

Active vs. Passive Decisions and Crowd-out in Retirement Savings Accounts: Evidence from Denmark

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Policies to Increase Retirement Saving

- Growing concern that many people may not be saving adequately for retirement [e.g., Poterba 2014 Ely Lecture]
- U.S. spends approximately \$100 billion per year on subsidies for retirement savings accounts such as 401(k)'s and IRA's [JCT 2012]
- Are these subsidies effective in increasing savings rates?
- Or can we do better with alternative policies (e.g., auto enrollment)?
- More generally, what models of savings best describe household behavior and should be used to guide policy?

New Data

- Extensive prior literature on effects of subsidies for retirement saving [e.g. Poterba, Venti, Wise 1996, Engen, Gale, Scholz 1996, Gelber 2010]
- Answers remain debated because of lack of high quality data on saving
- To obtain more precise evidence, we turn to data from Denmark [Chetty, Friedman, Leth-Petersen, Nielsen, Olsen 2013]
 - Universe of Danish income tax returns, 1994-2009
 - 4 million individuals (aged 18-60)
 - 41 million third-party reported observations on savings

Overview

- We analyze two types of policies using quasi-experimental methods
 1. Automatic contributions by government or employers to workers' retirement savings accounts
 2. Tax subsidies for retirement savings
- Structure empirical analysis using a stylized lifecycle model
 - Two savings accounts: illiquid retirement account (401k) and liquid taxable savings (bank)
 - Two types: active savers (neoclassical) and passive savers (ignore govt. policies when choosing pension contribs.)

Impacts of Government Policies on Saving for Active vs. Passive Savers

Automatic Contribution

	Raises Pension Contribs.?	Raises Total Saving?
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Active Savers

No

No

Passive Savers

Yes

Uncertain

Impacts of Government Policies on Saving for Active vs. Passive Savers

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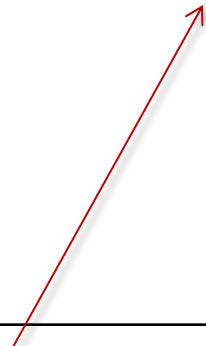
Impact of auto. contrib. on *total* saving depends on how budget constraint is satisfied

Impacts of Government Policies on Saving for Active vs. Passive Savers

	Automatic Contribution		Tax Subsidy	
	Raises Pension Contribs.?	Raises Total Saving?	Raises Pension Contribs.?	Raises Total Saving?
Active Savers	No	No	Yes	Uncertain
Passive Savers	Yes	Uncertain	No	No

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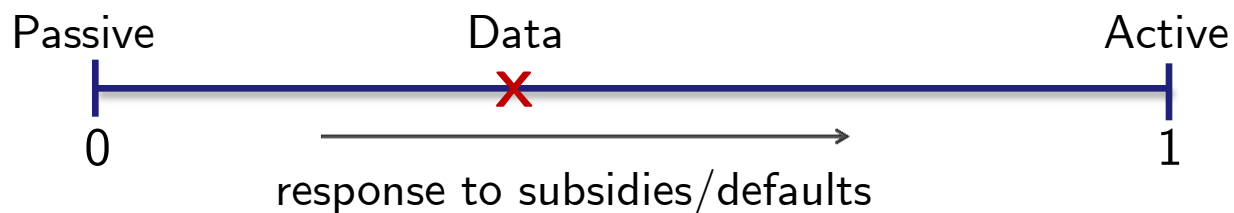
Impact of price subsidy on total saving depends on magnitude of price and income effects

Impacts of Government Policies on Saving for Active vs. Passive Savers

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Data	?	?	?	?

Outline

1. Test the four predictions
2. Estimate fraction of active vs. passive savers

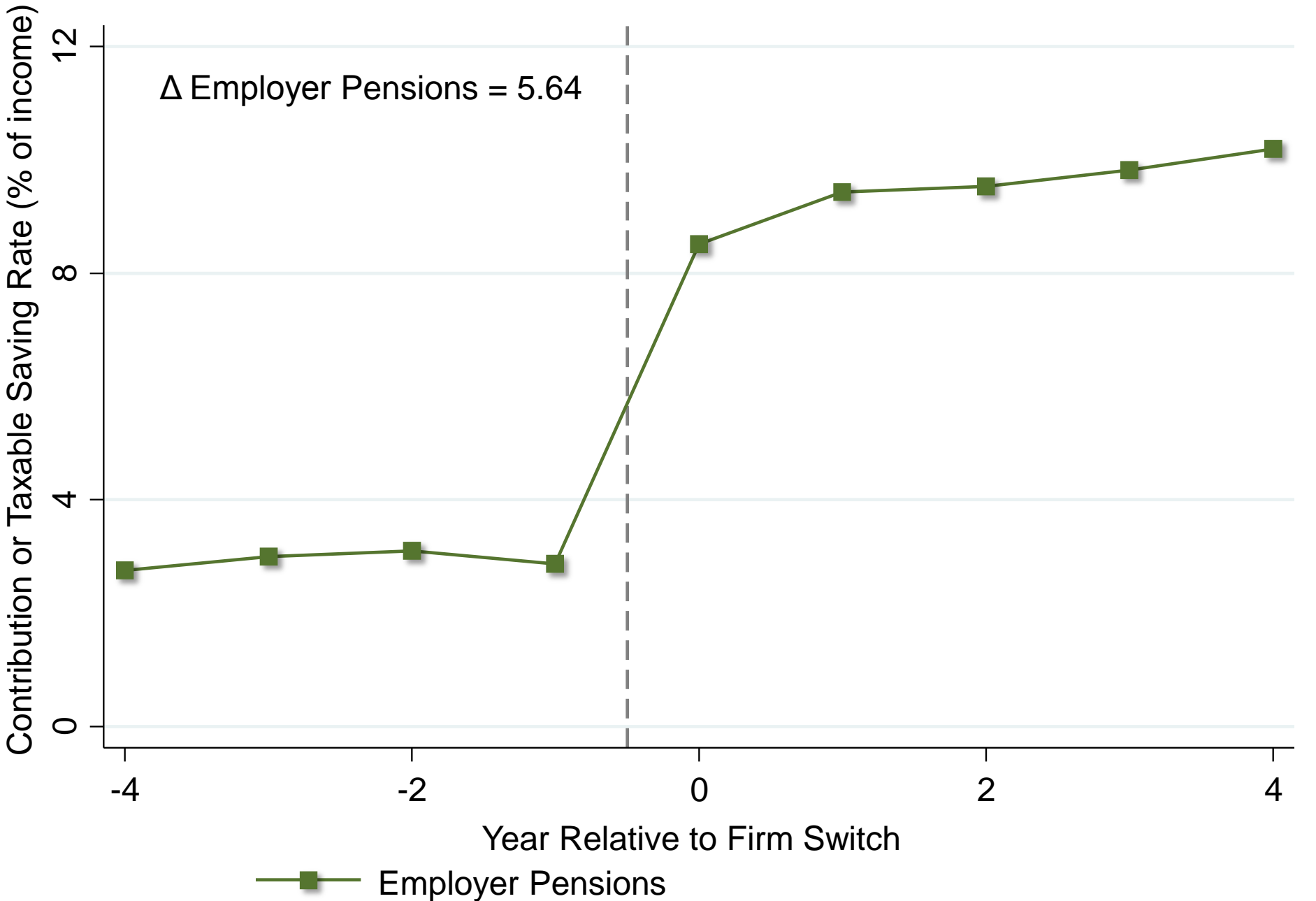


3. Analyze heterogeneity to test active vs. passive choice mechanism

Impacts of Automatic Contributions

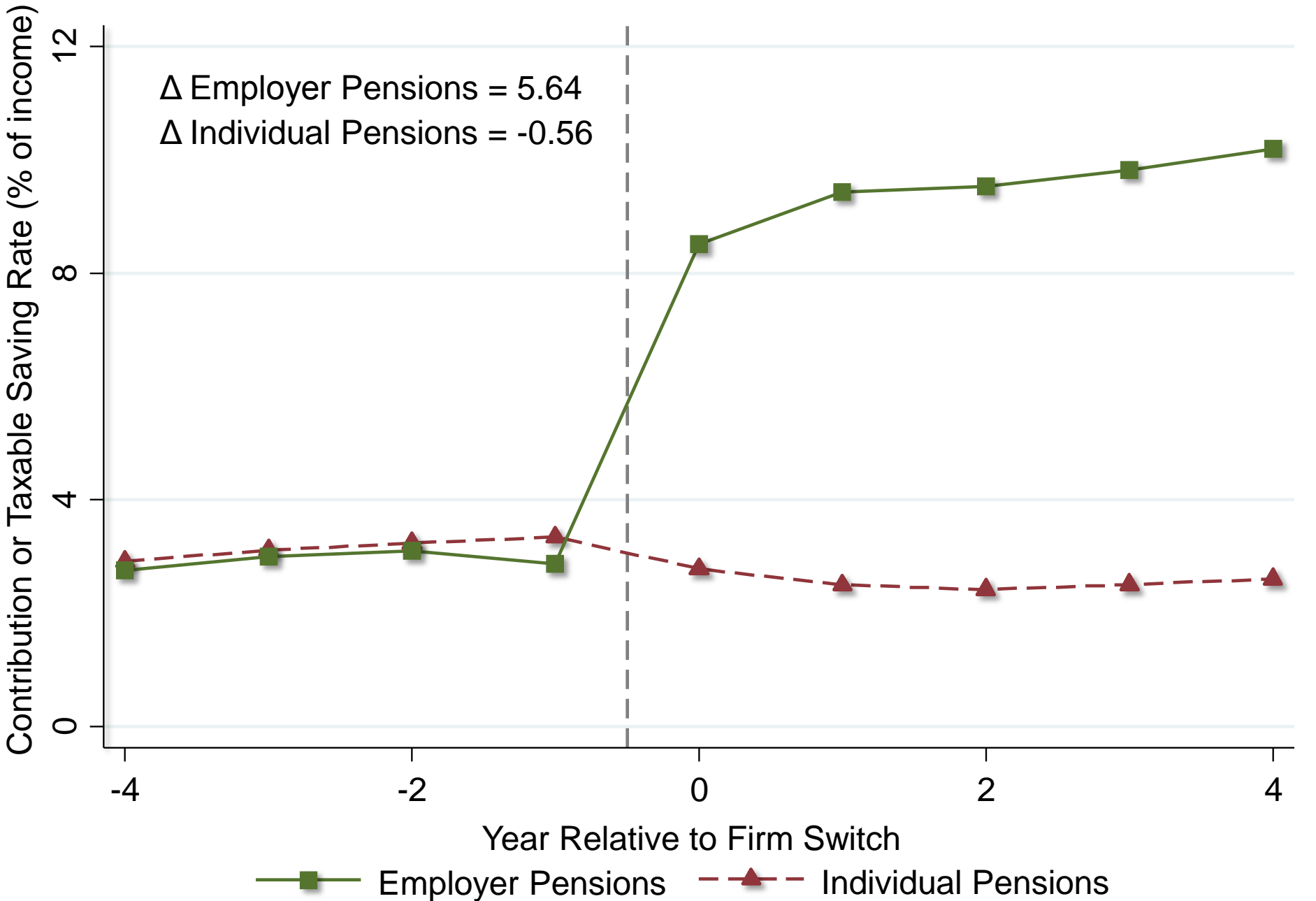
Event Study around Switches to Firm with >3% Increase in Employer Pension Rate

