Abstract

Inadequacy of domestic savings in Turkey limits the potential for sustainable growth in the long-term and exacerbates the vulnerabilities associated with dependency on volatile foreign capital flows. The private pension system that was designed to complement public pension system demonstrated limited impact on savings rates. Thus, former tax incentives are replaced by matching contributions as of 2013. Our paper aims to assess the effectiveness of the recent incentives introduced to the private pension system in Turkey. We find that the state contribution has positive significant effect on the number of participants by using alternative asset returns and a dummy variable for state contribution in two samples covering different time periods. We analyze the dynamic time varying interaction between the state contribution and the number of participants in our second sample that focus on post reform period. The model estimated with the dynamic Kalman filter indicates that the positive effect of the state contribution on the number of participants tends to decline slightly in time. We conclude that the fund management in the private pension system should be improved in order to make use of the state incentive efficiently.

JEL classification: D91; E21; G23; H31; H55; I38

Keywords: Saving; Private pension scheme; Tax relief; Matching contributions; Turkey

1. Introduction

Sustainable economic growth requires a balance of savings and investments. Extended periods of inadequate saving rates indicate less investment and slower growth in the long-run. Pension funds provide an alternative channel for accumulation of long-term savings. Voluntary pension schemes are initially recommended to support mandatory pension systems to counteract the complex problems of our era such as longevity that increase the burden of financing elderly throughout the longer life span in retired age. As Barr and Diamond (2006) emphasize that excessive public pension spending may even risk growth via higher tax rates, private pension systems provide an alternative solution for transferring the risk to individuals and hence alleviate stress on public budget. In addition to easing the burden on the state supported mandatory pension plans, the private pension schemes are expected to contribute to the accumulation of long-term funds and hence induce economic growth.

As the stimulation of complementary private pension schemes has gained priority in the policy maker's agenda, a large number of OECD (The Organisation for Economic Co-operation and Development) countries made use of economic incentives to enlarge private pension funds. Yoo and de Serres (2004) estimate that the costs incurred by the states that provide such incentives account for at least 10% of the funds accumulated. Hence, the relevant empirical question concerns...
the measurement of the effect of the state incentives implemented in the private pension schemes on long-term savings. The literature is ample in empirical work that investigates the relationship between the incentives provided to the private pension schemes and savings. Yet empirical evidence is far from being conclusive even for a limited number of countries thoroughly analyzed.

The state incentives introduced to the third pillar pensions can either take the form of tax reliefs or matching contributions. As the design of the private pension system is crucial in boosting long-term savings, the vast extend of the literature focus on comparisons of the effectiveness of different reforms and incentives provided in third pillar pensions. Considering the lack of variety in empirical work on the case of Turkey, our paper aims to contribute to the existing literature by analyzing the private pension system in Turkey with a special focus on the comparative effects of different forms of state incentives provided throughout the initiation of the system in 2003.

We established two models covering different time periods in order to compare the impact of the recent reform in the form of the state contribution provided to the third pillar pension scheme in Turkey. One of the models used in the paper is a full sample model covering the years between 2004 and 2016 and the other model covers the matching contribution period, from 2013 to 2016. In the first model we employ the ARDL model to investigate the long-term coefficients whereas we employ dynamic Kalman Filter model to investigate the time varying interaction between the state contribution and the number of participants in the private pension system in the second model. We also estimate static ARDL, DOLS and FMOLS models in order to check for robustness for both of the models.

The paper is organized as follows. Following the introduction, section 2 presents a brief literature review and section 3 outlines the private pension system in Turkey. Section 4 describes the data and the methodology. Section 5 presents the results and deals with econometric issues. Section 6 concludes.

2. Literature

The empirical literature presents inconclusive results for the ongoing debate on the potential impacts of private pension plans on national savings. Skeptics argue that the tax incentives provided for voluntary pension schemes merely result in a shift of savings between different types of assets rather than net additions to long-term savings. For instance, Anton, Bustillo, and Macias (2014) use longitudinal dataset and fixed effects method and conclude that tax favored contributions to pension plans are not associated with rising national savings for the case of Spain. Marino, Pericoli, and Ventura (2011) show that raising deductibility limit associated to pension fund holdings in Italy did not contribute to boosting savings. Börsch-Supan, Reil-Held, and Schunk (2007) and Corneo, Keese, and Schröder (2010) argue that the Riester pension plans in Germany has not been effective in increasing national savings. Börsch-Supan (2004) analyzes the tax favored Riester pension plans in 2001 and 2004 in Germany and conclude that boosting retirement savings requires more than tax relief. Attanasio, Banks, and Wakefield (2004) examine both the IRAs in the US and the tax incentives provided for retirement plans in the UK and conclude that the state incentives provided in the form of tax exemptions are ineffective in increasing new national savings and also create burden on the public budgets. Guariglia and Markose (2000) and Rossi (2009) investigate the effects of incentives on pension plans in UK and conclude that the incentives provided are not associated with increase in savings rates.

On the other hand, Engen, Gale, and Scholz (1994), using a stochastic life cycle simulation model of saving, conclude that tax incentives increase savings only to a limited extent in the longer run. Bosworth and Burkett (2004) argue for saving incentives however they note that the net effect of incentives on private pension schemes is ambiguous as substitution and income effects counteract each other. Hubbard and Skinner (1996) propose that saving incentives do increase savings although probably not as strongly as suggested by Poterba, Venti, and Wise (1996) who conclude that the two tax favored plans in the USA, namely the 401 k and the IRAs contribute to additional savings instead of being mere substitutions for other financial and real assets.

Attanasio and DeLeire (2002), categorize sources provided for pension funds and argue that only funds that otherwise would have been spent on consumption constitute net addition to national savings. Because according to Attanasio and DeLeire (2002) other sources directed towards pensions such as savings as a result of reshuffling of other assets or savings associated with the tax break are only disguised forms of other personal and public savings that would have been existing even the tax incentive was not in force. Hence Attanasio and DeLeire (2002) argue that the IRAs do not generate additional savings but result in mere substitution among existing assets. Paiella and Tiseno (2009) argue that tax incentives provided for private retirement in Italy has been effective merely in generating substitution towards tax favored pension funds yet ineffective in increasing net private savings.

There is still ongoing debate on the net impact of incentives on savings as the literature has not been able to reach conclusive results on the effects of alternative forms of incentives such as tax reliefs or matching state contributions. For instance Duflo, Gale, Liebman, Orszag, and Saez (2007) analyze the effect of the saver's credit which is a form of incentive that provides a federal income tax reduction up to 50% of the funds contributed to a 401(k) or an IRA depending on the eligibility criteria and find no significant effect of the implementation on pension fund contributions. However, Duflo, Gale, Liebman, Orszag, and Saez (2006) detected substantial impact for more clearly defined matching incentives. Therefore, matching contributions can be provided independently of an individual's income tax eligibility hence can represent a more inclusive approach towards the lower income segments and vulnerable groups within the population. Yet the authors suggest that even the well-designed matches in 2005 produced relatively modest increase in IRA contribution,
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