A. Supplementary Results on Mandated Savings Plan

This appendix has two objectives. First, we formalize how we estimate pass-through using the threshold approach in Columns 4-7 of Table IV. Second, we show that the impacts of the MSP reported in Section IV.B using an RD design for individuals with labor income around DKr 34,500 are similar for higher income individuals using a difference-in-differences design.

Threshold-Based Estimator. We estimate pass-through in Column 4 of Table IV as follows. First, we define an indicator \( \theta_{i,\text{pred}} = I[P_{i,1998} + P_{E,i,1998} + 0.01Y_i > \bar{P}] \) and run a regression of the following form using the observations in Figure IVc below the eligibility cutoff (\( Y_i < 34,500 \)):

\[
\theta_{i,\text{pred}} = \beta_0 + \beta_1 Y_i + \varepsilon_i. \tag{12}
\]

Let \( \theta_{i,\text{cut}}^{\text{pred}} \) denote the predicted value from this regression at the eligibility cutoff \( Y_i = 34,500 \). Next, we repeat (12) with \( \theta_i \) as the dependent variable and compute the predicted value at the cutoff, \( \theta_{i,\text{cut}} \). Finally, we replicate the RD specification in Column 1, changing the dependent variable to the indicator \( \theta_i \) for having \( P_{i} > \bar{P} \), and report the resulting regression coefficient divided by the predicted increase under no offset, \( \theta_{i,\text{cut}}^{\text{pred}} - \theta_{i,\text{cut}} \). Columns 5-7 are estimated using the same approach, changing the measure of saving used to define the indicator variables.

Difference-in-Difference Estimates. We exploit the variation in the level of MSP contributions across income levels to implement a difference-in-differences design. To illustrate the design, we divide the population into three terciles based on their current individual labor income. Appendix Figure IIa plots the mean level of MSP contributions from 1995 to 2005 for these three groups. Individuals in the top tercile (incomes above DKr 280,400) were forced to contribute approximately DKr 3,480 on average between 1998 and 2003 to the MSP. Individuals in the middle tercile were forced to contribute DKr 2,320 on average, while individuals in the bottom tercile were forced to contribute only DKr 930 on average.

Appendix Figure IIb plots individual retirement saving \( (P_{I,i,t} + P_{G,i,t}) \) for the same three income terciles. The introduction and termination of the MSP have sharp effects on total contributions to retirement accounts that correspond to the magnitudes of the changes in the MSP.\(^{35}\) To quantify pass-through to total retirement contributions, we estimate the following difference-in-differences specification:

\[
\Delta P_{i,t} = \beta_0 + \beta_1 Y_i + \varepsilon_i. \tag{13}
\]

\(^{35}\)From 1999-2001, the MSP had a redistributive element, so that MSP balances were fixed even though contribution amounts still varied with income as shown in Appendix Figure IIa. The fact that the series in Appendix Figure IIb show no breaks around 1999 and 2001 implies that individuals’ pension contributions are unaffected by MSP balances even though they should change in a neoclassical model. This is not surprising given that individuals do not appear to respond to even the changes in the level of contributions in 1998 and 2004.
savings, we first divide the sample into cells of DKr 25,000 income groups for each year and calculate mean government mandated \( (P_{g,t}^G) \) and total individual pension contributions \( (Z_{g,t}) \) in each group \( g \) in year \( t \). We then estimate the following regression specification, weighting by the number of observations in each cell:

\[
\Delta Z_{g,t} = \beta_t + \phi_G \cdot \Delta P_{g,t}^G + \varepsilon_{g,t} \tag{13}
\]

where \( \Delta Z_{g,t} \) denotes the change in mean total individual contributions from year \( t - 1 \) to year \( t \) in each cell, \( \Delta P_{g,t}^G \) is defined analogously, and \( \beta_t \) is a year fixed effect. We limit the sample to \( t = 1998 \) and \( t = 2004 \), the years in which the MSP was introduced and terminated.\(^{36}\) We obtain a pass-through estimate of \( \phi_G = 0.81 \), as shown in Appendix Figure IIb.