Individuals with Positive Pension Contributions or Savings Prior to Switch



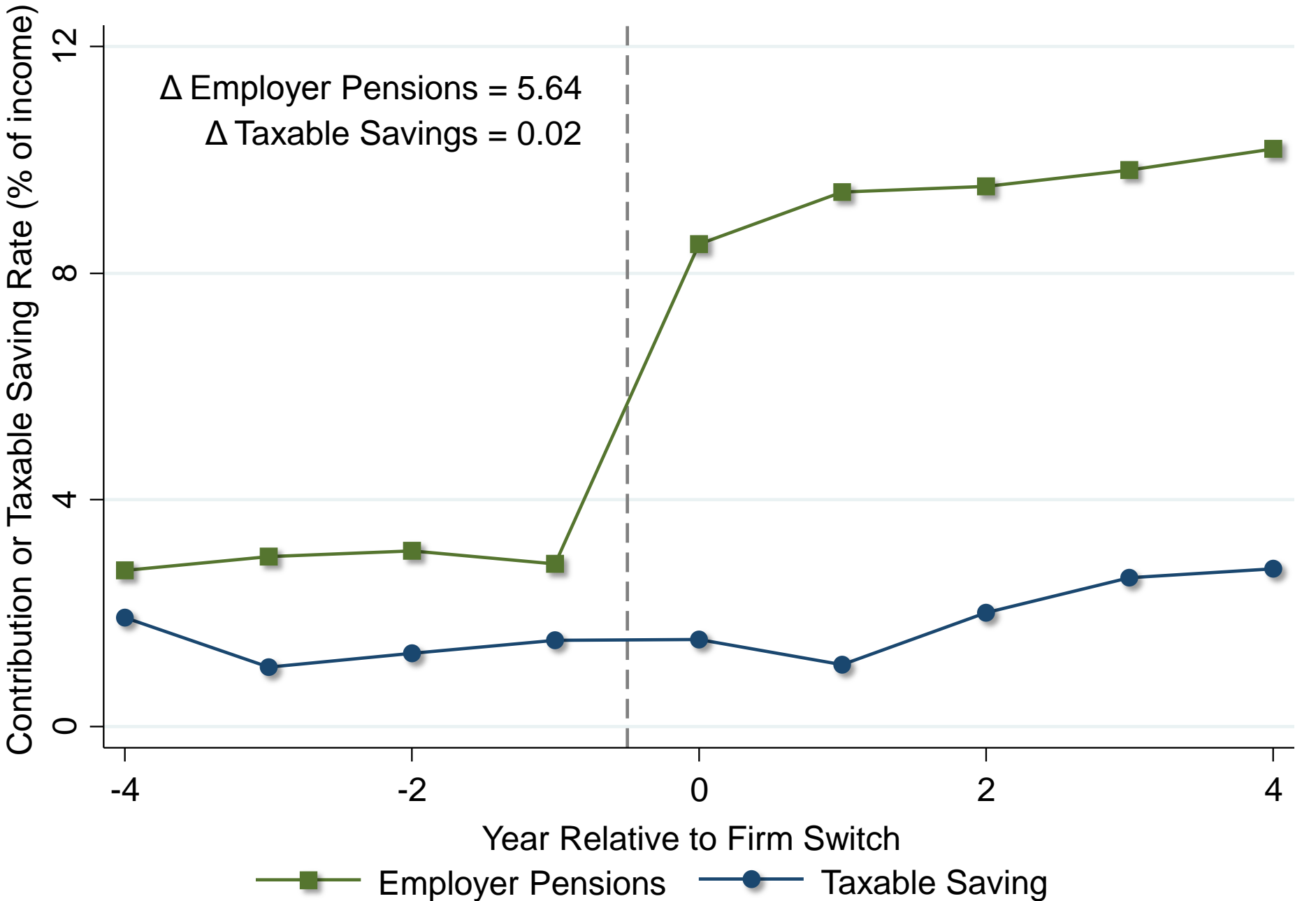
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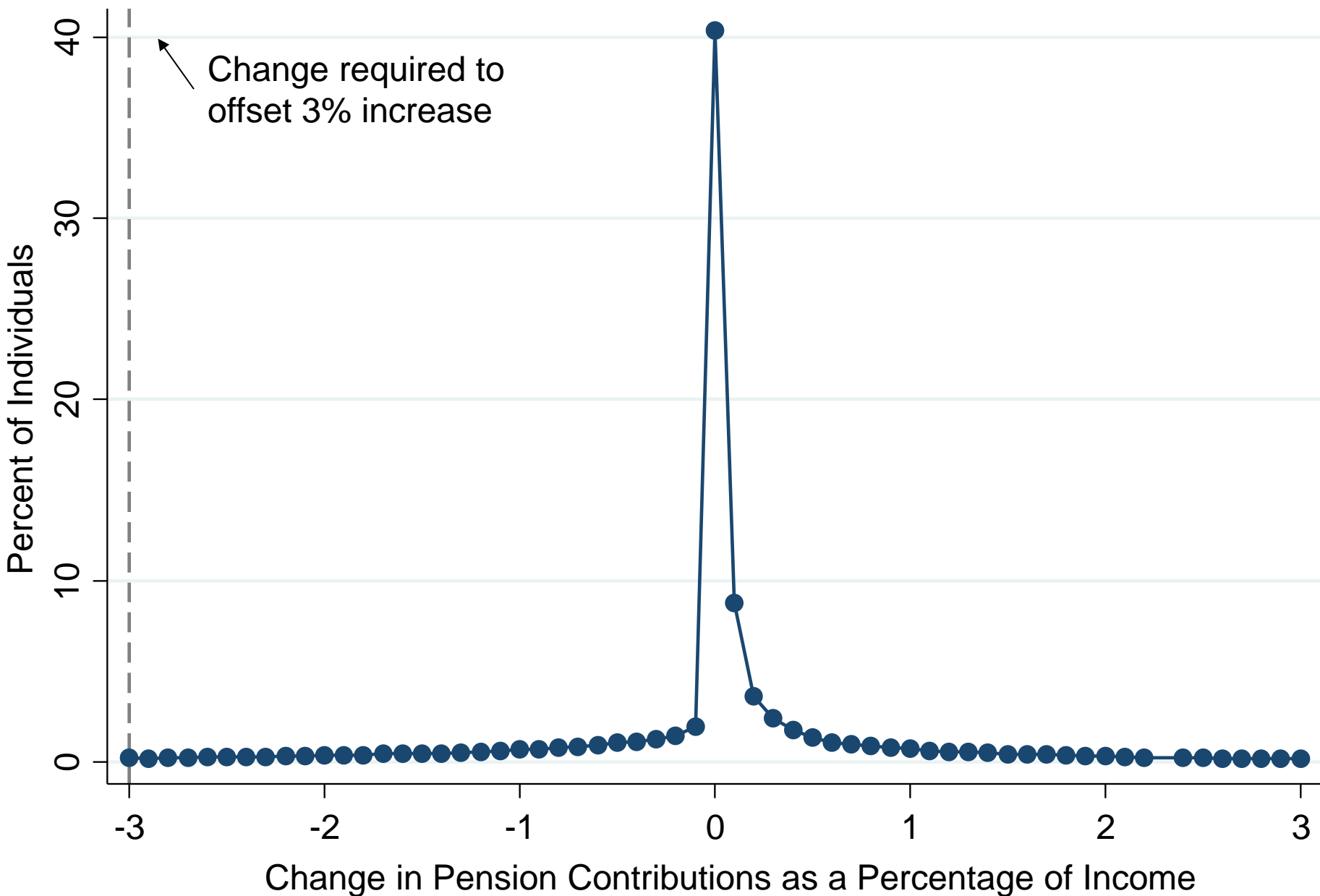


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Changes in Individual Pension Contributions in Year of Firm Switch

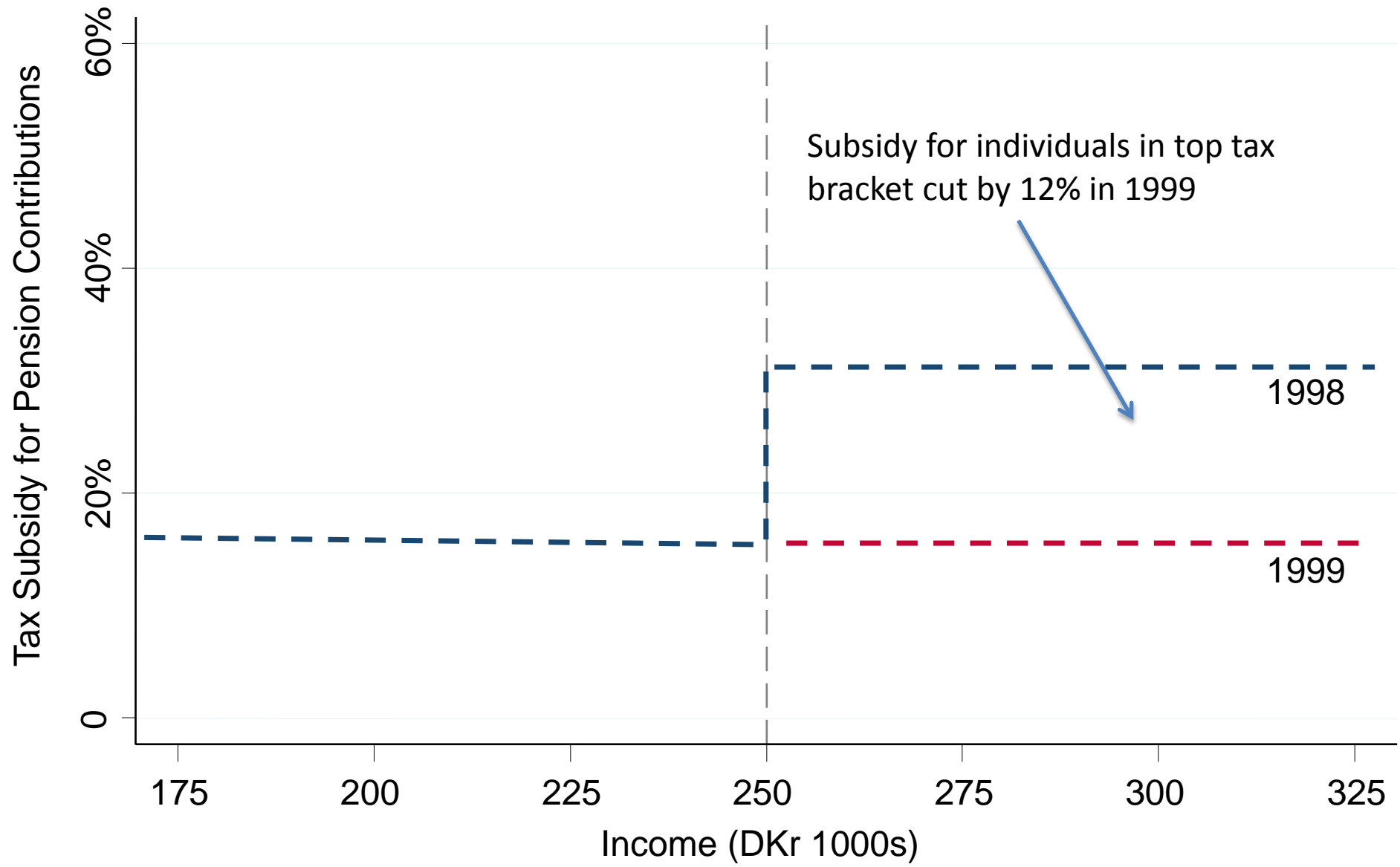


Impacts of Automatic Contributions

- Approximately 85% of individuals respond passively to changes in automatic contributions
 - And they primarily cut consumption to meet budget when disposable income falls
 - Savings increases persist for several years even for large shocks (+/- 5% of income), challenging bounded rationality models
- Cutting salary by \$1 and raising pension contribution by \$1 increases savings rate by at least 80 cents

