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Effect of Auto IRA Policies on Retirement and Social Security Claiming**

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Abstract

We examine how state auto IRA mandates—policies requiring employers to offer a qualified plan or enroll workers in a state-facilitated option—affect retirement timing and Social Security claiming. Nearly half of American private-sector workers lack access to employer-sponsored retirement plans. Using data from the Survey of Income and Program Participation (2014–2024) and a staggered difference-in-differences design, we find that in addition to significant first order effects on account ownership, the mandates reduce early retirement by 1.2 percentage points and increase retirement past the full retirement age (FRA) by 3 percentage points. Early Social Security claiming (between 62 and FRA) decreases by 1 percentage point, while claiming at age 70 rises by 1.8 percentage points. Because delaying from 62 to 70 increases monthly benefits by roughly 77 percent (about \$1,028), these shifts extend beyond short-term gains in account ownership to higher lifetime retirement income.

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1. Introduction

By 2030, one in five Americans will be retired. Over 4.1 million Americans are expected to turn 65 every year between 2024 and 2027 (Fichtner 2024). Yet retirement preparedness among older adults varies considerably by household income. Between 2007 and 2019, retirement account balances of households in the top decile rose from \$333,000 to \$605,000 (a \$272,000 increase), while for the bottom quintile, balances increased from \$20,000 to \$35,000 (a \$15,000 increase) (2019; NIRS 2026). These differences tend to compound over time and persist into retirement, making it more challenging for low- and moderate-income older adults to meet financial needs in retirement.

While differences in pre-retirement income are partly reduced by Social Security benefits that provide universal coverage and the program's redistributive features (Aguila and Lee 2026), frictions in the U.S. retirement system make retirement wealth accumulation challenging for low- and moderate-income households (Choukhmane et al. 2024; GAO 2019). In particular, differences in pension plan access across the income distribution contribute to retirement wealth disparities. Nearly half of private sector workers lack access to a workplace retirement savings plan (John, Rao, and Koenig, 2024). Workers without access to workplace plans are less likely to save for retirement (Chen and Munnell 2022; Bond and Saad-Lessler 2026; Federal Reserve Bank of Minneapolis 2025).

State auto IRA policies were introduced to reduce gaps in retirement plan access by requiring employers to offer a qualified plan or enroll workers in the state option. The first auto IRA policy was introduced in 2017 by Oregon. Since 2017, fifteen states have created similar

policies, and an additional nine states have passed auto IRA legislation (see Appendix 3 for the phased expansion across states).¹

Recent studies have shown that auto IRA policies increased retirement account ownership, plan participation (Chalmers et al. 2022) and retirement savings (Dao 2024; Willingham 2024; Bloomfield et al. 2025a, 2025b). A question that has received lesser attention is whether these gains translate to meaningful changes in retirement behavior (e.g., retirement timing and Social Security claiming timing). In this paper, we investigate the effects of state auto IRA policies on decisions that determine income in retirement: retirement timing and Social Security claiming.

Drawing data from the Survey of Income and Program Participation (SIPP) from 2014 to 2024, we employ a staggered difference-in-differences (CSDiD) (Callaway and Sant-Anna, 2021) approach to estimate the effect of auto IRA policies on retirement timing and Social Security claiming among individuals nearing retirement (ages 55-75), comparing outcomes in seven early-adopters (California, Oregon, Illinois, Colorado, Connecticut, Maryland, and Virginia) to non-adopters. We also estimate heterogeneous treatment effects and potential household finance mechanisms that drive the observed effects.

We find significant first-order effects: IRA and 401(k) ownership increase by 3.8 and 2.3 percentage points (11 and 7.2 percent relative to the pre-policy means), respectively. Our main findings show significant policy-induced shifts towards later retirement and claiming ages. Specifically, auto IRA policies are associated with a 1.2 percentage point decrease in retirement before age 65, and a 3-percentage point increase in delayed retirement past full retirement age (FRA). Social Security claiming between the early retirement age (age 62) and age 67 (FRA) drops by 1 percentage point and claiming at age 70 increases by 1.8 percentage points. These policy-

¹ Georgetown University Center for Retirement Initiatives (2025). State program performance data: Historical trends. McCourt School of Public Policy. <https://cri.georgetown.edu/states/state-data/historical-trends/>

induced shifts translate to increases in retirement income from two sources: increased savings from extended labor force attachment and higher monthly benefits delayed Social Security claiming.

This paper contributes to literature on retirement savings, Social Security claiming, labor market dynamics, and wealth inequality. We extend emerging research on retirement savings and employer mandates that have shown increases in retirement account ownership (Bloomfield et al., 2025a, 2025b; Dao, 2024), higher private plans offered (Bloomfield et al., 2025), and changes in labor composition (Bloomfield, Dao, & Rao, 2024), by providing the first causal evidence on retirement related decisions. The paper advances literature on labor market behavior by examining how employer-mandates transmit to older workers' retirement and labor supply decisions. The paper contributes to the household finance literature by introducing a new source of variation – recurring payroll deducted savings – unlike previous studies that rely on windfalls shocks such as pension reforms (Lindeboom & Montizaan, 2020; Lalive, Magesan & Staubli, 2023) and housing wealth shocks (Huang, Li & Ross, 2022) or correlational approaches (Coile et al., 2002; Hurd, Smith & Zissimopoulos, 2004; Goda et al., 2018) to assess impacts on household wealth. The findings in this paper contribute to the wealth inequality literature by examining the role of labor market interventions on retirement wealth accumulation among lower-income groups.

The rest of the paper proceeds as follows: Section 2 lays out the conceptual framework; Section 3 reviews relevant literature. Section 4 describes data and methods; Section 5 presents the results and Section 6 concludes with a discussion.

2. Conceptual Framework

We conceptualize retirement timing and Social Security claiming as two closely linked decisions jointly influenced by retirement wealth, liquidity constraints, and the salience of retirement

planning. State auto IRA policies require employers that do not sponsor a retirement plan to enroll workers in a payroll-deducted savings option. By extending access and participation through automatic enrollment and a default contribution rate, these policies may affect retirement and claiming decisions through two complementary channels: a liquidity channel and a behavioral channel.

The liquidity channel: For most workers, delaying Social Security claiming is actuarially advantageous (Goda et al., 2018; Shoven & Slavov, 2021). Current liquidity constraints, however, may lead workers to claim earlier and forgo the higher monthly benefits that delaying provides. We model the claiming decision as governed by the relationship between accumulated wealth and a worker-specific liquidity threshold, the resources required to finance an additional year of delayed claiming, which itself depends on consumption needs, the discount rate, health status, and perceived value of delay. When the threshold exceeds accumulated wealth, the worker is claims early irrespective of the actuarial return; and conversely. Because state auto IRA policies function as a de facto savings mandate, they raise accumulated wealth and can push it above the liquidity threshold, shifting the incentive structure toward later claiming. The magnitude of this effect depends on contribution rates, years of program exposure, and pre-retirement investment returns; we expect it to be largest among workers with low retirement wealth (Kahn, 1988; Poterba, Venti, and Wise, 2018) and among those facing borrowing constraints that lead them to discount future benefits above-market rates (Hubbard & Judd, 1987). To the extent that claiming and labor force exit are determined jointly, liquidity-driven early claiming should be accompanied by early labor force exit, while delayed claiming should coincide with continued attachment.

The behavioral channel: State auto IRA policies may also operate through a behavioral channel by increasing the salience of retirement preparedness. The programs increase visibility of retirement savings through automatic enrollment, payroll deduction and periodic statements of accumulated assets sent by service providers. These statements function as recurring informational interventions: they lower informational costs by making the trade-offs between labor force exit and claiming more salient to workers. Prior work documents that comparable interventions such as the staggered rollout of Social Security statements shifted behavior towards later claiming ages (Mastrobuoni, 2011), consistent with broader evidence that disclosures and framing affect retirement choices (Madrian and Shea 2001; Knoll and Olsen, 2014). To the extent that this channel operates, workers should adjust claiming and labor supply in response to new information about their accumulated resources even absent a change in those resources. Unlike the liquidity channel, the behavioral channel can alter behavior independently of accumulated wealth. We hypothesize that account-related information influences retirement and claiming behavior even when wealth accumulation is minimal, for example, among workers nearing retirement with limited program exposure.

This conceptual framework yields several testable propositions. Auto IRA mandates should raise retirement account ownership, participation, and assets among workers without prior access to a workplace plan. Higher savings levels can in turn be expected to delay labor force exit, which we measure as retirement at increasing age thresholds, and delay claiming. To the extent that the liquidity and behavioral channels operate simultaneously, we test their combined effect on retirement timing and claiming and examine changes in household finances to assess the underlying mechanisms.

3. Background and Related Literature

The U.S. retirement system is comprised of three pillars: Social Security, Employer-Sponsored Retirement Plans (ESRPs) and private savings. Social Security provides guaranteed income to workers with at least 40 quarters of covered employment, and its progressive benefit formula replaces a larger share of pre-retirement income for lower earners than higher earners (SSA, 2019; Aguila & Lee, 2026), making it especially important to the retirement well-being of low- and moderate-income individuals. Solvency challenges and the projected trust fund depletion, however, could reduce benefits by roughly 21 to 23 percent as early as 2033-2035 (Social Security Trustees, 2024); increasing the need for private savings that complement Social Security benefits.