Appendix Figure IIc uses a threshold approach to confirm that these increases in pension contributions are not driven by individuals who make zero individual contributions and are unable to offset the MSP. It plots the fraction of individuals whose total individual (non-employer) pension contributions exceed 1.5% of income, the mean individual pension saving rate in the sample. Because the MSP was only 1% of income, any changes in this indicator must be driven by individuals who are not at the corner. The MSP again clearly increased the fraction of individuals saving more than 1.5% of their income in pension accounts between 1998 and 2003. To estimate pass-through, we repeat the regression in (13) with the dependent variable defined as change in the fraction of individuals whose total individual pension contributions exceed 1.5% of income. To calculate pass-through, we divide this coefficient by the change one would have obtained by mechanically adding the changes in the MSP to prior-year individual pension contributions. The resulting estimate, shown in Appendix Figure IIc, is 96.6%.

Unfortunately, when we replicate the analysis in Appendix Figures IIb and IIc for total saving, we obtain very noisy and unstable results. The year-to-year income-specific shocks to taxable saving levels are sufficiently large that we cannot reject pass-through to total saving of 0 or 1. We explain why estimates based on comparing the level of taxable saving across income groups are so imprecise in Appendix B.

**B. Supplementary Results on Crowd-out in Taxable Saving**

This appendix presents three sets of supplementary results on the degree of crowd-out in taxable saving accounts caused by the 1999 subsidy reduction. First, we explain why the levels specification in (10) yields statistically uninformative estimates of crowd-out in taxable saving. Second, we present permutation tests

\(^{36}\)This synthetic cohort approach isolates variation in MSP due to the law changes in 1998 and 2004; changes in MSP at the individual level confound variation driven by changes in income and changes in the law. An alternative approach is to instrument for the changes at the individual level by simulated changes in MSP due to the law. We find that this approach yields much less stable estimates because the results are sensitive to the control function used to capture mean reversion at the individual level, a well known problem in the literature on estimating taxable income elasticities (Saez, Slemrod and Giertz, 2012).
for the MPS specification in (11) to show that our statistical inferences using that specification are valid. Finally, we explain why the income effect created by the 1999 subsidy reduction is unlikely to affect our crowd-out estimates.

**Levels Estimates.** Appendix Figure IIIa illustrates the levels DD estimator of crowd-out in taxable saving accounts. This figure plots the mean level of taxable saving (measured in pre-tax dollars) in the control (25-75K below the top tax cutoff) and treatment (25-75K above the top tax cutoff) groups. There are very large differential fluctuations in the level of taxable saving across income groups over time relative to the size of the treatment effect on total contributions to individual pension accounts ($P^I$), shown by the dashed line.

The differential fluctuations in levels in Appendix Figure IIIa are partly due to fluctuations in the marginal propensity to save in taxable accounts across years. This is illustrated in Appendix Figure IIIb, which plots the MPS (the coefficient in an OLS regression of taxable saving on taxable income) for individuals below and above the top tax cutoff. The MPS fluctuates significantly across years in a manner that is correlated with the level of taxable savings. Intuitively, in years with good asset returns or a booming economy, everyone saves more and earns higher returns in taxable accounts, with larger increases for higher income individuals. To see why these shocks to the MPS generate imprecision in the levels estimate, observe that the levels DD estimator essentially compares mean taxable saving for those above the top tax cutoff $Y_H$, with mean taxable saving for those below the top tax cutoff, whose mean taxable income is $Y_L$. If the marginal propensity to save $MPS_t$ does not vary with income in year $t$, the difference between the level of taxable saving for these two groups is

$$E[S_{i,t} | Y_{i,t}^{tax} > Y_t] - E[S_{i,t} | Y_{i,t}^{tax} < Y_t] = MPS_t \cdot (Y_H - Y_L) + E[\varepsilon_{i,t} | Y_{i,t}^{tax} > Y_t] - E[\varepsilon_{i,t} | Y_{i,t}^{tax} < Y_t].$$

This equation shows that fluctuations in $MPS_t$ contribute to the difference in savings levels across income groups and raise the variance of the error term in the levels DD estimator in (10). However, the same fluctuations in the MPS are netted out of the error term in the MPS DD estimator because that estimator directly compares the difference in the MPS across low and high income individuals around the reform. Importantly, Appendix Figure IIIb shows that the MPS does not vary differentially across income groups over time prior to the reform. The MPS in taxable saving rises sharply in the treated group relative to the control group only in 1999, the year of the reform. That is, the common trends assumption is satisfied for the MPS, whereas it is not for levels of taxable saving. This is why one obtains more precise and robust

---

37 Using individuals who are closer to the top tax cutoff to define the treatment and control groups reduces noise due to fluctuations in $\beta_t$ by reducing $W_H - W_L$. However, the magnitude of the first-stage treatment on pension contributions also diminishes at the same rate, and thus narrowing the window does not yield more precise estimates of crowd-out. Conceptually, the subsidy reduction generates a change in the slope of saving with respect to income rather than a change in the level of saving in both retirement and non-retirement accounts. The levels specification therefore yields imprecise estimates irrespective of the bandwidth used to estimate the means given fluctuations in the MPS.
estimates of crowd-out in taxable saving accounts using the MPS estimator in (11) than the levels estimator in (10).

