European Economic Review 101 (2018) 512–527

Contents lists available at ScienceDirect

European Economic Review

journal homepage: www.elsevier.com/locate/euroecorev

Paradoxical effects of increasing the normal retirement age: A prospective evaluation

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ARTICLE INFO

Article history:
Received 7 December 2016
Accepted 23 October 2017

JEL classification:
E21
E24
E62
H55
J18

Keywords:
Social Security
Labor supply
Disability
Retirement

ABSTRACT

A life-cycle model that incorporates both Disability Insurance (DI) and Old-Age Insurance (OAI) is developed to study Social Security reforms, and is compared to an alternative model without DI. The model with DI predicts that increasing the normal retirement age (NRA) causes a decrease in employment and an increase in DI receipt, and that the decrease of payroll tax revenue and the increase of DI expenses combined offset about 40% of the decrease of OAI expenses. These paradoxical effects of increasing the NRA are absent from the model without DI. I employ both models to search for reforms that will balance the government budget in an economy with an aging population, which has the demographics for the year 2100, and find that the required change in tax and benefit rules differ substantially across the two models.

1. Introduction

Due to reduced fertility and increased life expectancy, the combined Old-Age, Survivors, and Disability Insurance (OASDI) Trust Fund in the U.S. is expected to be depleted in 2034. Thereafter, scheduled tax income is projected to be sufficient to pay about three-quarters of scheduled benefits (Social Security Administration, 2016). To study reforms that aim to address this solvency issue, this paper develops a heterogeneous-individual, life-cycle model that incorporates two major components of Social Security, Disability Insurance (DI) and Old-Age Insurance (OAI).[1]

The model is an extension of the Bewley-Aiyagari-Huggett framework, where individuals face uncertain wages, health, health spending, survival, and DI review decisions, and choose how much to work and save, and whether and when to claim DI and OAI benefits. To be eligible for OAI, an individual needs to reach age 62 without receiving DI benefits. OAI claims do not prevent individuals from working, but delaying claims yields greater benefit levels. DI benefits always equal the Primary Insurance Amount (PIA), the amount an individual will receive if he/she claims OAI at the normal retirement age (NRA). But to be eligible for DI, an individual must prove that he/she has a severe medical condition that lasts for at least one year and prevents substantial gainful activities.[2] Capturing this requirement, the model assumes that DI applicants and DI

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[1] In December 2015, DI and OAI programs, respectively, provided benefits to about 11 million and 43 million beneficiaries, and composed 15.0% and 75.8% of total benefit outlays of the OASDI Trust Fund (Social Security Administration, 2015).

[2] In 2015, the limit of substantial gainful activities was $1090 per month for non-blind individuals. In spite of the relatively high limit, the actual earnings of DI recipients are very low, about $1.5k per annum (Autor et al., 2015).

https://doi.org/10.1016/j.euroecorev.2017.10.018
0014-2921/

recipients cannot work. Similar to Benitez-Silva et al. (2004), Low and Pistaferri (2015), and Laun and Wallenius (2016), the DI review process is characterized by high rejection rates of applicants with work limitations and some acceptance of healthy applicants. Allowed applicants will receive past due benefits accumulated during the application process and be eligible for Medicare after a two-year waiting period starting from five months after the initial application. Denied applicants can choose to continue their DI filings and receive a new review decision in the next period.

The model is used to conduct two sets of experiments to examine the effects of alternative Social Security reforms in an economy with an aging population, which has the year 2100 life expectancy and old-age dependency ratio. The first set of experiments reduces OAI benefits by increasing the NRA and keeps other program rules unchanged to isolate the effect of increasing the NRA. The second set of experiments compares three alternative approaches for balancing the Social Security budget—increase Social Security payroll taxes; reduce Social Security benefits; and use the surplus of remaining government programs to pay for the deficit of Social Security programs—and adjusts income taxes to balance the remaining budget. To understand the importance of incorporating DI, predictions of the baseline model are compared to an alternative model that excludes the DI program but is otherwise identical to the baseline model (referred to as "the model without DI").

