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Later pension, poorer health? Evidence from the new State Pension age in the UK

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Abstract

This paper examines the health impact of UK pension reforms that increased women's State Pension age for up to six years since 2010. Exploiting an 11% increase in employment caused by the reforms, we show that rising the State Pension age reduces physical and mental health among women from routine- manual occupations. We show robust evidence that a larger increase in the State Pension age leads to larger negative health effects, resulting in a widening gap in health between women from different occupations. Our results are consistent with a 27% fall in individual incomes for women in routine- manual occupations.

1. INTRODUCTION

Over the last decade, most OECD countries have introduced reforms to increase the Statutory Retirement Age with the aim of enhancing the financial sustainability of pension systems (OECD, 2016). The assumption behind these reforms is that increased employment opportunities, longer life expectancy and more years spent in good health will enable older people to work longer and retire later (OECD, 2016; OECD, 2017b). However, debates on pension reform often overlook potential consequences of postponing the State pension age on the well-being of older people. In several OECD countries, the incomes of older people are lower than those for the general population, including the UK, where older people hold on average 83% of the income in the total population (OECD, 2017b). Pensions make up about 45% of the income of the older population in the UK; therefore, pension reforms could impact the economic well-being of older people unable to adapt to a change in the State pension age. This is particularly important for older women, who are at higher risk of poverty than men: in the UK, their relative income poverty is 24%, compared to 17% for men (OECD, 2017b).

In this study, we assess the health impact of a recent pension reform in the UK that gradually increased the State Pension Age (SPA) from age 60 for up to 6 years for women born after March 1950. We implement a reduced-form difference-in-differences approach that exploits the fact that women with otherwise similar characteristics were exposed to vastly different pensionable ages, based on their month and year of birth. The effect of an increase in SPA is ambiguous as several mechanisms may be at play. On the one hand, the 'use-it-or-lose-it' hypothesis poses that, absent the market incentive to invest in health, the rate of health-decline would fasten with retirement, for example, through reduced physical activity or a worsening cognitive status associated with reduced social interactions and engagement (Mazzonna and Peracchi, 2017). On the other hand, the Grossman model predicts that retirement-induced leisure time and reduced work-related stress may boost investments in health: retirement decreases the opportunity cost of time, incentivizing individuals to invest more time in health (Galama and Kapteyn, 2011), e.g., by exercising, cooking healthier foods, or attending medical appointments. Retirement may also be a direct input into the health production function, for example, by reducing exposure to hazardous working conditions and job stress (Galama and Kapteyn, 2011). An increase in SPA, therefore, may result in reduced time for health investments and longer exposure to stressful working conditions, potentially leading to negative health effects. Likewise, psychological theory predicts that an unanticipated increase in SPA might trigger feelings of frustration and concern about the future, which could result in negative mental health consequences, an effect amplified if information about the reform arrives with short notice (van Solinge and Henkens, 2017).

Although several studies have evaluated the health impact of changes in labour market behaviour arising from later retirement, findings are sensitive to the choice of country, empirical strategy and health outcome (Mazzonna and Peracchi, 2017). Avendano and Berkman (2014) and Motegi et al. (2016) provide a comprehensive review of the literature. Studies have reported either a positive effect of retirement on mental (Belloni et al., 2016; Eibich, 2015; Kolodziej and García-Gómez, 2017) or physical-health (Bertoni et al., 2017; Coe and Zamarro, 2011; Westerlund et al., 2009); a negative effect of retirement on health (Behncke, 2012; Bonsang et al., 2012; Mazzonna and Peracchi, 2017); or no significant effect of retirement on health (Coe and Lindeboom, 2008; Coe and Zamarro, 2011). These studies often exploit cross-country variation in statutory retirement ages, retirement windows offered by employers, or changes to statutory retirement ages. An important finding from this literature is that the impact of an increase in SPA is highly heterogeneous by socioeconomic status (Ardito et al., 2016; Belloni et al., 2016; Bertoni et al., 2017; Coe et al., 2012; Kolodziej and García-Gómez, 2017; Mazzonna

and Peracchi, 2017; Westerlund et al., 2009). Raising SPA is expected to more negatively affect the pension wealth of people from lower socioeconomic status, who face lower life expectancy, more barriers to re-employment, lower health literacy and access to good quality care, and lower pension literacy, which can exacerbate the emotional impact of an increase to SPA (OECD, 2017c).

Our study attempts to make three important contributions to this literature. First, to our knowledge, this is the first study to examine the health effects of a recent pension reform in the UK that mirrors reforms recently introduced by many OECD countries in aftermath of the 'Great recession'(OECD, 2016). Our study could therefore shed light on how recent reforms to increase statutory retirement age might influence the health of older people in other OECD countries. Second, rather than focusing on the impact of extended working lives, our study examines the net effect of an increase in State pension age, which could affect health not only through extended careers but also through effects on unemployment, income or changes in social participation, such as shifts in caring practices. Third, we are able to estimate non-linearities in the effect of increases in SPA by comparing cohorts that will experience vastly different SPA extensions, and for which they received relatively short-notice (Crawford and Tetlow, 2010; MacLeod et al., 2012; Thurley and Keen, 2017). We therefore hope to capture the full effect of an increase in SPA on the health of older women.

Our analysis is based on a sample of 3,452 women aged 60-64 interviewed between 2009 and 2015 as part of *Understanding Society*, a nationally representative survey with extensive health measures including the General Health Questionnaire (GHQ) depression score and the SF-12 mental (MCS) and physical score (PCS) assessments. We find strong evidence that an increase in SPA leads to a significant worsening of mental health: UK women no longer eligible to collect their pension at age 60-62 as a result of the reform fare worse mental health and higher depression scores than women able to collect their pensions at the same age. We provide evidence that longer extensions of SPA lead to roughly linear declines in physical and mental health. Crucially, we show that the impact of the reform is highly heterogeneous by socioeconomic status (SES), measured with a hierarchical job-type classification: women working on routine/manual occupations are more negatively affected by an increase in SPA for any health measure we consider than women from professional sectors. The magnitude of these effects is substantial and robust to multiple estimating assumptions. In our preferred specification, women under the State pension age as a result of the reform exhibit up to a 10% increase in GHQ-12 depression scores, a 3% decline in mental health, and a 5% decline in physical health scores as measured by the MCS and PCS scales. Our findings are in line with evidence from the Netherlands (De Grip et al., 2012) and Italy (Ardito et al., 2016) suggesting that a postponement of statutory retirement leads to worse physical or mental health. They are also in line with tentative evidence that an increase in SPA increases health inequalities across SES (Ardito et al., 2016; Mazzonna and Peracchi, 2017; Westerlund et al., 2009). By contrast, our findings challenge results from studies suggesting that similar policy changes reduce mortality rates (Bloemen et al., 2017) or have no significant health consequences (Hernaes et al., 2013).

This paper is organised as follows: Section 2 summarises the context and nature of the SPA reforms in the UK; section 3 describes the data and empirical strategy; while section 4 discusses the results. Section 5 concludes with a discussion of the implications of our findings for both research and policy.

2. STATE PENSION AGE POSTPONEMENT IN UK

The postponement of the SPA for UK women was introduced through a series of reforms that started with the Pension Act 1995 and came into force in 2010. This reform affected the age at which women

could claim the Basic State Pension, which provides an almost-flat minimum level of retirement income, with eligibility rules based on National Insurance contribution-years. The Basic State Pension is generally low by OECD standards, yet for a significant proportion of older people it represents their main source of income: in 2010, the full annual Basic Pension amounted to £5,077.8 for a single individual and £8,119.8 for a couple; corresponding figures in 2016 were £6,029.4 and £9,643.4 (see OECD (2013), PPI (2015) and Lain (2016) for further details). The SPA - the minimum age at which the Basic State Pension can be claimed- was 65 years for men and 60 years for women prior to the reform. In essence, the Pension Act 1995 initially introduced a timetable to increase women's SPA from 60 to 65 between 2010 and 2020, corresponding to an effective increase of one month every two months. Concerns about financial sustainability of the pension system led the Government to subsequent reforms that increased both men's and women's SPA to 66 by October 2020 (Pension Act 2011), 67 by April 2028 (Pension Act 2014) and 68 by April 2046 (Pension Act 2007). Such regulatory changes are comprehensively described in Thurley and Keen (2017).

As shown in Figure 1, the impact of the reform on pensionable age is substantial: being born one year after March 1950 implies a one-year delay in SPA. The SPA postponement exceeds 36 months for cohorts born after March 1953. This implies that pension eligibility ages differ markedly for women born just a few years apart (right panel), resulting in large differences in the probability of being below SPA at any given point. For example, a woman aged 60 in 2009 is above her SPA, while a woman aged 60 in 2012 is two years below her SPA. The Institute for Fiscal Studies estimates that a one-year SPA-postponement led to an annual loss of between £14,008 and £5,587 (depending on eligibility status for the second tier) for a single individual at the age of 60, which corresponds to 4% of women's median State pension wealth. Although the policy increased female employment rates by 10% (Cribb and Emmerson, 2017; Cribb et al., 2016), the decrease in benefits-income is not fully compensated by the additional flow of private income. As a result, the reform led to a monthly reduction in net individual income of £200 and an increase of 6 percentage points in absolute poverty rate (Cribb and Emmerson, 2017; Cribb et al., 2016).

Figure 1

There has been considerable debate on the impact of the reform on older women, particularly those characterised by discontinuous careers, high risk of poverty in older age and significant caring commitments (Foster, 2017; Ginn and MacIntyre, 2012). Anecdotal evidence suggests that awareness of the reform was limited among some women, leading to mental distress and unmatched expectations due to the inability to retire (Altmann, 2011; Breslin and James, 2016; Goodley, 2016), with particular relevance to the post-1953 cohorts (Jones, 2016). Indeed, although the reform was first legislated in 1995, recent evidence shows that women were not aware of the changes. In a 2012 survey, 60% of women close to retirement age reported an SPA that was lower than their legal SPA (MacLeod et al., 2012). Similar findings come from an earlier analysis by Crawford and Tetlow (2010). Holman *et al.* (2018) suggest that awareness of pension legislation is worse for less skilled workers, raising concerns about heterogeneous impacts disfavouring these groups. However, there is as yet no empirical evidence on the health effects of the reform. This paper addresses this gap by examining the impact of the reform on the physical and mental health of women.