ESRPs and Individual Retirement Accounts (IRAs) are the most common tax-advantaged retirement savings vehicles.^{2,3} ESRPs are preferred to IRAs because of features like payroll deduction, higher contribution limits, employer matching, and automatic enrollment in a low-cost diversified default investment which reduce behavioral frictions (Madrian & Shea, 2001; Chetty et al., 2014) and make it easier to accumulate retirement assets (Choi et al., 2004; Goda and Manchester, 2013). Access, however, is not universal and depends on employer discretion: nearly half of private-sector workers lack access to a workplace plan (John, Rao, & Koenig, 2024), with gaps concentrated among workers at smaller firms, low-income workers, women, and racial and ethnic minorities (U.S. Department of Labor, 2025; Chen & Munnell, 2022).⁴ Low ESRP access coupled with low IRA ownership (Congressional Research Service, 2024), has widened retirement

² Workers can save for retirement on their own through IRAs. IRAs differ from 401(k)s in several aspects including lower annual contributions, no matching employer contributions, and absence of automatic enrollment or payroll deduction features.

³ Of note, previous research shows a complementarity in savings between IRAs and ESRPs. Individuals with ESRPs are more likely to also save in an IRA, helping accumulate higher total retirement assets. In 2022, 31 percent of U.S. households owned IRAs (CRS, 2024), yet nearly nine in ten IRA-owning households also had employer-sponsored retirement plan accumulations or defined benefit plan coverage (Holden and Schrass, 2025).

⁴ For more information, see Department of Labor (2025). Employee Benefits in the United States Summary. Released September 25, 2025. Available at <https://www.bls.gov/news.release/ebs2.nr0.htm>

wealth disparities across income and demographic groups (GAO, 2019; Poterba, 2014; Engelhardt and Kumar, 2011).

State auto IRA policies were introduced to close these access gaps. They require employers without a plan to automatically enroll workers, at a default contribution rate of 3 to 5 percent, in a low-cost investment option. Oregon launched the first program in 2017; since then, 15 states have implemented programs and 9 more have passed enabling legislation (Georgetown CRI, 2025). By 2025, these programs held \$2.3 billion across roughly a million accounts,⁵ with about 258,000 employers enrolling workers in the state option and another 30,000 offering their own ESRP.⁶ Recent studies document that auto IRA programs raised plan offerings, participation and savings (Chalmers et al. 2022; Dao 2024; Willingham 2024), consistent with broader evidence that employer retirement benefits shape labor supply through worker sorting and retention incentives (Goda, Jones, and Manchester 2017).

No previous study, however, examines whether these gains from auto IRA policies, specifically, or retirement benefits more generally, affect workers' retirement timing and Social Security claiming behavior. A large literature identifies several channels through which household finances and savings influence these decisions. For claiming, studies show that despite the actuarial incentives of delayed claiming, nearly 40 percent of individuals claim before the FRA due to liquidity constraints (Coile et al. 2002; Knoll & Olsen 2014; Slavov ,2025). Claiming also responds to macroeconomic shocks such as the rise in unemployment rates and falling home value during the 2008 great recession (Johnson et al. 2013; Haaga & Johnson 2012; Huang et al. 2022).

⁵ As of early 2026, the largest program in California (CalSavers) had 572,000 funded accounts, Oregon's OregonSaves had 180,000 funded accounts, the Illinois Secure Choice program had 167,000 funded accounts, Colorado's SecureSavings program had 72,000 funded accounts, the program in Connecticut (MyCTSavings) had 36,000 funded accounts, and Maryland's MarylandSaves had 17,000 funded accounts.

⁶ Ibid.

Behavioral factors matter as well: workers who underestimate the returns to delay tend to claim early (Bairoliya & McKiernan, 2022), while informational interventions that provide information on benefits at different claiming ages are associated with later claiming (Mastrobuoni, 2011).

Retirement timing, in turn, reflects both financial and non-financial factors. Earnings potential, accumulated retirement assets and Social Security incentives influence labor force attachment and retirement (French 2005; Gustman & Steinmeier 2015; Rust & Phelan 1997; Kondo 2025; Geyer et al. 2021; Diamond & Gruber 1999; Coile & Gruber 2001), in addition to health status, mortality expectations, and anticipated medical expenditures (French & Jones 2011; Blundell et al. 2021; Hurd et al. 2004; Delavande et al. 2006). We expect auto IRA policies to affect both margins through these same channels: by raising retirement wealth and providing account information which has the potential to relax liquidity constraints and increase the salience of retirement planning, shifting retirement and claiming towards later ages.

4. Data and Methods

The study uses data from the Survey of Income and Program Participation (SIPP), a nationally representative longitudinal survey conducted by the U.S. Census Bureau that covers retirement decisions, Social Security claiming, labor market participation, household assets, and demographic characteristics. The analysis sample comprises individuals ages 55-75 observed across the 2014 to 2024 SIPP panels, for a total of 1,803,085 person-wave observations - 346,817 in treated states and 1,456,268 in control states. We exclude respondents enrolled in school, unable to work due to disability, or on active military duty, to eliminate confounding policy effects.

Policy effects are estimated by comparing outcomes in auto IRA states with those in non-auto IRA states; Table A1 in the Appendix reports summary statistics for each group. Treated and control states differ on observable characteristics - treated states have higher shares of urban

residents, college-educated households, immigrant households, Hispanic and Asian residents, households with children, and lower homeownership rates – and we account for these differences by controlling for a wide range of individual demographics and for time-invariant state and year effects. Event-study plots show similar pre-treatment trends across treated and control states, supporting the identifying assumption that these compositional differences do not bias the estimated treatment (Figures A1-A11, Appendix).

We estimate policy effects on three sets of outcomes: (a) retirement account ownership - IRA ownership, 401(k) ownership, and total retirement assets; (b) retirement timing – retirement before age 62, before age 65, before the FRA, and any delay beyond the FRA; and (c) Social Security claiming timing – claiming at age 62 (the Early Retirement Age), between 62 and the FRA, at age 70, and any delay past the FRA. We further estimate heterogeneous treatment effects by demographic group and for the near-retiree subsample. To probe mechanisms, we examine several household-finance outcomes: monthly earnings, weekly work hours, liquid savings, total savings balances, checking account balances, and total household debt. All dollar values are inflation-adjusted to 2024 constant dollars.

All models control for individual characteristics: age, gender, marital status (married, single, divorced/widowed), race and ethnicity (White, Black, and Hispanic), educational attainment (less than high-school, high school, and college), household size, metropolitan residence (urban, rural), home value, and health insurance coverage. Selected specifications additionally control for state-level conditions including log gross domestic product, EITC share, unemployment rate and the minimum wage to absorb state-specific economic differences.

5. Estimation Strategy

Our empirical strategy exploits the staggered rollout of auto IRA mandates across states, using the Callaway and Sant’Anna (2021) staggered difference-in-differences (CSDiD) estimator. We compare outcomes in seven early-adopter (treated) states - Oregon, Illinois, California, Connecticut, Colorado, Maryland, and Virginia⁷ - to those in non-adopter states.⁸ Relative to conventional Two-Way Fixed Effects (TWFE), the CSDiD estimator avoids bias from staggered adoption with heterogeneous treatment effects (Goodman-Bacon, 2021). We estimate the average treatment effect on the treated (ATT) using the following specification:

$$ATT_{i,s,g,t} = E[Y_{it} | G_i = g, t \geq g, \mathbf{X}_{igt}, \mathbf{V}_{st}, \alpha_s, \lambda_t] - E[Y_{it} | G_i \notin g, t \geq g, \mathbf{X}_{igt}, \mathbf{V}_{st}, \alpha_s, \lambda_t] \quad (1)$$

where $ATT_{i,s,g,t}$ is the average treatment effect for individual i in state s , first treated in period g , at time t , relative to a comparable individual state not yet (or never) treated. The vector \mathbf{X}_{igt} contains the individual-level demographic, employment, and family structure controls, and \mathbf{V}_{st} the state-level economic controls, defined in Section 4; α_s and λ_t are state and year fixed effects. We estimate equation (1) separately for each outcome. All estimates are population-weighted, and standard errors are wild-bootstrapped and clustered at the state level. We also estimate heterogeneous effects by gender, marital status, and race/ethnicity, and for near-retirees (ages 62–72). Finally, we conduct several robustness checks: (a) alternative control-group definitions, (b) excluding late-adopting states (Colorado and Virginia), and (c) a TWFE specification. Robustness results are reported in the Results section.

⁷ CO and VA rolled out their programs in 2023. We conduct robustness tests excluding these two states from the sample because of fewer post-treatment years. Results are presented in the appendix Table A4, results are robustly to this specification.

⁸ We also estimate models using two control groups: not-yet treated and never-treated states. Results are presented in the appendix Table A3. Results are similar to those from the main specification.

