

Pension Saving and the Danish 2010 Tax Reform

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Project Description

The Danish welfare state relies heavily on citizens saving for retirement and has incentivized individual retirement savings through the tax system in various ways. An important policy question is whether individuals actually respond to these tax incentives for pension savings. A recent study by Chetty, Friedman, Leth-Petersen, Nielsen and Olsen (2014) analyzes the savings responses to the Danish 1999 tax reform, which reduced the tax subsidy for contributions to capital pension schemes, and shows this reduced capital pension contributions but without any significant effect on overall saving; 57% of the contributions were shifted towards other pension savings schemes, and the remaining part was substituted towards other types of savings.

The 1999 reform was salient in the sense that it was targeted directly towards pension savings. However, little is known about whether the same happens when other dimensions of the tax system, affecting pension saving incentives, are changed. In 2010, the marginal tax rate on earned income was reduced from 63% to 56% for taxpayers in the top tax bracket, while the tax rate was changed only marginally for taxpayers with lower income. For taxpayers in the top tax bracket, the reform provided a strong incentive to either advance future pension contribution payments to 2009 or simply increase pension savings in 2009 without changing future contributions (in addition, the reform introduced a ceiling of 100.000 DKK on contributions to annuity pension schemes, which may also increase contributions in 2009). The policy was announced in March 2009 and passed in the Parliament in May 2009 to take effect from the 1st of January 2010. The distance in time between the announcement/passing and the actual implementation of the reform gave taxpayers more than half a year to change their planned pension contributions. In this project, we aim to answer the following question:

Did the 2010 tax reform generate increased pension savings in 2009?

Theoretically, the responses of the taxpayers may differ depending on the composition of contributions before the reform. Some people are subject to a minimum mandated contribution to their LMPS to which they can voluntarily contribute additionally. Contributions to private schemes are by construction voluntary. Considering a person who contributes above the mandated level, either to LMPS or private accounts, we would expect to see that this contributor would increase contributions in 2009 and maybe reduce contributions in 2010. For a contributor who only contributes at the mandated level, it is possible we would see extra contributions in 2009, but otherwise unchanged contributions in 2010. However, if the fact that he only pays in at the mandated level reflects that his optimal savings is below the mandate then we would expect to see a smaller response or no response at all. The purpose of this project is to test these predictions and quantify the effects.

Data

To carry out this project, we will use high frequency data that are unique from an international perspective. The data comes from the so called e-income register and it records earnings and labor market pension contributions at the monthly level for the universe of Danish employees for the period January 2008 to December 2011. These data enable us to identify who are affected by the tax reform and to quantify who makes adjustments to their labor market pension contributions among those affected. The high frequency of the data makes it possible to investigate exactly when people make adjustments during the announcement period and to quantify how big the adjustments are. For example, the data

allows us to investigate whether advanced contributions to LMPS' are made towards the end of the year or already at the announcement of the tax reform.

The e-income data will be combined with other data containing information about contributions to private pension accounts as well as information about the holdings of financial assets, housing wealth, mortgage debt and other debt as well as a host of standard demographic characteristics such as age, sex, education, household composition, industry of occupation etc. These data are unfortunately available only at the annual level, and the analysis of the adjustment patterns in private accounts will therefore be less fine grained as to when exactly the adjustment is made.

Method

To measure the effect of the change in the marginal tax rate implemented in January 2010 we will compare the evolution of LMPS contributions over the period January 2008 to December 2011 of people in the top tax bracket in 2008 (the treatment group) with that of people with income just below the top tax threshold in 2008 (the control group). The reason for grouping people based on their 2008 income rather than, say, 2009 income is that people may shift income payments from 2010 to 2009 in order to take advantage of the lower marginal tax rate in 2010, or they may make contributions to LMPS' and reduce their taxable income in that way so as to temporarily change tax brackets. Specifically, we will construct an indicator for extraordinary contributions to LMPS in any given month in our data period and use this to measure whether people have made significant extra contributions. Specifically, we will identify extraordinary contributions by constructing the following indicator variable

$$f_{i,m,y} = 1 \left[\frac{p_{i,m,y} - p_{i,m,2008}}{\bar{w}_{i,2008}} > k \right] \quad (1)$$

where $p_{i,m,y}$ are LMPS contributions of individual i in month m and year y , $\bar{w}_{i,2008}$ is the average monthly salary for individual i in 2008, k is a threshold value we select, for example 25% or 50%. $f_{i,m,y}$ is then an indicator of extraordinarily high LMPS contributions for person i in any given month and year in the data period. Using equation (1) allows us to plot the average across people in the treatment group and the control group across all months in the data period. This will enable us to graphically identify whether people have made exceptionally large contributions during the announcement period. In order to be able to make proper statistical inference, this method can also be implemented in a regression framework, cf. Kreiner, Leth-Petersen and Skov (2014a).