Impacts of Tax Subsidies

1999 Reduction in Tax Subsidy for Pension Contributions



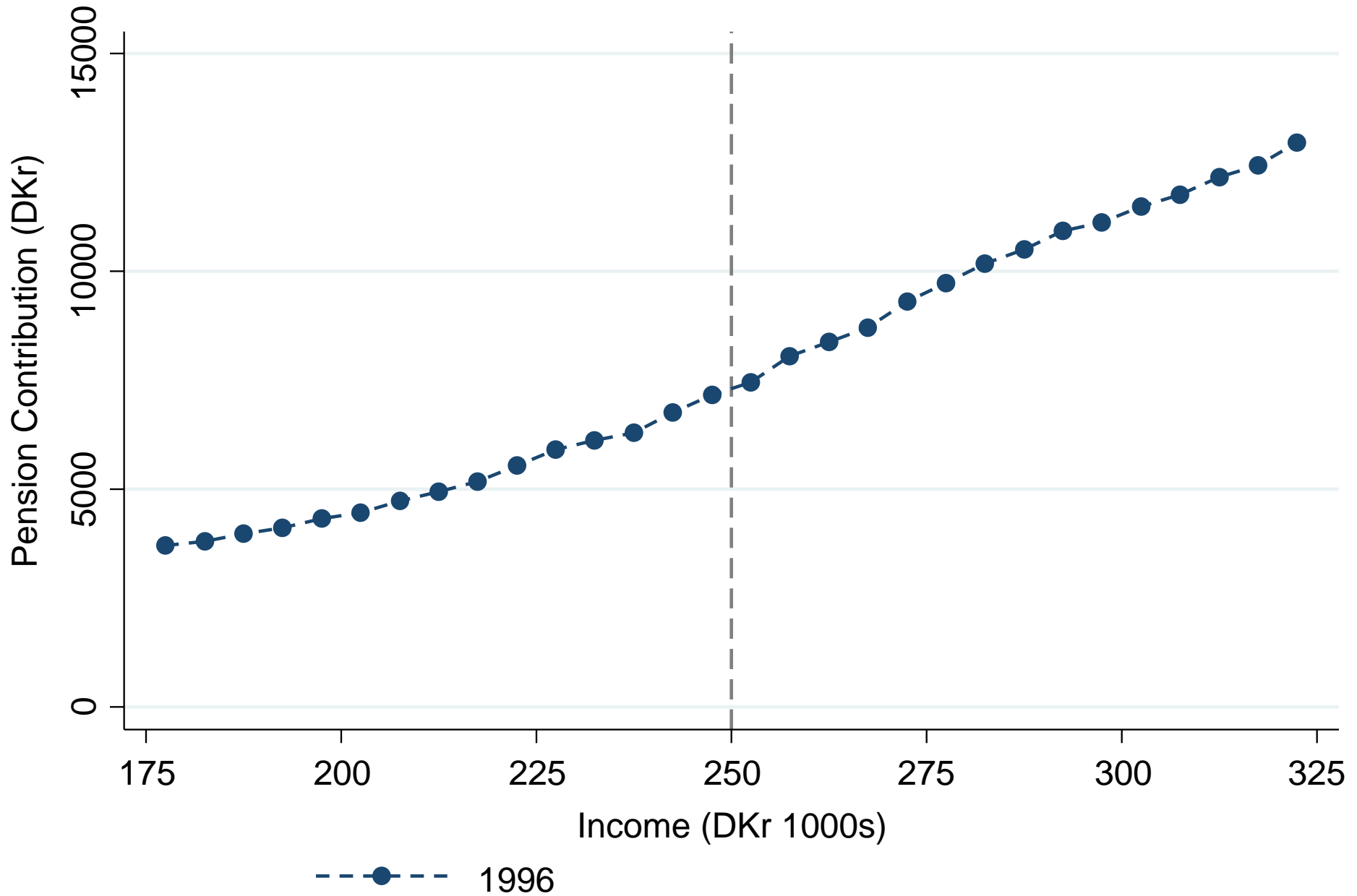
Subsidy for individuals in top tax bracket cut by 12% in 1999

1998

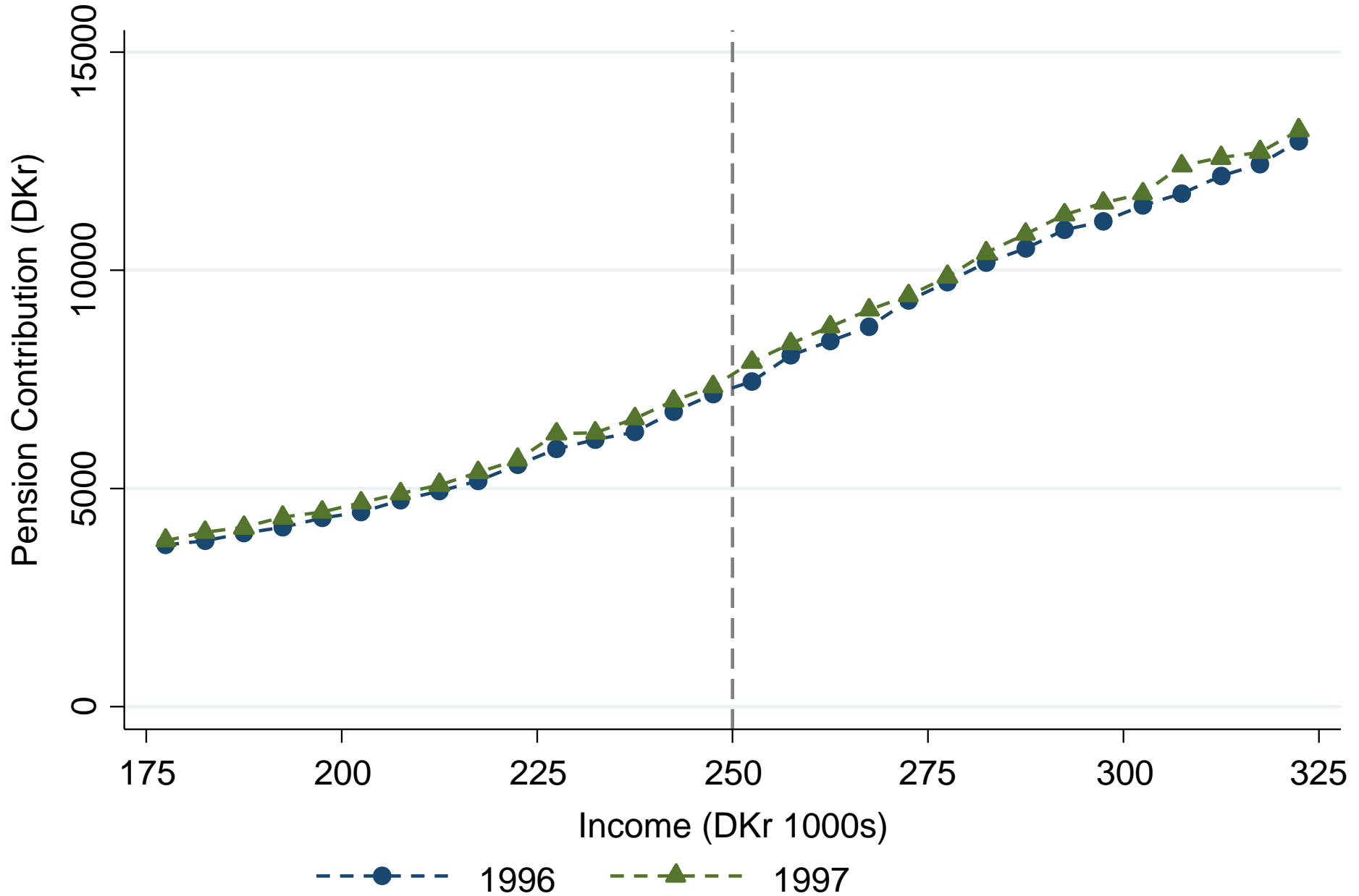
1999

Note: \$1 \cong 6 DKr

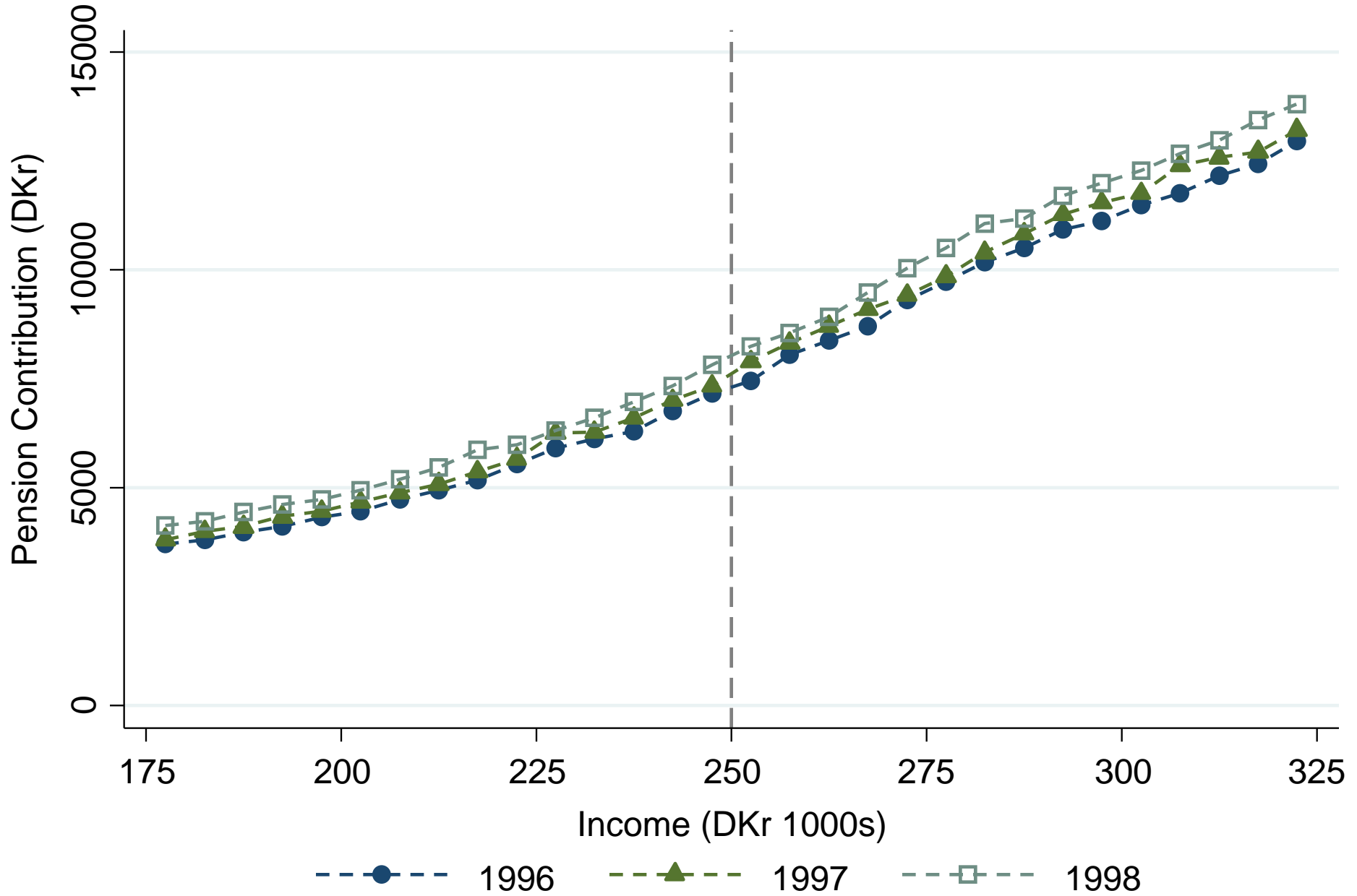
Impact of 1999 Pension Subsidy Reduction On Pension Contributions