3. METHODS

3.1 DATA, SAMPLE SELECTION AND DESCRIPTIVE EVIDENCE

We use data from the first six Waves (2009-2015) of *Understanding Society*, an annual[1] survey interviewing household members aged 16+ in Britain, on health, work, education, income, family and social life subjects. Technical details of the survey are available in Lynn (2009) and Knies (2016)). We exploit information on year-and-month of birth and date-of-interview, to determine whether an individual lies above or below her SPA when interviewed, and the extent of SPA postponement in months with respect to the pre-reform threshold of age 60.[2] Based on self-reports of employment status, we use binary indicators for being "paid worker", "unemployed", "retired", "looking after family or home" or "long-term sick/disabled". We also incorporate information on living arrangements classifying respondents as "single" (or never married), "living in couple", and "widowed/divorced/separated". Additional characteristics include the year at which respondents left their last job, number of children, and educational attainment (A-level or higher, GCSE level or no education). Through the simplified hierarchical National Statistics Socio-economic Classification (NS-SEC) we categorise respondents into higher managerial/administrative/professional, intermediate (including small employers and own-account workers), and routine/manual.[3]

As measure of health, we use three widely validated measures of mental and physical health, whose details are included in Appendix 8.1. The General Health Questionnaire index (GHQ-12) measures psychological distress, evaluated through 12 items, each scored from zero to three using a Likert scale. The items evaluate how often respondents experienced loss-of-concentration, loss-of-sleep, feeling of playing useful roles, incapability of making decisions, feeling of being under strain, ability to overcome difficulties, enjoyment for day-to-day activities, inability to face-up problems, feeling unhappy/depressed, loss of confidence, feeling of worthlessness, general happiness. The overall sum constitutes the final index (ranging between 0 and 36), with higher values signalling worse health (Goldberg et al., 1997; Goldberg and Williams, 1988).[4] The Short Form-12 (SF-12, version 2) is a generic health-related quality of life instrument which comprises 12 items from eight health concepts (Ware, 2002). Four concepts, namely, physical functioning, role limitations due to physical health issues, role limitations due to emotional problems, and mental health (psychological distress and psychological wellbeing) are assessed using two items each; the remaining four concepts, bodily pain, general health, vitality (energy/fatigue) and social functioning, are measured through one item each. The items are

[1] Longitudinal respondents are interviewed around the same time each year

[2] SPA eligibility is based on whether individuals are born before the sixth day of each month. For women born between 6th April 1950 and 6th April 1953, SPA increases by two months for those born after the sixth day of each month. For women born between 6th April and 5th December 1953, SPA increase by three months for those born after the sixth day of each month. In our data, we have information on month and year of birth, but we have no information on day of birth. Therefore, our definition of SPA eligibility assumes that respondents are subject to the pension rules as if they were born from the 6th day of the month or later (as in, e.g., Cribb *et al.* (2016)). Although this leads to some misclassification of SPA eligibility, misclassification is relatively small: we estimate that if dates of birth are uniformly distributed within each month, we would misclassify about 1.2% of women above SPA as being below SPA at time of interview.

[3] The NS-SEC coding is based on a cross-reference between individuals' current or last occupational category (based on the Standard Occupational Classification, SOC2000), firm size, and employment status (employer, self-employed or employee).

[4] The dataset also provides an alternative compact version of the GHQ index where each item is first dichotomised (assigning value 1 if the original score is two or three) and then summed so that the index ranges from 0 to 12. Following the recent literature, we adopt the Likert version as the two have been shown to be basically equivalent (Dustmann and Fasani, 2016). Indeed, our results are confirmed when using the compact GHQ index (available upon request).

evaluated with either 1-3 or 1-5 Likert scales, and then aggregated into a physical (PCS) and a mental (MCS) component scores, each ranging from 0 to 100 (with a mean of 50), to measure physical (PCS) and mental (MCS) functioning. Higher values signal better health. MCS and PCS are generic measures of physical and mental health, and do not focus on a particular condition or disease. Both the GHQ and the SF-12 are widely used in the economics and epidemiologic literature as measures of health (Bünnings et al., 2017; Clark, 2003; Dustmann and Fasani, 2016; Marcus, 2013; Mitra and Jones, 2017; Schmitz, 2011).

Due to the gradual implementation of the pension reform, we observe women of the same age – interviewed in different years- who are subject to different pension rules. In particular, at ages 60 to 64 years, we observe both respondents with an SPA higher than 60, and respondents with an SPA of 60.[5] We therefore select women aged 60 to 64 as our main sample. We drop respondents who never worked, as they would not be directly affected by an extension of the State Pension Age, as well as women with only proxy interviews, or entries with missing information on any variable of interest. Our final sample comprised 8,407 observations in 3,452 women.

Descriptive evidence

The first column of Table 1 summarises descriptive statistics for the whole sample. The average age is 62.5, 70% have a partner, and almost 80% have at least a GCSE qualification. The majority are either retired or in paid work. Around 40% fall into the manual-routine category, mostly consisting of women in personal service occupations, sales and customer services, process/plant/machine operatives, and women in elementary occupations. Around 30% of women belong to the intermediate class, which comprises women in administrative and secretarial positions. The remaining 30% of women are in higher occupations, which include managers and senior officials, health, teaching and science professionals.

Table 1

In column 2, we split the sample according to whether women were observed above- or below-SPA, which depends on both birth and interview date.[6] There are significant differences between those above and those below the State pension age across several demographics including age, occupational status income and health. In particular, the population below-SPA exhibits higher employment, unemployment and sick/home-carers rates, as well as significantly worse MCS and GHQ scores. This pattern is further illustrated in Figure 2, which plots the rates of employment outcomes for women aged 60, 61 and 62-64 years by quarter from 2009 to 2014. The combination of age and interview year implies that at different times individuals may be below or above their State pension age. We restrict the time interval to the years 2009q1-2014q1 in order to compare trends for a control group who was always above-SPA when interviewed (62-64), with two treatment groups whose SPA-status changes over the study period, that is, women aged 60 and 61: the dashed lines highlight the period in which they came to be below-SPA as a result of the reform. Figure 2 highlights labour-market trends that are in line with recent literature: first, the prevalence of retirement increases with age; second, visual inspection suggests that retirement rates decrease for 60-year olds first affected by the reform in 2010, and for 61-year olds affected by the reform in 2011, while trends for those unaffected by the reform (62-63 years) remain relatively stable. In addition, the rate of women reporting being sick, disabled or caring for family/home increases for cohorts

[5] By contrast, we have no such control group for women aged 59 or 65, because nearly all women aged 59 years had their SPA postponed, while nearly all 65-year old women had an SPA of 60. These women, therefore, are excluded from our analysis. However, including them in the sample does not affect our results.

[6] Table 7 in Appendix illustrates the size of each age group, by pension eligibility status

affected by the reform, in line with prior evidence (see also Cribb et al. (2016) and Staubli and Zweimüller (2013)).

Figure 2

Figure 3 explores trends in the main health outcomes of interest. The GHQ depression score (column a) for 60-61-year olds, affected by the reform since 2010, increases once they fall below their SPA, and their health appears to diverge from that for 62-64-year-olds. Similarly, the MCS score (column b) exhibits a worsening trend for those aged 60 (after April 2010) and 61 years (after April 2012), while there is no increasing trend for the older group. Column (c) shows no visible effect for the physical health (PCS) score. These trends, however, could reflect cohort effects or other omitted variables. Therefore, we now turn to our econometric specification which attempts to isolate the impact of the SPA reform on the health of older adults in England.

Figure 3

3.2 ECONOMETRIC SPECIFICATION

Our identification strategy exploits variation in exposure to the reform by birth and interview dates. This approach has been applied by recent papers to examine the impact of SPA increases on employment and earnings in Austria and the UK (Cribb and Emmerson, 2017; Cribb et al., 2016; Staubli and Zweimüller, 2013). We examine the impact of raising the SPA on the health of women in the UK using a difference-in-differences approach that exploits the fact that individuals of similar age faced different SPA as a result of the reform: some women were interviewed when they were still ineligible for the State pension (below SPA); while other women were interviewed after they became eligible (above SPA). More specifically, identification relies on a comparison of trends in health outcomes between age cohorts whose State Pension eligibility status changed due to the reform (the 60, 61 and 62-year-olds who became ineligible after 2010, 2012 and 2014, respectively) relative to health trends in older age cohorts whose eligibility status was unchanged (63-64-year-olds). To control for age and time trends, our analysis is based on a narrow age (60-64 years) and year (2009-2015) range, incorporating extensive controls for age and year in quarters.

We implement models through a series of reduced-form specifications shown in equations (3.1) and (3.2), estimated for three continuous dependent variables y_{ict}, namely, the GHQ, the MCS and PCS health indices, observed at time t for individual i born in month-year c. Equation (3.1.) is as follows:

$$(3.1) \quad y_{ict} = \alpha + \beta * belowSPA_{ict} + \gamma_i + \delta_c + \eta_t + X'_{ict}\varphi + \varepsilon_{ict}$$

where our main independent variable of interest is an indicator function for being below SPA, i.e., an interaction between the individual's age and the interview date ($belowSPA_{ict} = I(age_{ict} < SPA_{ic})$, which captures whether individuals were eligible to claim a State Pension. Due to the gradual nature of the SPA-shift, women of the same age may end up with different SPA, depending on their interview date: in particular, age groups 60-62 are observed both below and above SPA, while 63-64 are above SPA in all years (Figure 1, right panel). We incorporate fixed effects for age in quarters (γ_i) and interview year in quarters (η_t), as well as a linear control for month-of-birth (δ_c) to capture any cohort and interview date

effects. Because age, year and birthdate are measured in different units (quarters of year for age and interview date, months-year for birthdate) their inclusion is non-collinear. Our models thus assume that age-effects are cohort- and time-constant; cohort effects are time- and age-constant; and time-effects are age- and cohort-constant (Cribb et al., 2016). Our results are robust to alternative specifications for age-time-cohort effects (Section 4.2.2). Additional controls in the vector *X* include living arrangements and marital status, country fixed-effects, number of children, education, and socioeconomic classification. Our coefficient β, therefore, captures the impact of being below the SPA as a result of the reform, above and beyond the effect of age, year and cohort.

Prior literature suggests that there is substantial heterogeneity in the health effects of retirement by SES (Holman *et al.*, 2018; Mazzonna and Peracchi, 2017; van Solinge and Henkens, 2017). We therefore estimate an additional specification by introducing an interaction term between the "policy-variable" and the NS-SEC occupational classification:

$$(3.2)\quad y_{ict} = \alpha + \beta_1 * belowSPA_{ict} + \beta_2 * \text{intermediate}_{ict} + \beta_3 * \text{manager}_{ict} + \beta_4 * belowSPA_{ict} * \text{intermediate}_{ict} + \beta_5 * belowSPA_{ict} * \text{manager}_{ict} + + \gamma_i + \delta_c + \eta_t + Z'_{ict}\varphi + \varepsilon_{ict}$$

In all analyses, standard errors are clustered at the month-of-birth level (140 clusters) to account for the fact that treatment assignment varies by month of birth. However, findings are robust to standard errors being clustered at the individual level (Section 4.2.2).

We opted for estimating a reduced-form equation instead of an instrumental variables (IV) specification, as done in previous studies (Bloemen et al., 2017). IV estimation would in principle allow us to estimate the local average treatment effect (LATE) of "being in paid work" on health, exploiting the extension of work for those who experienced an increase in their SPA. However, although an increase in SPA has a strong positive employment effect, recent analyses for the UK suggest that the reform did not only increase employment but also increased the probability of reporting being in sickness or disability; the probability of reporting to be looking after family/home; as well as the probability of being in poverty and experiencing a reduction in income (Cribb and Emmerson, 2017; Cribb et al., 2016). These findings suggest that instrumenting employment using the SPA would potentially violate the exclusion restriction as the reform affected health via mechanisms other than employment.