Because retirement wealth is illiquid, the extent to which people are interested in advancing contributions to retirement savings accounts depends on the degree to which they are liquidity constrained, their fear of being constrained in the future (before retirement), or whether they are simply forced to save more than desired in mandated LMPS. To learn about the importance of these factors we will quantify how the propensity to advance pension savings during the announcement period in 2009 depends on the availability of financial assets that can be used to compensate for the temporary drop in disposable income that follows from making extraordinary contributions to retirement accounts. This approach to measuring the importance of liquidity constraints is well established in the literature about savings and credit market imperfections, Zeldes (1989) and Leth-Petersen (2010).

In 2010, deductions for contributions to annuity pension schemes were capped, so that no deductions were given for contributions above 100.000 DKK (the ceiling dropped to 50.000 DKK in 2012). This initiative has implications for the analysis. First, it implies that people are expected to shift towards life annuity contributions. However, since life annuities are not perfect substitutes for regular annuity pensions full substitution is not expected, and the policy may imply that total pension contributions are reduced. To take account of this policy, we will consider separately people who in 2008 made contributions amounting to more than 50.000 DKK and more than 100.000 DKK to annuity schemes.

In two previous papers, Kreiner, Leth-Petersen and Skov (2014a,b), we have investigated the extent to which the 2010 tax reform induced people to shift income from 2009 to 2010 and how this impacted estimates of the elasticity of taxable income. Such behavior is not illegal but is an unintended side effect of implementing tax reforms that change the marginal taxation of earned income, i.e. it is a clear case of tax avoidance. We have shown tax avoidance of this type requires cooperation of the employer and all employees therefore are not able to engage in this type of tax avoidance. In this project, we investigate whether people instead exploit the opportunity to increase their pension savings (in a recent public hearing about taxation in the Danish Parliament, Lars Andersen from AE-rådet speculated that pensions contribution shifting from 2010 to 2009 would be at least as important as income shifting from 2010 to 2009). This project will clarify whether the 2010 tax reform has in fact generated increased savings in retirement accounts.

Expected Output and Time Plan

The output of the project is expected to be 1 academic paper. Given the unique features of the Danish data, we expect to be able to publish the results in a good field journal.

The core data exist, but so far we have not looked into the data about pension saving. We will need to clean and transfer the data from SKAT to Statistics Denmark where it will be combined with demographic variables, wealth records and data on contributions on private pension accounts. We will then clean and analyze the data. We expect to have a first paper draft ready by the end of 2015.

Budget

We apply for funding to cover expenses to Statistics Denmark related to transferring e-income data at the monthly level on labor market pension contributions from SKAT to Statistics Denmark and for buying additional data from Statistics Denmark on private pension accounts (at the yearly level). We also apply for funding to cover research time for Peer Ebbesen Skov.

References

Chetty, Raj & Friedman, John & Leth-Petersen, Søren & Nielsen, Torben H. & Olsen, Tore (2014); Active vs. Passive Decisions and Crowd-out in Retirement Savings: Evidence from Denmark; *Quarterly Journal of Economics*, 129(3).

Kreiner, Claus Thustrup & Søren Leth-Petersen & Peer Ebbesen Skov (2014a); Year-End Tax Planning of Top Management: Evidence from High-Frequency Payroll Data. *American Economic Review*, vol. 104(5), pp. 154-158, Papers & Proceedings.

Kreiner, Claus Thustrup & Søren Leth-Petersen & Peer Ebbesen Skov (2014b); Tax Reforms and Intertemporal Shifting of Wage Income: Evidence from Danish Monthly Payroll Records, Revise and resubmit at *American Economic Journal: Economic Policy*.

Leth-Petersen, Søren (2010); Intertemporal Consumption and Credit Constraints: Does Total Expenditure Respond to An Exogenous Shock to Credit?; *American Economic Review*, 100, pp. 1080-1103.

Zeldes, S.P. (1989); Consumption and Liquidity Constraints: An Empirical Investigation. *Journal of Political Economy* 97(2), pp. 305-346.