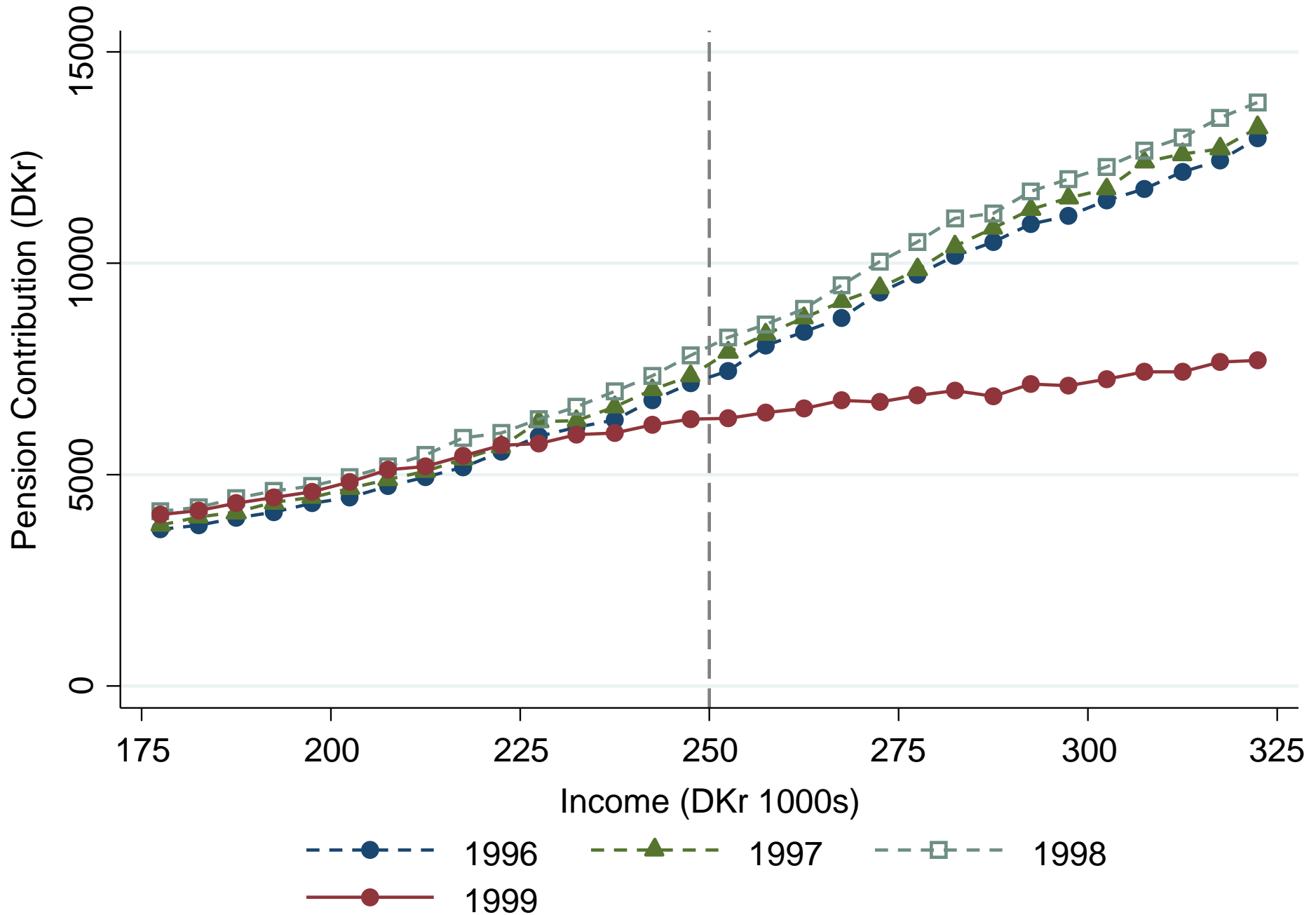
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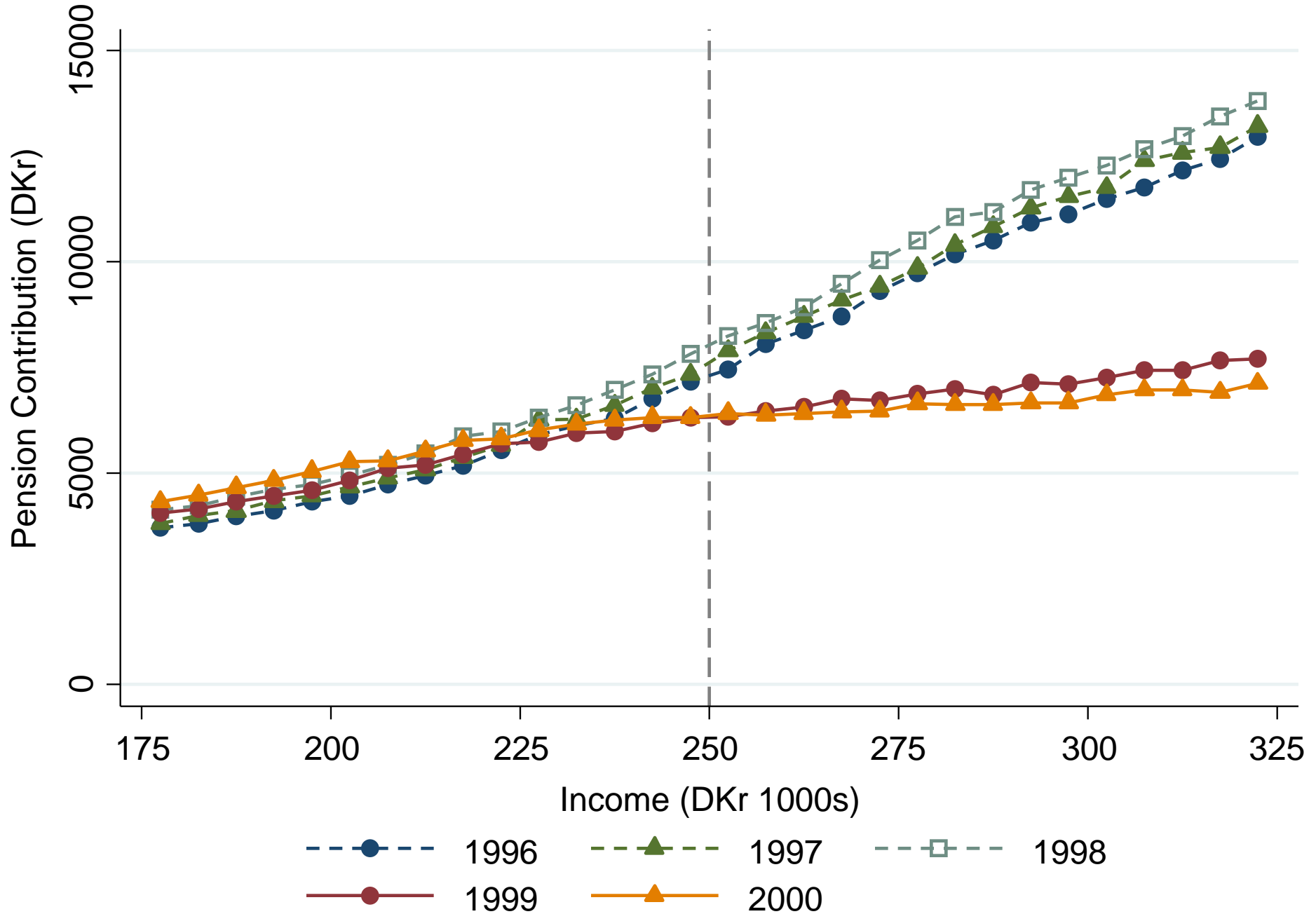
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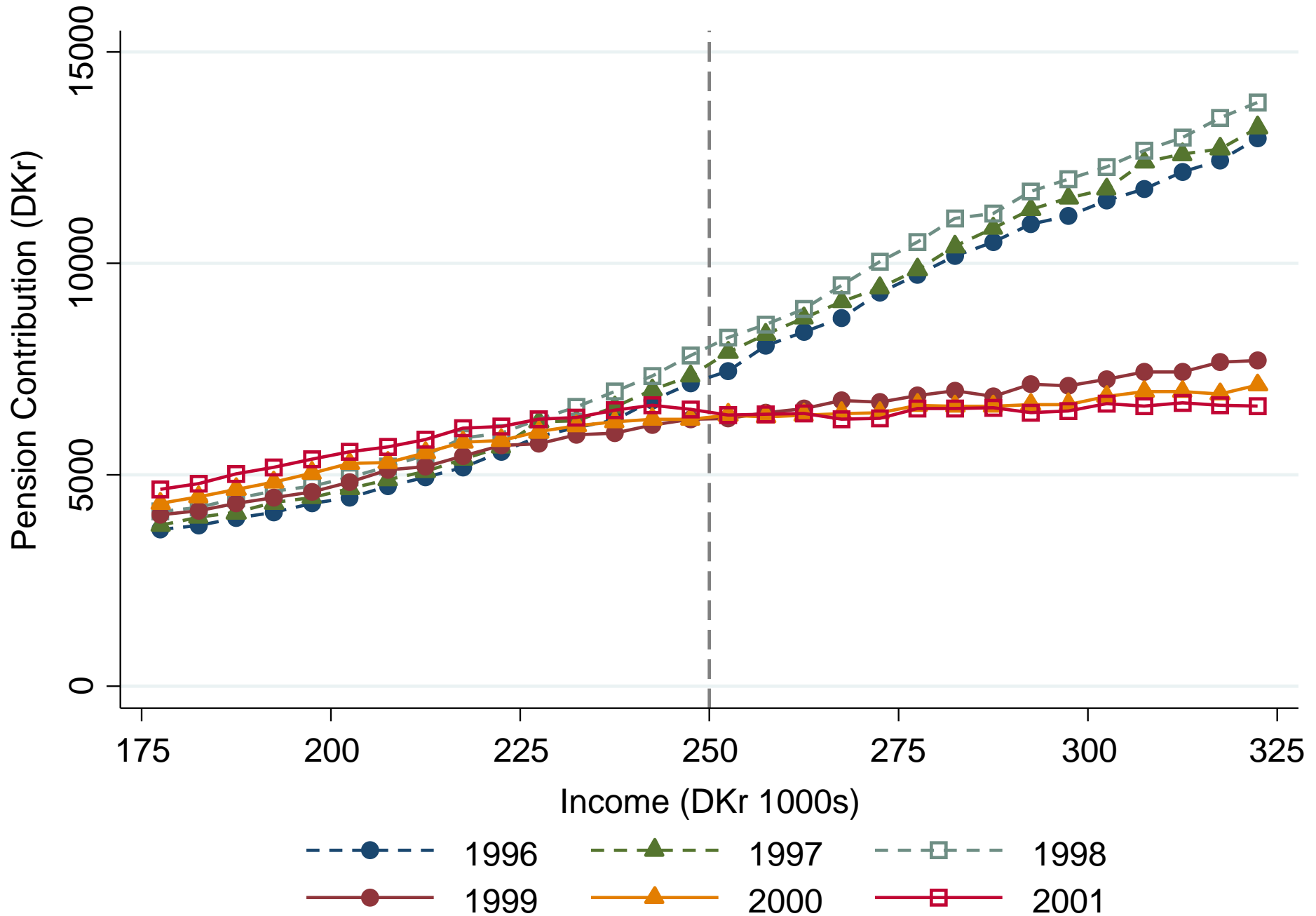
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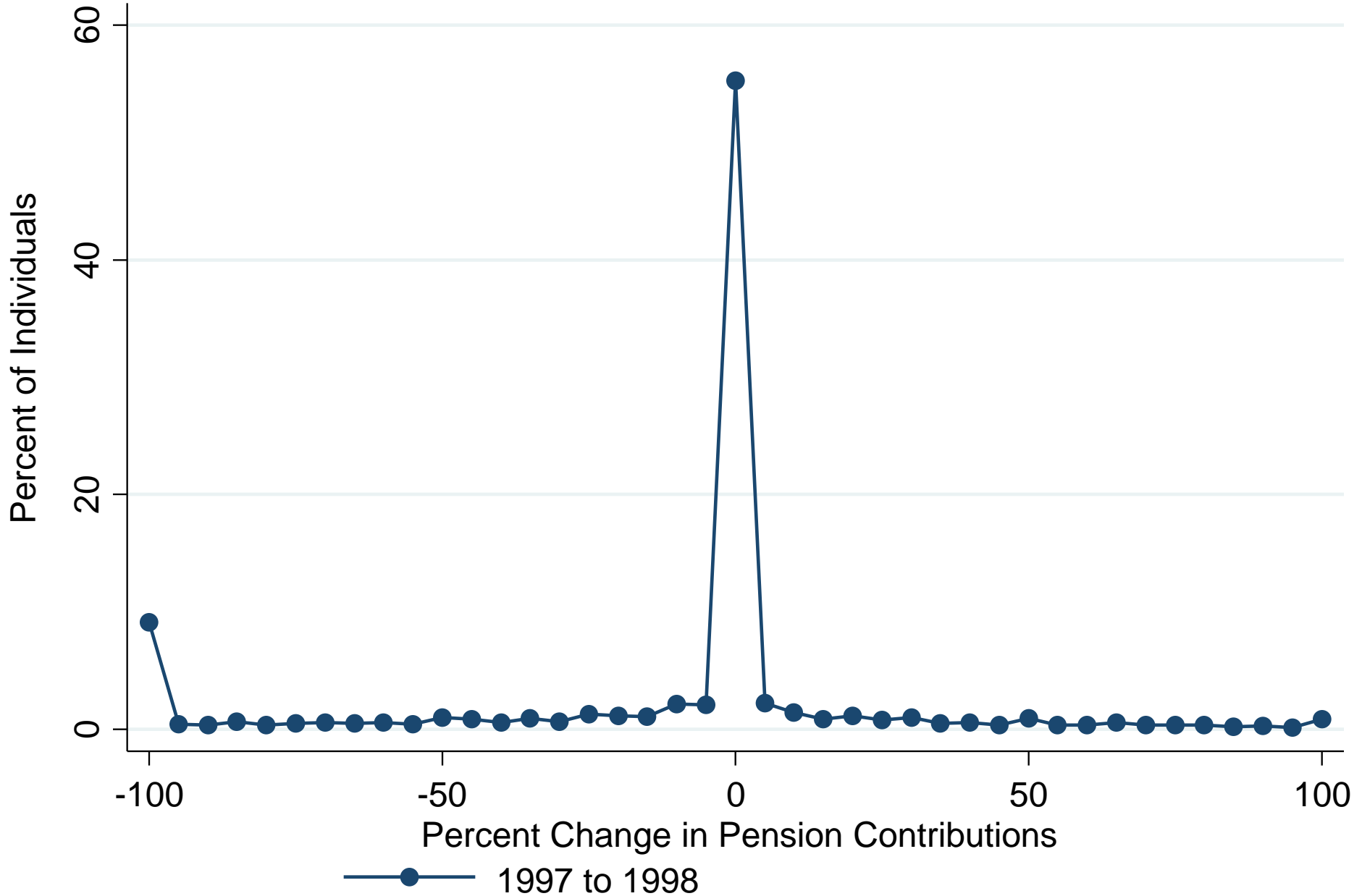
