

## Boosting Older Worker Employment. Analysis of Hiring and Wage Subsidies

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A significant fraction of current and soon-to-be elderly Americans are approaching retirement with little to no savings. To add to low savings rates, the Great Recession and Covid-19 pandemic have left many of the current elderly with even further reduced savings and larger barriers to be well prepared for retirement. Insufficient retirement savings and longer life expectancy will necessitate an increasing number of elderly Americans to work past the typical current retirement age. However, the elderly are facing old-age discrimination in the labor market often leading to earlier-than-preferred retirement, less preferable jobs, and worse working conditions leading to lower labor force participation, well-being, and incomes. In this paper, I study possible policies that could boost employment and social inclusion of older workers. More specifically, I ask if hiring and wage subsidies targeting the elderly help employment opportunities of the old, and what consequences they have on the rest of the workers.

As most econometric studies of various active labor market policies do not have enough information to even make a general assessment of the benefits relative to the program costs, much of the research regarding labor policy reforms is based on theoretical labor market-specific models. Such models, however, abstract from workers' and firms' non-labor market decisions such as consumption and saving. In order to assess hiring and wage subsidies' effects on the economy as a whole, I integrate typical search and matching labor market dynamics into otherwise standard general equilibrium overlapping generations macroeconomic model. In this model, workers make consumption, saving, work, and job search decisions while firms post job openings and invest in capital. The distinguishing feature of this model is the dual labor market separating the general and policy-protected (elderly) labor market. Without any government intervention, firms post all the job openings in the general labor market in which both, the elderly and the young, participate. The introduction of a hiring or wage subsidy incentivizes firms to hire elderly workers, and the labor market splits. Firms reallocate their job openings between the general and elderly-specific labor markets according to their cost-benefit calculation.

I study two hiring subsidies protecting the elderly workers: a long-term hiring subsidy absent of any shocks and a short-term (one-period) hiring subsidy following an elderly employment shock. After the government introduces either the long-term or short-term hiring subsidy for hiring older workers, firms find the marginal benefit of posting a job opening targeting the elderly to increase

while not directly affecting the younger workers. One could potentially expect an increase in elderly employment due to an increase in job openings for the elderly without any change to the employment of the young and middle-aged population. However, given an existing interest rate, firms make an optimal capital investment decision that, in large part, determines labor demand. Due to diminishing marginal product of labor, every additional elderly worker hired reduces the marginal return to the next worker, either young or old. As employment of the elderly increases causing the marginal product of labor to decrease, firms reduce general job openings it posts negatively affecting the employment opportunities of the population below the policy-protected age.

The hiring subsidy would not negatively affect the employment of the younger population if it also created downward pressure on the interest rate. A lower interest rate increases firms' investment and labor demand potentially leading to an increase in employment among all age groups. However, I find the opposite because of three reasons. First, workers save less knowing that it will be easier to find employment in older age (due to hiring or wage subsidies) reducing future income uncertainty. Two, a decrease in general job openings due to the introduction of a subsidy reduces employment of the younger population negatively affecting their ability to accumulate savings. Three, a tax necessary to fund the subsidy negatively affects workers' ability to save. Due to these reasons, hiring/wage subsidy protecting elderly workers creates upward pressure on the interest rate leading to a decline in firms' investment and labor demand.

Not only that a hiring and wage subsidy shifts labor demand from younger towards elderly workers but also reduced investment leads to a net reduction of total labor demand. Simulations predict that in the long run, due to lower employment opportunities for the younger population, employment is lower across all age groups, including the elderly. The only winners from such policy are the elderly of the time of the introduction of the subsidy independent if there was a negative employment shock or not.

Policies protecting the elderly increase labor force participation and, in the short run, employment of the elderly. In the long run, however, substitution and dead-weight costs outweigh the benefits. These policies have a negative effect on the unemployed below the policy-protected age and overall are net welfare decreasing. I suggest that alternative policies to hiring/wage subsidies that support the economic and social reintegration of the elderly should be considered.