3.2.1 Evaluating the impact of different levels of SPA postponement

As discussed in Section 2, the extent of an increase in SPA widely differs for women born after March 1950. To test how the health impact of the reform differs with the extent of SPA postponement, we modify specification (3.1) as follows:

$$(3.3)\quad y_{ict} = \kappa + \lambda_1 I\left(0 < months \leq 6\right)_{ic} + \lambda_2 I\left(6 < months \leq 24\right)_{ic} + \lambda_3 I\left(24 < months \leq 36\right)_{ic} + + \lambda_4 I\left(36 < months\right)_{ic} + \mu_i + \nu_c + o_t + X'_{ict}\pi + \upsilon_{ict}$$

where we introduce a set of dummies for having an increase in SPA of 0-6, 6-24, 24-36 or $\geq$36 months. In order to account for heterogeneity by SES, we adapt (3.2) into (3.4) as follows:

$$(3.4)\quad y_{ict} = \kappa + \lambda_1 * months_{ic} + \lambda_2 * \text{intermediate}_{ict} + \lambda_3 * \text{manager}_{ict} + \lambda_4 * months_{ic} * \text{intermediate}_{ict} + \\ + \lambda_5 * months_{ic} * \text{manager}_{ict} + \mu_i + \nu_c + o_t + Z'_{ict}\pi + \upsilon_{ict}$$

Equation (3.4) estimates the average change in health for a one-month increase in SPA. The model includes the same set of sociodemographic characteristics as previous specifications, with fixed effects for age, interview year (both in quarters), as well as a linear control for month-of-birth.
It is worth noting that, in this setting, the SPA increase is non-linearly related to birthdate: the SPA is constant for women born before April 1950 or after September 1954 while it increases depending on month-of-birth for women born between March 1950 and September 1954, although the pace of the increase has four discontinuities, due to subsequent reforms (Figure 1, left panel).[7]

4. RESULTS

We start by documenting the effect of postponing SPA on employment (being in paid work / sick or disabled / home-carer / unemployed) and personal income. We estimate Linear Probability Models for employment outcomes following our main specifications (3.1) and (3.2).[8] We use information on monthly individual income (sum of labour-, miscellaneous-, private benefit-, investment-, pension- and social benefit income, net of taxes on earnings and national insurance contributions) adjusted in real terms with the Consumer Prices Index including owner occupiers' housing costs (reference prices: July 2015). To reduce the impact of outliers, we drop the tails of the distribution at the 1st and 99th percentile. The empirical design and the definition of the dependent variables are comparable to recent studies on the UK reform based on a different dataset (Cribb and Emmerson, 2017; Cribb et al., 2016).

The results summarised in Table 2 closely confirm previous findings. Full results are presented in the Appendix (Table 10). Coefficients in column *i* show that the SPA reform is estimated to have increased employment rates by 11% in the overall sample; by 5.7% and 2.9% the probability of reporting to be sick/disabled or looking after family/home; and by 2.2% the probability of reporting unemployment. In our sample, 41% of women reported being in employment, 2.8% in sickness, 3.2% in caring for family/home, and 1% in unemployment, suggesting that our effects are substantial. The last row of Table 2 shows that being below the SPA as a result of the reform leads to a reduction of £220 in monthly individual income, generated by a decrease in pension income which is not compensated by earnings from increased labour supply. In columns *ii* to *iv* we report the results from specification (3.2). Column *v* highlights that the income reduction, as well as the probability of alternative pathways to retirement (through sickness, home/family-caring and unemployment) are larger for women in routine-class occupations than for women in managerial occupations. Overall, these results suggest that the reform represents a major shock to the employment and income of women whose SPA was postponed.

[7] Dropping the linear control for month-of-birth does not influence our findings (see Section 4.2.2).
[8] Across the paper, results from the Linear Probability Model estimation are matched closely by those from probit models (e.g., the marginal probit coefficient for being below SPA indicates an increase by 10.9 points in the probability of being in paid work, compared to the coefficient of 11.2 we get from LPM estimation in Table 2). Given that the binary variable for being below SPA is an interaction between age and interview date, we compute the average marginal probit effect following the methodology suggested by Puhani (2012) (eq.10) and implemented by Cribb et al. (2016) (p. 86), to avoid the miscalculation of treatment effect in nonlinear models: we first compute the difference in the predicted probability of the selected outcome if above and below the SPA for each individual, and then average across all observations.

Table 2

4.1 HEALTH EFFECTS OF THE SPA REFORM

Table 3 reports the results for specifications (3.1) and (3.2), estimated through OLS for each of the health-indexes examined. Columns 1-3 indicate that being below the SPA as a result of the reform leads to a significant increase in GHQ depression scores and a decline in the SF-12 mental well-being score, both indicating worsening of mental health. The GHQ score increases by 0.51 (elasticity of 4.7%, evaluated at the mean), while the MCS score drops by 0.88 (elasticity of -1.7%). The coefficient for the SF-12 index of physical health is also negative but not statistically significant.

Table 3

Model (3.2) estimates heterogeneous effects by occupational classification. Columns 4-6 show that the negative effects of the SPA reform on health is significantly stronger for women in lower occupational classifications. For women in this category, being below SPA leads to a significant increase in GHQ depression scores and a decline in both mental and physical SF-12 scores. The magnitude of the effect is non-trivial: women from routine occupations below SPA as a result of the reform have 1.12 points higher in the GHQ scale (elasticity +10%), 1.48 points lower in the MCS scale (elasticity -3%), and 2.1 points lower in the PCS scale (elasticity -4.7%) than routine-class women above the SPA. By contrast, women from "intermediate" or "managerial" categories have a significant better mental and physical health than routine ones, and the change in SPA status does not significantly affect any of their health outcomes.

Table 4 shows the impact of the extent of SPA-postponement on health (models (3.3) and (3.4)). Columns 7-9 report coefficients from a series of models that consider different levels of postponement of the SPA. Results are in line with those of Table 3: relative to those who were not affected by the reform, GHQ increases by 0.57 points for those with an increase of 6-24 months (elasticity 5%), 0.81 for those with an increase of 24-36 months (+7.3%), and 1.19 for those with an increase of 36 or more months (+10.7%), suggesting that a longer postponement of SPA leads to worse depression scores. Results are in the same direction for the SF-12 mental health, with longer extensions of SPA leading to larger reductions in the index of mental well-being. The largest effects are found for women with a postponement of three or more years (cohort 1953-1955, with an average SPA increase of 55 months): a GHQ elasticity of +10.7%, and a MCS elasticity of -3.7%. As reported in columns 10-12, for routine-class women, increasing the SPA by one month significantly worsens the GHQ index by 0.034 points (elasticity of 0.3%), while MCS and PCS drop by 0.042 (0.08%) and 0.073 (0.16%), respectively. This implies that a delay of 15, 30 or 55 months leads to an increase in GHQ scores of 4.5%, 9% or 16.5%; a decline in MCS scores of 1.2%, 2%, or 4.4%; and a decline in PCS scores of 2.4%, 4.8% or 8.8%. Again, the reform has no clear consistent impact on intermediate and managerial classes, with the effect being largely confined to women from routine occupations. Predicted means of each health outcome are presented in Figure 4. The results suggest that the increase in SPA led to a divergence in health between occupational groups of women aged 60 to 64 years.

Table 4

Figure 4

4.1.1 Depression and clinical significance

To evaluate the clinical significance of our results, we exploit the validated GHQ cut-offs signalling the presence of depressive disorders, corresponding to a 13+ score (cut-off 1) built on the 0-36 GHQ scale and to a 3+ score (cut-off 2) built on the 0-12 GHQ scale (see Appendix 8.1, (Goldberg *et al.* (1997); Kelly *et al.* (2008))). We estimate Linear Probability Models using these dichotomous outcomes and show the results for our preferred specifications (3.2) and (3.4) in Table 5.

Columns 13a and 13b highlight that the probability of having depressive disorders is statistically higher for routine-class women below-SPA, in the 12-valued GHQ (by 0.055 probability points, elasticity 24%) and the 36-valued GHQ (by 0.067 points, elasticity 24%). Columns 14a-14b show that a one-month increase in the SPA increases the probability of depression by 0.2 points for women from routine occupations, with an elasticity of 0.7%. The effect is much weaker and not significant for women in the intermediate and managerial categories.

Our results also indicated a substantial health decline of up to 2.3 MCS and 4 PCS points for routine-class women experiencing an increase in the State pension age. While there are no universally accepted thresholds for the SF-12, these changes are substantial when compared to recent studies focusing on women's mental-health.[9] A reduction of 2 MCS points is comparable to that reported for becoming unemployed (Marcus, 2013), fearing losing a job (Bünnings et al., 2017) or experiencing financial strain (Maclean et al., 2015).

Table 5

4.1.2 Decomposing the health impact

The nature of observed health effects can be further described by analysing the impact of the reform on each of the 24 items included in the GHQ and the SF-12 tools. To do so, we first recode each item into a 0/1 binary variable, where 1 represents a measure of poor health. For the GHQ (Table 8) this dichotomisation requires to assign the value 1 if the original score is two or three (Goldberg et al., 1997). For the SF-12 (Table 9), we define bad self-rated health as reporting being in fair or poor health; and being limited, as reporting a lot or some limitations (as opposed to no limitations). For other items on feelings or limitations, we discriminate between those answering all/most of the time, and those answering some/a-little/none of the time. Finally, we define being limited due to pain based on respondent's reports of pain interfering with normal work. We run Linear Probability models under our baseline specifications (3.1) and (3.2), which incorporates an interaction between pension eligibility and job category.

Results are summarised in Table 6, where column (i) reports the average values of the dichotomous outcomes, to better appreciate the magnitude of the estimated effects; column (ii) reports the coefficients for the under-SPA indicator for the whole sample; and column (iii) reports the coefficients for the interaction term between the under-SPA indicator and the routine-class dummy. Our results suggest that the negative health effect of SPA postponement is consistent across many of the GHQ outcomes, as well as across the components of the SF-12, for women from routine-manual occupations. In particular, we report a higher probability of emotional distress (e.g., feeling downhearted, useless, worthless or

[9] Although there is no universally accepted cut-off level for SF-12 (Córdoba-Doña et al., 2016), an optimal screening cutoff to evaluate 30-day depressive disorders (MCS) was set at 45.6 for the European population by Vilagut et al. (2013). When implementing such threshold, we find a significant increase in the probability of being depressed for routine women below SPA (elasticity of 30%).

unhappy, losing self-confidence and pleasure from day-to-day activities, inability to overcome difficulties or making decisions), as well as higher probability of reduced energy and worse self-rated health, all of which may hamper productivity (accomplishing less in work or activities due to physical or emotional problems or pain). We find no statistically significant impact of the reform on any outcome for intermediate and managerial categories (results are available upon request).