We quantify our power to reject the null hypothesis of no change in taxable saving using the levels estimator using a permutation test. Let \( t_p \) denote a year between 1999 and 2006 and \( Y_{pt} \) a placebo cutoff for the top tax bracket. We consider a grid of values for \( Y_{pt} \) from DKr 200,000 below to DKr 200,000 above the actual top tax cutoff in year \( t \) in increments of DKr 10,000. For each combination of \( \{t_p, Y_{pt}\} \), we estimate the baseline levels DD reduced-form model, restricting the sample to 3 years before and after the placebo reform year and incomes 25-75K above or 25-75K below the placebo top tax cutoff in those years:

\[
S_{i,t}^{pretax} = \beta_0 + \beta_1 \text{postplacebo}_{i,t} + \beta_2 \text{treatplacebo}_{i,t} + \mu_S^{postplacebo} \cdot \text{treatplacebo}_{i,t} + \epsilon_{i,t} \tag{14}
\]

where \( S_{i,t}^{pretax} = S_{i,t}/0.4 \) denotes taxable saving measured in pre-tax dollars, \( \text{postplacebo}_{i,t} \) denotes an indicator for the 3 years including and after the placebo treatment year \( t_p \), and \( \text{treatplacebo}_{i,t} \) is an indicator for having taxable income above the placebo top tax cutoff \( Y_{tax}^{postplacebo} > Y_{p,t} \).

Appendix Figure IVa plots the empirical distribution of coefficient estimates \( \mu_S^{postplacebo} \) from this regression for all the placebos, excluding the coefficients from 1999 with \( Y_{p,t} \) within DKr 100,000 of the true cutoff to avoid biasing the placebo tests with the true treatment effect. Under the assumption that the treatment of the subsidy reduction is exchangeable across the year by top tax cutoff pairs (Rosenbaum, 1996), this empirical CDF represents the distribution of coefficients one would obtain under the null hypothesis that the subsidy has no impact on taxable saving. The vertical line shows the change in taxable saving one would see under perfect crowd-out \( (\rho_2 = -1) \) given the size of the treatment effect on total individual pension contributions \( P' \), which is DKr 1,058. The permutation test shows that the chance of observing a coefficient \( \mu_S^{postplacebo} \) exceeding this value is greater than 48%. Appendix Figure IVb replicates Appendix Figure IVa using a trimmed measure of taxable saving (the dependent variable in Column 2 of Table VII). Trimming reduces the dispersion of the estimates, but the chance of observing a coefficient \( \mu_S^{postplacebo} \) exceeding DKr 1058 is still 24%. These results show that the levels estimator does not have adequate power to discriminate between the extremes of perfect crowd-out and no crowd-out, i.e. it is not informative about the degree of crowd-out in taxable savings accounts.

**Precision of MPS Estimates.** Next, we implement a set of permutation tests analogous to those above to ensure that the MPS approach does in fact yield more precise estimates than the levels approach. Using the same combinations of \( \{t_p, Y_{p,t}\} \) above, we re-estimate the 2SLS specification for crowd-out in Column 2.

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38In contrast, there is little or no variation in the MPS in retirement saving accounts across years in the control group, as is evident in Figure Va. This is why the levels and MPS estimator yield very similar estimates of responses within retirement accounts. The observed MPS may fluctuate more in taxable accounts because we directly observe flows in retirement accounts (and thus the MPS is unaffected by fluctuations in asset returns) and because cyclical fluctuations in durable purchases may have greater impacts on balances in taxable accounts.
of Table VII. Appendix Figure Va plots an empirical distribution of the t-statistics obtained from the set of placebo regressions, computed using standard errors clustered at the DKr 5,000 income bin level as in Table VII. The t-statistic corresponding to the actual treatment is shown by the vertical line. Appendix Figure Vb repeats this analysis for the threshold specification in Column 5 of Table VII. In both cases, the actual t-statistic falls at or below the first percentile of the empirical CDF of placebo t-statistics, confirming that we can reject the null of no crowd-out at conventional levels of significance.

