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Is an early retirement offer good for your health? Quasi-experimental evidence from the army☆

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ABSTRACT

This paper studies empirically the consequences on health of an early retirement offer. To this end we use a targeted retirement offer to military officers 55 years of age or older. Before the offer was implemented, the normal retirement age in the Swedish defense was 60 years of age. Estimating the effect of the offer on individuals' health within the age range 56–70, we find support for a reduction in both mortality and in inpatient care as a consequence of the early retirement offer. Increasing the mandatory retirement age may thus not only have positive government income effects but also negative effects on increasing government health care expenditures.

1. Introduction

Demographic projections clearly show that the population in most OECD countries is ageing, and that the working-age population as a share of the total population will decrease. This development will exert pressure on government budgets. This is both because a larger fraction of elderly people will create greater demand for welfare services and also because each potential taxpayer will have more non-workers to support. As a consequence, most OECD countries are undertaking measures to prolong the careers of older workers. However, a natural question – which has been largely overlooked by policy makers – concerns the effect of postponing retirement, on individual well-being and, in particular, on health. Unfavorable (or favorable) effects from retirement timing on health may not only influence individual wellbeing, but also have direct effects on health care costs in society.

A small piece of evidence is provided in this paper in which we estimate the effects on health of a targeted early retirement offer, implemented during 1992–1994, to military officers 55 years of age or older. Before this offer was instigated, the normal retirement age was 60 years of age for regular military officers. The motivation behind the targeted retirement offer was the need to rejuvenate the staff in order to better serve the future needs of the Swedish defense. As a result, early retirement was offered to military officers 55 years of age or older. The effect of the offer is estimated by examining their subsequent health in ages 56–70. The identification strategy is based on cohort variation in the timing of the offer and as health measurements we use number of days of inpatient care and mortality. The main analysis makes use of the cohorts born

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1938–1939 who are fully affected (already at age 55) by the offer. We utilize the cohorts born 1931–1932, who is not affected, in the estimation of the counterfactual health of those born 1938–1939. In order to control for secular trends in schooling, nutrition (i.e., early childhood difference at the cohort level), health care technology, and general period effects we use other central government employees of the same ages who were not affected by the early retirement offer. Estimation is thus performed using difference-in-difference regression models, which also allow us to control for pre-reform characteristics of the individuals.[1]

The results show that the targeted offer increased early retirement and decreased market work substantially in age 55–59. We find that the opportunity to retire early reduced the number of days of inpatient care. The results are robust to the model specification. We also find a lower risk of mortality for those who were offered the chance to retire early from the army.

From a heterogeneity analysis we find a greater reduction in inpatient care days for those with low pre-retirement incomes and low education. One interpretation of this could be that the effect is linked to less stress and less exposure to workplace hazards. A second heterogeneity analysis, using different causes of death and number of days in inpatient care due to different diagnoses, gives some support to a reduced risk of dying from acute myocardial infarction.

The rest of the paper is structured as follows. Section 2 provides a discussion of the earlier literature. Section 3 gives a brief presentation of the Swedish pension system. Section 4 describes the early retirement reform. Section 5 discusses the methodological framework, the data analyzed in this study, and the sample selections made. Section 6 provides the analyses. Section 7 discusses the findings regarding effects of retirement on health. Section 8 concludes the study.

2. Earlier literature

Cross-sectional analyses usually find that those who retire early have worse post-retirement health. Taking these studies as evidence of a positive effect on the health of later retirement suggests a "win-win" situation of prolonging or extending retirement age in the population. However, the results from cross-sectional studies are questionable, as individual decisions to retire are most likely influenced by health reasons. That is, the population that retires early has worse health in general than the population that retires later.