We test the parallel-trends assumption and trade and post-treatment dynamics with the following event study model:

$$Y_{ist} = \sum_{\substack{k=-5 \\ k \neq -1}}^5 \beta_k \cdot \mathbf{1}\{G_i = g\} \cdot \mathbf{1}\{t - g = k\} + X_{ist}\gamma + \alpha_s + \lambda_t + \varepsilon_{ist} \quad (2)$$

where $\mathbf{1}\{G_i = g\}$ indicates treatment cohort g and $\mathbf{1}\{t - g = k\}$ indexes event time from five years before to five years after adoption, with $k = -1$ is the reference period. The pre-treatment coefficients (β_k for $k < -1$) test the parallel trends assumption and should be statistically indistinguishable from zero; the post-treatment coefficients (β_k for $k \geq 0$) trace the timing and persistence of the policy's effects. α_s and λ_t again denote state and year fixed effects.

6. Results

We first confirm, consistent with prior literature, that Auto IRA policies increase retirement account ownership: IRA ownership rises by 3.8 percentage points and 401(k) ownership by 2.3 percentage points. We find no statistically significant change in retirement account balances (full estimates in Appendix Table A2). We now turn to our primary outcomes: retirement timing and Social Security claiming.

Table 1 reports effects of auto IRA policies on four early-retirement indicators: retiring before age 62 (Social Security Early Claiming Age), retirement before age 65, retirement before age 67 (Full Retirement Age), and any delay in retirement beyond age 67. Across all indicators, we find auto IRA policies are associated with a significant shift towards later retirement ages. Retirement before age 65 declines by 1.2 percentage points (16 percent relative to the pre-policy mean of 7.1 percent). Retirement before age 67 (FRA) decreases by 0.97 pp (13 percent relative to the pre-policy mean of 7 percent). Correspondingly, delayed retirement (retirement past age 67)

increases by 3 pp (13 percent relative to the pre-policy mean of 23 percent). We find no significant effects on retiring at age 62 (the early claiming age).

[Table 1]

Table 2 presents results of auto IRA policy effects on Social Security claiming timing across five claiming thresholds: at age 62 (the early claiming age), between 62 and 67 (FRA), after FRA, at age 70, and any delay beyond FRA. We find a statistically significant shift towards later Social Security claiming ages. Claiming between age 62 and 67 (FRA) decreases by 1 pp (31 percent relative to the pre-policy mean of 3.2 percent). Claiming after FRA increases by 0.3 pp, although the effect is not statistically significant, and claiming at age 70 increases by 1.8 pp (16 percent relative to the pre-policy mean of 11 percent). Probability of any delay beyond FRA rises by 0.87 pp (16 percent relative to the pre-policy mean of 5.3 percent).

[Table 2]

We confirm that our results are robust to the alternative control groups (Appendix Table A3) and exclusion of late-adopting states (Appendix Table A4). Two-Way Fixed Effects estimates (Appendix Table A5) yield attenuated or reversed coefficients on account ownership, consistent with the heterogeneous treatment effect bias under staggered policy adoption documented by Goodman-Bacon (2021) this reinforces the need for CSDiD estimator as our main specification. Retirement timing and claiming estimates under TWFE are directionally consistent but smaller in magnitude and largely insignificant, as expected when treatment effect heterogeneity across cohorts is present.

Next, results from our exploration of potential mechanisms through which auto IRA policies affect retirement and claiming timing are presented in Table 3. We do not conduct formal mediator analyses, we estimate CSDiD models to examine the relationship of auto IRA policies

with several household finance outcomes. We find auto IRA policies are associated with higher monthly earnings, ranging from \$100-\$900 across different specifications, without a commensurate increase in weekly hours worked. This could potentially indicate a continued attachment to covered payroll employment (i.e., delaying retirement timing) as opposed to retiring (earning zero labor income) or partially retiring and getting bridge jobs (earning lower income). We also observe a mechanical decrease in checking account balances ranging from \$287 to \$315, consistent with payroll-deducted contributions flowing out of checking and into retirement accounts. Alongside this, we document a near-identical decrease in unsecured debt, ranging from \$220 - \$300, suggesting the accumulation of savings enables households to reduce debt. Taken together, these findings point to balance sheet improvements that suggest the liquidity-channel at play in driving auto IRA effects on retirement and claiming decisions.

[Table 3]

Heterogeneous Treatment Effects

Results from the subgroup analyses are presented in Tables 4–7. Table 4 reports effects by gender and marital status. Auto IRA policies significantly increase account ownership for both women and men, though the gains are larger for men (IRA ownership by 5.4 pp and 401(k) ownership by 2.7 pp) than for women (2.4 pp and 1.9 pp, respectively). The timing and claiming effects, however, accrue largely to women: early retirement (before age 65) falls by 1.8 pp, delayed retirement rises by 3 pp, claiming between 62 and the FRA falls by 1.8 pp, and claiming after the FRA and at age 70 rise by 3.7 and 2.6 pp, respectively. None of these timing or claiming effects are significant for men. This concentration of timing effects among women is consistent with auto IRA policies easing liquidity constraints that had induced earlier retirement and claiming.

By marital status, we find married individuals show significant timing effects: retirement before age 65 and before the FRA each decline by 1.9 pp, while claiming after the FRA rises by 3.5 pp and claiming at age 70 by 2.6 pp. Among single individuals, delayed retirement increases by 4.9 pp and claiming between ages 62 and the FRA increases by 1.3 pp. We find no significant retirement or claiming effects for divorced and separated individuals, though their IRA and 401(k) ownership rise by 4.5 and 7.1 pp, respectively.

[Table 4]

Effects by race and ethnicity are presented in Table 5. Among non-Hispanic White individuals, 401(k) ownership rises by 3.6 pp, early retirement (before 65) falls by 1.3 pp, delayed retirement increases by 4 pp and claiming after the FRA and at age 70 rise by 3.5 and 2.6 pp, respectively. Hispanic individuals show a 4.8 pp increase in 401(k) ownership and a 1.6 pp decrease in claiming between 62 and the FRA. Among individuals in other racial and ethnic groups, IRA ownership rises by 4 pp, retirement before 62 falls by 2 pp, delayed retirement rises by 4 pp and claiming after the FRA and at age 70 rise by 4.6 and 6.2 pp, respectively.

[Table 5]

Table 6 reports effects by educational attainment, which are generally larger for individuals with lower attainment. Among workers without a high school diploma, IRA and 401(k) ownership rise by 4 and 3.8 pp, respectively, while college-educated individuals show a 2.8 to 3.7 pp increase in IRA ownership. For those with less than a high school education, retirement before age 65 falls by 2.5 pp and retirement before the FRA by 3 pp; correspondingly, claiming between 62 and the FRA falls by 1.9 pp and claiming after the FRA rises by 2.3 pp. The pattern is similar for high-school-educated individuals, though smaller in magnitude.

[Table 6]

Finally, Table 7 presents results for workers near Social Security claiming ages (62 to 72). We find no significant ownership effects, plausibly because these individuals were exposed to the policy for fewer years before retiring. We do, however, find significant claiming effects: claiming after the FRA decreases by 2.8 pp and delayed claiming increases by 3 pp. The increase in delayed claiming, coupled with the null ownership effects, is suggestive of the behavioral channel operating for individuals close to retirement: receiving account statements may prompt them to delay claiming, paralleling Mastrobuoni's (2011) finding for the Social Security Statement.

[Table 7]

7. Discussion and Conclusion

This paper is among the first to examine whether auto IRA mandates affect workers' retirement timing and Social Security claiming. We exploit the staggered introduction of state auto IRA policies, which require payroll-deducted contributions for workers who lack a workplace plan, as a plausibly exogenous, policy-induced savings shock. The mandates produce a significant rightward shift in both retirement and claiming timing, alongside increases in IRA and 401(k) ownership. The simultaneous decline in early retirement and claiming and the rise in retirement and claiming at later ages indicate a meaningful shift in the timing of these decisions, rather than a tightening of the distribution around existing ages.

This shift toward later claiming carries substantial implications for retirement income. Because the benefit formula adjusts monthly payments based on claiming age relative to the FRA, a worker with the average primary insurance amount (PIA) would receive roughly \$1,334 per month claiming at the ERA, \$1,905 at the FRA, and \$2,362 at age 70, a 43 percent increase from

the ERA to the FRA and a 77 percent increase from the ERA⁹ to age 70 (about \$1,028 more per month, or \$12,336 annually). Delayed claiming thus raises monthly, inflation-indexed benefits and provides longevity insurance, with the largest lifetime retirement income gains for workers who survive to or beyond average life expectancy. The accompanying delay in retirement further extends the period over which workers earn labor income and accumulate private savings that supplement Social Security.

The balance sheet improvements with a mechanical delay in retirement timing we observe suggest that both the liquidity and behavioral channels are at play. This finding complements prior studies that show liquidity constraints are associated with early claiming (Slavov, 2025; Coile et al. 2002; Goda et al., 2018) and informational interventions are associated with delayed claiming (Mastrobuoni, 2011). The subgroup results indicate that effects are concentrated among women, workers with lower educational attainment, and racial and ethnic minorities, groups with historically limited access to tax-advantaged workplace retirement saving. The concentration of effects among women is consistent with international evidence that retirement policy reforms disproportionately influence women's labor supply (Geyer et al. 2021).