Table 6

4.2 ROBUSTNESS CHECKS

4.2.1 Sample selection

Our sample selection includes all the age groups for which we observe both women with an SPA higher than 60, and women with a SPA of exactly 60. However, pension eligibility status changed only for women aged 60-62: the 63-64 year olds were always above-SPA and eligible to a pension. When running models with a restricted sample of 5,054 respondents aged 60-62 (Appendix Table 11), we find similar results as for our full sample. Although standard errors increase as a result of the reduced sample size, the magnitude of the coefficients is nearly identical to that for our full sample. Moreover, we originally excluded women aged 59 and 65 from the analysis (only 6% of the former are unaffected by the reform, while only 1% of the latter are affected). In analysis incorporating these age groups, we find nearly identical results as those presented for our original sample (results available upon request).

Table 11

Our sample excludes individuals who never worked in their life. However, a potential concern is that the reform affected women who were at some point involved in paid work, but stopped working several years ago. For example, women who have been inactive for a long time might have built smaller pensions over the lifecycle, and might therefore be more likely to be affected by an extension of the SPA. By contrast, those who left the labour marker earlier might comprise women from a higher socioeconomic status, which may be less affected by the pension reform. Our original sample includes 431 women (951 observations) who stopped working at least ten years before the Survey started, i.e., before 1999 (77% are retired, 13% are home-carers, 10% are sick/disabled), with 50% of them being born on or before 1950. Dropping these observations does not alter our main findings, as shown in Appendix Table 12 for our preferred specifications (3.2) and (3.4).

Table 12

Demographic characteristics of a respondent's partner could influence the health impact of being ineligible to collect the State Pension, e.g., having a retired partner may reduce the negative health effects of SPA postponement. We therefore estimated our models on a sample of women married or in-partnership for which partner's age is available (5867 observations), including a second order polynomial for their partner's age, and a set of dummies for partner being younger than 60, between 60 and 64, 65 and 69, or above 70. Estimates from these models are very similar to those in our original specification (results available upon request).

4.2.2 Econometric specification

Our sample includes repeated observations for some individuals. To address this potential issue, we run our models clustering standard errors at the individual level rather than at month-of-birth level. Results are shown in Appendix Table 13 for our preferred specifications (3.2)-(3.4), and largely support our main findings, both in magnitude and in significance of the coefficients. Results hold both for the SPA-status (columns 31-33), and for the SPA-shift (columns 34-36).

Table 13

We also test the sensitivity of our results to alternative specifications for age-, year- and cohort-effects. We first run our models with a second-order polynomial for age in quarters and interview year in quarters, together with a linear control for year-and-month of birth, which fully confirms our results (available upon request); second, we include a second-order polynomial for age in quarters, fixed effects for interview year in quarters, and fixed effects for birth-year. Results (shown in Appendix Table 14) are very close to those in our original specification. We also drop the linear control for month-of-birth from our main models, to check the impact of potential collinearity with SPA-shift. Again, results are nearly identical to those in our original specification (results available upon request).

Table 14

5. DISCUSSION AND CONCLUSIONS

Our results show that the increase in the State pension age had unanticipated, negative consequences for the mental health of older women in the UK. Women who could not claim a State Pension between 2009 and 2015, due to the reform, have worse mental health with respect to women of the same age whose pension eligibility was not affected by the reform. The detrimental impact on health increases with the extent of the SPA increase, and it is confined to women from lower routine and manual socioeconomic classifications, who report worse physical and mental health as a result of the reform. These negative effects are consistent across multiple sub-components of the physical and mental health scales examined, and they are robust to several alternative empirical specifications. The magnitude of these effects is substantial and clinically relevant, and they are in line with studies evaluating similar reforms in the Netherlands (De Grip et al., 2012) and Italy (Ardito et al., 2016).

Increasing the State pension age is a critical policy to improve the sustainability of pension systems. The OECD estimates that the average retirement age will rise by 1.5 years in the next decade as a result of current reforms, which is expected to accrue major potential savings (OECD, 2017a). Yet, our findings suggest that the negative health consequences of pension reforms have been overlooked and should be considered in evaluating the merit and cost-effectiveness of these policies as strategies to increase pension system sustainability. Recent estimates suggest that the social and economic costs of mental illness should not be underestimated. In England, the costs of mental illness have been estimated at 105 Million Pounds a year (Centre for Mental Health, 2010). Mental illness impacts directly on health care costs and disability insurance payments, as well as indirectly, e.g., by imposing a burden on care givers and family members. Mental illness has also important implications for labour market productivity: those affected are less likely to engage in work, have higher unemployment rates and lower productivity than healthy workers (Bubonya et al., 2017). As a result, mental illness constitutes a major burden for public budgets, estimated at 3-4% of GDP in OECD countries (Arends et al., 2014; OECD/EU, 2016; WHO,

2013). Mental disorders, and particularly depression, are also a leading cause of disability worldwide and are associated with the onset of other physical health conditions such as cancer, CVD, and diabetes, which may exacerbate their impact on productivity and the economy (Prince et al., 2007).

The increase in SPA for women in the UK may have negatively affected their mental health through multiple mechanisms, some of which we were able to explore in our data. First, the reform led to a significant negative individual income effect, which may translate into negative mental health consequences, e.g., by reducing the ability to afford basic goods or increasing the likelihood of individual and household indebtedness (Keese and Schmitz, 2014). Women in the UK may be particularly vulnerable to psychological distress arising from reduced financial wellbeing as they face higher levels of poverty and have weaker labour market attachment than women in most other OECD countries (Cribb et al., 2016; Foster, 2017). Second, the fact that the negative impact of an increase in SPA on physical and mental health is confined to women in manual-routine social classes suggests that longer exposure to lower quality jobs may potentially lead to worse physical and mental health outcomes. Evidence suggests that working longer in low-quality occupations is associated with health-capital degradation and contributes to lower productivity and health (Barnay, 2016; Paccagnella, 2016; Ravesteijn et al., 2013) (Bildt and Michélsen, 2002; Chandola and Zhang, 2017; Fischer and Sousa-Poza, 2009). Evidence also suggests that rates of reemployment are relatively low for older workers due to their higher skill specificity acquired with work experience and the risk of age-discrimination (OECD, 2017c), especially for routine and manual occupations which are most affected by computerisation and offshoring (Autor and Dorn, 2009). Furthermore, recent studies suggest that women with pre-existing health problems or caring commitments are particularly vulnerable to adverse impacts of an extension in SPA (Price et al., 2016).

A third possible explanation of our findings relies on the particular way information about State pension age changes was communicated to women affected by the reform (John Cridland Independent Review, 2017; Thurley and Keen, 2017). Some evidence from the UK suggests that many women close to retirement were unware that they were required to work longer before being able to claim pension benefits (Clery et al., 2009; MacLeod et al., 2012), and particularly women in poor health or from lower socioeconomic status (Holman *et al.*, 2018). A change in the State pension age during the last years of employment may disrupt plans and generate anxiety and depression. Accordingly, evidence from the Netherlands, where pension reforms took many employees by surprise, suggest that poor adjustment to the reform lead to feelings of anger and worries about capability to survive in the job, particularly for workers in poor health, those in manual occupations and those with long working careers (van Solinge and Henkens, 2017). Poor adaptation to retirement ages can be particularly marked in the context of low reform awareness (De Grip et al., 2012; Falba et al., 2009), and for workers from lower manual occupations with low financial literacy (Holman *et al.*, 2018; Prast and van Soest, 2015).

In conclusion, our results show that increasing State pension age, a common policy aimed to increasing the financial sustainability of pension systems, can lead to negative physical and mental health consequences for older workers, which outweigh some of the potential benefits from extended working lives. Women in manual and routine occupations do not only face a substantial loss of pension income, but they also face an increased risk of physical and mental illness as a result of increased State pension ages. There are two possible policy implications from this finding. First, the fact that the negative health effects of the reform are confined to women from manual and routine occupations raises potential questions about fairness, and whether eligibility rules should consider occupation as a potential criterion (Wester and Wolff, 2010). Second, national policies that increase State pension age need to consider

strategies to prevent negative health consequences for women in manual and routine occupations, for example, through inclusive labour market policies that facilitate a smooth transition to retirement (i.e., gradually reducing the working week), and by providing workers with sufficient time and information in advance to adjust to changes in State pension age.

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7. TABLES AND FIGURES

Table 1, Descriptive statistics for the whole sample and by pension eligibility status at interview date

	(i) *Whole sample Mean*	*(ii)* *Above SPA at interview mean*	*(iii)* *Below SPA at interview mean*	*(iv)* *p-value (controlled for birth-year)*
Age	62.5	62.9	60.9	***
Married/couple	70.2%	70.4	69.4	
Widowed/Divorced	25.3%	25.5%	24.2%	
Single	4.5%	3.9%	6.3%	
Number of children	1.4	1.5	1.2	
Educ.: less than GCSE	20.4%	22.1%	14%	
Educ: GCSE	35%	35.4%	33.5%	
Educ: A-level or more	44.6%	42.4%	52.4%	
SPA postponement (months)	10.3	3	36	***
occupational status				
Employed	41%	36.2%	58.2%	***
Unemployed	1%	0.3%	3%	***
Retired	52.1%	59.4%	25.6%	***
Long-term sick/disabled	2.8%	1.5%	7.2	***
Caring for family/home	3.2%	2.5%	5.3%	***
Socioeconomic classification (NS-SEC3)				
Routine occupations	38.9%	40.2%	34.6%	
Intermediate occupations	28.3%	28.6%	26.9%	*
Higher occupations	32.8	31.2%	38.6%	
Net indiv. income	£1213	£1217	£1200	***
Health measures				
SF-12 PCS (physical)	46.8	46.8	47.2	
SF-12 MCS (mental)	51.1	51.4	50	***
GHQ-12 (0-36 scale)	10.9	10.8	11.4	***
GHQ caseness 1 (0-36 scale)	25.2%	24.6%	27.6%	**
GHQ caseness 2 (0-12 scale)	21%	20.4%	23%	*
observations	8407	6553	1854	

*Note: the sample includes women aged 60-64 between 2009 and 2015, having been engaged in paid work in their life, excluding proxy respondents. Column (iv) reports the test for the null-hypothesis of mean-equivalence between columns (ii) and (iii). P-values correspondence: *<0.10, **<0.05 ***<0.01.*
The status of being above/below State Pension Age (SPA) is defined by comparing the individual SPA (based on month-year of birth) and the date of interview. The SPA postponement is a distance measured in months between the individual-specific SPA post-reform and the pre-reform threshold of 60 years old. The job classification follows the National Statistics SEC-3 taxonomy. The GHQ caseness 1 is a dichotomous variable referred to the Likert GHQ index (range: 0-36), taking value 1 for scores higher than 12; the GHQ caseness 2 is a dichotomous variable referred to the compact GHQ index (range: 0-12), taking value 1 for scores higher than 2 (Goldberg et al., 1997; Kelly et al., 2008).