Now, though, there is an emerging literature, using data from both Europe and the US, that deals with the potential problem of selection that uses longitudinal data and quasi-experimental designs (e.g., Neuman, 2007; Bound and Waidmann, 2008; Coe and Lidboom, 2008; Westerlund et al., 2009; Vahtera et al., 2009; Coe and Zamarro, 2011; Hernaes et al., 2013; Kuhn et al., 2010; Bloemen et al., 2013). The general result from these studies suggests a positive effect of early retirement on health, at least when self-reported measures on health are used to assess health. For instance, the longitudinal studies by Westerlund et al. (2009) and Vahtera et al. (2009) find positive effects based on self-reported health measures on mental and physical fatigue, depressive symptoms, and a decrease in sleep disturbances. However, studies using self-reported health measures in a longitudinal design may also have problems, since answers to questions about health may vindicate the active choice of retiring. Using the same data as in Westerlund et al. (2009) and Vahtera et al. (2009),[2] Westerlund et al. (2010) could not, for instance, find a positive effect of retirement on respiratory diseases, diabetes, coronary heart disease, or stroke.

An exception to the general quasi-experimental design result is Kuhn et al.'s study (2010), which finds negative effects on health (measured as mortality before age 67) of early retirement for men. In the estimation, the researchers exploit changes in unemployment rules that allowed workers to retire early in some regions in Austria. Coe and Lidboom (2008) find a positive effect on self-reported health. Their empirical analysis takes use of an offer of early retirement from the employer as an instrument for actual retirement. Hernaes et al. (2013) use a series of retirement policy changes in Norway, which reduced the retirement age for one group of workers but not for others. They find no effect on mortality of retirement age. Coe and Zamarro (2011) use European cross-national data and exploit country variation in legislated (normal) pension age and legislated early retirement age as instruments for retiring. They find positive effects on health from retirement. Charles (2002) and Neuman (2007) use the incentives imbedded in the US Social Security regulations at certain ages, as an exogenous shift in retirement probability. The identifying assumption is hence that there are no sudden changes in health at those ages for reasons other than retirement. Charles (2002) finds a positive effect on mental well-being. Neuman (2007) finds a positive effect on subjective health but no effect on objective measures. Bound and Waidmann (2008) employ a similar method to institutional features in the UK pension system, thus finding an indication of a positive health effect of retirement for men. Bloemen et al. (2013) focus on a group of civil servants who became eligible for retirement earlier than expected during a short time window. They find that early retirement decreased mortality for men.

This study and similar studies of the effects of retirement on subsequent health relate closely to the field of literature (by now, quite large) on the health effects of job loss (e.g., Eliason and Storrie, 2009a,b; Eliason, 2011; Browning and Heinesen, 2012; Black et al., 2013). All things considered, the evidence suggests that there are considerable adverse health effects from losing a job and becoming unemployed. However, for several reasons, the effects of unemployment most likely differ from the effects of (voluntary) retirement. First, unlike unemployment, retirement is likely to have a smaller impact on the disposable income, especially in the long run. That is, income loss due to early retirement presumably has a smaller effect on income later in life than (long-term) unemployment. The early retirement program investigated in this study left the retirement income at normal retirement age unchanged, given that the individual had a full record of 30 years of service. Second, one can assume that it is much more stressful to become unemployed than to enter retirement, since being unemployed may impose a social stigma different from that of retirement. Unplanned "retirement" (via unemployment) may furthermore be stressful because of uncertainty about the future, which in turn may reduce the possibility to invest in one's own health.

3. The Swedish pension system[3]

The public pension system for the cohorts under study was mainly[4] a defined benefit scheme consisting of a flat-rate basic pension and an income-related supplementary pension based on the

[1] In an extended analysis we also include cohorts 1934–1937 who are affected to a different degree by the offer. The results from this analysis strengthen the results from the more transparent and clean difference-in-difference framework used in the main analysis.

[2] That is, the French Gazel cohort. This is a yearly panel that includes, among others, self-reported measures on health 7 years before to 7 years after retirement at the age of 55–60.

[3] A more detailed description of the Swedish institutions is provided in Hallberg et al. (2014).

[4] In 1998, a new pension scheme was phased in. Individuals born 1938–1953 are in both the new and the old schemes. Those born 1938 had 16/20 (those born 1939