Simulations from the baseline model suggest that increasing the NRA to 67 or to 68 causes a decrease in consumption, employment, and OAI receipt, and an increase in DI receipt. The change in employment is the joint effect of three competing channels with the latter two dominating the first: (1) cutting OAI benefits reduces wealth and encourages labor supply; (2) cutting OAI benefits decreases the returns on labor and discourages labor supply, because future OAI benefits are a part of total labor compensation; and (3) as DI benefits are kept unchanged, cutting OAI benefits makes the DI program more attractive, inducing more individuals to exit the labor market to become DI recipients. Regarding the Social Security budget, increasing the NRA from 66 to 67 reduces the per capita deficit by $166, but 43% of the savings from the OAI program are canceled by tax revenue reductions and DI expense increases. Increasing the NRA from 67 to 68 reduces the per capita deficit by $208, 25% more than that induced by increasing the NRA from 66 to 67, suggesting it is inappropriate to extrapolate the effects of increasing the NRA. In contrast to the baseline model, the model without DI predicts that increasing the NRA raises employment, and causes a reduction in the Social Security budget deficit that is much greater than the amount found using the baseline model.

Both models predict that among three alternative approaches to balance the Social Security budget, reducing benefits places the least distortion on labor supply and asset accumulation, and generates the smallest welfare loss for a new generation. However, there is a large difference in the size of required policy change: the required benefit reduction for balancing the Social Security budget is 8% greater in the baseline model than in the alternative model, and the required income tax increase for balancing the remaining budget is 62% smaller in the baseline model than in the alternative model. This is because the model without DI understates the expense reduction (or revenue increases) needed for balancing the Social Security budget by neglecting DI expenses and produces a biased estimate for income tax revenue by shutting down the effect of changing DI receipt on employment and asset accumulation.

This paper complements three strands of the existing literature. The first strand develops heterogeneous agents models to evaluate social insurance programs.[3] Within this literature, Gustman and Steinmeier (1985) is the first paper that studies the effect of increasing the NRA. This effect is reexamined in later works of Bound et al. (2010) that adds the decision of claiming DI and İmrohoroğlu and Kitao (2012) that explores the general equilibrium feedback on factor prices. All three papers find that increasing the NRA raises labor supply among older individuals, contrary to the findings of this paper, likely because Gustman and Steinmeier (1985) and İmrohoroğlu and Kitao (2012) abstract from DI claiming decisions and Bound et al. (2010) abstracts from asset accumulation decisions. The analysis framework of this paper builds on that of İmrohoroğlu and Kitao (2012) by adding the DI program to a life-cycle model with endogenous labor and assets. This paper is also related to a set of papers that studies reforms which make the Social Security programs long-term solvent, including De Nardi et al. (1999), Hosseini and Shourideh (2017), Kitao (2014b), Kotlikoff et al. (2007), Ludwig et al. (2012) and Nishiyama (2015). The innovation of this paper is to explicitly model the DI program.

Note that the life-cycle influence of the DI program has been evaluated by a number of papers. For instance, Low and Pistaferri (2015) develop a life-cycle framework for comparing insurance and disincentive effects of DI benefits, and find that welfare increases as the DI program becomes less strict or more generous. Kitao (2014a) provides a labor market search framework to study the effect of DI benefits and the associated Medicare coverage on life-cycle employment. Michaud and Wiczer (2014) develop a model where disability risks differ by occupations, and examine the effect of DI on occupational reallocation. Mitchell and Phillips (2000), Galaasen (2014), Laun and Wallenius (2015, 2016) explore the joint effect of DI and OAI on labor supply patterns of older individuals, with Mitchell and Phillips (2000) focusing on the effects of reducing OAI benefits for early claimers, Galaasen (2014) focusing on the effects of reforms in the Norwegian economy, Laun and Wallenius (2015) focusing on Swedish pension reform and Laun and Wallenius (2016) focusing on the role of Social Security programs in explaining different labor supply patterns across countries. Different from the previous literature, this paper aims to quantitatively explore how the incorporation of DI affects the implications of increasing the NRA and affects the design of policies to achieve a balanced budget in an economy with an aging population.

[3] For example, see Hansen and İmrohoroğlu (1992), İmrohoroğlu et al. (1995), Rust and Phelan (1997), French and Jones (2011), Laitner and Silverman (2012), De Nardi et al. (2016).