



# The retirement age and the hiring of senior workers<sup>☆</sup>

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## ABSTRACT

This paper examines the effect of decreasing the distance to the minimum legal retirement age on the hiring of senior workers. Using variation brought about by a comprehensive old-age public pension reform in Norway in 2011, I identify a positive effect on the hiring of senior workers. The results suggest that the increase was mainly caused by a positive shift in the demand for “risky” senior workers (workers with prior sick-leave and blue-collar workers). This lends support to the notion that risk-averse firms are more willing to hire senior workers when the minimum legal retirement age is decreased.

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## 1. Introduction

In light of increased longevity and the need to extend working lives, reforms of old-age public pension systems are on the agenda for many OECD countries (OECD, 2015). In reforming these systems, policymakers can (somewhat simplified) choose from a limited policy menu consisting of: (i) the flexibility approach, allowing for flexible pension benefit claiming while also strengthening the incentives for continued work, and (ii) the prescription approach, increasing the minimum legal retirement age (LRA).<sup>1</sup> The main contribution of this paper is to illustrate that implementing the flexibility approach can lead to a positive effect on the demand for senior workers through increased hiring. To show this, I consider a comprehensive reform of the Norwegian old-age public pension system in 2011. The Norwegian reform followed the flexibility approach, and the policy discontinuity induced by reducing the minimum LRA from age 67 to age 62 in private sector firms without early retirement schemes allows me to identify a (positive) causal effect of decreasing the distance to the minimum LRA on the hiring of senior workers.

One possible explanation why decreasing the distance to the minimum LRA leads to increased hiring of senior workers relates to the argument made by Lazear (1979). Any firm considering a senior applicant to a vacancy must take into account both the applicant's perceived

current productivity and the expected productivity in the future. While these two factors may be accurately probed at the time of hire, there may be a high downside risk that the senior worker will be subject to a negative productivity shock after the time of hire. The combination of strict employee protection legislation and the limited outside labor market opportunities for senior workers means that the firm may then be left with an “expensive” worker in terms of the wage-productivity differential. It is only when the worker qualifies for pension benefits and can withdraw from the labor market that the firm is relieved of this negative lock-in effect. Lowering the minimum LRA (as in the Norwegian reform) facilitates for the senior worker to withdraw from the labor market earlier than before. As such, reducing the distance to the minimum LRA reduces the firm's exposure to the downside risk of hiring a senior worker and could therefore increase its propensity to hire senior workers. In addition, we would expect that lowering the minimum LRA would affect different groups of senior workers differently according to the risk associated with hiring them. At the same time, the lowering of the minimum LRA in the Norwegian reform was accompanied by an actuarial adjustment of pension benefits. This means that while there was now a possibility for workers to retire earlier than before (e.g. due to a negative health shock), there were no changes in the economic incentives to do so. For the hiring firm, the reform therefore reduced the risk of a negative lock-in effect while keeping the expected length of the employment relationship the same.

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<sup>1</sup> By the minimum legal retirement age (LRA), I mean the earliest age at which a senior worker can claim old-age public pension benefits conditional on having sufficient individual pension benefit accrual.

The estimation results accord well with this story. A difference-in-difference approach indicates that the reform increased the probability of private sector firms hiring a senior worker (defined as a worker aged 50 to 61 at the time of hire) by 0.81 percentage points or 16.3% ( $100 \times (0.0081/0.0497) = 16.3$ ). Estimations using age-specific difference-in-difference specifications show a clear age-differential effect on the probability of a new senior hire, with the effect being lower for higher ages. In light of this, I exploit the reform-induced discontinuity in the distance to the minimum LRA in order to assess the effect of decreasing the distance to the minimum LRA. Using a linear probability model, the results indicate that a one-year decrease in the distance to the minimum LRA increases the probability of a new senior hire by 4.2% ( $100 \times (0.0021/0.0497) = 4.2$ ). Furthermore, the increase in probability of a new senior hire is concentrated on the extensive margin (with the firm going from no senior hire to one senior hire). To examine the mechanism behind these results, I consider the effect on senior workers with a prior history of sick-leave and blue-collar senior workers. These are two worker characteristics that may indicate the risk of hiring for the firm. Restricting attention to senior workers with a prior history of sick-leave, the effect of decreasing the distance to the minimum LRA by one year increases the probability of a new senior hire by 4.6% ( $100 \times (0.0011/0.0234) = 4.6$ ). For blue-collar senior workers, the effect is 7.4% ( $100 \times (0.0015/0.0201) = 7.4$ ). In short, the increase in the hiring of senior workers from decreasing the distance to the minimum LRA is mainly driven by firms being more willing to hire “risky” senior workers than before, as we would expect from the argument made by Lazear (1979).

As traditional pay-as-you-go public pension systems are reformed, increasing the minimum LRA is considered an effective policy measure to lengthen working lives. The results in this paper suggest that doing so may have an unintended detrimental effect on the labor market opportunities of displaced senior workers or senior workers wanting to change jobs to facilitate partial retirement (Kantarci, 2013). In terms of the policy menu, the results therefore point to the flexibility approach being the better choice in terms of accommodating for labor market mobility of senior workers. This paper adds to the existing literature on the effect of changing the minimum LRA, which has mostly focused on labor supply responses and program substitution (see e.g. Börsch-Supan et al., 2017; Geyer and Welteke, 2017; Manoli and Weber, 2016; Staubli and Zweimüller, 2013; Vestad, 2013), by examining the consequences for the demand for senior workers.

