Behavioral Responses To Retirement Account Early Withdrawal Penalties: Evidence From The 2020 CARES Act Penalty Suspension – Pre-Analysis Plan

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Abstract

This paper studies the 2020 CARES Act tax-deferred account (TDA) 10% withdrawal penalty suspension on early withdrawals and savings behavior. Using administrative tax filings from the California Franchise Tax Board (FTB) and an identification strategy that takes advantage of the penalty cutoff at age 59.5, we estimate the treatment effects of the suspension of the penalty on a number of variables including IRA withdrawals and labor incomes. We further estimate the elasticity of saving with respect to taxes and penalties.

Keywords: Savings, Liquidity Constraints, Retirement, Assets

JEL Codes: D12, J26

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1 Introduction

Increasing retirement savings has been a major policy interest for decades, with the goal of improving retirement financial outcomes. While some such as Thaler and Benartzi (2004) have encouraged the use of nudges like automatic enrollment to increase retirement savings, investment vehicles and their favorable tax treatment (either growing tax free or on a tax deferred basis) remain important policy tools to promote retirement savings. Expanding the maximum contributions to such vehicles has been a major policy idea in recent years.

That being said other advanced economy countries such as Canada have much greater maximum contribution limits on tax-favorable retirement savings vehicles. Compared to other countries, the US is relatively unique[1] in having a broad penalty on early withdrawals before retirement (at age $59\frac{1}{2}$) from all tax-deferred retirement vehicles such as Individual Retirement Accounts (IRAs) and 401(k)s triggering a 10% penalty tax. Some states such as California impose an additional penalty (2% in the case of California) on early withdrawals[2].

In the US, Traditional IRAs were first introduced with the Employee Retirement Income Security Act of 1974 (ERISA) and later popularized with the Economic Recovery Tax Act of 1981. Since the beginning of IRAs, the federal government has imposed the 10% penalty on early withdrawals before age $59\frac{1}{2}$. The purpose of retirement savings accounts having early withdrawal penalties is to encourage savers not to take money out early. While a 10% IRA early withdrawal penalty is incurred when the withdrawal is made before the age of $59\frac{1}{2}$ years, there are exceptions to the rule. For example, taxpayers can withdraw up to $10,000 for the purpose of financing, buying, building, or rebuilding of a home (if deemed to be a "first time buyer") and when there are unreimbursed medical expenses amounting to more than 7.5% of adjusted gross income.

In 2020, the CARES Act contained a provision to allow for a tax-free coronavirus-related distribution up to an aggregate limit of $100,000 from all eligible retirement plans and IRAs from January 1, 2020 to December 30, 2020. In addition, the distributions generally are included in taxable income which can be spread across a three-year period, starting with the

[1]For instance, Canadian Registered Retirement Savings Plans (RRSPs) generally do not have early withdrawal penalties although income taxes are withheld at the point of RRSP withdrawals. In the UK, Individual Savings Accounts (ISAs) exist as tax-free retirement vehicles where after-tax contributions grow tax free with an overall annual contribution limit of 20,000 GBP. ISAs have several different subtypes each with separate individual limits and different benefits: Cash ISAs, Stocks Shares ISAs, Innovative Finance ISAs (IFISAs), Junior ISAs (for those below 18) and Lifetime ISAs (which have a 25% bonus, adding a subsidy of up to 1,000 GBP, and can only be opened by those above 18 and under 40 with a limit of 4,000 GBP each year until age 50 with a requirement of making a first payment before age 40). Only Lifetime ISAs in the UK have early withdrawal penalties in the amount of of 25% on early withdrawals before the age of 60 with the exception of home purchases like the US

[2]https://www.ftb.ca.gov/file/personal/income-types/early-distributions.html

first year in which one receives their CARES Act pandemic distribution. For example, if a taxpayer receives a $9,000 coronavirus-related distribution in 2020, they would report $3,000 in income on their federal income tax return for each of 2020, 2021, and 2022. That being said, taxpayers taking early distributions during 2020 still have the option of including the entire distribution in their income for the year of the distribution.

This one-time withdrawal penalty holiday for those below age 59.5 presents a natural experiment to test the elasticity of retirement savings with respect to early withdrawal penalties by analyzing early withdrawal behavior above and below age 59.5 prior to the CARES Act 10% early withdrawal suspension and comparing it to the withdrawal behavior above and below age 59.5 during the year the early withdrawal penalty holiday was in effect. We further analyze how this withdrawal behavior interacts with income shocks. We look at separate specifications to only include those with no income shock as well as those with income shocks of certain magnitudes.