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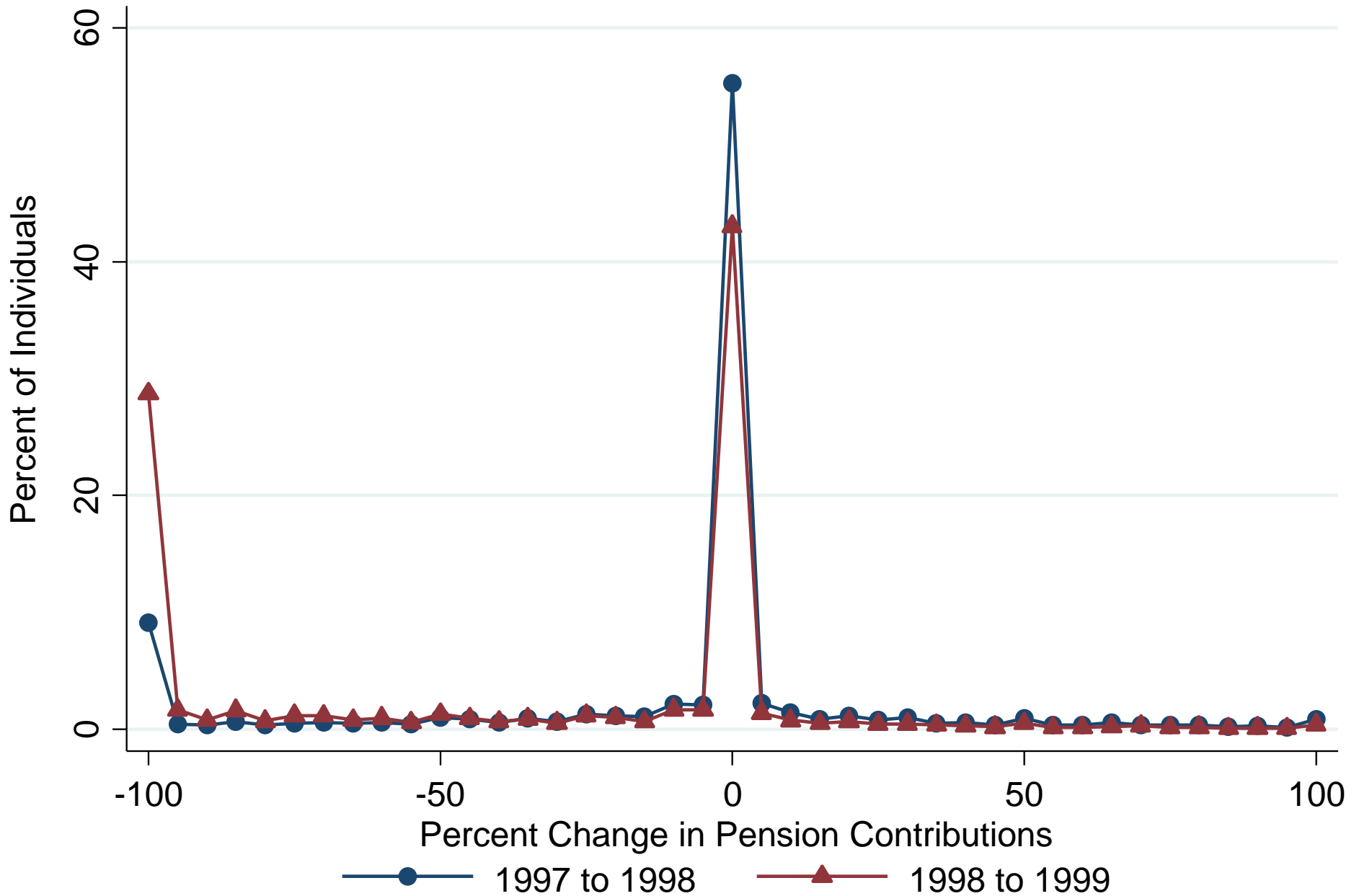
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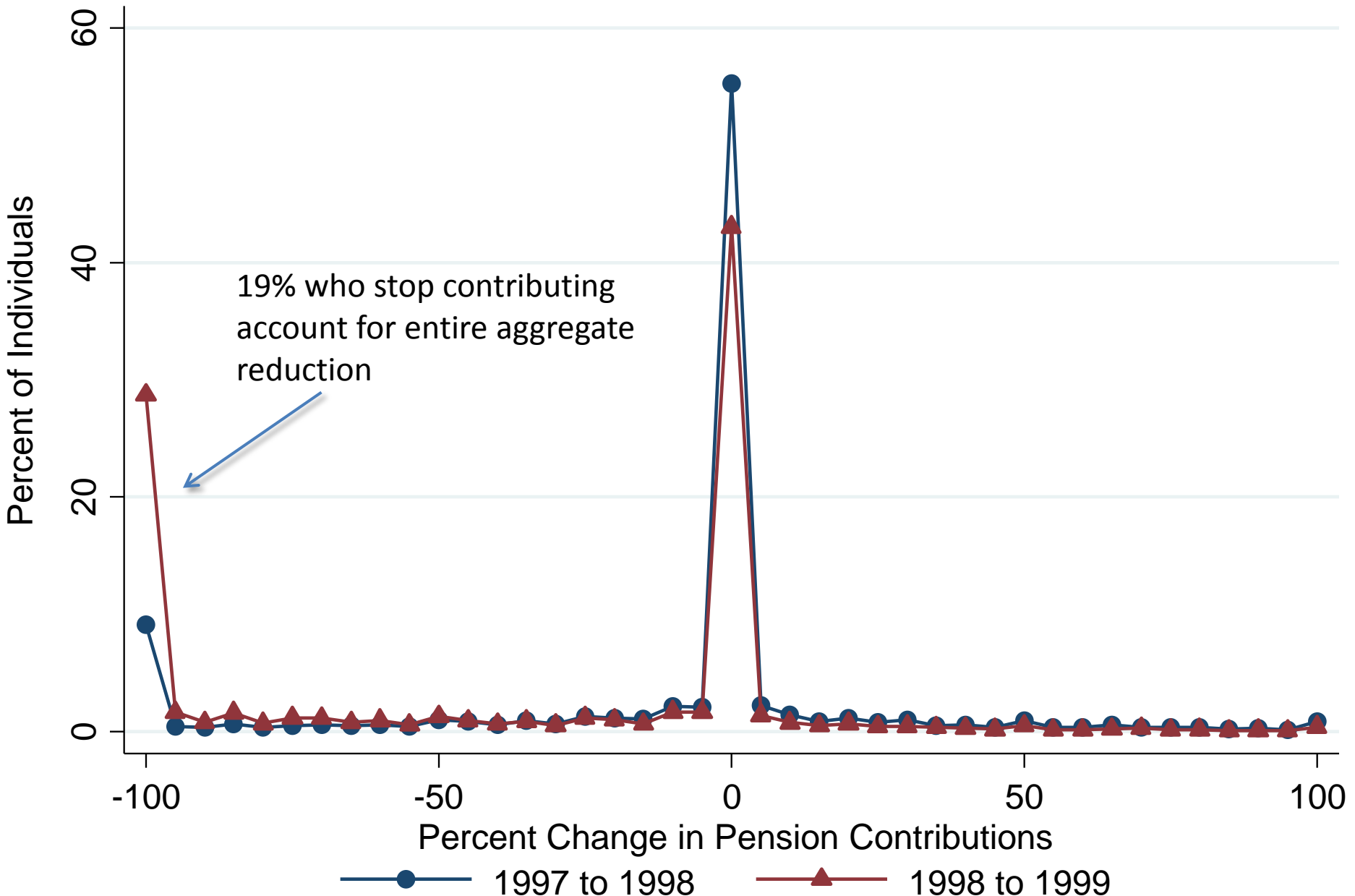
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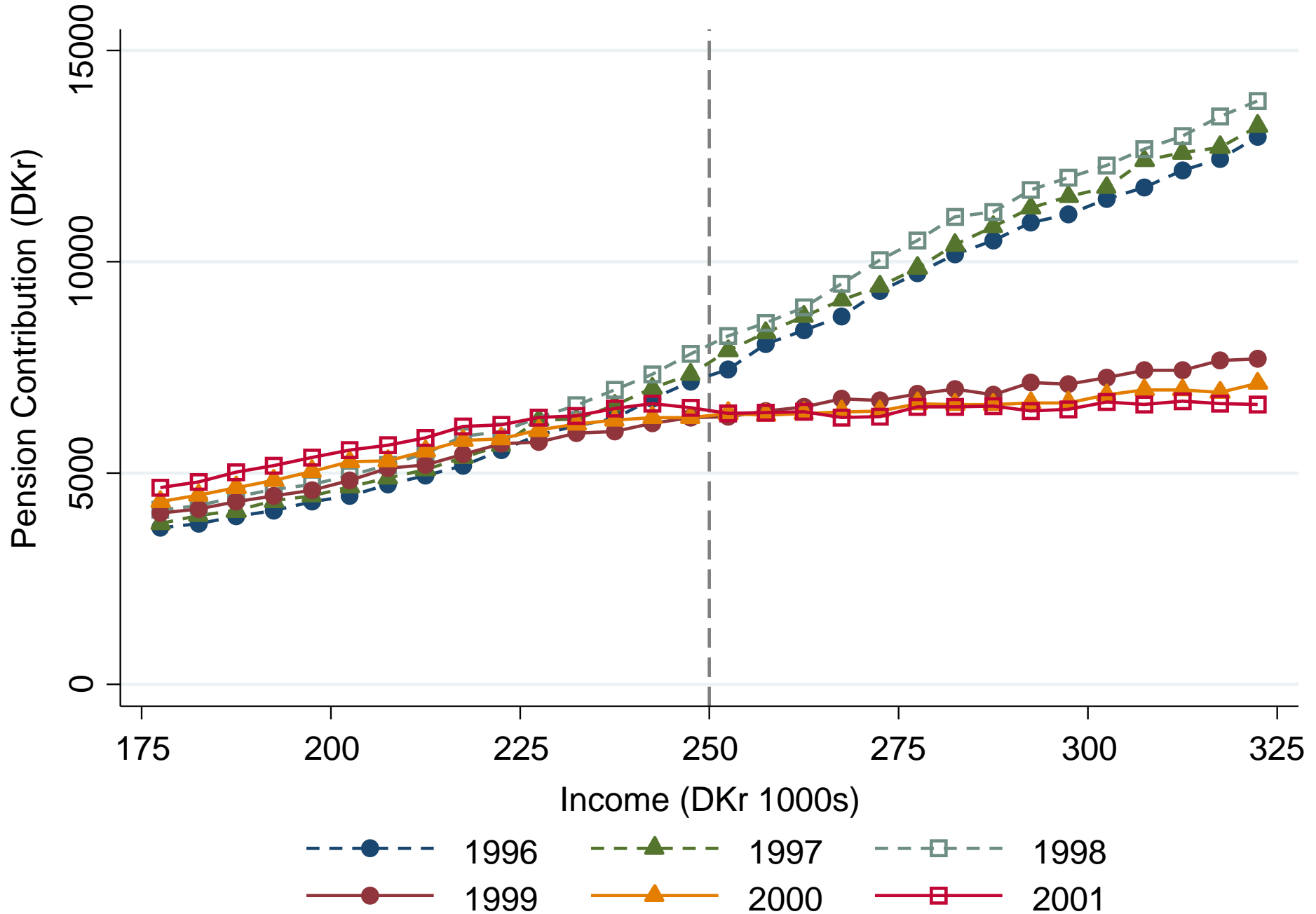
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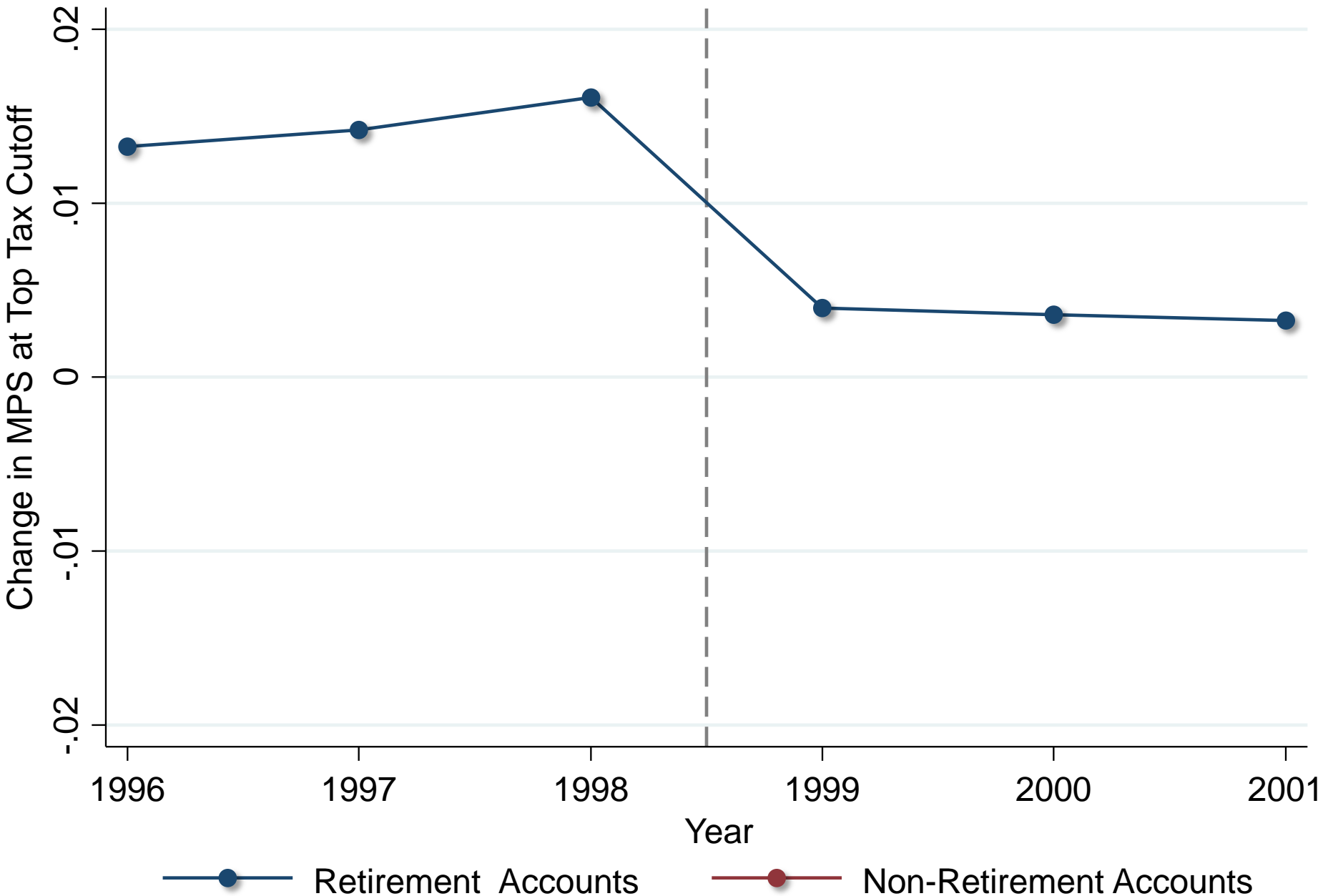
Impacts of Tax Subsidies