Table 2, employment and income effects of State Pension Age postponement

	Effect of being below SPA at interview				
	(i) Overall population	(ii) Routine-class	(iii) Intermediate class	(iv) Managerial class	(v) Test for (ii) = (iv)
1. Being in paid work	0.112***	0.086***	0.157***	0.105***	
	0.023	*0.032*	*0.035*	*0.032*	
2. Being sick/disabled	0.057***	0.136***	0.023**	0.005	***
	0.008	*0.017*	*0.010*	*0.008*	
3. Caring for family/home	0.029***	0.043**	0.036**	0.009	**
	0.009	*0.016*	*0.015*	*0.008*	
4. Being unemployed	0.022***	0.036***	0.021***	0.008	***
	0.005	*0.009*	*0.008*	*0.007*	
5. Net monthly indiv. income	-£220.1***	-£261.7***	-£268***	-£146.1***	*
	47.6	*50.8*	*62.8*	*64.4*	

Note: we report Linear Probability Model coefficients for rows 1-4, and OLS coefficient for row 5. Column (i) reports the effect of being below SPA among the whole sample for four separate dependent variables (four regressions), see model (3.1). Column (ii) to (iv) report the predicted average impact of being below SPA for routine, intermediate and managerial occupations, respectively (see model (3.2)); each row corresponds to a separate regression. Column (v) reports the test for the null-hypothesis that the effect of being below SPA is the same for routine (ii) and managerial (iv) occupations. The status of being above/below State Pension Age (SPA) is defined by comparing the individual SPA (based on month-year of birth) and the date of interview. The job classification follows the National Statistics SEC-3 taxonomy. The net monthly individual income is measured in 2015 Pounds.

*P-values correspondence: *<0.10, **<0.05 ***<0.01. Standard errors (in italics) are clustered by year-and-month-of-birth (140 clusters).*

Sample selection: 8,407 observations on women aged 60-64 between 2009 and 2015, having been engaged in paid work in their life, excluding proxy respondents. Additional controls include fixed effects for age (in quarters), interview year (in quarters), living arrangements and marital status (married, widowed/divorced/separated, single), country, number of children (none, one-two, three or more), education (low, mid or high degree), and a linear control for year-and-month-of-birth.

Full results are available in Table 10.

Table 3, effect of State Pension Age postponement on GHQ, MCS, PCS index.

	(1) GHQ	(2) MCS	(3) PCS	(4) GHQ	(5) MCS	(6) PCS
being below SPA	0.511**	-0.882**	-0.398	1.116***	-1.488**	-2.084***
	0.242	*0.391*	*0.593*	*0.394*	*0.593*	*0.803*
belowSPA * intermediate				-1.131***	1.181*	2.601**
				0.418	*0.688*	*1.001*
belowSPA * manager				-0.818**	0.783	2.670**
				0.378	*0.668*	*1.018*
routine job (ref.)	-	-	-			
intermediate	-0.176	0.597*	0.997*	0.053	0.358	0.471
	0.213	*0.363*	*0.657*	*0.237*	*0.408*	*0.712*
manager	-0.738***	1.184***	2.613***	-0.57***	1.025***	2.034***
	0.198	*0.352*	*0.659*	*0.212*	*0.363*	*0.709*
Marital status (ref. "married/couple")						
Widowed/divorced	1.253***	-3.011***	-2.808***	1.247***	-3.001***	-2.789***
	0.235	*0.452*	*0.495*	*0.235*	*0.453*	*0.494*
Single	0.44	-1.778**	-1.187	0.416	-1.754**	-1.108
	0.399	*0.75*	*0.987*	*0.395*	*0.774*	*0.978*
no children (ref.)						
1-2 children	-0.183	0.147	-0.062	-0.193	0.158	-0.033
	0.21	*0.357*	*0.401*	*(0.209)*	*(0.356)*	*(0.402)*
3+ children	0.319	-0.499	-1.447**	0.322	-0.503	-1.448***
	0.22	*0.397*	*0.549*	*(0.221)*	*(0.399)*	*(0.549)*
No education (ref.)						
low education	-0.296	1.107**	3.219***	-0.311	1.12**	3.268***
	0.25	*0.434*	*0.582*	*(0.249)*	*(0.433)*	*(0.575)*
mid or high education	-0.661***	1.763***	4.014***	-0.655***	1.755***	4.016***
	0.251	*0.471*	*0.629*	*(0.249)*	*(0.469)*	*(0.626)*
_cons	0.2	78.398***	32.6	-0.031	78.635***	33.188
	9.781	*17.401*	*24.151*	*9.781*	*17.37*	*24.17*
R^2	0.03	0.04	0.05	0.03	0.04	0.05
N	8,407	8,407	8,407	8,407	8,407	8,407

Note: we report OLS estimates for the GHQ index (ranging from 0 -least distressed- to 36 -most distressed), MCS and PCS index (ranging from 0 – most distressed – to 100 – least distressed). Columns 1 to 3 refer to model (3.1). Columns 4-6 refer to model (3.2), which accounts for heterogeneity by SES, defined according to the National Statistics SEC-3 taxonomy. The status of being above/below State Pension Age (SPA) is defined by comparing the individual SPA (based on month-year of birth) and the date of interview.

*Sample selection: women aged 60-64 between 2009 and 2015, having been engaged in paid work in their life, excluding proxy respondents. Additional controls include fixed effects for age (in quarters), interview year (in quarters), and country and a linear control for year-and-month-of-birth. Standard errors are clustered by year-and-month-of-birth (140 clusters). *<0.10, **<0.05 ***<0.01*

Table 4, effect of State Pension Age postponement on health scores, accounting for heterogeneity by SES classification

	(7) GHQ	(8) MCS	(9) PCS	(10) GHQ	(11) MCS	(12) PCS
0 postponement (ref.)	-	-	-			
0-6 months	0.17	-0.243	-0.137			
	0.305	*0.578*	*0.943*			
6-24 months	0.57*	-0.585	-0.293			
	0.341	*0.591*	*0.779*			
24-36 months	0.812*	-1.364*	-0.597			
	0.473	*0.788*	*1.127*			
36+ months	1.192**	-1.777**	-1.280			
	0.022	*0.822*	*1.381*			
SPA postponement in months				0.032***	-0.041**	-0.071***
				0.011	*0.018*	*0.025*
SPA postpon.*intermediate				-0.025**	0.032*	0.065**
				0.011	*0.018*	*0.027*
SPA postpon.*managerial				-0.021**	0.022	0.077***
				0.009	*0.016*	*0.025*
routine job (reference)						
intermediate	-	-	-			
	-0.186	0.601*	1.004	0.058	0.296	0.39
	0.213	*0.365*	*0.658*	*0.24*	*0.429*	*0.742*
manager	-0.742***	1.185***	2.617***	-0.536**	0.797**	1.835**
	0.198	*0.352*	*0.658*	*0.222*	*0.381*	*0.737*
Marital status (ref. "married/couple")						
Widowed/divorced	1.255***	-3.015***	-2.817***	1.248***	-3.005***	-2.781***
	0.235	*0.452*	*0.494*	*0.234*	*0.452*	*0.493*
Single	0.448	-1.782**	-1.191	0.417	-1.758**	-1.091
	0.398	*0.775*	*0.985*	*0.398*	*0.776*	*0.979*
No children (ref.)						
1-2 children	-0.172	0.131	-0.074	-0.187	0.15	-0.051
	0.21	*0.357*	*0.403*	*(0.209)*	*(0.356)*	*(0.493)*
3+ children	0.328	-0.513	-1.457***	0.319	-0.499	-1.445**
	0.219	*0.396*	*0.548*	*(0.221)*	*(0.398)*	*(0.549)*
No education (ref.)						
low education	-0.294	1.104**	3.219***	-0.321	1.133***	3.306***
	0.25	*0.435*	*0.582*	*(0.249)*	*(0.433)*	*(0.573)*
mid or high education	-0.651**	1.749***	4.009***	-0.658***	1.755***	4.034***
	0.252	*0.473*	*0.628*	*(0.25)*	*(0.469)*	*(0.625)*
_cons	-1.345	80.1***	34.11	-0.837	79.469***	35.07
	9.727	*17.257*	*23.99*	*9.805*	*17.475*	*24.30*
R^2	0.03	0.04	0.05	0.03	0.04	0.05
N	8,407	8,407	8,407	8,407	8,407	8,407

*Note: we report OLS estimates for the GHQ index (ranging from 0 -least distressed- to 36 -most distressed), MCS and PCS index (ranging from 0 – most distressed – to 100 – least distressed). Columns 7 to 9 refer to model (3.3). Columns 10-12 refer to model (3.4), which accounts for heterogeneity by SES, defined according to the National Statistics SEC-3 taxonomy. The SPA postponement is measured as a difference in months between the individual-specific SPA post-reform and the pre-reform threshold of 60 years old. Sample selection: women aged 60-64 between 2009 and 2015, having been engaged in paid work in their life, excluding proxy respondents. Additional controls include fixed effects for age (in quarters), interview year (in quarters), and country and a linear control for year-and-month-of-birth. Standard errors are clustered by year-and-month-of-birth (140 clusters). *<0.10, **<0.05 ***<0.01*

Table 5, effect of State Pension Age postponement on dichotomous GHQ scores

	(13a) GHQ caseness 1	(13b) GHQ caseness 2	(14a) GHQ caseness 1	(14b) GHQ caseness 2
being below SPA	0.067**	0.055**		
	(0.029)	*(0.028)*		
belowSPA * intermediate	-0.047	-0.064**		
	(0.036)	*(0.032)*		
belowSPA * manager	-0.033	-0.048		
	(0.031)	*(0.030)*		
SPA postponement in months			0.002**	0.001*
			(0.001)	*(0.001)*
intermediate*SPA-shift months			-0.001	-0.001
			(0.001)	*(0.001)*
manager* SPA-shift in months			-0.001	-0.001*
			(0.001)	*(0.001)*
routine job (reference)				
intermediate	-0.002	-0.000	-0.003	-0.001
	(0.021)	*(0.019)*	*(0.021)*	*(0.019)*
manager	-0.046**	-0.046***	-0.052***	-0.044**
	(0.018)	*(0.016)*	*(0.018)*	*(0.016)*
R^2	0.03	0.03	0.03	0.03
N	8,407	8,407	8,407	8,407

Note: we report Linear Probability Model coefficients for two dichotomous indices derived from the General Health Questionnaire. The GHQ caseness 1 (columns 13a and 14a) is a dichotomous variable referred to the Likert GHQ index (range: 0-36), taking value 1 for scores higher than 12; the GHQ caseness 2 (columns 13b and 14b) is a dichotomous variable referred to the compact GHQ index (range: 0-12), taking value 1 for scores higher than 2 (Goldberg et al., 1997; Kelly et al., 2008).