Several limitations warrant mention. First, we do not observe account type (employer 401(k) versus auto IRA) or account balances, which prevents us from decomposing effects along these dimensions. Second, unobserved confounders may remain: contemporaneous state policies such as minimum-wage increases and EITC expansions could affect our estimates, though our state-level controls absorb much of this variation. The 2020-21 Covid 19 pandemic overlaps with part of the study period, Covid-related early exits and claiming would attenuate our estimates

⁹ The Primary Insurance Amount (PIA) is the monthly benefit a worker receives if they claim at the Full Retirement Age (67 for those born after 1960). Claiming at age 62 reduces the benefit to 70 percent of the PIA; delaying to age 70 increases it to 124 percent. Using the average monthly PIA of \$1,905 as of December 2023 (Social Security Administration, 2024), this implies monthly benefits of approximately \$1,334 at age 62 versus \$2,362 at age 70.

toward zero. We mitigate these concerns with year fixed effects and state-clustered standard errors. Third, because Colorado and Virginia adopted their programs only in 2023, their treatment effects are unlikely to have fully materialized; their inclusion renders our estimates a conservative lower bound, and effect sizes should grow as exposure lengthens. A robustness check excluding these two states yields consistent results. Finally, data limitations preclude a formal decomposition of the liquidity and behavioral channels, which we leave to future research.

State auto IRA policies represent the first large-scale effort to expand workplace retirement plan access across the United States. We contribute to a growing literature on these programs by showing that their effects extend beyond account ownership and contributions to meaningful changes in labor force attachment and Social Security claiming among older workers. The savings and information generated by the mandates are associated with later retirement and claiming decisions that raise retirement income. As mandated workplace retirement coverage receives growing attention at the federal level, these results add to the evidence base on the behavioral consequences of such mandates.

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Table 1: Effect on Retirement Timing

	Model 1	Model 2	Model 3
	(1)	(2)	(3)
Panel A: Retired before 62	-0.001	-0.003	-0.003
	(0.004)	(0.004)	(0.004)
<i>Pre-Policy Mean</i>	<i>0.028</i>	<i>0.028</i>	<i>0.028</i>
Panel B: Retired before 65	-0.006	-0.011**	-0.012**
	(0.005)	(0.004)	(0.004)
<i>Pre-Policy Mean</i>	<i>0.071</i>	<i>0.071</i>	<i>0.071</i>
Panel C: Retired before 67	-0.006	-0.009*	-0.009**
	(0.005)	(0.005)	(0.005)
<i>Pre-Policy Mean</i>	<i>0.071</i>	<i>0.071</i>	<i>0.071</i>
Panel D: Delayed past 67	0.016**	0.031***	0.030***
	(0.008)	(0.009)	(0.009)
<i>Pre-Policy Mean</i>	<i>0.228</i>	<i>0.228</i>	<i>0.228</i>
State & Year FE	Yes	Yes	Yes
Demographic Controls	No	Yes	Yes
State Characteristic Controls	No	No	Yes
N	1,803,085	1,803,085	1,803,085

Notes: Data come from SIPP panels: 2014 - 2024. Sample includes individuals aged 55 - 75 years. For each outcome variable, the coefficient and its standard errors come from a separate CSDID models. All monetary variables are deflated in 2024 dollars and winsorized at the 1st and 99th percentile to remove outliers. All models include state and year fixed effects but differ in inclusion of controls for individual-level demographic and state-level characteristics. All estimates are adjusted using sample weights, standard errors are clustered at the state level. * p < 0.10, ** p < 0.05, *** p < 0.01

Table 2: Effect on Social Security Claiming

	Model 1	Model 2	Model 3
	(1)	(2)	(3)
Panel A: Claim at 62	0.0001	0.00003	-0.00003
	(0.0001)	(0.0001)	(0.0001)
<i>Pre-Policy Mean</i>	<i>0.0005</i>	<i>0.0005</i>	<i>0.0005</i>
Panel B: Claim between 62 and 67 (FRA)	-0.01***	-0.01***	-0.01***
	(0.002)	(0.003)	(0.003)
<i>Pre-Policy Mean</i>	<i>0.032</i>	<i>0.032</i>	<i>0.032</i>
Panel C: Claim after FRA	0.012	0.027***	0.003
	(0.008)	(0.008)	(0.008)
<i>Pre-Policy Mean</i>	<i>0.21</i>	<i>0.21</i>	<i>0.21</i>
Panel D: Claim at 70	0.006**	0.019**	0.018*
	(0.003)	(0.004)	(0.004)
<i>Pre-Policy Mean</i>	<i>0.11</i>	<i>0.11</i>	<i>0.11</i>
Any delay in claiming past FRA	0.009**	0.008**	0.008**
	(0.004)	(0.004)	(0.004)
<i>Pre-Policy Mean</i>	<i>0.053</i>	<i>0.053</i>	<i>0.053</i>
State & Year FE	Yes	Yes	Yes
Demographics Controls	No	Yes	Yes
State Characteristics Controls	No	No	Yes
N	1,801,923	1,801,923	1,801,923

Notes: Data come from SIPP panels: 2014 - 2024. Sample includes individuals aged 55 - 75 years. For each outcome variable, the coefficient and its standard errors come from a separate CSDID models. All monetary variables are deflated in 2024 dollars and winsorized at the 1st and 99th percentile to remove outliers. All models include state and year fixed effects but differ in inclusion of controls for individual-level demographic and state-level characteristics. All estimates are adjusted using sample weights, standard errors are clustered at the state level. * p < 0.10, ** p < 0.05, *** p < 0.01

Table 3: Effect on Earnings, Work Hours, and Household Finance

	Model 1	Model 2	Model 3
	(1)	(2)	(3)
<u>Labor Market Outcomes:</u>			
Monthly Earnings	623.5***	924.8***	102.3***
	(75.4)	(198.3)	(195.2)
<i>Pre-Policy Mean</i>	5,398	5,398	5,398
N	817,653	817,653	817,653
Work Hours (Weekly)	0.16	0.27	0.19
	(0.1)	(0.3)	(0.2)
<i>Pre-Policy Mean</i>	37	37	37
N	817,653	817,653	817,653
<u>Household Balance Sheet Outcomes:</u>			
Total Savings Balance	-226.53	-220.91	-242.64
	(369.7)	(397.5)	(396.1)
<i>Pre-Policy Mean</i>	8,424	8,424	8,424
Checking Account Balance	-252.75**	-276.33**	-247.23
	(145.8)	(139.4)	(162.1)
<i>Pre-Policy Mean</i>	3,752	3,752	3,752.6
Total Household Debt	-1,448.71	-1,578.19	-1,741.45
	(2,014.5)	(2,120.4)	(2,164.6)
<i>Pre-Policy Mean</i>	128,012	128,012	128,012
Unsecured Debt	-152.08	-235.41*	-236.41*
	(124.4)	(125.7)	(126.7)
<i>Pre-Policy Mean</i>	3,099	3,099	3,099
State & Year FE	Yes	Yes	Yes
Demographic Controls	No	Yes	Yes
State Characteristic Controls	No	No	Yes
N	1,803,085	1,803,085	1,803,085

Notes: Data come from SIPP panels: 2014 - 2024. Sample includes individuals aged 55 - 75 years. For each outcome variable, the coefficient and its standard errors come from a separate CSDID models. All monetary variables are deflated in 2024 dollars and winsorized at the 1st and 99th percentile to remove outliers. All models include state and year fixed effects but differ in inclusion of controls for individual-level demographic and state-level characteristics. All estimates are adjusted using sample weights, standard errors are clustered at the state level. * p < 0.10, ** p < 0.05, *** p < 0.01