- Tax subsidies induce 19% of individuals to save more in retirement accounts
 - Where does that money come from?
 - Reducing consumption or less saving in non-retirement accounts?

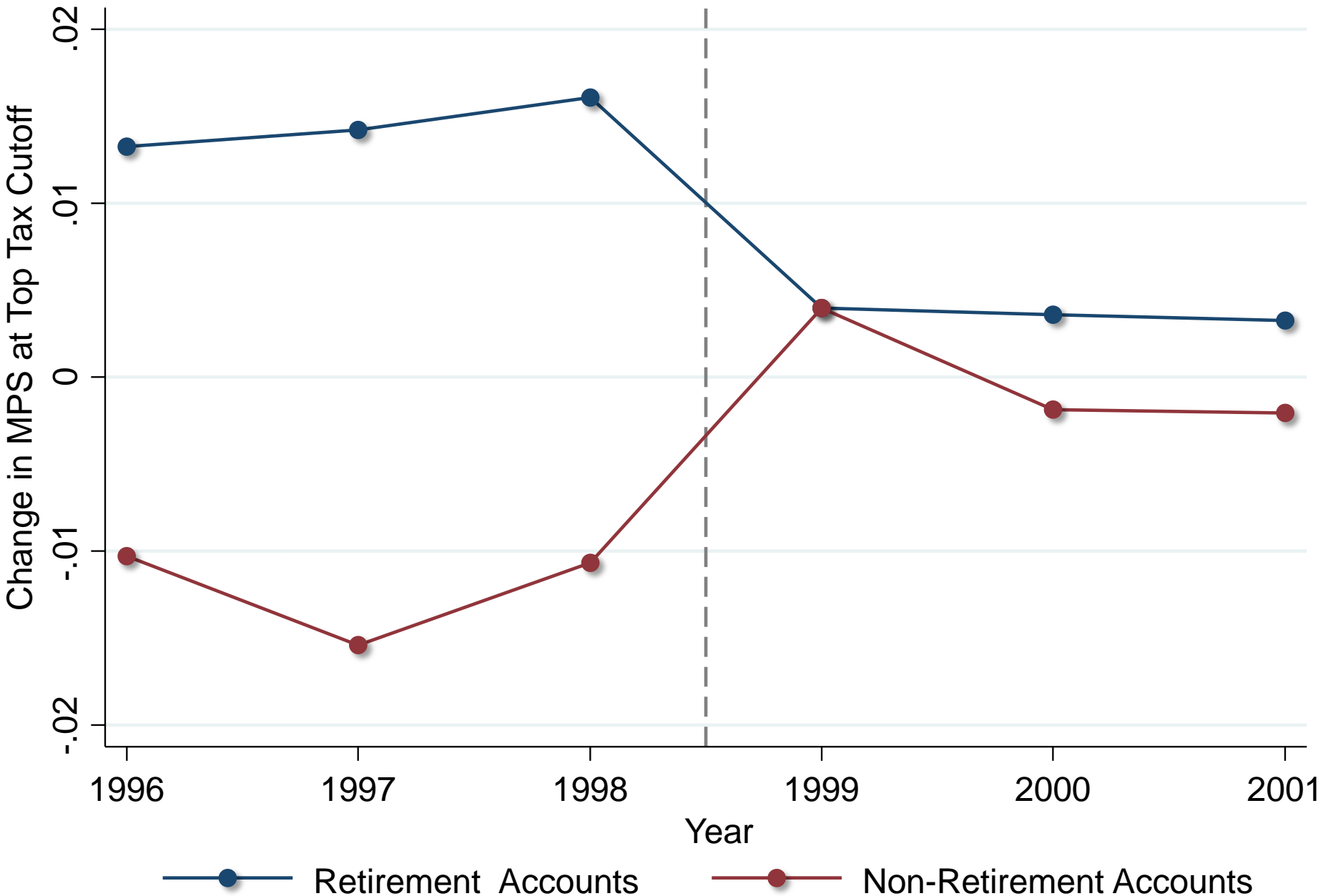
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Change in Marginal Propensity to Save at Top Tax Cutoff In Retirement and Non-Retirement Accounts by Year



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Impacts of Tax Subsidies

- Tax subsidies induce 19% of individuals to save more in retirement accounts
 - But more than 95% of their extra saving comes from less saving in non-retirement accounts
- Each \$1 of expenditure on tax subsidies raises total personal saving by less than 1 cent

Part 3
Identifying Active vs. Passive Savers

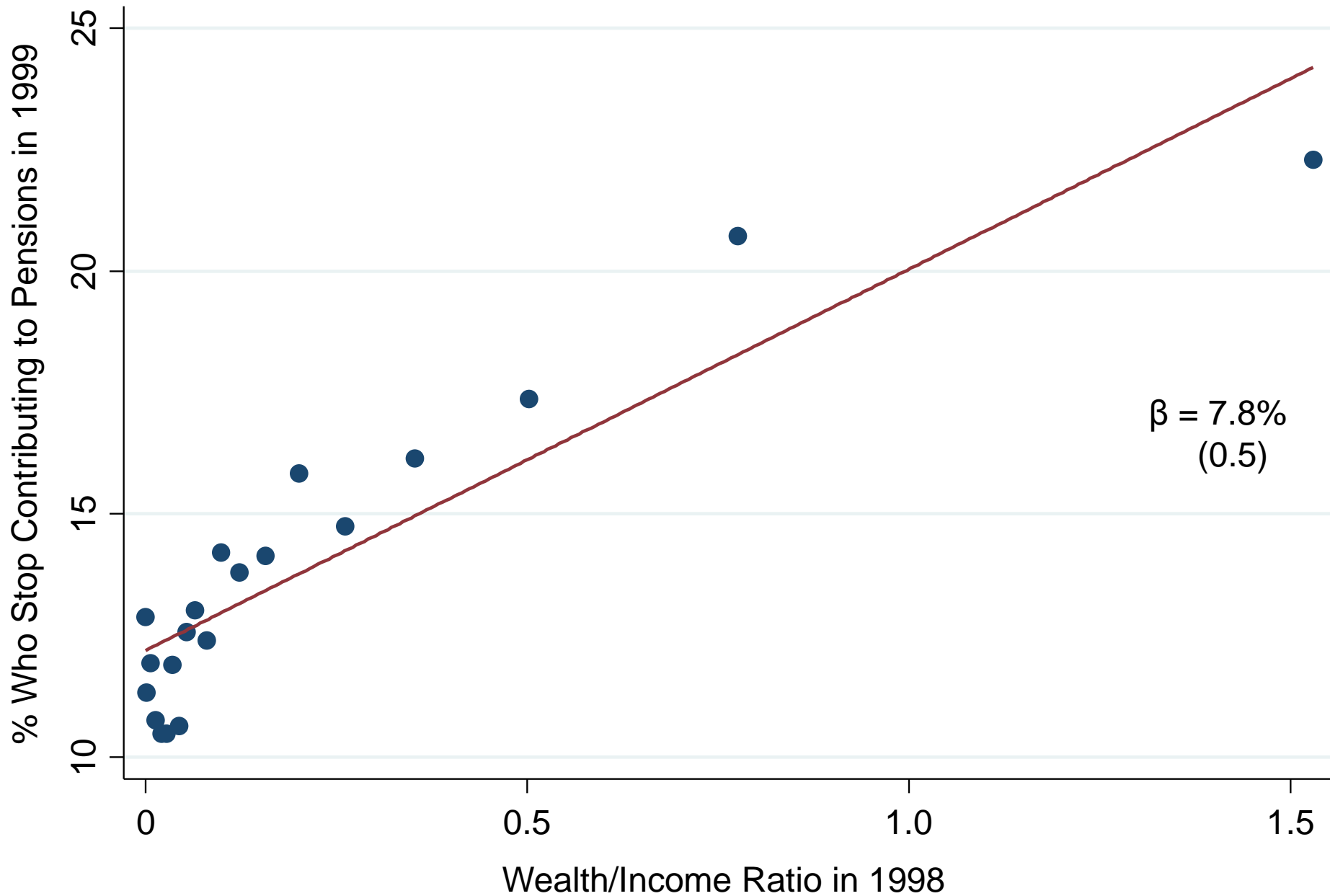
Heterogeneity: Active vs. Passive Savers

- Are differences between impacts of automatic contributions and subsidies driven by active vs. passive choice?
 - Test the mechanism by analyzing heterogeneity of responses across individuals