Appendix Figures Vc and Vd plot the empirical CDF of placebo p values corresponding to these two regressions. Under the assumption of exchangeability, the p values should have a uniform distribution if inference based on the clustered standard errors is valid. The CDF of the p values is in fact very close to the 45 degree line, indicating that our baseline approach of clustering standard errors by DKr 5,000 income bins gives valid p values for the MPS specifications.\footnote{Interestingly, the same is not true for the levels estimator: standard errors clustered at the DKr 5,000 income bin level yield a p value below 0.01 in the baseline 2SLS specification. However, a permutation test reveals that 40% of the p values from placebo tests fall below 0.01, indicating that these standard errors substantially overstate the precision of the estimate. This is because there is substantial correlation in the level of taxable saving across individuals within a year that is not accounted for by clustering at the DKr 5,000 income bin level.}

**Income Effects.** The increased taxation of capital pension contributions after the 1999 reform reduces disposable income for those who continued to make capital pension contributions after the reforms. This change in disposable income has a negligible impact on our crowd-out calculation because the $100 - 19.3 \times 0.7\%$ of passive savers who do not respond to the reform also do not change taxable saving significantly when their disposable income changes, as shown by the results in Section V. The 19.3% of individuals who respond to the subsidy change do so primarily by exiting capital pensions entirely, and thus their tax liabilities are unaffected by the change in the tax rate on capital pensions. As a result, our crowd-out estimate is driven purely by the behavior of the active savers: the passive savers affect neither the numerator (change in taxable saving), nor the denominator (change in pension contributions). If a small fraction of passive savers do reduce consumption when their disposable income falls after 1999, we would understate the degree of crowd-out, as the increase in taxable saving after 1999 would have been even larger absent this income effect.

**C. Revenue Gain from 1999 Subsidy Reduction**

In this appendix, we calculate the impact of the 1999 capital pension subsidy reduction on government revenue. The capital subsidy reduction in 1999 changed the current tax rate on contributions, but did not affect rates on withdrawal or accrual. The primary determinant of the fiscal gain from the 1999 reform is therefore simply the mechanical revenue gain from reducing the subsidy on current contributions by 13.6 cents per DKr (ignoring any behavioral responses). Given that mean per capita contributions to capital pensions were DKr 5196 in 1998 in the treatment group, the mechanical subsidy reduction of 13.6 cents per
DKr yields a fiscal gain of DKr $5196 \times 0.136 = 707$ per individual in the top bracket.

The 1999 subsidy reduction induced individuals to reduce contributions to capital pensions by DKr 2449 (Table V, Column 1). This behavioral response induced individuals to shift DKr $0.529 \times 2449 = 1296$ from retirement accounts to taxable savings accounts (Table VI, Column 5). Because retirement accounts are tax subsidized, this behavioral response further increased government revenue. The revenue gain due to behavioral responses depends upon the net subsidy to capital pensions relative to taxable savings accounts. Calculating this net subsidy requires various assumptions on individual behavior, as it requires accounting for not just the impact of the behavioral response on current tax revenues but also the present value of impacts on revenue when the money is withdrawn from retirement accounts, adjusting for the accrual of capital gains.

We estimate the average value of the net subsidy to capital pension accounts using the following calculation. Assume that the representative individual invests at age 40 and earns a 5% nominal return per year, of which 40% (i.e., 2 percentage points) is realized in each year (e.g., through dividends, interest payments, or capital gains from asset reallocation) and reinvested. The money stays in the account until age 60, when it is withdrawn. Retirement accounts are subsidized in two ways. First, individuals pay an effective tax rate of 20% on capital gains within the retirement account, as compared with 40% in non-retirement accounts. Second, withdrawals from non-retirement accounts are taxed as regular income, at an average rate of 45.9%; withdrawals from the capital pension retirement account are taxed at 40%. Taking these two tax benefits into account, we calculate that the subsidy to capital pension contributions is equivalent to an up-front subsidy of 19.4 cents per DKr in 1999, after the reform. Hence, the revenue gain from individuals shifting money out of capital pensions and into taxable accounts is DKr $1296 \times 0.194 = 176$.