Table 4: Heterogeneity Analysis 1

Effect on Retirement and Claiming by Gender and Marital Status

	Female	Male	Married	Single	Divorced/Separated/ Widowed
	(1)	(2)	(3)	(4)	(5)
Account Ownership and Assets					
IRA ownership	0.024*	0.054**	0.038	0.033**	0.045***
	(0.02)	(0.02)	(0.02)	(0.01)	(0.01)
<i>Pre-Policy Mean</i>	<i>0.33</i>	<i>0.34</i>	<i>0.38</i>	<i>0.26</i>	<i>0.28</i>
401(k) owned	0.019***	0.027**	0.004	0.015	0.071***
	(0.004)	(0.01)	(0.01)	(0.02)	(0.02)
<i>Pre-Policy Mean</i>	<i>0.3</i>	<i>0.35</i>	<i>0.35</i>	<i>0.27</i>	<i>0.26</i>
Retirement Assets	25719.8	15502.1	45938.2**	-48947.3***	-3379.4
	(19621.9)	(11742.5)	(20142.5)	(18669.1)	(12554.4)
<i>Pre-Policy Mean</i>	<i>231,466</i>	<i>253,861</i>	<i>313,579</i>	<i>119,520</i>	<i>118,449</i>
Retirement Timing					
Retire before age 62	-0.0009	-0.005	-0.004	-0.007	-0.003
	(0.005)	(0.004)	(0.006)	(0.007)	(0.005)
<i>Pre-Policy Mean</i>	<i>0.026</i>	<i>0.03</i>	<i>0.029</i>	<i>0.028</i>	<i>0.024</i>
Retire before age 65	-0.018***	-0.002	-0.019***	-0.006	-0.002
	(0.004)	(0.009)	(0.006)	(0.02)	(0.009)
<i>Pre-Policy Mean</i>	<i>0.07</i>	<i>0.07</i>	<i>0.07</i>	<i>0.06</i>	<i>0.06</i>
Retire before FRA	-0.015***	-0.001	-0.019***	0.003	0.0006
	(0.003)	(0.009)	(0.006)	(0.01)	(0.01)
<i>Pre-Policy Mean</i>	<i>0.07</i>	<i>0.07</i>	<i>0.07</i>	<i>0.06</i>	<i>0.06</i>
Any delay in retirement	0.03***	0.026*	0.041***	0.049**	-0.0008
	(0.007)	(0.016)	(0.013)	(0.02)	(0.01)
<i>Pre-Policy Mean</i>	<i>0.23</i>	<i>0.22</i>	<i>0.22</i>	<i>0.17</i>	<i>0.25</i>
SS Claiming					
Claim before age 62	-0.0002	-0.034***	-0.0001	-0.0003	-0.003
	(0.002)	(0.01)	(0.001)	(0.007)	(0.006)
<i>Pre-Policy Mean</i>	<i>0.0005</i>	<i>0.0005</i>	<i>0.0005</i>	<i>0.0005</i>	<i>0.0005</i>
Claim between 62 and FRA	-0.018**	-0.0001	-0.018	0.013*	-0.03
	(0.005)	(0.002)	(0.002)	(0.007)	(0.006)
<i>Pre-Policy Mean</i>	<i>0.03</i>	<i>0.02</i>	<i>0.03</i>	<i>0.02</i>	<i>0.02</i>
Claim after FRA	0.037***	0.003	0.035***	-0.053**	0.0004
	(0.01)	(0.01)	(0.009)	(0.02)	(0.02)
<i>Pre-Policy Mean</i>	<i>0.21</i>	<i>0.21</i>	<i>0.21</i>	<i>0.15</i>	<i>0.23</i>
Claim at age 70	0.026***	-0.007	0.026***	0.002	0.014

	(0.005)	(0.008)	(0.004)	(0.01)	(0.01)
<i>Pre-Policy Mean</i>	0.11	0.11	0.07	0.07	0.12
Any delay in SS Claiming	0.002	0.01	0.01	-0.002	0.005
	(0.004)	(0.009)	(0.007)	(0.01)	(0.009)
<i>Pre-Policy Mean</i>	0.05	0.05	0.05	0.05	0.04
N	965,945	835,978	1,096,576	163,744	530,110

Notes: Data come from SIPP panels: 2014 - 2024. Sample includes individuals aged 55 - 75 years. For each outcome variable, the coefficient and its standard errors come from a separate CSDID models. All monetary variables are deflated in 2024 dollars and winsorized at the 1st and 99th percentile to remove outliers. All models include state and year fixed effects but differ in inclusion of controls for individual-level demographic and state-level characteristics. All estimates are adjusted using sample weights, standard errors are clustered at the state level. * p < 0.10, ** p < 0.05, *** p < 0.01

Table 5: Heterogeneity Analysis 2

Effect on Retirement and Social Security Claiming by Race/Ethnicity

	Non-Hispanic White	Non-Hispanic Black	Hispanic	Other Racial Groups
	(1)	(2)	(3)	(4)
<u>Account Ownership and Assets</u>				
IRA ownership	0.059 (0.02)	0.056 (0.02)	-0.02 (0.01)	0.04* (0.02)
<i>Pre-Policy Mean</i>	<i>0.42</i>	<i>0.17</i>	<i>0.12</i>	<i>0.28</i>
401(k) ownership	0.036*** (0.005)	-0.014 (0.05)	0.048** (0.02)	-0.054 (0.04)
<i>Pre-Policy Mean</i>	<i>0.36</i>	<i>0.31</i>	<i>0.18</i>	<i>0.28</i>
Total Retirement Assets	50659.7*** (14203.9)	-16304.1 (25836.8)	16969.3 (14363.04)	-58309.03*** (20182.6)
<i>Pre-Policy Mean</i>	<i>302,958</i>	<i>121,072</i>	<i>82,066</i>	<i>231,188</i>
<u>Retirement Timing</u>				
Retire before age 62	-0.003 (0.006)	0.005 (0.01)	-0.002 (0.006)	-0.02*** (0.004)
<i>Pre-Policy Mean</i>	<i>0.03</i>	<i>0.03</i>	<i>0.02</i>	<i>0.02</i>
Retire before age 65	-0.013* (0.008)	0.021 (0.01)	-0.021** (0.009)	-0.016 (0.02)
<i>Pre-Policy Mean</i>	<i>0.07</i>	<i>0.07</i>	<i>0.05</i>	<i>0.07</i>
Retire before FRA	-0.011 (0.008)	0.021 (0.02)	-0.024** (0.01)	-0.016 (0.02)
<i>Pre-Policy Mean</i>	<i>0.07</i>	<i>0.07</i>	<i>0.05</i>	<i>0.07</i>
Any delay in retirement	0.04*** (0.02)	0.016 (0.01)	-0.001 (0.01)	0.04*** (0.009)
<i>Pre-Policy Mean</i>	<i>0.24</i>	<i>0.19</i>	<i>0.19</i>	<i>0.18</i>
<u>SS Claiming</u>				
Claim at age 62	0.00 (0.0002)	0.0008*** (0.0002)	0.00005 (0.0002)	-0.0002 (0.0002)
<i>Pre-Policy Mean</i>	<i>0.0005</i>	<i>0.0003</i>	<i>0.0004</i>	<i>0.0006</i>
Claim between 62 and FRA	-0.009*** (0.003)	-0.002 (0.004)	-0.016*** (0.005)	-0.004 (0.018)
<i>Pre-Policy Mean</i>	<i>0.03</i>	<i>0.03</i>	<i>0.02</i>	<i>0.03</i>
Claim after FRA	0.035*** (0.01)	0.027* (0.01)	-0.01 (0.01)	0.046*** (0.01)
<i>Pre-Policy Mean</i>	<i>0.22</i>	<i>0.16</i>	<i>0.17</i>	<i>0.17</i>

Claim at 70	0.026*** (0.003)	0.007 (0.02)	-0.008 (0.01)	0.062*** (0.009)
Pre-Policy Mean	0.12	0.07	0.09	0.09
Any delay in claiming	0.008 (0.006)	0.012 (0.02)	0.007** (0.004)	-0.01*** (0.003)
<i>Pre-Policy Mean</i>	0.06	0.05	0.03	0.04
N	530,110	205,766	182,360	111,753

Notes: Data come from SIPP panels: 2014 - 2024. Sample includes individuals aged 55 - 75 years. For each outcome variable, the coefficient and its standard errors come from a separate CSDID models. All monetary variables are deflated in 2024 dollars and winsorized at the 1st and 99th percentile to remove outliers. All models include state and year fixed effects but differ in inclusion of controls for individual-level demographic and state-level characteristics. All estimates are adjusted using sample weights, standard errors are clustered at the state level. * p < 0.10, ** p < 0.05, *** p < 0.01

Table 6: Heterogeneity Analysis 3

Effect on Retirement and Claiming by Educational Attainment

	Less than High School	High School	Some College	College	College Plus
	(1)	(2)	(3)	(4)	(5)
Account Ownership and Assets					
IRA ownership	0.04*** (0.008)	0.018 (0.03)	0.031 (0.03)	0.028*** (0.009)	0.037*** (0.01)
<i>Pre-Policy Mean</i>	<i>0.04</i>	<i>0.21</i>	<i>0.32</i>	<i>0.49</i>	<i>0.59</i>
401(k) ownership	0.038*** (0.009)	0.029 (0.02)	0.022 (0.01)	0.014 (0.02)	-0.027 (0.03)
<i>Pre-Policy Mean</i>	<i>0.08</i>	<i>0.24</i>	<i>0.33</i>	<i>0.39</i>	<i>0.51</i>
Total Retirement Assets	7644.1 (7033.2)	-41314.3 (28364.2)	-20809.1 (26491.9)	59888.8** (27058.1)	80382.7*** (30415.8)
<i>Pre-Policy Mean</i>	<i>26,016</i>	<i>130,424</i>	<i>193,311</i>	<i>362,878</i>	<i>520,522</i>
Retirement Timing					
Retire before age 62	-0.011 (0.007)	-0.006 (0.01)	-0.008 (0.006)	-0.001 (0.01)	0.002 (0.003)
<i>Pre-Policy Mean</i>	<i>0.02</i>	<i>0.03</i>	<i>0.04</i>	<i>0.02</i>	<i>0.02</i>
Retire before age 65	-0.025*** (0.005)	-0.012* (0.006)	-0.019 (0.01)	-0.006 (0.017)	0.0004 (0.008)
<i>Pre-Policy Mean</i>	<i>0.04</i>	<i>0.07</i>	<i>0.09</i>	<i>0.06</i>	<i>0.05</i>
Retire before FRA	-0.029*** (0.006)	-0.015** (0.006)	-0.013 (0.02)	-0.01 (0.02)	0.009 (0.01)
<i>Pre-Policy Mean</i>	<i>0.04</i>	<i>0.07</i>	<i>0.09</i>	<i>0.06</i>	<i>0.05</i>
Any delay in retirement	0.022** (0.009)	0.039*** (0.01)	0.039*** (0.009)	0.013 (0.02)	0.042** (0.02)
<i>Pre-Policy Mean</i>	<i>0.21</i>	<i>0.24</i>	<i>0.23</i>	<i>0.22</i>	<i>0.22</i>
SS Claiming					
Claim before age 62	-0.0001 (0.0001)	0.00002 (0.0004)	0.0002 (0.0003)	-0.0001 (0.0002)	0.0001 (0.0001)
<i>Pre-Policy Mean</i>	<i>0.0003</i>	<i>0.0007</i>	<i>0.0006</i>	<i>0.0005</i>	<i>0.0001</i>
Claim between 62 and FRA	-0.019* (0.01)	-0.013 (0.01)	0.00004 (0.007)	-0.013** (0.006)	-0.002 (0.009)
<i>Pre-Policy Mean</i>	<i>0.03</i>	<i>0.03</i>	<i>0.04</i>	<i>0.02</i>	<i>0.02</i>
Claiming after FRA	0.023** (0.01)	0.032*** (0.009)	0.035*** (0.01)	0.007 (0.02)	0.052** (0.02)