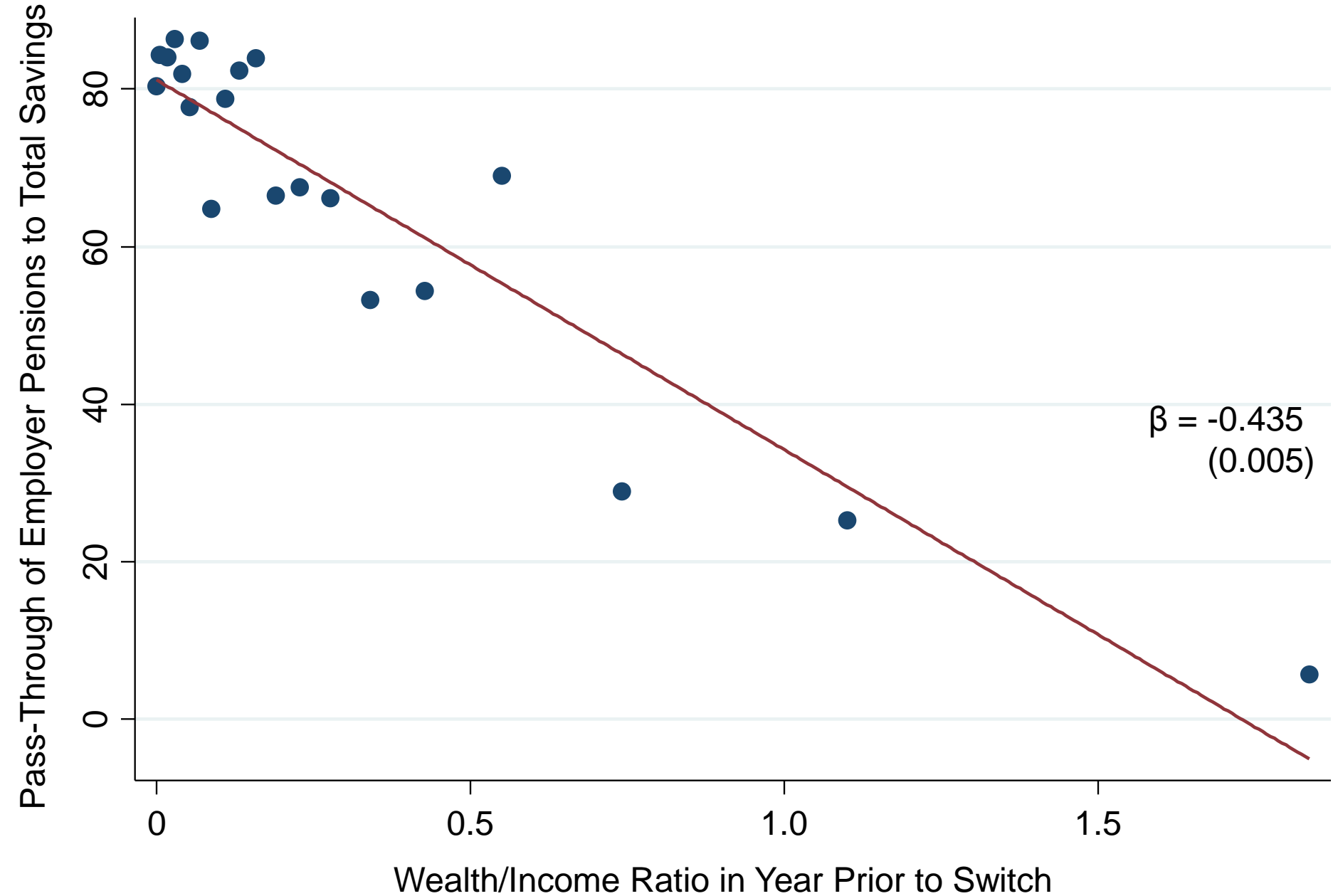
Evidence for Active vs. Passive Choice

- Goal: compare responses for “active” and “passive” savers
- Consider three proxies for attention to retirement saving
 1. Portfolio rebalancing rate
 2. Level of wealth
 3. Education
- By all three measures, more attentive individuals:
 - Respond more to subsidy change in 1999
 - Are more likely to offset changes in automatic employer contribs.

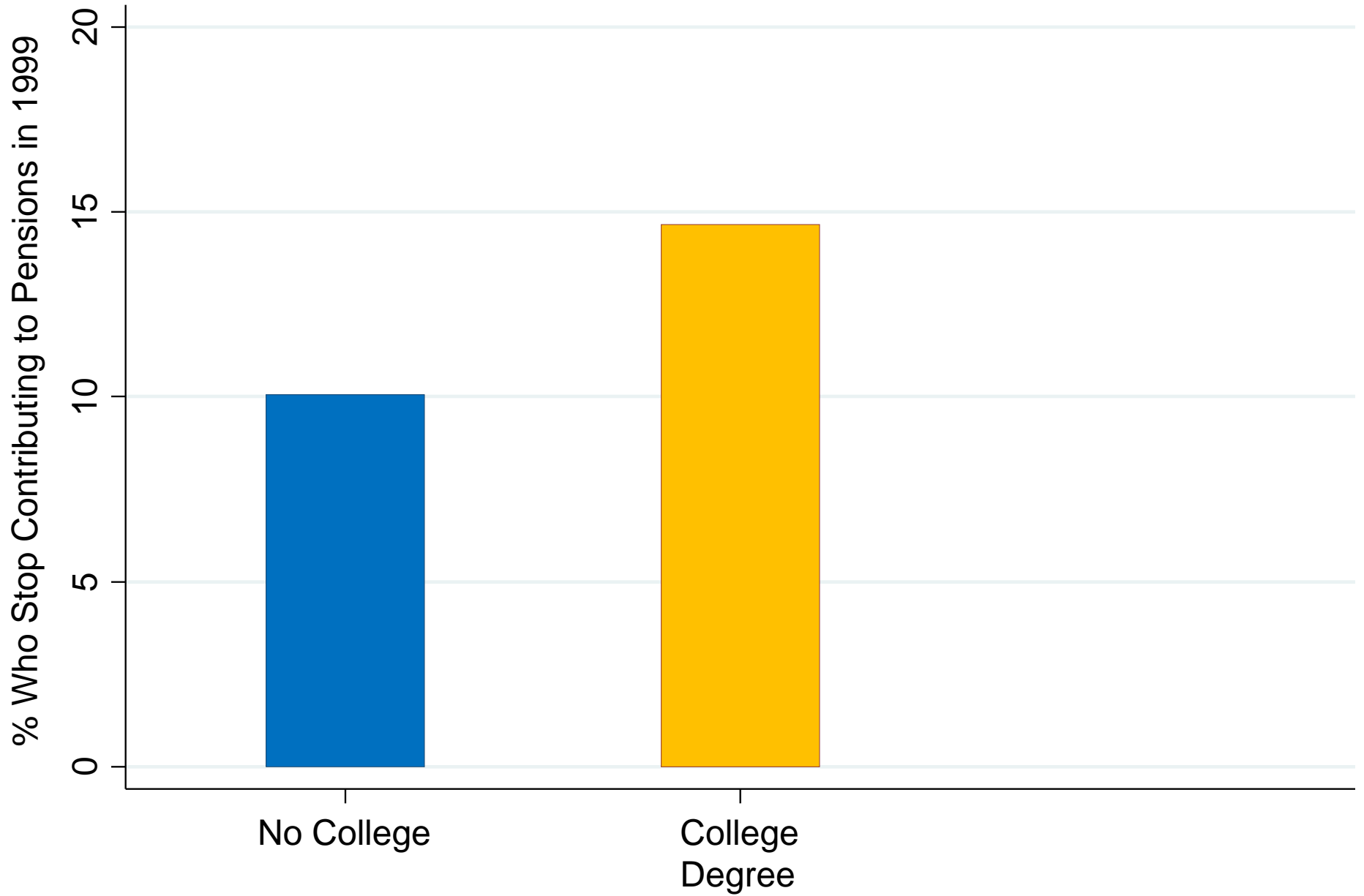
Heterogeneity in Response to 1999 Subsidy Reduction by Wealth/Income Ratio



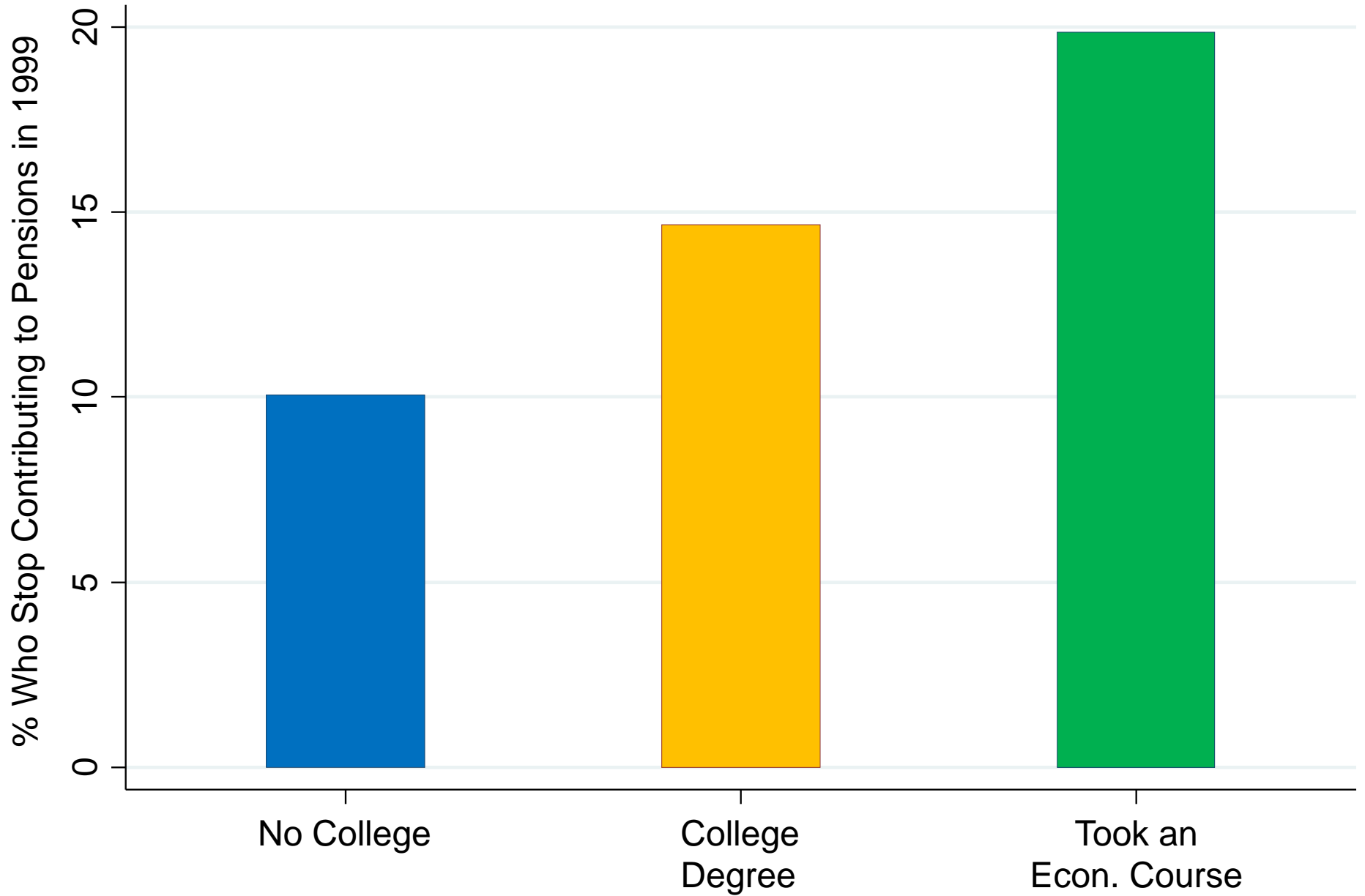
Heterogeneity in Pass-Through of Employer Pensions by Wealth/Income Ratio



Heterogeneity in Responses to Subsidies by Educational Attainment



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Implications for Models of Consumption

1. MPC differs sharply by the form of compensation
 - Increases in automatic pension contributions raise saving much more than increases in disposable income
 - Inattention/passivity matters independent of liquidity constraints

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2. Data point to a spenders/savers model with heterogeneous agents
 - 85% of individuals are spenders with cash-on-hand rule-of-thumb
3. Interest elasticity of savings is low because
 - Many individuals react passively to changes in net-of-tax return
 - Active savers have a low interest elasticity of saving