Combining the mechanical revenue gain and the gain from the behavioral response, we estimate that the 1999 reform generated an NPV fiscal gain of DKr $707 + 176 = 883$ on average across treated individuals. 80% of the fiscal savings came from the first-order mechanical effect of reducing the subsidy on infra-marginal capital pension contributions; hence our estimate of the revenue gain is not very sensitive to the assumptions made when calculating the net subsidy above. Note that the DKr 883 figure understates the true fiscal gain because it ignores the revenue gain that comes from shifting of assets from capital to annuity accounts in 1999 (substitution within retirement accounts).

Repeating these calculations including employer pensions generates larger revenue gains. Mean per capita contributions to firm capital pensions were DKr 12,088 in 1998 in the treatment group, so that the mechanical subsidy reduction of 13.6 cents per DKr yields an additional fiscal gain of $12,088 \times 0.136 = 1644$. The 1999 subsidy induced firms to switch contributions from capital to annuity pensions, which we ignore to

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40In 1999, savers paid 33.8% tax on real (that is, inflation adjusted) capital gains in retirement accounts. Assuming a 5% nominal return and 2% inflation, this is equivalent to a 20% nominal tax rate.
be conservative, but did not change total employer pension contributions. Therefore, the total fiscal gain for the government from the 1999 subsidy reduction, including employer contributions to retirement accounts, is DKr $1644 + 883 = 2527$ per individual in the top bracket.
**APPENDIX TABLE I**

Robustness Checks of Pass-Through Estimates

<table>
<thead>
<tr>
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<th>Full Sample Including Corners</th>
<th>Renters</th>
<th>Household Saving</th>
<th>Single Individuals</th>
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</thead>
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<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
</tr>
<tr>
<td><strong>Panel A: Effect of Employer Pensions on Total Saving (Table IIIA, Column 2)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>∆ Employer Pension Rate</td>
<td>0.747</td>
<td>0.818</td>
<td>0.739</td>
<td>0.775</td>
</tr>
<tr>
<td></td>
<td>(0.015)</td>
<td>(0.027)</td>
<td>(0.024)</td>
<td>(0.034)</td>
</tr>
<tr>
<td>Observations</td>
<td>3,582,391</td>
<td>841,398</td>
<td>1,840,435</td>
<td>708,579</td>
</tr>
</tbody>
</table>

| **Panel B: Effect of MSP on Total Saving (Table IV, Column 5)** |                               |         |                  |                    |
| Pass-Through RD        | 1.021                         | 1.577   | 1.328            | 1.769              |
|                        | (0.051)                       | (0.410) | (0.508)          | (0.571)            |
| Observations           | 155,735                       | 119,033 | 148,380          | 92,647             |

| **Panel C: Subsidy Change and Crowd-out of Taxable Saving (Table VII, Column 5)** |                               |         |                  |                    |
| Total Pension Contrib. | -1.215                        | -0.907  | -1.409           |                    |
|                        | (0.453)                       | (0.314) | (0.528)          |                    |
| Observations           | 2,327,951                     | 7,926,187 | 1,897,831        |                    |

Notes: This table replicates key specifications using alternative samples or dependent variables to evaluate the robustness of the results. Panel A replicates the specification in Table IIIA, Column 2, measuring the effect of a change in the employer pension contribution rate on total saving at the time of a firm switch. Panel B replicates the specification in Table IV, Column 5, measuring the effect of the Mandated Savings Plan on total saving using a threshold indicator for having above-average saving. Panel C replicates the specification in Table VII, Column 5, measuring the effect of the 1999 capital pension subsidy reform on crowd-out in taxable saving using a threshold indicator for having taxable saving above the median. See notes to the earlier tables for further details on each specification. In Column 1, we replicate the specifications in the first two panels including all individuals, not just those who are not at the lower corner in saving in the prior year. In Column 2, we replicate the three original specifications exactly, restricting to individuals who do not own homes (i.e., have zero home equity). In Column 3, we replicate each specification including partner’s taxable assets in our savings measure where present. In Panel A of Column 3, the dependent variable is the change in the household saving rate (measured as a percentage of the individual’s own labor income, with observations below the 1st or above the 99th percentile of the distribution excluded); in Panels B and C, the dependent variable is a dummy variable for having household saving (or household taxable saving) above the relevant sample mean or median. In Column 4, we replicate the three original specifications exactly, restricting to individuals who do not have a partner, defined as in the notes to Table II.
APPENDIX TABLE II