Many other studies have analyzed the effects of various parameters of social security as a retirement savings program. Deshpande et al (2022) use Social Security administrative data to study how increases in the U.S. Social Security full retirement age (FRA) affect benefit claiming behavior and retirement (workforce exit) behavior, and how these two behaviors differ in their responses to FRA increases (retirement ages often allows for a regression-discontinuity designs at the age cutoff year).

This paper studies the 2020 CARES Act tax-deferred account (TDA) 10% withdrawal penalty suspension on early withdrawals and savings behavior. Using administrative tax filings from the California Tax Board (CTB) and a difference-in-differences design, we estimate to what degree individuals withdrew tax-deferred savings above and below age 59.5 in 2020 compared to past years when the 10% early withdrawal penalty was still in place. We estimate the elasticity of saving with respect to taxes and penalties.

The elasticity of retirement savings to changes in early withdrawal penalties is relatively unexplored in the literature since waiving early withdrawal penalties for TDAs during the COVID-19 pandemic was a largely unprecedented event. We exploit this event using data on early withdrawals from individual tax returns to determine how sensitive individuals are to changes in early withdrawal penalties when liquidity needs occur such as during recessions. In other words, are retirement savers below age 59.5 more willing to take early withdrawals when there are no penalties in 2020 compared to prior years when 10% early withdrawal penalties were still in place for TDAs? How does such early withdrawal behavior differ across sizes of income shocks?

This paper proceeds as follows. In Section 2, we review related literature. In Section 3, we discuss describe we describe the data. In Section 4, describes the empirical methodology.

Sections 5 presents the results. Section 6 concludes.

2 Literature Review

The origins of savings behavior has been explored in depth ranging from rational life cycle models to more complicated behavioral explanations. Deaton (1991) presents a lifecycle model of when consumers are not permitted to borrow which matches and explains some stylized facts about savings behavior.

Bernheim, Skinner, and Weinberg (2001), Lusardi (2001), and Madrian and Shea (2001) argue that nonstandard models and behavioral factors explain variation in savings behavior.

Cronqvist and Siegel (2015) analyze the savings behavior of a large sample of identical and fraternal twins, finding that genetic differences explain about 33 percent of the variation in savings propensities across individuals while nurture and parenting also contributes to variation in savings rates among younger individuals. Charles and Hurst (2003) suggests that there are significant parent-child similarities in savings behavior.

With the transition from defined-benefit pension plans to defined-contribution plans such as 401(k) and private social security accounts, individual workers have become increasingly responsible for their own savings (Cronqvist and Thaler (2004); Poterba, Venti, and Wise (2007)).

There is also a well developed literature on how tax-deferred accounts (TDAs) can help promote optimal savings (Gomes, Michaelides and Polkovnichenko (2009)). Hubbard and Skinner (1996) argue that IRAs stimulate moderate amounts of savings while Engen, Gale and Scholz (1996) argue that IRAs stimulate relatively little savings.

Venti and Wise (1986) using a model of constrained optimization, estimate suggest that contributions to IRAs represent substantial net saving increases. Were the IRA limit to be increased, only about 10 to 20% of resulting increase in IRA contributions would be taken from other savings according to their model estimates, about 50% would come from reduced consumption, and about 35% from reduced taxes.

Dammon, Spatt and Zhang (2004) model optimal intertemporal asset allocation and location decisions for investors making taxable and tax-deferred investments finding a strong preference for holding taxable bonds in the tax-deferred account and equity in the taxable account, reflecting the higher tax burden on taxable bonds relative to equity. Garlappi and Huang (2006) show that violations of location rules (eg. putting equities into tax-deferred accounts) can actually be optimal for risk-averse investors who face portfolio constraints.

Withdrawal penalties for savings accounts have also been studied to some degree. Sabelhaus (2000) combines Survey of Consumer Finances (SCF) survey data on IRA balances with IRS

Statement of Income (SOI) tax return data on IRA flows to study IRA accumulation and withdrawal patterns across cohorts, producing simulations where early withdrawal penalties have predictable effects on IRA flows.

Amromin and Smith (2003) use data from a ten—year panel of individual tax returns to investigate the circumstances under which households choose to incur the 10% early withdrawal penalty to gain access to money saved in IRA retirement accounts, finding that job loss, income shocks, divorce, and home purchases increase the likelihood of early withdrawals by an average of 3 to 10 percentage points each, with greater likelihood of early withdrawal especially among the poorest households. They further argue that early withdrawal from such retirement accounts reflects consumption—smoothing behavior by liquidity-constrained households that experience financial shocks.

Beshears et al (2020) randomly assign commitment accounts to 1. have a 10% early withdrawal, 2. have a 20% early withdrawal penalty or 3. not to allow early withdrawals at all, finding that higher penalties actually attract more commitment account deposits which they argue is explained by present-biasedness.