<i>Pre-Policy Mean</i>	0.20	0.22	0.21	0.23	0.17
Claim after 70	0.017 (0.02)	0.019* (0.01)	0.016*** (0.005)	0.021 (0.01)	0.038*** (0.01)
Pre-Policy Mean	0.10	0.12	0.10	0.11	0.09
Any delay in SS Claiming	-0.002 (0.004)	0.016 (0.01)	-0.005 (0.007)	0.008 (0.009)	0.006 (0.01)
<i>Pre-Policy Mean</i>	0.01	0.04	0.06	0.06	0.08
N	212,674	541,987	489,490	322,574	235,198

Notes: Data come from SIPP panels: 2014 - 2024. Sample includes individuals aged 55 - 75 years. For each outcome variable, the coefficient and its standard errors come from a separate CSDID models. All monetary variables are deflated in 2024 dollars and winsorized at the 1st and 99th percentile to remove outliers. All models include state and year fixed effects but differ in inclusion of controls for individual-level demographic and state-level characteristics. All estimates are adjusted using sample weights, standard errors are clustered at the state level.
* p < 0.10, ** p < 0.05, *** p < 0.01

Table 7: Heterogeneity Analysis 4:

Effect on Retirement and Claiming Among Near-Retirees (Age 62-72)

	(1)	(2)	(3)
Retirement Decision			
Any Retirement	0.023*** (0.007)	0.021** (0.009)	0.018* (0.01)
<i>Pre-Policy Mean</i>	<i>0.44</i>	<i>0.44</i>	<i>0.44</i>
Retire before 65	-0.004 (0.006)	-0.005 (0.006)	-0.006 (0.006)
<i>Pre-Policy Mean</i>	<i>0.09</i>	<i>0.09</i>	<i>0.09</i>
Retire before FRA	-0.005 (0.007)	-0.003 (0.008)	-0.004 (0.008)
<i>Pre-Policy Mean</i>	<i>0.10</i>	<i>0.10</i>	<i>0.10</i>
Delay Retirement	0.024** (0.01)	0.025 (0.01)	0.02 (0.01)
<i>Pre-Policy Mean</i>	<i>0.33</i>	<i>0.33</i>	<i>0.33</i>
SS Claiming			
SS Claim at 62	0.0003 (0.0002)	0.0002 (0.0002)	0.0002 (0.0002)
<i>Pre-Policy Mean</i>	<i>0.0010</i>	<i>0.0010</i>	<i>0.0010</i>
SS Claim before FRA	-0.0172*** (0.0043)	-0.0168*** (0.0055)	-0.0159*** (0.0054)
<i>Pre-Policy Mean</i>	<i>0.0640</i>	<i>0.2198</i>	<i>0.2198</i>
SS Claim at 70	0.0143*** (0.0058)	0.0139*** (0.0048)	0.0142*** (0.0047)
<i>Pre-Policy Mean</i>	<i>0.0703</i>	<i>0.0703</i>	<i>0.0703</i>
Any delay in SS Claiming	0.0146 (0.0213)	0.0150 (0.0228)	0.0173 (0.0225)
<i>Pre-Policy Mean</i>	<i>0.5002</i>	<i>0.5002</i>	<i>0.5002</i>
State & Year FE	Yes	Yes	Yes
Demographics Controls	No	Yes	Yes
State Characteristics Controls	No	No	Yes
N	956,590	956,590	956,590

Notes: Data come from SIPP panels: 2014 - 2024. Sample includes individuals aged 55 - 75 years. For each outcome variable, the coefficient and its standard errors come from a separate CSDID models. All monetary variables are deflated in 2024 dollars and winsorized at the 1st and 99th percentile to remove outliers. All models include state and year fixed effects but differ in inclusion of controls for individual-level demographic and state-level characteristics. All estimates are adjusted using sample weights, standard errors are clustered at the state level. * p < 0.10, ** p < 0.05, *** p < 0.01

Appendix

1. Sample Statistics

Table A1: Summary Statistics

	Auto-IRA States		Non-Auto IRA States	
	Mean	SD	Mean	SD
Outcome Variables				
IRA owned	0.33	0.47	0.29	0.45
401k owned	0.33	0.47	0.31	0.46
Total Household Retirement Assets	264,161	533,067	213,142	479,733
Retire before 62	0.02	0.15	0.02	0.15
Retire before 65	0.06	0.24	0.06	0.25
Retire before FRA	0.07	0.26	0.07	0.26
Delay Retirement	0.23	0.42	0.24	0.43
SS Claim at 62	0.04	0.02	0.05	0.02
SS Claim before FRA	0.03	0.18	0.04	0.2
SS Claim at 70	0.11	0.31	0.12	0.33
Any Delay SS Claiming	0.05	0.22	0.04	0.2
Demographics				
Age	63.81	5.81	63.96	5.82
Female	0.52	0.49	0.52	0.49
Married	0.62	0.48	0.62	0.48
Single	0.11	0.31	0.09	0.28
White	0.78	0.41	0.82	0.37
Black	0.09	0.29	0.12	0.32
Asian	0.09	0.28	0.03	0.17
Other Races	0.03	0.16	0.03	0.15
Less than HS	0.12	0.32	0.09	0.29
HS graduates	0.23	0.42	0.31	0.46
Some College	0.27	0.44	0.27	0.44
College	0.21	0.40	0.18	0.38
College Plus	0.16	0.36	0.13	0.33
Hispanic	0.16	0.36	0.08	0.28
Household Size	2.41	1.37	2.19	1.13
Living in Metro Area	0.78	0.41	0.78	0.41
Any Health Insurance	0.95	0.21	0.94	0.22
Primary Residence Home Value	395,884	527,782	225,523	320,227
State-Level Characteristics				
Gross Products (Log)	13.93	0.96	13.13	0.92
EITC Rates	0.34	0.29	0.08	0.14
Minimum Wages (real 2024 dollars)	10.48	2.25	8.44	2.02

Unemployment Rates	5.51	1.9	4.96	1.65
N	386,464		1,416,621	

Notes: Data comes from SIPP panels: 2014 - 2024. Sample includes individuals aged 55 - 75 years old. All monetary variables are deflated in 2024 dollars and winsorized at the 1st and 99th percentile to remove outliers. Table shows t-stats and p-values for mean differences.

Table A2: Effect on Retirement Account Ownership and Assets

	Model 1	Model 2	Model 3
	(1)	(2)	(3)
Panel A: IRA ownership	0.016	0.035**	0.037**
	(0.02)	(0.018)	(0.018)
<i>Pre-Policy Mean</i>	<i>0.34</i>	<i>0.34</i>	<i>0.34</i>
Panel B: 401(k) ownership	0.023***	0.021***	0.023***
	(0.006)	(0.006)	(0.005)
<i>Pre-Policy Mean</i>	<i>0.32</i>	<i>0.32</i>	<i>0.32</i>
Panel C: Retirement Assets	3,861	21,794	20,143
	(16974.1)	(14299.2)	(14247.4)
<i>Pre-Policy Mean</i>	<i>242,078</i>	<i>242,078</i>	<i>242,078</i>
State & Year FE	Yes	Yes	Yes
Demographics Controls	No	Yes	Yes
State Characteristics Controls	No	No	Yes
N	1,803,085	1,803,085	1,803,085

Notes: Data come from SIPP panels: 2014 - 2024. Sample includes individuals aged 55 - 75 years. For each outcome variable, the coefficient and its standard errors come from a separate CSDID models. All monetary variables are deflated in 2024 dollars and winsorized at the 1st and 99th percentile to remove outliers. All models include state and year fixed effects but differ in inclusion of controls for individual-level demographic and state-level characteristics. All estimates are adjusted using sample weights, standard errors are clustered at the state level. * p < 0.10, ** p < 0.05, *** p < 0.01