Employer Responses to 1999 Capital Pension Subsidy Reduction

<table>
<thead>
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<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Above Cutoff × Post</td>
<td>-2645</td>
<td>-1.011</td>
<td>-0.011</td>
<td>-0.078</td>
</tr>
<tr>
<td></td>
<td>(173) (0.041)</td>
<td>(0.041)</td>
<td>(0.035)</td>
<td></td>
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<tr>
<td>Capital Pension Contrib.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Controls</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Observations</td>
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<td>4,707,788</td>
<td>4,707,708</td>
<td>4,707,708</td>
</tr>
</tbody>
</table>

Notes: Column 1 presents estimates of the impact of the 1999 subsidy reduction on employer contributions to capital pension accounts. This column replicates Column 1 of Table V, changing the dependent variable to employer capital pension contributions. Columns 2-4 replicate Columns 1-3 of Table VI, changing the dependent variables to employer pensions instead of individual pensions and replacing the endogenous independent variable with employer capital pensions instead of individual capital pensions. As in Table VI, we instrument for the endogenous variable with the DD interaction term. All specifications are estimated using data from 1996-2001. Standard errors, reported in parentheses, are clustered at the DKr 5,000 income bin level.
APPENDIX FIGURE I
Mandated Savings Account Balance Notification Letter

Notes: This figure presents a pension balance notification letter sent to a Danish citizen in 2004. These letters were sent annually by ATP, Denmark's largest pension company, giving citizens information about the balance in their mandated savings account.
APPENDIX FIGURE II
Impact of Mandated Savings Plan: Difference-in-Differences Design

Notes: These figures present the effect of the Mandated Savings Plan (MSP) on total non-employer pension contributions. In all three panels, we split the data into terciles based on labor income in each year. Individuals may therefore switch groups across years. We include only observations with positive labor income. Panel A plots the average contribution to the MSP in each year for these three groups ($P_G$). Panel B plots the average total non-employer pension contribution ($P_I + P_G$) in each year for the three groups. Panel C plots the fraction of individuals in each group with total non-employer pension contributions greater than 1.5% of income, which is the mean total non-employer contribution rate for the sample across all years.
APPENDIX FIGURE III
Levels and Marginal Propensity to Save in Taxable Accounts Around 1999 Subsidy Change

a) Mean Levels of Taxable Saving Above vs. Below Top Tax Cutoff by Year

b) Marginal Propensity to Save in Taxable Accounts for Individuals Above vs. Below Top Tax Cutoff by Year

Notes: Panel A plots the mean level of taxable savings for individuals 25-75K above the top tax cutoff (the treatment group) and 25-75K below the top tax cutoff (control group) by year. It replicates Figure Vb, replacing mean capital pension contributions with mean taxable saving levels (measured in pre-tax dollars using the top bracket marginal tax rate, \(S/(1 - 0.6)\)) as the y variable. The dashed series plots the impact on total pension contributions as a reference (on a separate y scale). Panel B plots the marginal propensity to save in taxable savings accounts for individuals above vs. below the top tax cutoff. We construct this figure by regressing taxable saving (\(S/(1 - 0.6)\)) on taxable income separately for each year and for individuals DKr 0-75K below the top cutoff and those DKr 0-75K above the top tax cutoff. We then plotting the resulting regression estimates for the two groups. Note that the lower series in Figure VIIIa is simply the difference between the series plotted in Panel B of this figure.
APPENDIX FIGURE IV
Permutation Tests for Levels Estimator of Crowd-out in Taxable Saving

Notes: Panel A shows an empirical CDF of estimated impacts of placebo subsidy changes on taxable saving levels. We construct this figure as follows. Let $t_p$ denote a year between 1999 and 2006 and $Y_{pt}$ a placebo cutoff for the top tax bracket. We consider a grid of values for $Y_{pt}$ from DKr 200,000 below to DKr 200,000 above the actual top tax cutoff in year $t$ in increments of DKr 10,000. For each combination of $\{t_p, Y_{pt}\}$, we estimate the levels DD reduced-form model shown in (14), using the level of taxable saving measured in pre-tax dollars ($S/(1 - 0.6)$) as the dependent variable. We restrict the sample to 3 years before and after the placebo reform year and incomes 25-75K above or 25-75K below the placebo top tax cutoff in those years. The figure plots the cumulative distribution function of coefficient estimates for all the placebos, excluding the coefficients from 1999 with $Y_{pt}$ within DKr 100,000 of the true cutoff to avoid biasing the placebo tests with the true treatment effect. The vertical line shows the treatment effect one would observe under 100% crowd-out, i.e. if the change in taxable saving (in pre-tax dollars) were equal to the reduction in individual pension contributions shown by the dashed line in Appendix Figure IIIA. Panel B replicates Panel A, winsorizing the taxable saving measure at the 10th and 90 percentiles, as in Column 2 of Table VII.
APPENDIX FIGURE V
Permutation Tests for MPS Estimator of Crowd-out in Taxable Saving