The elasticity of retirement savings to changes in early withdrawal penalties is relatively unexplored in the literature since waiving early withdrawal penalties for TDAs during the COVID-19 pandemic was a largely unprecedented event. We exploit this event using data on early withdrawals from individual tax returns to determine how sensitive individuals are to changes in early withdrawal penalties when liquidity needs occur such as during recessions and an identification strategy that exploits the age discontinuity that 10% early withdrawal penalties only exist for those at and below 59.5 years old.

3 Data

3.1 California Franchise Tax Board (FTB) Individual Administrative Tax Filings

This paper uses the universe of individual administrative tax record data for the calendar years 2000 to 2020 obtained from the California Franchise Tax Board.

From these returns, we have population-level coverage of certain variables measured from the California Form 540. Variables for which we have full coverage include Taxable Income and California AGI, Federal AGI, Capital Gains (we observe the sum of long term and short term capital gains), Interest, and Dividends.

To obtain the size of IRA distributions, we use the IRA distribution line-item on the Schedule CA, which is only available to us in a subsample of California FTB data. The subsample covers 100% of high income taxpayers but only a sample of mid- and lower-income. As a result, we will conduct some analysis on the universe of high-income taxpayers, and others on the sample of mid- and lower-income taxpayers using analytical weights provided by California FTB meant to make the data representative of the overall population.

In general three filing statuses account for the near-universe of filings: single, married joint-filers, and head of household.

"Total Income", which is then adjusted to AGI through subtractions. AGI then becomes taxable income by removing deductions. State and federal quantities differ due to state and federal specific adjustments. For example, state and local taxes could at the time still be itemized in deductions from federal AGI.

The FTB designates one spouse the "primary taxpayer" and the other a "redundant spouse" and the data include identical records for each party reflecting household quantities. All of our analysis is conducted at the level of a primary taxpayer which is our unit of observation.

All dollar amounts are inflation-adjusted to 2020 dollars using inflation factors from the FTB.

Table 1 will contain summary statistics for the full sample, 2000-2020.

This data is a rich dataset that can be used analyze incomes across the income distribution and how they were impact in by COVID-19. Other studies have used such California data including Rauh and Shyu (2022) which studies the response to California top marginal income tax rate changes and Rauh (2022) which studies net migration in response to various types of tax changes.

4 Empirical Approach

In our empirical analysis, We drop those who turn $59\frac{1}{2}$ at any time during 2020 since according to statute the penalty applies to distributions "made on or after the date on which the employee attains age 59 1/2" and the date of distributions cannot be distinguished from the tax filing data.

4.1 Event Study Design

Analyzing both the income shocks of those below age $59\frac{1}{2}$ (the 10% penalty cutoff) and those above $60\frac{1}{2}$ on December 31, 2020, we follow the approach to event studies of Freyaldenhoven, Hansen and Shapiro (2019):

$$IRAWithdrawAmount_i = \alpha + \beta_1 TreatedYearInd2020_i +$$
$$\beta_2 TreatedYearInd2008_i + \beta_3 TreatedYearInd2001_i + \gamma X_i + \epsilon_i$$

Where $TreatedYearIndicator2001_i$, $TreatedYearIndicator2008_i$, and $TreatedYearIndicator2020_i$ are indicators for whether the year is a recession. For instance, in one specification of we $TreatedYearIndicator2020_i = 1$ in 2020, the year the early IRA withdrawal 10% penalty holiday was in effect. To also estimate the effects of other recessions on IRA early withdrawals, we set $TreatedYearIndicator2001_i = 1$ for 2001 and $TreatedYearIndicator2008_i = 1$ for 2008, other years that experienced economic recessions but did not have early IRA withdrawal penalty suspensions. Until 2021 data are available, we will begin by assuming that all taxpayers spread the taxes owed on their distributions of three years, so that the 2020 data for IRA Withdraw Amount reflects one-third of the true withdrawal. If and when 2021 data become available we will use those data to more directly model the amounts withdrawn in 2020.

For covariates X_i we use additional controls including family size, age as well as income from tax files to control for events like individual income shortfalls that cause early withdrawal as a way to get liquidity for the household. For the sample for which we have lagged income data, we control for that as well.

