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Tax-deferred saving accounts: Heterogeneity and policy reforms☆

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ABSTRACT

Tax-deferred saving accounts (TDA) are systematically used in many countries. In the United States, households' access to TDA exhibits substantial heterogeneity: 401(k) has a higher contribution limit than IRA, but only 50% of workers are eligibility for it. I developed an overlapping-generations model that captures the tax benefits of TDA and the heterogeneity in 401(k) eligibility to investigate the quantitative impacts of TDA on the aggregate economy and their implications on policy reforms. Experiment results show that IRA already provides sufficient tax benefits for most households. The effects of providing universal 401(k) are relatively insignificant because households who can benefit from 401(k) already have access to it. On the other hand, raising the TDA contribution limit allows high-income households to increase their use of TDA and results in stronger effects on the economy. When households' use of TDA is considered, the U.S. income tax system is less distortionary and the welfare gain from a consumption tax reform is reduced by more than half.

1. Introduction

Tax-deferred saving accounts (hereafter TDA) are important instruments for retirement savings, and they are systematically used in many countries. For example, Canada, Germany, Italy, the Netherlands, and the United Kingdom all have TDA with similar institutional settings.[1] In the United States, the most common types of TDA include Individual Retirement Accounts (IRA) and 401(k) for private-sector employees.[2] According to Board of Governors of the Federal Reserve System (2014), about $12.9 trillion (77% of GDP) was accumulated in TDA in 2013, making the TDA system a sizable part in the U.S. economy. Generally, all types of TDA have three common features. First, capital income within these accounts is tax-free until withdrawal. Second, contributions to TDA are income-tax deductible and subsequent withdrawals are taxed as ordinary income. Third, contributions are restricted to certain legal limits and can only be made in working age; early withdrawal before retirement age is subject to penalty payment in addition to the income taxes incurred from the assets withdrawn.

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[1] See Guiso et al. (2001) for a detailed description.

[2] Other accounts with similar settings are 403(b) for nonprofit-sector employees, 457 plan for public-sector employees, and Keogh accounts.

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TDA are of particular interest because they provide substantial tax benefits for households. These accounts provide tax-free returns on investment and hence a stronger compound growth of assets. TDA also allow households to reduce their lifetime income tax payments by redistributing their lifecycle income. Generally, households have higher labor earnings and face higher marginal income tax rates in their working lives when compared to that after retirement. Under a progressive income tax system, households can contribute their pre-tax income to TDA and defer their income tax payments from working years to retirement ones. It allows them to take advantage of the lower marginal tax rates after retirement and reduce their lifetime income tax payments. Thus, TDA offer households another channel to respond to distortionary tax policies, in addition to the labor supply decisions in a conventional framework. Given that households' contributions to TDA are exempted from income tax until withdrawal, TDA effectively provide consumption tax treatment on labor earnings set aside for retirement consumption. That makes the current U.S. income tax system essentially a *hybrid* one with a progressive income tax component and a consumption tax component.

Access to TDA, however, is not homogeneous to all households in the U.S. While IRA is universally available, only about 64% of households are eligible for 401(k). The statutory contribution limits for IRA and 401(k) also differ substantially, with the limit for 401(k) being 2.6 times higher.[3] The heterogeneous access to 401(k) may imply inequalities in the use of TDA among households. There has been various proposals on expanding TDA coverage.[4] More recent proposals include state-based retirement plan for private sector employees.[5]

This paper investigates the macroeconomic impacts of TDA and their implications on policy reforms. Since the primary target of TDA is to encourage retirement savings, the effect of TDA on capital accumulation is first evaluated. I explore if the heterogeneous 401(k) eligibility limits households' use of TDA and whether a further expansion of the TDA system have an impact on the economy. Then the paper proceeds to address the implications of TDA for a consumption tax reform, as the effects of such reform could be overstated when TDA consumption tax treatment on labor earnings is not taken into account. The analyses are based on an overlapping-generations (OLG) model incorporated with the institutional settings of TDA. Households have access to both TDA and their taxable savings accounts (hereafter TA). While all households are eligible for IRA, their 401(k) eligibility are heterogeneous and conditional on their labor efficiency. A progressive income tax system that mimics the U.S. code is used to reflect the tax benefits of TDA. The model also includes a public pension system to capture households' retirement income from Social Security. Each period households decide their consumption, labor supply, and savings endogenously under uninsurable idiosyncratic risks on labor efficiency and 401(k) eligibility. The model is calibrated to the long-run U.S. economy, with the pattern of 401(k) eligibility calibrated to match the data in the 2001 Survey of Income and Program Participation (SIPP).

Results from the policy experiments show that TDA have important impacts on the economy. When TDA is eliminated from the economy, the aggregate capital decreases by 20.7% and the effective labor supply reduces by 3.5%. The welfare cost is equivalent to a 6.3% decrease in per-period consumption. The provision of IRA has relatively stronger impacts than 401(k) because it is available to all households. Providing universal 401(k) eligibility have negligible effects on the economy because it only benefits higher-income households and the majority of them already have access to it. On the other hand, removing the TDA contribution limit creates stronger impacts on the economy because households, particularly the high-income ones, can take full advantage of TDA tax benefits. Experiment results also indicate that the TDA system is self-financing, as it increases the tax revenue from the increased levels of output and consumption. On the implications of TDA for policy reforms, TDA are effective tax-shelters that substantially reduce the distortions created by the U.S. income tax system. When TDA are taken into consideration, the welfare improvement from a consumption tax reform is lowered by 60% or more depending on the exemption level.

This paper fits into the literature on households' use of TDA. Existing studies focus on households' retirement savings decisions in response to TDA tax incentives, and the importance of households' heterogeneous 401(k) eligibility is not considered. In a theoretical framework, Imrohoroglu et al. (1998) and Kitao (2010) only consider IRA with a low contribution limit. On the other hand, Nishiyama (2011) evaluate the transition dynamics for introducing TDA assuming the contribution limit is similar to that of 401(k), implying that all households are 401(k) eligible.[6] This paper provides a better understanding about the effects of TDA on the aggregate economy through a model that captures multiple important aspects of the current TDA system. Findings on the macroeconomic impacts of TDA show that IRA contributes to 80% of the increase in the aggregate capital and 401(k) contributes to the remaining 20%. Findings on TDA policy reform also offer new insights to the long standing policy debate about pension provision and universal 401(k) coverage.

The policy experiments in this paper also contribute to the literature on tax reforms. Even though TDA are widely available and commonly used as tax shelters, the implications of TDA on the effectiveness of tax reforms are unexplored (Auerbach, 2006). This paper is most related to a consumption tax reform proposed by Hall and Rabushka (1995). The potential gains of such reform is quantitatively evaluated in Ventura (1999), based on a model with the statutory progressive

[3] Section 2provides a more detailed explanation of the history of TDA and their institutional settings.

[4] For instance, Sperling (2006) outlines an idea for universal 401(k); Iwry et al. (2007) proposed the "Automatic IRA"; Then-Senator Hillary Clinton proposed a government-sponsored "American Retirement Accounts" for households without 401(k) plans in her 2008 White House campaign.

[5] An example of it is the California Secure Choice Retirement Plan. See Pension Rights Center (2016) for details on the legislation status in different states in the U.S.

[6] For empirical research on TDA induced incremental savings, see Gale and Scholz (1994), Poterba et al. (1995), Poterba et al. (1996), Engen et al. (1996) and Bernheim (2002), among others.