

Social Security Reforms with Labor Market Frictions

Social Security (SS) plays a very important role for millions of Americans. It covers over 60 million elderly Americans and provides 33% of all elderly income. Among elderly Americans who claim SS benefits, half of the married couples and 70% of unmarried individuals rely on SS for half or more of their income. Moreover, SS is attributed to significantly lowering poverty rates among elderly Americans. Unfortunately, the current SS program is unsustainable as an increasing share of the population is in retirement. The current level of SS benefits is expected to last only until 2034 after which payroll tax revenues are expected to only be able to pay three-quarters of the current benefits if no other reforms take place.

A multitude of researchers has studied ways in which the SS program could be reformed and how those reforms would affect the current and the future elderly Americans. Due to the computational complexity of models used to understand the ways reforms will affect the economy, researchers are required to make a set of strong assumptions about agent heterogeneity, decisions they can make, markets, and other factors. Among those simplifications is the labor market. It is typically assumed either to be perfectly competitive or predetermined by the modeler. However, recent literature suggests that labor market imperfections matter for modeling Social Security reforms. To capture these imperfections in my model, I allow a more dynamic labor market in an otherwise typical multi-period overlapping generations model with heterogeneous agents. A more detailed labor market allows for more dynamic interaction and feedback effects between the decisions of the employed, unemployed, retired, and the firm. These changing decisions include labor supply, job search,

saving, retirement timing among others, all of which are critical to agents' well-being as well as the sustainability of the Social Security program.

I calibrate the model to match the US in the year 2000 and then impose aging that resembles the demographic shift that the US is expected to experience in 2100. Without any policy reforms, an increased old-age dependency ratio would lead to large ongoing Social Security financing shortfalls. I consider 5 stylized fiscal reforms that would lead to a balanced government budget: (1) an increase in the payroll tax rate, (2) an increase in payroll tax rate with an increase in taxable maximum, both of which would allow preserving the current level of benefits, (3) a decrease in social security benefits, (4) an increase in the retirement age, and (5) an introduction of capital gains tax, all of which would allow keeping the funding of the program unchanged.

Simulations predict that an increase in payroll taxes to cover the budget deficit leads to a significant decline in hours worked and average retirement age, resulting in a decrease in capital accumulation, and GDP in the long run. Removing the taxable maximum along with an increase in payroll taxes has a similar effect with a larger burden falling on the top of the income distribution. The introduction of capital gains tax to partially fund Social Security decreases private savings. Instead of accumulating assets, workers delay retirement when the capital gains tax is introduced to partially fund Social Security. Taxing capital gains leads to the largest decrease in GDP. On the other hand, decreasing or delaying social security benefits generate significantly higher hours worked, delayed retirement, higher savings accumulation, and aggregate production. The retirees, however, despite

accumulating more savings, have significantly reduced consumption as most workers are unable to fully replace lower or delayed Social Security benefits.

These results are similar to findings of previous researchers, however, a more complex and dynamic labor market introduces new granular interactions between the agents in the model. There are new channels that amplify the increases in long-run positive outcomes when labor force participation and private saving policies are employed. First, increased capital accumulation creates downward pressure on the interest rate which induces firm investment and labor demand leading to higher employment levels across the age groups. Second, lower benefits incentivize higher job search efforts and delayed retirement contributing to an increased employment rate. Third, the first two channels – labor demand and job search slack – are reinforcing. Firms posting more vacancies draw in more unemployed to look for work, and more unemployed looking for work with more intensity incentivizes firms to post more vacancies. Fourth, I find that when a decrease in interest rate is large enough to cause an increase in overall labor demand, older workers' increased employment does not negatively affect the employment opportunities of the young.

The presence of these labor market channels makes reforms that reduce benefits or increase retirement age not only more efficient (leading to higher GDP) but also more equitable compared to reforms that increase taxation. I conclude that ignoring labor market frictions may bias Social Security and any other fiscal reform evaluation leading to potentially understanding the benefits of policies that incentivize private saving and labor supply.