Postponing Retirement Age: Are People with Health Issues More at Risk to Be 'Neither Employed nor Retired'? Evidence from France.

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Abstract.

Background. In response to population ageing, many OECD countries have raised statutory retirement ages to sustain their pension systems. In France, the 2010 pension reform unexpectedly increased the statutory eligibility age (SEA) from 60 to 62. While it extended working lives, it also led to more early exits through unemployment, disability pensions, and inactivity, grouped under the category "Neither Employed Nor Retired" (NENR). This study investigates whether such effects differed by health status, focusing on histories of depression, osteoarticular diseases (OSD), and cardiovascular diseases (CVD), which are strongly linked to disability and early labor market exit. **Methods.** We use administrative records from the French National Pension Fund (CNAV), linked with medical data from the CONSTANCES cohort. A difference-in-differences (DiD) design is applied to cohorts born between 1948 and 1953 (22,324 individuals), comparing employment, NENR, and retirement rates between those unaffected by the reform (born before July 1951) and those affected (born after). Interactions between disease histories and the DiD estimator test for heterogeneous effects. **Results.** Before the reform, individuals with either history of depression, OSD, and CVD were less likely to be employed and more likely to be NENR prior to retirement. The reform increased employment around age 60 but also raised rates of NENR, with stronger effects among individuals with disease histories. The interaction between depression and a higher likelihood of NENR remained robust across multiple checks. **Conclusion.** Health plays a key role in shaping responses to postponed retirement ages. Depression, in particular, deserves targeted consideration in policy design.

Context.

Population ageing has become a central policy concern in OECD countries, where the share of adults aged 65 and over continues to rise (OECD, 2025). In France, this group is expected to reach 28% of the population by 2050 (Bonnet et al., 2021). These demographic changes raise major challenges for public finances, through rising demand for health care and long-term care (Belmonte et al., 2023; Jones & Dolsten, 2024), and increased pressure on pension systems. In response, many OECD countries, including France, have raised statutory and full-rate retirement ages to extend working lives (OECD, 2023).

While these reforms have lengthened employment durations among older workers (Pilipiec et al., 2021), some also increased early exits through alternative pathways such as unemployment, such as disability pensions, or inactivity, grouped under the category "Neither Employed Nor Retired" (NENR) (Zemmour, 2024). In France, 11% of adults aged 53–69 were classified as NENR in

2015 (D'Isanto et al., 2018). This trend contrasts with the policy objective of extending working lives and highlights the need to understand the factors driving such responses.

Previous research has shown that reactions to pension reforms vary across gender, education, and occupational groups (Emmerson et al., 2022; Staubli & Zweimüller, 2013). However, the role of health has been less examined, despite being a central determinant of employment at older ages. Chronic diseases are particularly relevant in this context, as their prevalence rises with age and they often entail long-term functional limitations that reduce work ability. Musculoskeletal disorders (MSD), cardiovascular diseases (CVD), and depression are among the most common chronic conditions in mid-adulthood and have been consistently associated with early withdrawal from employment (Kouwenhoven-Pasmooij et al., 2016; Olesen et al., 2012). It is therefore relevant to examine whether these specific conditions contribute to the higher likelihood of being out of employment prior to retirement in the context of pension reforms extending working lives.

The unequal prevalence of these diseases across gender and occupations is also notable: women face higher prevalence of MSD and depression (Nusselder et al., 2019), and MSD and CVD are more frequent among manual and low-skilled workers exposed to physical strain and occupational risks (Govaerts et al., 2021). Analysing the association of MSD, CVD, and depression with employment outcomes can thus help assess whether gender and social differences in responses to pension reforms are partly explained by differences in health status.

This study examines heterogeneity in responses to the 2010 French pension reform according to individuals' health histories with depression, osteoarticular diseases (OSD, a type of MSD), and CVD. The 2010 reform, which unexpectedly raised the statutory eligibility age (SEA) gradually from 60 to 62 for cohorts born after July 1951, provides a relevant quasi-experimental setting to identify behavioral adjustments around retirement thresholds (Caroli et al., 2023). Previous studies showed that the reform increased employment around age 60 but also led to higher rates of NENR statuses before retirement (Dubois & Koubi, 2017; Rabaté & Rochut, 2017; Zemmour, 2024). However, potential differences in these responses by health status remain unexplored.

