may result in inaccurate estimates for women at the extreme end of the distribution. This appendix details sensitivity analysis of women's estimated transition rates to the categorization of the pension wealth variable.

Figures used here are calculated from the dataset structured in long form, in which women have multiple records with one per year of age that they are either at risk of leaving work or have an observed transition. Quintile boundaries are calculated from women of the same age and prior to the removal of cases with missing data on other covariates. There are a total of 6644 records for 2215 women, with 363 experienced transitions. This sample is divided into two groups according to whether pension wealth at each age is higher than or less than a given percentile. The percentiles of interest rise in 5% increments from the 70<sup>th</sup> to the 95<sup>th</sup>, with the 99<sup>th</sup> percentile also included to contrast the most extreme end of the wealth distribution. The number of women and records where wealth is greater than each percentile is shown in the table below.

A binary indicator designates membership for each of the seven groups. It is coded 1 if family pension wealth is sufficient to place a woman in the top given percentage of households, and 0 if there is insufficient wealth to be in that upper proportion. A series of

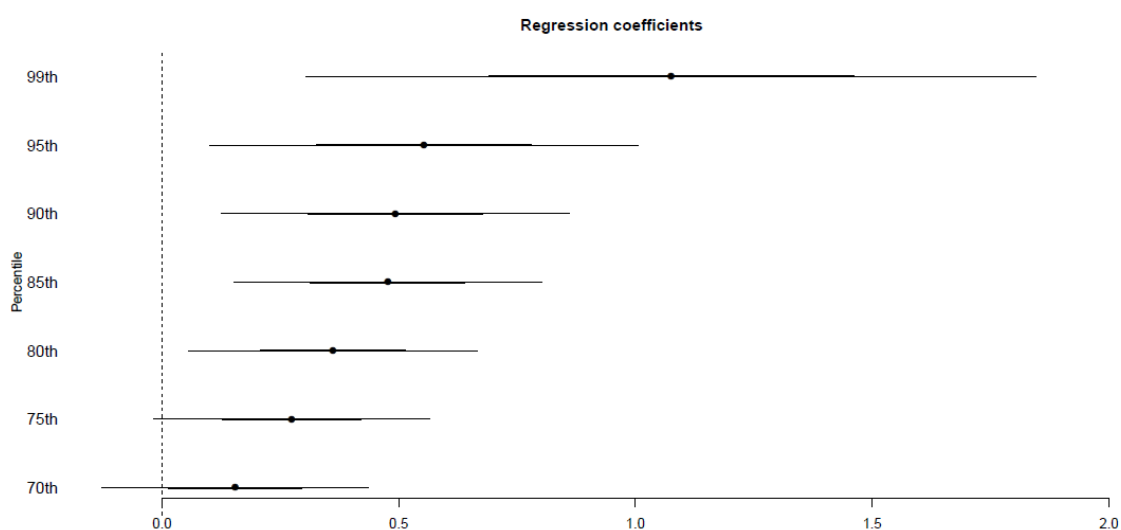
discrete time event history models for the probability of transitioning are then fitted that incorporate, in turn, each of the seven binary indicators and appropriate individual level predictors. This process leads to seven estimated coefficients – one for each of the percentiles in question – and these are shown graphically in the figure below. Each of the estimates is plotted with a 95% confidence interval.

Number of sampled women, records and transitions above a range of pension wealth percentiles.

Source: English Longitudinal Study of Ageing.

	Percentile of wealth distribution						
	70%	75%	80%	85%	90%	95%	99%
Number of women above percentile	584	499	421	324	228	128	31
Number of records above percentile	1866	1559	1250	942	636	325	66
Number of transitions above percentile	89	80	68	56	40	23	7

Confidence interval for estimated pension wealth coefficient for 70<sup>th</sup> to 99<sup>th</sup> pension wealth percentile groups



There are not overly large differences between the confidence intervals of women that are in the highest 20%, 15%, 10% or 5% of couples for pension wealth resources. It is only those with very extreme levels of household wealth that have a considerably higher – and markedly more uncertain – estimated risk of leaving work. From this, it seems reasonable to code the pension wealth variable by grouping together the 1250 observations taken from women in the top 20% of the pension wealth distribution – but ideally with the 66 records from the top 1% separated out, because their transition behavior varies markedly from the others. However this is not a feasible option, as the top 1% of observations involve only 7 transitions which is too few to place into a single category. Recoding the continuous measure into quintiles is the most sensible choice; it adequately allows the modelling of the transitions of the more affluent women in the sample and under-predicts the risk of transition for only the wealthiest 1% of observations.