*Columns 13a-13b refer to model (3.2). Columns 14a-14b refer to model (3.4). Both models account for heterogeneity by SES, defined according to the National Statistics SEC-3 taxonomy. P-values correspondence: *<0.10, **<0.05 ***<0.01. Standard errors (in italics) are clustered by year-and-month-of-birth (140 clusters). The status of being above/below State Pension Age (SPA) is defined by comparing the individual SPA (based on month-year of birth) and the date of interview. The SPA postponement is measured as a difference in months between the individual-specific SPA post-reform and the pre-reform threshold of 60 years old.*

Sample selection: 8,407 observations on women aged 60-64 between 2009 and 2015, having been engaged in paid work in their life, excluding proxy respondents. Additional controls include fixed effects for age (in quarters), interview year (in quarters), living arrangements and marital status (married, widowed/divorced/separated, single), country, number of children (none, one-two, three or more), education (low, mid or high degree), and a linear control for year-and-month-of-birth.

Table 6, effect of SPA postponement on specific components in GHQ and SF-12 questionnaires

		Effect of being below SPA	
	(i)	(ii)	(iii)
	average	Whole sample	Routine-class
GHQ dichotomous outcomes			
Less concentrated	0.155	0.01	0.029
Loss of sleep	0.167	-0.003	0.013
Not playing useful part in things	0.117	0.038***	0.072***
Uncapable making decision about things	0.085	0.011	0.042**
Feeling constantly under strain	0.197	0.013	0.024
Less able to overcome difficulties	0.121	0.017	0.039**
Less able to enjoy daily activities	0.171	0.031*	0.076***
Less able to face up problems	0.102	0.001	0.018
More unhappy or depressed	0.173	0.023	0.055**
Losing self-confidence	0.127	0.027**	0.049**
Thinking of oneself as worthless	0.065	0.012	0.032*
General happiness	0.12	0.016	0.037*
SF-12 dichotomous outcomes			
Bad Self-reported health	0.239	0.032*	0.093***
Limited in typical activities	0.337	0.018	0.058*
Climbing stairs	0.401	0.010	0.041
Accomplished less in work/activities due to physical health	0.123	0.008	0.058**
Physical health limits kind of work/activities	0.116	0.008	0.051**
Accomplished less due to emotional problems	0.061	0.018*	0.043**
Less careful in work/activities due to emotional problems	0.046	-0.004	0.008
Pain interferes with work/housework	0.160	0.025	0.084***
Not feeling calm peaceful	0.398	0.040*	0.065*
Not having a lot of energy	0.518	0.061***	0.083***
Feeling downhearted/depressed	0.057	0.010	0.029*
Physical/emotional problems limits social activities	0.072	0.008	0.026

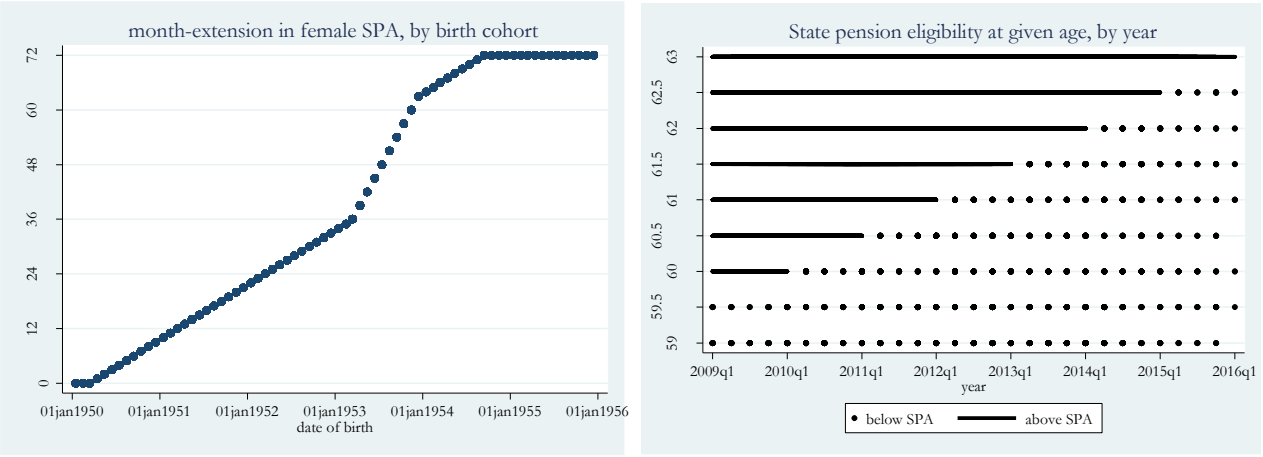
Note: we report results from Linear Probability Model estimates. We estimate the effect of being below SPA on 24 dichotomous outcomes derived from the General Health Questionnaire and SF-12 tools. The coding for each outcome is described in Section 4.1.2.

Each row reports results from a separate regression. Column (i) reports the average prevalence in the sample; Column (ii) reports the effect of being below SPA among the whole sample (model (3.1)); Column (iii) reports the effect of being below SPA for routine-class women (model (3.2)), i.e., the interaction term between the "below SPA" indicator and a dummy for routine category, defined according to the National Statistics SEC-3 taxonomy. The status of being above/below State Pension Age (SPA) is defined by comparing the individual SPA (based on month-year of birth) and the date of interview. We find no statistically significant impact of the reform on any outcome for intermediate and managerial classes (results are available upon request).

*P-values correspondence: *<0.10, **<0.05 ***<0.01. Standard errors (in italics) are clustered by year-and-month-of-birth (140 clusters).*

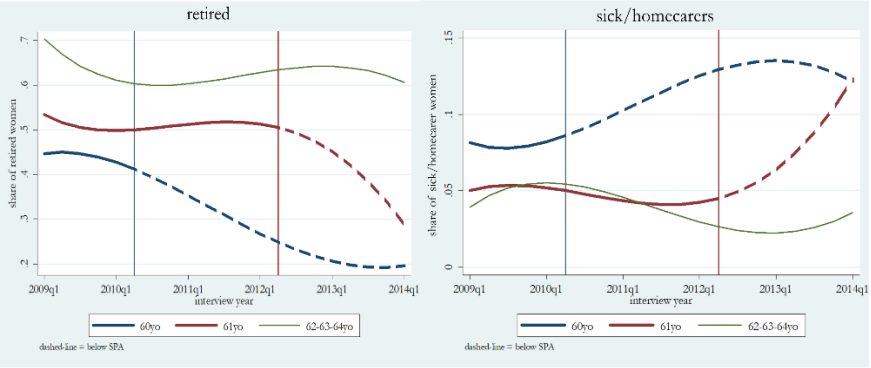
Sample selection: 8,407 observations on women aged 60-64 between 2009 and 2015, having been engaged in paid work in their life, excluding proxy respondents. Additional controls include job classification (routine, intermediate, managerial), fixed effects for age (in quarters), interview year (in quarters), living arrangements and marital status (married, widowed/divorced/separated, single), country, number of children (none, one-two, three or more), education (low, mid or high degree), and a linear control for year-and-month-of-birth.

Figure 1, effects of Pension Acts 1995, 2011 and 2014 on women and men's SPA



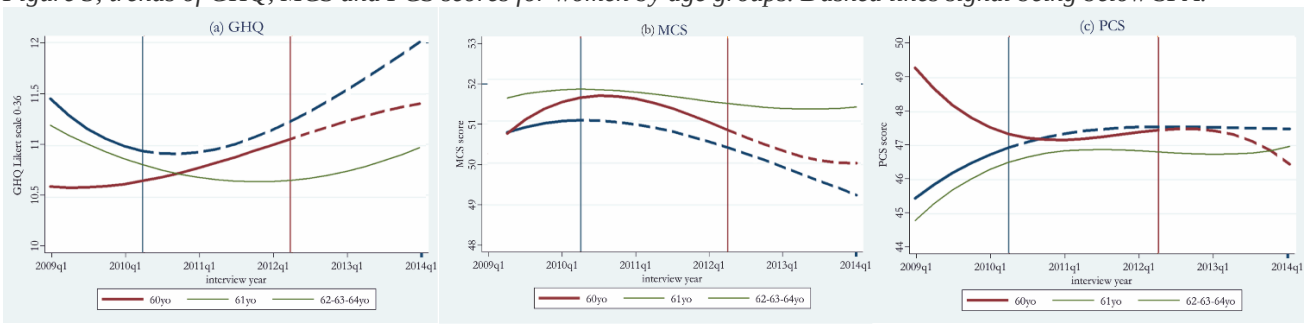
Note: authors calculations based on Pension Act 1995, 2011 and 2014

Figure 2, Share of retired and sick/homecaring/homeworking women by age groups. Dashed lines signal being below SPA



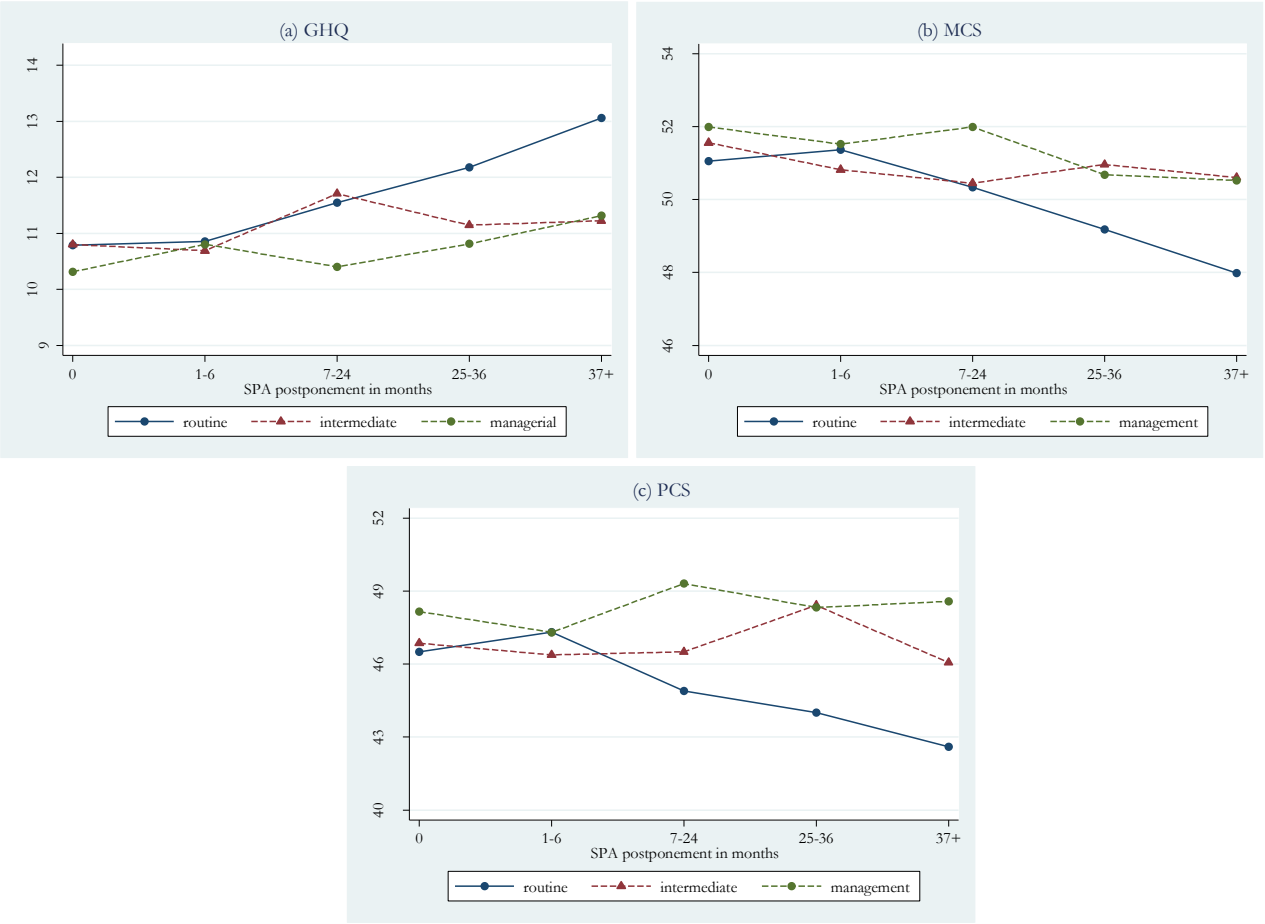
Note: authors calculations from the Understanding Society survey, 6,904 women aged 60-64 between 2009 and March 2014. The condition of being retired, sick/disabled, homecarer/homeworker are self reported.