In this analysis we leverage administrative data from the French National Pension Fund ("*Caisse nationale d'assurance vieillesse"*- CNAV) and medical data from the French CONSTANCES cohort. A difference-in-differences (DiD) approach is applied to cohorts born between 1948 and 1953 to estimate how the increase in the SEA affected employment, retirement, and NENR outcomes, and to test whether these effects varied across individuals with and without prior histories of depression, OSD, and CVD.

Data source.

The analysis relies on two linked data sources: the French CONSTANCES cohort and administrative pension records from the CNAV.

CONSTANCES is a large population-based cohort of adults aged 18–69, recruited since 2012 from the national health insurance system, which covers more than 85% of the French population. It provides detailed information on participants' socioeconomic characteristics, health status, and medical histories, collected through questionnaires and standardized health examinations. Employment information is drawn from CNAV records, which track individuals' employment and contribution histories through the *Système national de gestion des carrières* (SNGC). These data include all periods of activity contributing to old-age insurance, including

employment, unemployment, sickness, disability, and other validated quarters, and identify the year in which a retirement pension is first claimed.

The analytical sample of this work includes CONSTANCES participants born between 1948 and 1953 with complete information and available CNAV records between ages 55 and 65, yielding 22,324 individuals and 245,464 person-year observations.

Variables.

Annual activity status is classified into three mutually exclusive categories: *Employed*, *Neither Employed Nor Retired (NENR)*, and *Retired*. A year is coded as "Retired" when the individual claims and starts receiving a retirement pension. Otherwise, a year is coded as "NENR" when at least two quarters corresponded to unemployment, disability, or inactivity, and as "Employed" when more than two quarters were validated through work or equivalent contributions.

Health histories are derived from CONSTANCES medical data, where participants reported whether they had ever been diagnosed with predefined conditions and indicated the age at diagnosis. The study focuses on histories of depression, CVD and OSD between ages 40 and 55. Socio-demographic controls include gender, highest educational attainment (five categories) and nationality (French since birth, French by acquisition, or foreigner).

Methods.

Treatment and control groups are firstly defined based on the reform's implementation thresholds. Cohorts born before July 1st 1951 serve as the control group (unaffected by the increase in the SEA), while those born between July1st 1951 and 1953 form the treatment group (SEA raised from 60 to 61). Restricting the analysis to adjacent cohorts ensures comparability.

Descriptive trends in employment, NENR, and retirement are first examined between ages 55 and 62 for both groups to examine pre-trends, and stratified by history with depression, OSD, and CVD, to explore differences across health histories. The main empirical analysis then estimates the impact of the reform at using the DiD design adopted in previous works with linear models (Rabaté & Rochut, 2017). Heterogeneity is analysed by interacting disease histories with the DiD estimators (one model per disease).

Overview of main results.

Before the reform, individuals with a history of depression, OSD, or CVD exhibited lower employment rates and higher NENR rates compared to those without such conditions. Excluding health variables, the DiD results align with previous findings (Rabaté & Rochut, 2017):the 2010 reform significantly increased the probability of being employed at age 60, but also increased the probability of being NENR at this age. This dual effect is observed when comparing treated individuals with controls.

Heterogeneity analysis further confirms that the reform's impact differed by health status. The increase in the probability of being NENR at age 60 was significantly larger among individuals with a history of depression prior to age 55 than among those without. This result remained robust across alternative specifications (excluding edge cohorts, modifying the NENR definition, or adjusting thresholds). For OSD and CVD, interaction terms with the DiD estimator were significant in the baseline model but not consistently robust across alternative specifications.

Discussion.

These findings highlight the importance of accounting for health status, particularly histories of depression, osteoarticular, and cardiovascular diseases, when evaluating the labor market impacts of pension reforms. Depression was the only condition with a consistently robust effect, suggesting that mental health plays a distinctive role in shaping labor market responses to increases in retirement ages.

The French pension system offers specific pathways for individuals whose physical health limits work capacity, including early retirement schemes for those officially recognized as disabled or unfit for work. However, comparable provisions for mental health conditions remain limited. Individuals affected by depression may struggle to remain employed but have limited access to health-related early retirement, leaving them caught between employment and retirement. Given the higher prevalence of depressive disorders among women and their strong association with both activity and employment restrictions, these findings may also contribute to understanding gender differences in responses to pension reforms.

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