The remainder of the paper is structured as follows: Section 2 summarizes some of the existing literature on senior worker labor market mobility. Section 3 introduces the institutional changes brought about by the Norwegian old-age public pension reform in 2011, and motivates the quasi-experimental methods used later in the paper. Section 4 discusses how the reduction in the minimum LRA as a result of the reform can affect both (i) the firm’s propensity to hire senior workers and (ii) the (latent) labor supply of senior workers. Section 5 describes the data used, and presents summary statistics of this data. Section 6 introduces the baseline methodology used to estimate the effect of the reform on the hiring of senior workers, and discusses the estimation results. Section 7 sets out the extended methodology to estimate the effect of a one-year decrease in the distance to the minimum LRA on the hiring of senior workers, and discusses the estimation results. Section 8 applies the extended methodology on a subsample of senior worker hires to investigate the possible mechanisms behind the distance-to-retirement effect. Section 9 concludes.

## 2. Literature

Saint-Paul (2009) suggests three stylized facts that distinguish senior workers from junior workers: (i) their remaining career time is short, (ii) their human capital is more specific to their current job, and (iii) their labor productivity is falling. Taken together, these three characteristics

are likely to adversely affect both the supply of senior workers and the demand for senior workers.

On the demand side of the labor market, the use of deferred compensation structures to alleviate monitoring problems reduces the hiring rate of senior applicants as the short employment horizon for these workers reduces the effectiveness of this strategy (Daniel and Heywood, 2007; Heywood et al., 2010; Lazear, 2011). The fixed costs the firm faces when hiring also reduces the hiring rate, especially as senior workers have a greater stock of human capital which needs to be updated upon starting in a new job (Hutchens, 1986; Montizaan and Fouarge, 2016). Firms are also risk-averse with respect to the expected productivity of the applicant worker, which is often declining with age, and therefore leads firms to hire fewer senior workers than junior workers (Heyma et al., 2014; Skirbekk, 2004). The essence of this risk-aversion argument is that hiring a senior applicant who is paid a high wage but only has a potentially high productivity level is less appealing to the firm than to hire a junior applicant with a lower wage and lower productivity.<sup>2</sup>

On the supply side of the labor market, the (latent) labor supply of searching senior workers (either currently employed or unemployed) will be low due to (i) the potential wage loss upon changing employer (owing to loss of firm-specific human capital), (ii) institutional rules (such as the accrual rules of defined benefit occupational pension schemes) and (iii) constraints on outside labor market opportunities acting as a lock-in effect at the current employer (Hurd, 1996; Stier and Endeweld, 2015). Technological age-bias in job search efficiency (such as online job portals) owing to a lower command of new job search techniques leads to the job search efficiency of senior workers to decline with age, which results in a low optimal job search effort (Legendre and Sabatier, 2017). Furthermore, the closer an unemployed senior individual is to the retirement eligibility age, the lower the optimal job search effort becomes through the decrease in the expected additional gain in pension benefits of searching (Hairault et al., 2010).

In terms of labor market reforms, Heyman and Skedinger (2011) study the Swedish reform of reducing notice periods for employer-initiated separations for senior workers, and find a positive effect on firms’ propensity to hire senior workers. Behaghel et al. (2008) use a legislative change exempting firms from layoff taxation for workers hired after the age of 50, and find that the transition rate from unemployment to employment (interpreted as the hiring rate) for workers over the age of 50 increased compared to workers under the age of 50. More closely related to the topic of this paper are reforms to the minimum LRA. Ilmakunnas and Ilmakunnas (2015) exploit a Finnish reform increasing eligibility ages for unemployment pension benefits and individual early retirement pension benefits and find a positive effect on the hiring of senior workers. The Finnish reform had direct implications for firms’ labor costs (through pension contributions and liabilities), while this paper studies a reform that did not directly affect the labor costs of the firm. Brunello and Langella (2012) study the change in the early retirement age for several European countries, and find that in Northern Europe a one-year increase in the early retirement age increases the probability of senior workers taking up a bridge job, whereas in Southern Europe the same change does not change the probability of taking on a bridge job. Martins et al. (2009) study an increase in the minimum LRA for women in Portugal, and find a reduction in the hiring of junior workers

<sup>2</sup> There may also be a large upside risk of hiring a senior worker (the worker having a higher-than-expected productivity level) although the downside risk generally outweighs the upside risk, at least in terms of physically demanding jobs (Ilmarinen, 2002). To the extent that the variance of productivity levels is greater for senior workers compared to junior workers, statistical discrimination could explain firms’ low propensity to hire senior workers (Heyma et al., 2014). In terms of modeling statistical discrimination in the hiring of senior workers, Manger (2014) shows how labor market frictions endogenously lead to older unemployed workers facing lower hiring opportunities, even for age-independent productivity levels and no training costs upon being hired.

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