Figure 3, trends of GHQ, MCS and PCS scores for women by age groups. Dashed lines signal being below SPA.



Note: authors calculations from the Understanding Society survey, 6,904 women aged 60-64 between 2009 and March 2014. Panel (a) illustrates the scores for General Health Questionnaire, whose values range from 0 (least distressed) to 36 (most distressed). Panel (b) and (c) illustrates the scores for the SF-12 Mental Component Score and Physical Component Score, respectively, whose values range from 0 (most distressed) to 100 (most distressed).

Figure 4, Predicted trends for GHQ, MCS and PCS scores by extent of SPA postponement and (last) occupation category



Note: fitted values from OLS (model (3.4)) for the GHQ index (ranging from 0 -least distressed- to 36 -most distressed), MCS and PCS index (ranging from 0 – most distressed – to 100 – least distressed). The model accounts for heterogeneity by SES, defined according to the National Statistics SEC-3 taxonomy. The SPA postponement is measured as a difference in months between the individual-specific SPA post-reform and the pre-reform threshold of 60 years old. Sample selection: 8,407 women aged 60-64 between 2009 and 2015, having been engaged in paid work in their life, excluding proxy respondents. Additional controls include fixed effects for age (in quarters), interview year (in quarters), living arrangements and marital status (married, widowed/divorced/separated, single), country, number of children (none, one-two, three or more), education (low, mid or high degree), and a linear control for year-and-month-of-birth.

8. APPENDIX

8.1 ADDITIONAL TABLES

Table 7, number of observations by age and pension eligibility at interview

	60yo	61yo	62yo	63yo	64yo	Tot
Above SPA at interview	488	1,129	1,584	1,695	1,657	6,553
Below SPA at interview	1,153	597	104	0	0	1,854
Tot	**1,641**	**1,726**	**1,688**	**1,695**	**1,657**	**8,407**

Note: sample of 8,407 observations on women aged 60-64 between 2009 and 2015, having been engaged in paid work in their life, excluding proxy respondents

Table 8, Items in the General Health Questionnaire, Understanding Society Survey

	Question	answer
"Have you recently…"		
1	been able to concentrate on whatever you're doing?	0 Better than usual; 1 Same as usual; 2 Less than usual; 3 Much less than usual
2	lost much sleep over worry?	0 Not at all; 1 No more than usual; 2 Rather more than usual; 3 Much more than usual
3	felt that you were playing a useful part in things?	0 More so than usual; 1 Same as usual; 2 Less so than usual; 3 Much less than usual
4	felt capable of making decisions about things?	0 More so than usual; 1 Same as usual; 2 Less so than usual; 3 Much less than usual
5	felt constantly under strain?	0 Not at all; 1 No more than usual; 2 Rather more than usual; 3 Much more than usual
6	felt you couldn't overcome your difficulties?	0 Not at all; 1 No more than usual; 2 Rather more than usual; 3 Much more than usual
7	been able to enjoy your normal day-to-day activities?	0 More so than usual; 1 Same as usual; 2 Less so than usual; 3 Much less than usual
8	been able to face up to problems?	0 More so than usual; 1 Same as usual; 2 Less so than usual; 3 Much less than usual
9	been feeling unhappy or depressed?	0 Not at all; 1 No more than usual; 2 Rather more than usual; 3 Much more than usual
10	been losing confidence in yourself?	0 Not at all; 1 No more than usual; 2 Rather more than usual; 3 Much more than usual
11	been thinking of yourself as a worthless person?	0 Not at all; 1 No more than usual; 2 Rather more than usual; 3 Much more than usual
12	been feeling reasonably happy, all things considered?	0 More so than usual; 1 Same as usual; 2 Less so than usual; 3 Much less than usual

Note: data taken from Understanding Society questionnaires

Table 9, items in the SF-12 questionnaire, Understanding Society Survey

	Question	answer
1	In general, would you say your health is...	Excellent; Very good; Good; Fair; Poor
2	Does your health now limit you in moderate activities (moving a table/a vacuum cleaner,..)	Yes, limited a lot; Yes, limited a little; No, not limited at all
3	Does your health now limit you in climbing several flights of stairs	Yes, limited a lot; Yes, limited a little; No, not limited at all
4	During the past 4 weeks, how much of the time have you accomplished less than you would like due to your physical health	All/Most/Some/A little/None of the time
5	During the past 4 weeks, how much of the time were you limited in the kind of work/ activities you do due to your physical health?	All/Most/Some/A little/None of the time
6	During the past 4 weeks, how much of the time have you accomplished less than you would like as a result of any emotional problems, such as feeling depressed or anxious?	All/Most/Some/A little/None of the time
7	During the past 4 weeks, how much of the time did you do work/activities less carefully than usual as a result of any emotional problems?	All/Most/Some/A little/None of the time
8	During the past 4 weeks, how much did pain interfere with your normal work, including both work outside the home and housework?	Not at all; A little bit; Moderately; Quite a bit; Extremely
9	How much of the time during the past 4 weeks have you felt calm and peaceful?	All/Most/Some/A little/None of the time
10	How much of the time during the past 4 weeks did you have a lot of energy?	All/Most/Some/A little/None of the time
11	How much of the time during the past 4 weeks have you felt downhearted/depressed?	All/Most/Some/A little/None of the time
12	During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities like visiting friends or relatives?	All/Most/Some/A little/None of the time

Note: data taken from Understanding Society questionnaires

Table 10, employment and income effects of State Pension Age postponement, full results

	(16) In paid work	(17) Sick / disabled	(18) Home - carer	(19) Net m. indiv. income £	(20) In paid work	(21) Sick / disabled	(22) Home - carer	(23) Net m. indiv. income £
being below SPA	0.112***	0.057***	0.029***	-220.1***	0.086***	0.136***	0.043***	-261.7***
	(0.023)	*(0.008)*	*(0.009)*	*(47.39)*	*(0.032)*	*(0.016)*	*(0.016)*	*(50.8)*
belowSPA* intermediate	-	-	-	-	0.070	-0.112***	-0.006	-7.048
					(0.042)	*(0.02)*	*(0.022)*	*(62.28)*
belowSPA* manager	-	-	-	-	0.018	-0.131***	-0.033**	115.6*
					(0.044)	*(0.018)*	*(0.014)*	*(62.3)*
routine job (ref.)								
intermediate	0.003	-0.024***	-0.024	133.5***	0.011	-0.001	-0.001	134.8***
	(0.026)	*(0.006)*	*(0.006)*	*(27.46)*	*(0.025)*	*(0.005)*	*(0.006)*	*(31.14)*
manager	-0.071***	-0.025***	-0.016**	490.5***	-0.074***	-0.003	-0.008	462.5***
	(0.024)	*(0.006)*	*(0.007)*	*(32.15)*	*(0.026)*	*(0.005)*	*(0.007)*	*(35.98)*
Mar. status w.r.to "married/couple"								
Widowed/divorce	-0.009	0.032***	-0.025***	391.1***	-0.009	0.031***	-0.025***	392.1***
	(0.019)	*(0.006)*	*(0.005)*	*(28.69)*	*(0.018)*	*(0.006)*	*(0.005)*	*(28.66)*
Single	-0.064	0.052***	-0.029***	271.9***	-0.063	0.048***	-0.030***	*275.4***
	(0.043)	*(0.016)*	*(0.006)*	*(73.1)*	*(0.041)*	*(0.015)*	*(0.006)*	*(73.51)*
No children (ref.)								
1-2 children	-0.049***	0.007*	-0.004	-102.3***	-0.049***	0.005	-0.005	-101.7***
	(0.019)	*(0.004)*	*(0.003)*	*(28)*	*(0.019)*	*(0.004)*	*(0.005)*	*(27.91)*
3+ children	-0.035	0.014**	0.003	-78.02**	-0.036	0.014**	0.003	-77.21**
	(0.024)	*(0.006)*	*(0.008)*	*(35.47)*	*(0.023)*	*(0.006)*	*(0.007)*	*(35.48)*
No education (ref.)								
low education	0.142***	-0.025***	-0.014*	130.6***	0.142***	-0.017***	-0.015*	133***
	(0.024)	*(0.008)*	*(0.007)*	*(27.49)*	*(0.023)*	*(0.008)*	*(0.008)*	*(27.64)*
Mid/high educ	0.206***	-0.014**	-0.023**	371.4***	0.205***	-0.035***	-0.023**	373.8***
	(0.027)	*(0.006)*	*(0.009)*	*(34.75)*	*(0.025)*	*(0.008)*	*(0.009)*	*(34.47)*
_cons	1.442*	0.403	0.211	2157*	1.454*	0.376	0.207	2176*
	(0.757)	*(0.294)*	*(0.27)*	*(1279)*	*(0.758)*	*(0.289)*	*(0.27)*	*(1276)*
R^2	0.08	0.06	0.03	0.18	0.08	0.08	0.03	0.18
N	8,407	8,407	8,407	8,407	8,407	8,407	8,407	8,407