## Appendix 3 Descriptive statistics

Descriptive statistics for all covariates

		Full sample at baseline <sup>1</sup> N = 1569		Transitioned sample at age of transition N = 287	
Continuous variables		Mean	SD	Mean	SD
Age		53.2	2.32	55.9	2.39
Income (£ per week)		233.7	303.5	207.36	170.87
Partner age		55.8	5.0	58.8	5.2
Partner income (£ per week)		391.5	533.0	384.44	351.97
Categorical variables		n	%	n	%
Education	Less than O level equivalent	509	32.4	98	34.1
	O level equivalent	574	36.6	94	32.8
	Higher than A level equivalent	486	31.0	95	33.1
Social class	Managerial/professional	581	37.0	97	33.8
	Intermediate	451	28.7	92	32.1
	Routine/manual	537	34.2	98	34.1
Working hours	Full time	703	44.8	93	32.4
	Part time	866	55.2	194	67.6
Dependent child	No	1278	81.5	239	83.3
	Yes	291	18.6	48	16.7
Tenure	Own outright	562	35.8	119	41.4
	Outstanding mortgage	899	57.3	148	51.6
	Rent	108	6.9	20	7.0
Caring responsibilities	No	1272	81.1	214	74.6
	Yes	297	18.9	73	25.4
Self-rated health	Good/very good/excellent	1460	93.0	247	86.1
	Fair/poor	109	7.0	40	13.9
Limiting health	No	1331	84.8	222	77.4
	Yes	238	15.2	65	22.6
Partner's employment	Employed	1318	84.0	206	71.8
	Retired	150	9.6	54	18.8
	Illness/unemployed/caring	101	6.4	27	9.4
Partner limiting health	No	1231	78.5	206	71.8
	Yes	338	21.5	81	28.2
Household pension wealth quintile	Poorest	278	17.7	66	23.0
	Second poorest	293	18.7	53	18.5
	Middle	300	19.1	45	15.7
	Second wealthiest	295	18.8	54	18.8
	Wealthiest	403	25.7	68	23.7
Household non-pension wealth quintile	Poorest	318	19.9	47	16.4
	Second poorest	334	19.2	50	17.4
	Middle	304	19.4	57	19.9
	Second wealthiest	301	21.3	63	22.0
	Wealthiest	312	20.3	70	24.4

<sup>1</sup>Baseline is defined as the time of first ELSA interview

## Appendix 4 Estimation of the baseline hazard function and control model

Parameter estimates for the baseline hazard function from discrete time event history models for the conditional probability of women's transition from employment

	General specification (1)	Linear baseline (2)	Quadratic baseline (3)
Binary age indicators			
Age 51	-3.390*** (-3.852, -2.928)		
Age 52	-3.681*** (-4.171, -3.191)		
Age 53	-3.847*** (-4.337, -3.358)		
Age 54	-3.212*** (-3.570, -2.854)		
Age 55	-3.206*** (-3.553, -2.860)		
Age 56	-3.044*** (-3.371, -2.718)		
Age 57	-2.811*** (-3.107, -2.516)		
Age 58	-2.513*** (-2.785, -2.241)		
Age 59	-2.357*** (-2.656, -2.058)		
Continuous age variables			
Age		0.178*** (0.128, 0.229)	-0.003 (-0.236, 0.231)
Age <sup>2</sup>			0.017 (-0.004, 0.038)
Constant		-4.019*** (-4.341, -3.697)	-3.626*** (-4.202, -3.051)
Observations	6182	6182	6182
AIC	2283.597	2276.487	2276.145
-2 Log-Likelihood	2265.596	2272.488	2270.146

Note \*  $p < 0.05$  \*\*  $p < 0.01$  \*\*\*  $p < 0.001$

Three different specifications for the baseline hazard were constructed, each being a function of age. The first was a general formulation that had a binary indicator for each year of age; the second had a linear continuous age variable, and the third had the continuous age variable

in quadratic form. In the interests of parsimony, the continuous form of age is preferred over the general specification. The quadratic term did not improve model fit over the linear version ( $\chi^2_1 = 2.3418$ ;  $p = .1259$ ); hence the linear baseline hazard function is taken as the optimal baseline model.

Main effects for age, part-time working, health, caring obligations, family non-pension wealth, tenure and partner income were added to the linear baseline model, followed by significant interaction terms between age and part time working ( $\chi^2_1 = 10.749$ ;  $p = 0.0010$ ). An age and limiting health interaction was not significant ( $\chi^2_1 = 3.2652$ ;  $p = 0.07076$ ), and age interactions with each of self-rated health and caring responsibilities were likewise not retained ( $\chi^2_1 = 0.1242$ ,  $p = 0.7245$  and  $\chi^2_1 = 0.0896$ ,  $p = 0.7646$  respectively).