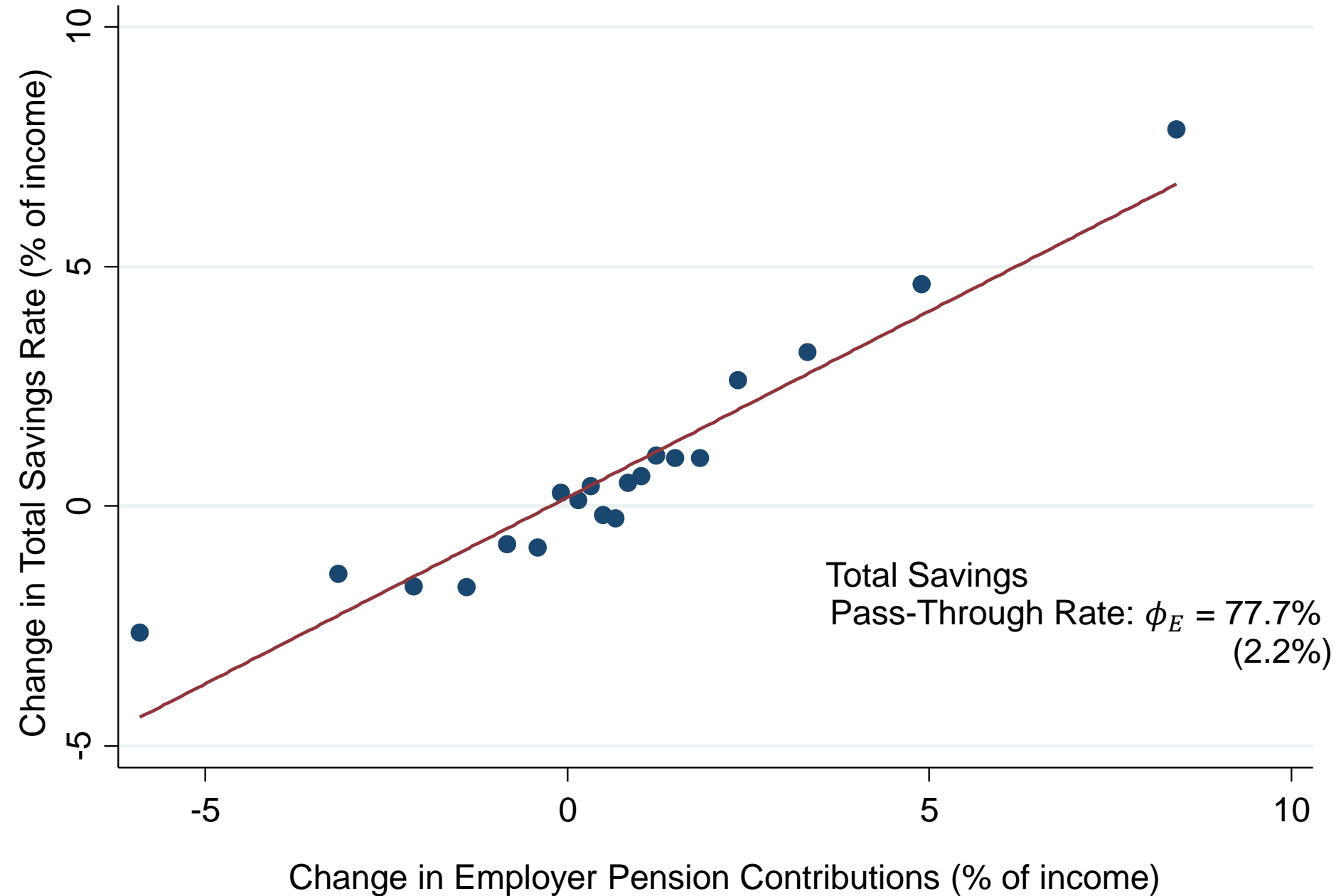
Implications for Tax Policy

- Tax subsidies are ineffective at raising savings for three reasons:
 1. Spend money subsidizing the savings of the 85% who are passive savers, who do not respond at all
 2. Crowd-out rates high among the 15% of active savers
 3. Active savers are already saving at higher rates → subsidies do not target those who may be least prepared for retirement

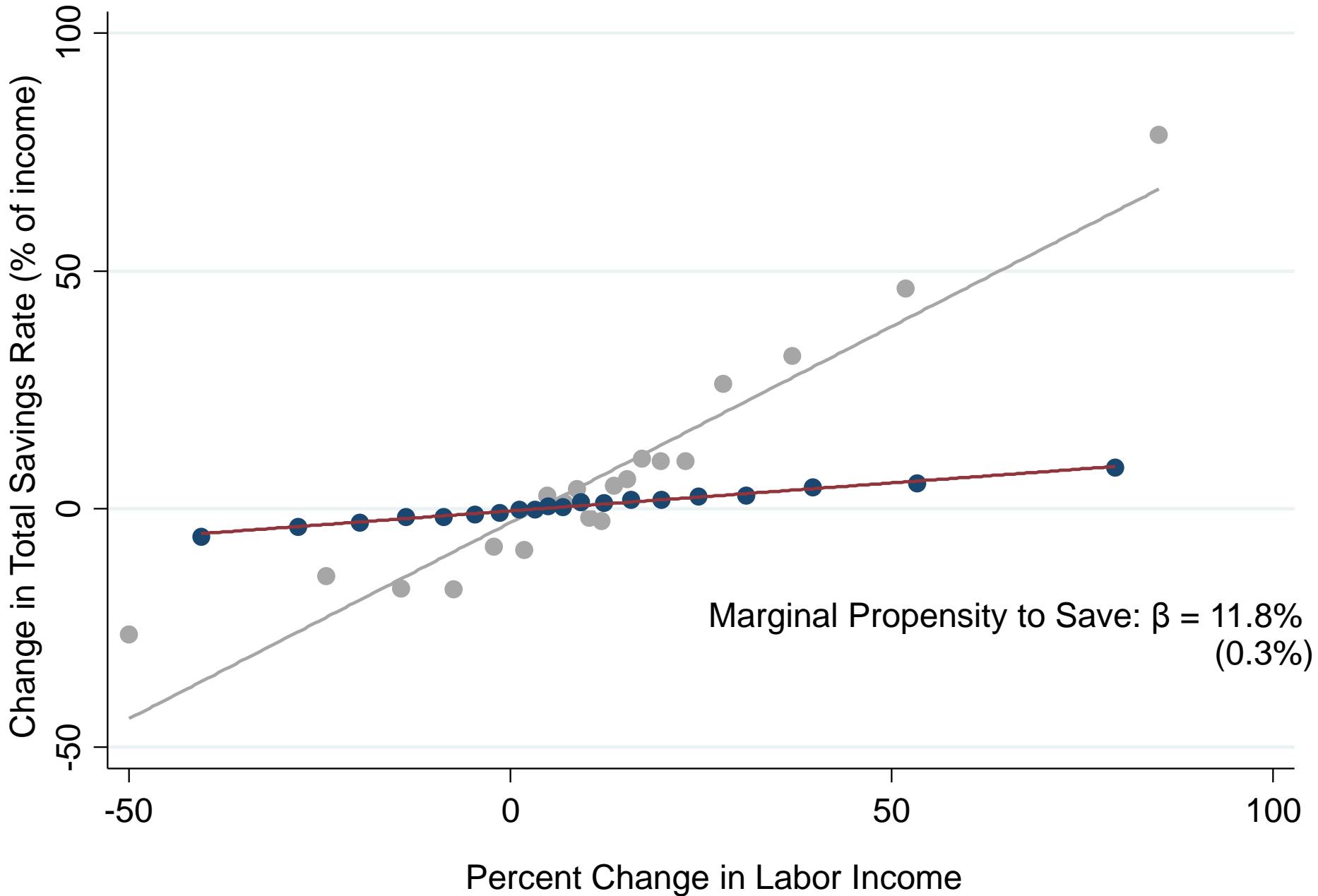
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- Automatic contributions resolve all three of these problems
- Obama administration currently reconsidering subsidies for saving
 - myRA plans coupled with cap on tax deductions for saving

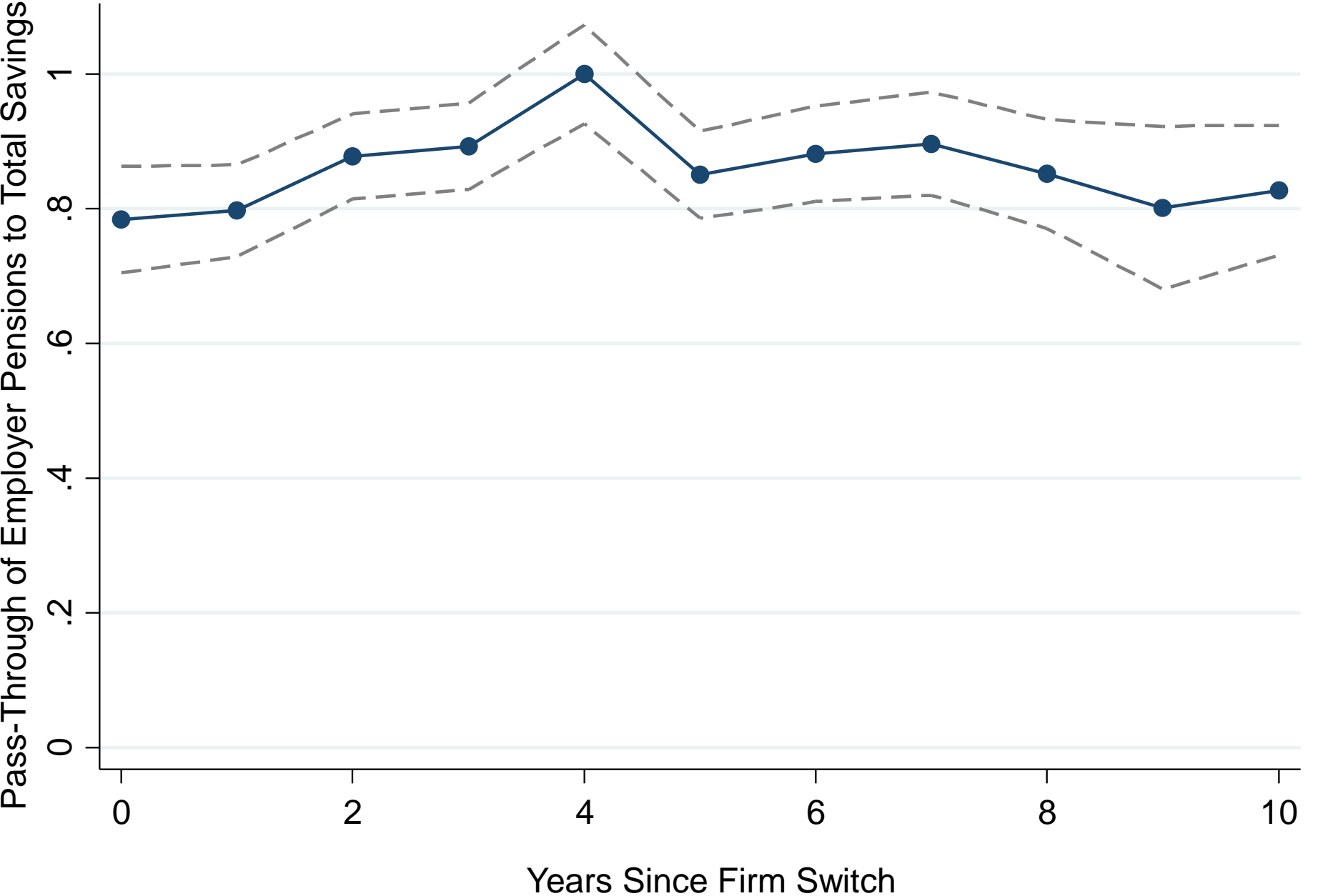
Changes in Total Savings Rates vs. Changes in Employer Pension Rates



Changes in Total Savings Rates vs. Changes in Labor Income



Pass-Through of Employer Pension to Total Savings by Years Since Firm Switch



Total Wealth Accrued from Switch to Retirement (Age 60) vs. Changes in Employer Pension Rate at Switch



Employer Pensions: Pass-Through Estimates

Sample:	All Firm Switches	All Firm Switches	Mass Layoff	Top Tax Sample	All Firm Switches	First Switch	Switch Age 46-54
Dep. Var.:	Δ Tot. Pension Rate (1)	Δ Tot. Savings Rate (2)	Δ Tot. Savings Rate (3)	Δ Tot. Savings Rate (4)	Δ Net Savings Rate (5)	Δ Tot. Savings Rate (6)	Δ Accrued Wealth (7)
Δ Emp. Pens. Contrib. Rate	0.949 (0.002)	0.777 (0.022)	0.828 (0.187)	0.750 (0.038)	0.745 (0.037)	0.784 (0.040)	4.541 (0.426)
Δ Wages		0.118 (0.003)					
No. of Obs.	867,075	1,890,220	37,432	876,922	1,890,642	727,372	54,147