Table A3: Robustness Test 1

Alternative Control Groups: Never-Treated + Not-Yet-Treated States

	(1)	(2)	(3)
Retirement Accounts and Assets			
IRA owned	0.019 (0.019)	0.038** (0.017)	0.04** (0.017)
<i>Pre-Policy Mean</i>	0.34	0.34	0.34
401k owned	0.023*** (0.006)	0.021*** (0.005)	0.023*** (0.005)
<i>Pre-Policy Mean</i>	0.32	0.32	0.32
Total Household Retirement Assets	5,776.6 (16525.1)	25,304.1* (1365.2)	23955.5* (13698.4)
<i>Pre-Policy Mean</i>	242,078	242,078	242,078
Retirement Behavior			
Retire before 62	-0.0007 (0.004)	-0.002 (0.004)	-0.003 (0.003)
<i>Pre-Policy Mean</i>	0.02	0.02	0.02
Retire before 65	-0.006 (0.005)	-0.01** (0.004)	-0.01** 0.004
<i>Pre-Policy Mean</i>	0.07	0.07	0.07
Retire before FRA	0.006 (0.005)	-0.008* (0.005)	-0.01** (0.005)
<i>Pre-Policy Mean</i>	0.07	0.07	0.07
Delay Retirement	0.014* (0.008)	0.029*** (0.009)	0.0306*** (0.0091)
<i>Pre-Policy Mean</i>	0.22	0.22	0.2278
Social Security Claiming			
SS Claim at 62	0.0001 (0.0001)	0.0001 (0.0001)	0.0001 (0.0001)
<i>Pre-Policy Mean</i>	0.0005	0.0005	0.0005
SS Claim between 62 and 67 (FRA)	-0.009*** (0.002)	-0.01*** (0.003)	-0.01*** (0.003)
<i>Pre-Policy Mean</i>	0.03	0.03	0.03
SS Claim after FRA	0.009 (0.007)	0.02*** (0.008)	0.026*** (0.008)
<i>Pre-Policy Mean</i>	0.21	0.21	0.21

SS Claim at 70	0.005 (0.004)	0.02*** (0.005)	0.01*** (0.004)
<i>Pre-Policy Mean</i>	<i>0.11</i>	<i>0.11</i>	<i>0.11</i>
Any Delay SS Claiming	0.009*** (0.003)	0.009*** (0.003)	0.008** (0.003)
<i>Pre-Policy Mean</i>	<i>0.05</i>	<i>0.05</i>	<i>0.05</i>
State & Year FE	Yes	Yes	Yes
Demographics Controls	No	Yes	Yes
State Characteristics Controls	No	No	Yes
N	1,803,085	1,803,085	1,803,085

Notes: Data come from SIPP panels: 2014 - 2024. Sample includes individuals aged 55 - 75 years. For each outcome variable, the coefficient and its standard errors come from a separate CSDID models. All monetary variables are deflated in 2024 dollars and winsorized at the 1st and 99th percentile to remove outliers. All models include state and year fixed effects but differ in inclusion of controls for individual-level demographic and state-level characteristics. All estimates are adjusted using sample weights, standard errors are clustered at the state level. * p < 0.10, ** p < 0.05, *** p < 0.01

Table A4: Robustness Test 2

Excluding late-adopting States: CO and VA with alternative control groups

	Control group: Never-Treated Only		Control Group: Never-Treated + Not Yet Treated	
	(1)	(2)	(3)	(4)
Account Ownership and Assets				
IRA owned	0.038**	0.041**	0.039**	0.04**
	(0.02)	(0.01)	(0.02)	(0.02)
<i>Pre-Policy Mean</i>	<i>0.33</i>	<i>0.33</i>	<i>0.33</i>	<i>0.33</i>
401k owned	0.024***	0.025***	0.025***	0.026***
	(0.005)	(0.005)	(0.005)	(0.005)
<i>Pre-Policy Mean</i>	<i>0.32</i>	<i>0.32</i>	<i>0.32</i>	<i>0.32</i>
Total Household Retirement Assets	23389.6*	21,446.4	24728*	22785.7*
	(13,927.7)	(13,936.1)	(13,599.5)	(13,595.3)
<i>Pre-Policy Mean</i>	<i>233,061</i>	<i>233,061</i>	<i>233,061</i>	<i>233,061</i>
Retirement Behavior				
Retire before 62	-0.003	-0.003	-0.003	-0.003
	(0.003)	(0.003)	(0.003)	(0.003)
<i>Pre-Policy Mean</i>	<i>0.027</i>	<i>0.027</i>	<i>0.02</i>	<i>0.02</i>
Retire before 65	-0.011**	-0.012***	-0.014	-0.017***
	(0.004)	(0.004)	(0.004)	(0.004)
<i>Pre-Policy Mean</i>	<i>0.061</i>	<i>0.069</i>	<i>0.064</i>	<i>0.06</i>
Retire before FRA	-0.01**	-0.011**	-0.01	-0.01**
	(0.004)	(0.005)	(0.005)	(0.005)
<i>Pre-Policy Mean</i>	<i>0.07</i>	<i>0.07</i>	<i>0.07</i>	<i>0.07</i>
Delay Retirement	0.03***	0.03***	0.032***	0.033***
	(0.009)	(0.008)	(0.009)	(0.008)
<i>Pre-Policy Mean</i>	<i>0.22</i>	<i>0.22</i>	<i>0.22</i>	<i>0.22</i>
SS Claim at 62	0.00006	0.00005	0.00005	0.00004
	(0.0001)	(0.0001)	(0.0001)	(0.0001)
<i>Pre-Policy Mean</i>	<i>0.0005</i>	<i>0.0005</i>	<i>0.0005</i>	<i>0.0005</i>
Social Security Claiming				
SS Claim between 62 and FRA	-0.01***	-0.01***	-0.012***	-0.011
	(0.002)	(0.002)	(0.002)	(0.002)
<i>Pre-Policy Mean</i>	<i>0.03</i>	<i>0.03</i>	<i>0.03</i>	<i>0.03</i>
SS Claim after FRA	0.02***	0.03***	0.03***	0.02

	(0.008)	(0.008)	(0.008)	(0.008)
<i>Pre-Policy Mean</i>	<i>0.21</i>	<i>0.21</i>	<i>0.21</i>	<i>0.21</i>
SS Claim After 70	0.01***	0.02***	0.02***	0.02***
	(0.005)	(0.004)	(0.005)	(0.003)
<i>Pre-Policy Mean</i>	<i>0.11</i>	<i>0.11</i>	<i>0.11</i>	<i>0.11</i>
Any Delay SS Claiming	0.009***	0.008**	0.01***	0.008***
	(0.003)	(0.003)	(0.003)	(0.003)
<i>Pre-Policy Mean</i>	<i>0.05</i>	<i>0.05</i>	<i>0.05</i>	<i>0.05</i>
State & Year FE	Yes	Yes	Yes	Yes
Demographics Controls	No	Yes	No	Yes
State Characteristics Controls	No	No	No	No
N	1,731,817	1,731,817	1,731,817	1,731,817

Notes: Data come from SIPP panels: 2014 - 2024. Sample includes individuals aged 55 - 75 years. For each outcome variable, the coefficient and its standard errors come from a separate CSDID models. All monetary variables are deflated in 2024 dollars and winsorized at the 1st and 99th percentile to remove outliers. All models include state and year fixed effects but differ in inclusion of controls for individual-level demographic and state-level characteristics. All estimates are adjusted using sample weights, standard errors are clustered at the state level. * p < 0.10, ** p < 0.05, *** p < 0.01

Table A5: Robustness Test 3: Two-Way Fixed Effects Model

Account Ownership and Retirement Wealth					
	IRA ownership	401(k) ownership	Retirement Assets		
Auto IRA x Post	-0.023**	-0.0005	-46986.3***		
	(0.009)	(0.008)	(15864.6)		
Pre-Policy Mean	<i>0.34</i>	<i>0.32</i>	<i>242,078</i>		
N	1,801,923	1,801,923	1,801,923		
Retirement Timing					
	Retire before 62	Retire before 65	Retire before FRA	Delayed Retirement	
Auto IRA x Post	0.001	-0.0007	0.0005	0.012**	
	(0.002)	(0.003)	(0.004)	(0.004)	
Pre-Policy Mean	<i>0.02</i>	<i>0.05</i>	<i>0.07</i>	<i>0.22</i>	
N	1,801,923	1,801,923	1,801,923	1,801,923	
Social Security Claiming					
	Claiming at 62	Claiming between 62 and FRA	Claiming after FRA	Claiming at 70	Delayed Claiming
Auto IRA x Post	-0.0001	-0.002	0.011**	0.0006	0.004
	(0.001)	(0.003)	(0.005)	(0.005)	(0.003)
Pre-Policy Mean	<i>0.03</i>	<i>0.12</i>	<i>0.03</i>	<i>0.11</i>	<i>0.05</i>
N	1,801,923	1,801,923	1,801,923	1,801,923	1,801,923

Notes: Data come from SIPP panels: 2014 - 2024. Sample includes individuals aged 55 - 75 years. For each outcome variable, the coefficient and its standard errors come from a separate CSDID models. All monetary variables are deflated in 2024 dollars and winsorized at the 1st and 99th percentile to remove outliers. All models include state and year fixed effects but differ in inclusion of controls for individual-level demographic and state-level characteristics. All estimates are adjusted using sample weights, standard errors are clustered at the state level. * p < 0.10, ** p < 0.05, *** p < 0.01

2. Event Study Plots: Evaluating the Parallel-Trends Assumption

Figures A1-A11 present event study plots for the main outcomes from five years before to five years after mandate adoption. Pre-treatment coefficients (years -5 to -1) are statistically indistinguishable from zero across all outcomes, supporting the parallel trends assumption. There is no evidence of differential pre-treatment trends in account ownership, retirement timing, and claiming between treated and control states, conditioned on covariates, state, and year fixed effects. Post-treatment coefficients show effects emerging within one to two years of implementation and persisting or growing over time, consistent with the gradual rollout and phased employer compliance. We also find no anticipation effects in the years immediately preceding policy adoption.