Notes: Panel A shows an empirical CDF of estimated t statistics for the impact of placebo subsidy changes on the crowd-out in taxable savings accounts per DKr change in individual pension contributions estimated using the MPS specification in Table VII. We construct this figure as follows. Let \( t_p \) denote a year between 1999 and 2006 and \( \overline{Y}_{pt} \) a placebo cutoff for the top tax bracket. We consider a grid of values for \( \overline{Y}_{pt} \) from DKr 200,000 below to DKr 200,000 above the actual top tax cutoff in year \( t \) in increments of DKr 10,000. For each combination of \( \{ t_p, \overline{Y}_{pt} \} \), we re-estimate the MPS specification in (11) using 2SLS, redefining the regressors based on the placebo variables and restricting the sample to 3 years before and after the placebo reform year and incomes within DKr 75K of the placebo top tax cutoff in those years. As in the baseline specification, standard errors are clustered at the DKr 5,000 income bin level. The figure plots the cumulative distribution function of t-statistics for all the placebos, excluding the coefficients from 1999 with \( \overline{Y}_{pt} \) within DKr 100,000 of the true cutoff to avoid biasing the placebo tests with the true treatment effect. The vertical line shows the actual t-statistic obtained in Column 2 of Table VII. Panel B replicates Panel A, using the threshold specification in Column 5 of Table VII instead. Panels C and D plot the empirical CDF of p values corresponding to the t-statistics in Panels A and B. These two panels also show the 45 degree line as a reference; under the exchangeability assumption, the p values should cluster around this 45 degree line if inference based on the parametric clustered standard errors is valid. Both figures also report the non-parametric permutation-based p value, computed using the empirical cdf.
APPENDIX FIGURE VI

Active vs. Passive Choice and Responses to Subsidies and Employer Pensions

Notes: Panel A is a binned scatter plot. The y variable is an indicator for extensive margin substitution in response to the 1999 capital pension reform, defined as exiting capital pensions and raising annuity pension contributions. The x variable is the fraction of other years in which an individual changes individual capital or annuity pension contributions relative to the prior year. This plot corresponds to the regression in Column 3 of Table VIII; see notes to Table VIII for further details of sample specification and notes to Figure II for details on construction of binned scatter plots. The best-fit line, coefficient, and standard error in Panel A come Column 3 of Table VIII. Panel B plots pass-through from employer pensions to total pensions vs. the same x axis variable as in Panel A. To construct this figure, we first split individuals into vingtiles based on the fraction of other years in which an individual changes individual capital or annuity pension contributions relative to the prior year (note that this procedure results in fewer than 20 groups because of point-masses in the distribution). We then estimate and plot the pass-through coefficient of employer pensions to total pensions, estimated from a separate regression in each bin using the specification in Table IIIA, Column 1. This figure is a non-parametric version of the regression in Column 5 of Table VIII; we report the coefficient and standard error from that specification. See notes to Table VIII for further details on sample and variable definitions.
APPENDIX FIGURE VII
Heterogeneity in Responses to Subsidies and Employer Pensions by Wealth

Notes: These figures show the heterogeneity by wealth/income ratios in extensive margin substitution in response to the reduction in the subsidy (Panel A) and pass-through of employer pensions to total saving (Panel B). The two panels replicate Panels A and B of Appendix Figure VI, changing the x axis variable to the wealth/income ratio, measured as non-pension assets divided by labor income. In Panel A, we measure the wealth income ratio in 1998, the year before the subsidy reduction; in Panel B, we measure it before the firm switch. In Panel B, we measure pass-through to total saving (rather than total pension contributions, as in Appendix Figure VI). See notes to Appendix Figure VI for additional details on construction of these figures. Panel A corresponds to Table IXa, Column 1, while Panel B is a non-parametric analog of the regression in Table IXb, Column 1. See notes to Table IX for further details on sample and variable definitions.