*Note: we report Linear Probability Model coefficients for outcomes in columns 16-18 and 20-22; OLS coefficients for outcomes in column 19 and 23. Columns 16-19 analyse the effect of being below SPA among the whole sample, see model (3.1). Columns 20-23 analyse the effect of being below SPA, including interaction terms with occupation categories (routine, intermediate and managerial), see model (3.2). The status of being above/below State Pension Age (SPA) is defined by comparing the individual SPA (based on month-year of birth) and the date of interview. The job classification follows the National Statistics SEC-3 taxonomy. P-values correspondence: *<0.10, **<0.05 ***<0.01. Standard errors (in italics) are clustered by year-and-month-of-birth (140 clusters). The net monthly individual income is measured in 2015 Pounds. Sample selection: 8,407 observations on women aged 60-64 between 2009 and 2015, having been engaged in paid work in their life, excluding proxy respondents. Additional controls include fixed effects for age (in quarters), interview year (in quarters), and country and a linear control for year-and-month-of-birth.*

Table 11, effect of State Pension Age postponement on health scores, for women aged 60-62

	(24) GHQ	(25) MCS	(26) PCS	(27) GHQ	(28) MCS	(29) PCS
being below SPA	1.082***	-1.430**	-1.278*			
	(0.408)	*(0.624)*	*(0.779)*			
belowSPA * intermediate	-1.125***	0.877	2.328**			
	(0.427)	*(0.706)*	*(1.045)*			
belowSPA * manager	-0.736*	0.443	2.467**			
	(0.403)	*(0.691)*	*(1.089)*			
SPA postponement in months				0.039***	-0.059**	-0.043
				(0.015)	*(0.026)*	*(0.033)*
SPA postpon.*intermediate				-0.025**	0.025	0.059**
				(0.011)	*(0.019)*	*(0.028)*
SPA postpon.*managerial				-0.018*	0.012	0.071***
				(0.010)	*(0.016)*	*(0.027)*
routine job (reference)						
intermediate	-0.042	0.782	0.648	0.014	0.727	0.564
	(0.283)	*(0.513)*	*(0.835)*	*(0.288)*	*(0.537)*	*(0.891)*
managerial	-0.614***	1.486***	2.132**	-0.621**	1.483***	1.902**
	(0.271)	*(0.454)*	*(0.839)*	*(0.287)*	*(0.483)*	*(0.893)*
R^2	0.04	0.05	0.06	0.04	0.05	0.06
N	5,054	5,054	5,054	5,054	5,054	5,054

*Note: we report OLS estimates for the GHQ index (ranging from 0 -least distressed- to 36 -most distressed), MCS and PCS index (ranging from 0 – most distressed – to 100 – least distressed). Columns 24 to 26 refer to model (3.2). Columns 27-29 refer to model (3.4). The status of being above/below State Pension Age (SPA) is defined by comparing the individual SPA (based on month-year of birth) and the date of interview. The SPA postponement is measured as a difference in months between the individual-specific SPA post-reform and the pre-reform threshold of 60 years old. The socio-economic classification follows the National Statistics SEC-3 taxonomy. P-values correspondence: *<0.10, **<0.05 ***<0.01. Standard errors (in italics) are clustered by year-and-month-of-birth (140 clusters).*
Sample selection: women aged 60-62 between 2009 and 2015, having been engaged in paid work in their life, excluding proxy respondents. Additional controls include fixed effects for age (in quarters), interview year (in quarters), living arrangements and marital status (married, widowed/divorced/separated, single), country, number of children (none, one-two, three or more), education (low, mid or high degree), and a linear control for year-and-month-of-birth.

Table 12, effect of State Pension Age postponement on health scores, excluding those who stopped working before 1999

	(30) GHQ	(31) MCS	(32) PCS	(33) GHQ	(34) MCS	(35) PCS
being below SPA	1.014***	-1.299**	-1.531**			
	(0.389)	*(0.593)*	*(0.694)*			
belowSPA * intermediate	-0.845**	0.711	2.301**			
	(0.416)	*(0.709)*	*(0.945)*			
belowSPA * manager	-0.788**	0.573	2.376***			
	(0.393)	*(0.699)*	*(0.864)*			
SPA postponement in months				0.029***	-0.035*	-0.055**
				(0.011)	*(0.019)*	*(0.023)*
SPA postpon.*intermediate				-0.019*	0.021	0.058**
				(0.011)	*(0.019)*	*(0.026)*
SPA postpon.*managerial				-0.021**	0.019	0.073***
				(0.010)	*(0.017)*	*(0.023)*
routine job (reference)						
intermediate	-0.008	0.401	0.370	-0.001	0.350	0.294
	(0.221)	*(0.387)*	*(0.645)*	*(0.225)*	*(0.406)*	*(0.673)*
manager	-0.555**	1.01**	2.172***	-0.517**	0.942**	1.936***
	(0.235)	*(0.416)*	*(0.674)*	*(0.245)*	*(0.432)*	*(0.702)*
R^2	0.03	0.04	0.04	0.03	0.04	0.04
N	7,456	7,456	7,456	7,456	7,456	7,456

Note: we report OLS estimates for the GHQ index (ranging from 0 -least distressed- to 36 -most distressed), MCS and PCS index (ranging from 0 – most distressed – to 100 – least distressed). Columns 30 to 32 refer to model (3.2). Columns 33-35 refer to model (3.4). The socio-economic classification follows the National Statistics SEC-3 taxonomy. The status of being above/below State Pension Age (SPA) is defined by comparing the individual SPA (based on month-year of birth) and the date of interview. The SPA postponement is measured as a difference in months between the individual-specific SPA post-reform and the pre-reform threshold of 60 years old.
*P-values correspondence: *<0.10, **<0.05 ***<0.01. Standard errors (in italics) are clustered by year-and-month-of-birth (140 clusters).*
Sample selection: 7,456 women aged 60-64 between 2009 and 2015, having been engaged in paid work in their life before 1999, excluding proxy respondents. Additional controls include fixed effects for age (in quarters), interview year (in quarters), living arrangements and marital status (married, widowed/divorced/separated, single), country, number of children (none, one-two, three or more), education (low, mid or high degree), and a linear control for year-and-month-of-birth.

Table 13, effect of State Pension Age postponement on health scores, standard errors clustered at individual level

	(36) GHQ	(37) MCS	(38) PCS	(39) GHQ	(40) MCS	(41) PCS
being below SPA	1.116***	-1.488**	-2.084*			
	(0.362)	*(0.646)*	*(0.817)*			
belowSPA * intermediate	-1.131***	1.18	2.601***			
	(0.439)	*(0.750)*	*(0.987)*			
belowSPA * manager	-0.818**	0.783	2.670***			
	(0.395)	*(0.715)*	*(0.912)*			
SPA postponement in months				0.032***	-0.041**	-0.071***
				(0.011)	*(0.021)*	*(0.026)*
SPA postpon.*intermediate				-0.025**	0.032	0.064**
				(0.011)	*(0.020)*	*(0.026)*
SPA postpon.*managerial				-0.021**	0.022	0.077***
				(0.010)	*(0.019)*	*(0.024)*
routine job (reference)						
intermediate	0.053	0.358	0.471	0.058	0.296	0.39
	(0.232)	*(0.412)*	*(0.6)*	*(0.242)*	*(0.430)*	*(0.628)*
manager	-0.570**	1.026**	2.034***	-0.536**	1.979**	1.835***
	(0.236)	*(0.430)*	*(0.613)*	*(0.248)*	*(0.445)*	*(0.639)*
R^2	0.03	0.04	0.05	0.03	0.04	0.06
N	8,407	8,407	8,407	8,407	8,407	8,407

*Note: we report OLS estimates for the GHQ index (ranging from 0 -least distressed- to 36 -most distressed), MCS and PCS index (ranging from 0 – most distressed – to 100 – least distressed). Columns 36 to 38 refer to model (3.2). Columns 39-41 refer to model (3.4). The status of being above/below State Pension Age (SPA) is defined by comparing the individual SPA (based on month-year of birth) and the date of interview. The SPA postponement is measured as a difference in months between the individual-specific SPA post-reform and the pre-reform threshold of 60 years old. The socioeconomic classification follows the National Statistics SEC-3 taxonomy. P-values correspondence: *<0.10, **<0.05 ***<0.01. Standard errors (in italics) are clustered by individual (3,452 clusters).*
Sample selection: 8,407 observations on women aged 60-64 between 2009 and 2015, having been engaged in paid work in their life, excluding proxy respondents. Additional controls include fixed effects for age (in quarters), interview year (in quarters), living arrangements and marital status (married, widowed/divorced/separated, single), country, number of children (none, one-two, three or more), education (low, mid or high degree), and a linear control for year-and-month-of-birth.

Table 14, effect of State Pension Age postponement on health scores, with alternative controls for age-year

	(42) GHQ	(43) MCS	(44) PCS	(45) GHQ	(46) MCS	(47) PCS
being below SPA	1.054***	1.731***	-1.883**			
	(0.391)	*(0.576)*	*(0.790)*			
belowSPA * intermediate	-1.116***	1.139*	2.948***			
	(0.405)	*(0.670)*	*(0.934)*			
belowSPA * manager	-0.819**	0.763	2.862***			
	(0.373)	*(0.665)*	*(0.983)*			
SPA postponement in months				0.065***	-0.127**	-0.021
				(0.023)	*(0.042)*	*(0.076)*
SPA postpon.*intermediate				-0.024**	0.029*	0.071**
				(0.011)	*(0.018)*	*(0.026)*
SPA postpon.*managerial				-0.020**	0.021	0.080***
				(0.01)	*(0.016)*	*(0.024)*
routine job (reference)						
intermediate	0.065	0.313	0.461	0.077	0.238	0.409
	(0.235)	*(0.410)*	*(0.720)*	*(0.242)*	*(0.430)*	*(0.748)*
manager	-0.560**	0.993***	2.001***	-0.523**	0.937**	1.822**
	(0.214)	*(0.369)*	*(0.717)*	*(0.224)*	*(0.388)*	*(0.747)*
R^2	0.03	0.04	0.06	0.03	0.04	0.05
N	8,407	8,407	8,407	8,407	8,407	8,407

*Note: we report OLS estimates for the GHQ index (ranging from 0 -least distressed- to 36 -most distressed), MCS and PCS index (ranging from 0 – most distressed – to 100 – least distressed). Columns 24 to 26 refer to model (3.2). Columns 27-29 refer to model (3.4). The status of being above/below State Pension Age (SPA) is defined by comparing the individual SPA (based on month-year of birth) and the date of interview. The SPA postponement is a distance measured in months between the individual-specific SPA post-reform and the pre-reform threshold of 60 years old. The socioeconomic classification follows the National Statistics SEC-3 taxonomy. P-values correspondence: *<0.10, **<0.05 ***<0.01. Standard errors (in italics) are clustered by year-and-month-of-birth (140 clusters).*

Sample selection: women aged 60-62 between 2009 and 2015, having been engaged in paid work in their life, excluding proxy respondents. Additional controls include a 2nd order polynomial for age (in quarters), fixed effects for interview year (in quarters), birth-year, living arrangements and marital status (married, widowed/divorced/separated, single), country, number of children (none, one-two, three or more), education (low, mid or high degree).