Figure A1: IRA Ownership

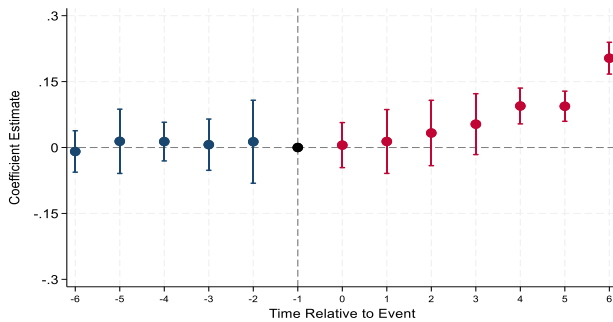


Figure A2: 401(k) Ownership

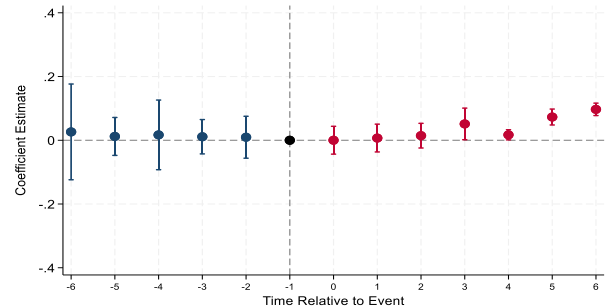


Figure A3: Household Retirement Wealth

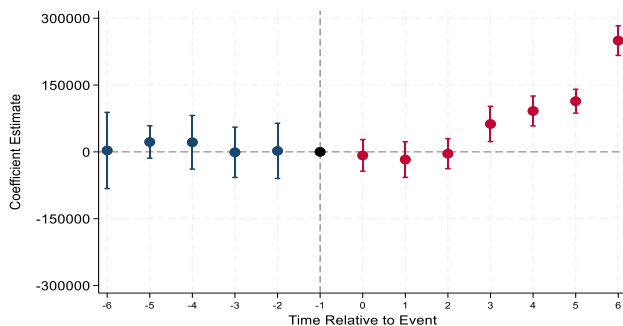


Figure A4: Retired at age 62

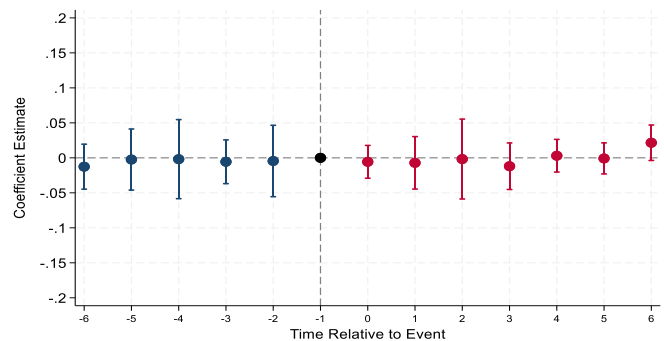


Figure A5: Retired before Age 65

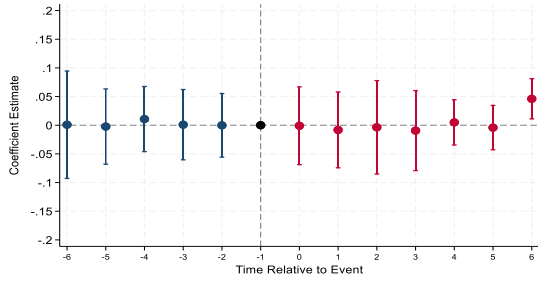


Figure A6: Retired before FRA

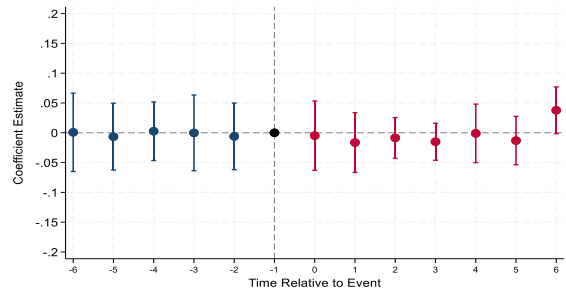


Figure A7: Delayed Retired

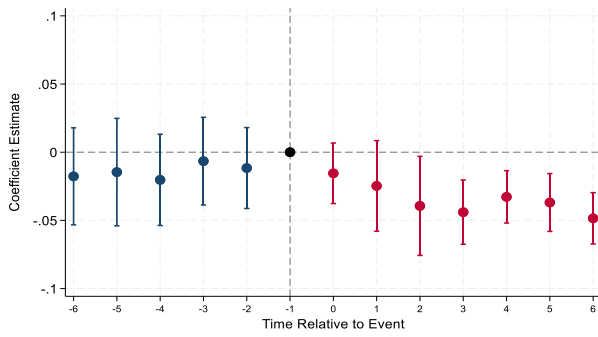


Figure A8: Claiming at age 62

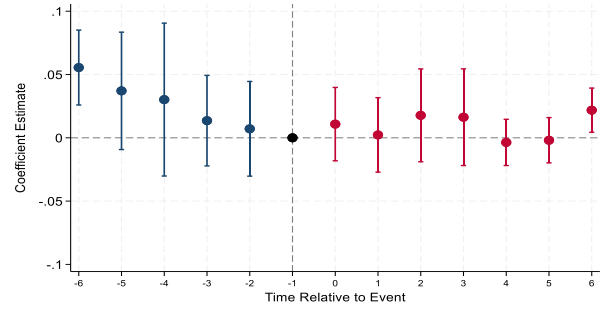


Figure A9: Claiming before FRA

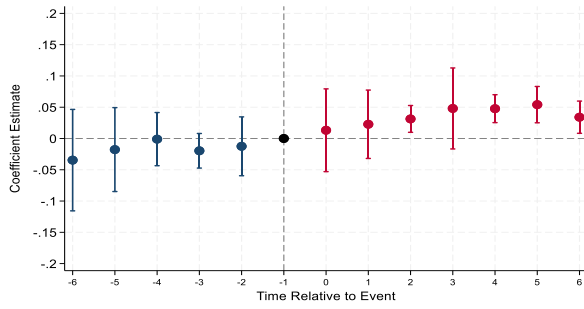


Figure A10: Claiming at age 70

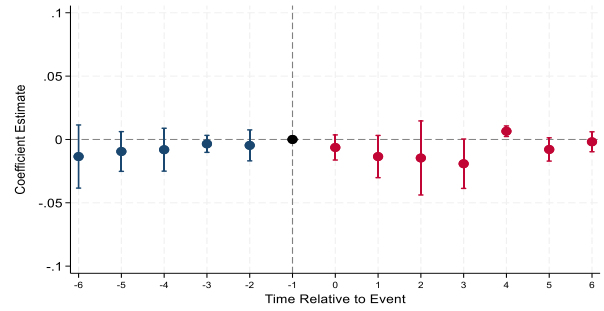
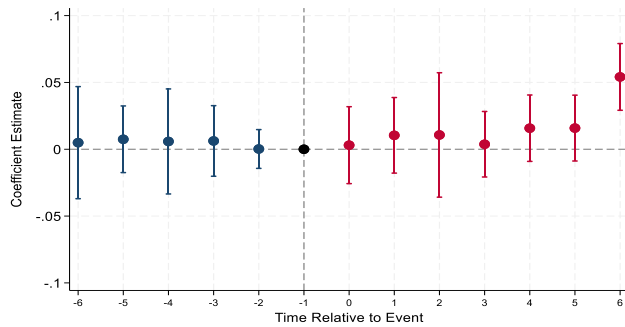


Figure A11: Delayed Claiming



3. Timeline of Policy Rollout

State	Policy year	Program rollout year
Oregon	2015	2017
Illinois	2015	2018
California	2016	2020
Maryland	2016	2022
Connecticut	2016	2022
Colorado	2020	2023
Virginia	2021	2023

Source: Center for Retirement Initiatives. Georgetown University. Available at: <https://cri.georgetown.edu/states/>