Given that individuals with larger income shocks would be expected to be more likely withdraw, and to withdraw greater amounts early, We further study the interactions with shocks to incomes by running the following specification in the sample for which we have panel income data that allow us to measure income shocks over a lag of k years:

$$\frac{IRAWithdrawAmount_{i,t}}{\sum_{s=1}^{k} Y_{i,t-s}} = \alpha + \beta_1 \frac{Y_{i,t} - \sum_{s=1}^{k} Y_{i,t-s}}{\sum_{s=1}^{k} Y_{i,t-s}}$$
$$+\beta_2 \frac{Y_{i,t} - \sum_{s=1}^{k} Y_{i,t-s}}{\sum_{s=1}^{k} Y_{i,t-s}} TreatedYearInd2020_i + \epsilon_{i,t}$$

where β_1 here reflects the percentage of lagged income a person withdraws when they experience a 1% income shock, and β_2 reflects the marginal impact of lifting the 10% penalty on the % of lagged income a person withdraws when they experience a 1% income shock.

4.2 Difference-In-Differences Design With Penalty Age Discontinuity

We use data on the age of individuals in the California FTB tax filings data and the institutional detail that age $59\frac{1}{2}$ is a sharp discontinuity where the penalty on early distributions ends. We argue that between age 59 and 60 is a unique enough age cutoff that we can isolate the effects of the 10% penalty suspension. Most old age benefits like Social Security Old-Age and Survivors Insurance (OASI) benefits begin as early as age 62 and Medicare eligibilty begins at 65 for the general population. Indeed, widowers can begin receiving benefits at age 60 and those with a disability can begin receiving benefits at age 50, these are relatively very small parts of the population. Furthermore, the generosity of these benefits did not change during COVID-19.

Other studies like Fetter and Lockwood (2018) analyze the effects of Old Age Assistance Program (OAA), a Social Security OASI precursor, that was the initial incarnation of Social Security Benefits set forth by Social Security Act of 1935. They analyze the labor supply, among other variables, of those aged 55 to 74 in states in which the OAA eligibility age was 65 in 1939 when the first benefit payments were made. One advantage of using OAA in 1939 to analyze the effects of social security benefits is that few other confounding old age benefits such as Medicare existed at that time (Medicare and Medicaid were not established until President Lyndon B. Johnson signed the Social Security Amendments of 1965). Many other studies have used age cutoffs with public programs as an identification strategy to analyze the effects of such programs. Diamond and Persson (2016), Angrist and Krueger (1991) analyze age and birthday discontinuities to measure the effects of schooling, Carpenter and Dobkin (2011) analyze the treatment effect of legal drinking age on drunk driving deaths among other outcomes.

We limit our attention to those in between ages $57\frac{1}{2}$ and $62\frac{1}{2}$ and estimate the following regression:

$$Y_i = \alpha + \beta_1 Post_i + \beta_2 Treated_i + \beta_3 Post_i * Treated_i + \epsilon_i$$

where $Posti$=1 in 2020, the year the 10% early withdrawal penalty suspension occurred and 0 otherwise. $Treated_i$=1 if the individual is 59.5 or younger as of December 31, 2020 and $Treated_i$=0 if the individual is 60.5 or older as of December 31, 2020. Our difference-in-difference estimate β_3 measures the treatment of the 10% early withdrawal penalty suspension.

Various outcome variables of interest Y_i include IRA withdrawals and incomes.

5 Results

Figure 1 will plot the annual distributions of Individual Retirement Account (IRA) Distributions for California households in the years directly before and during the COVID-19 pandemic (2019 and 2020), and if 2021 data become available in years after 2020 as well.

Figure 2 will plot the median Individual Retirement Account (IRA) Distribution for California households over time (2000-2020).

Figure 3 will plot the median Individual Retirement Account (IRA) Distribution for California households by age group over time (2000-2020).

Figure 4 will plot the median Individual Retirement Account (IRA) Distribution for California households by magnitude of income shock over time (2000-2020).

Table 2 will present the results of event study estimates for the effects of the 2020 CARES Act early withdrawal penalty suspension on individual California incomes by different age bands.

Table 3 will present the results of the difference-in-difference estimates for the effects of the 2020 CARES Act early withdrawal penalty suspension on individual California incomes with various age groups in the sample surrounding the age 59.5 penalty cutoff.

Table 4 will present the results of the difference-in-difference estimates for the effects of the 2020 CARES Act early withdrawal penalty suspension on individual California incomes with various income shock cutoffs with individuals in the sample close to the age 59.5 penalty cutoff.

6 Conclusion

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Table 1: Summary Statistics

	Mean	SD	p1	p10	p50	p90	p99
Wage							
Federal AGI							
California AGI							
Taxable Income							
Dependents							
Married							
Cal AGI/Fed AGI Ratio							
IRA Distribution							

Notes: The table shows summary statistics for all observations pooled over the time period 2000-2020. The level of observation is the household, as reflected in the primary taxpayer observation which aggregates spousal income. California AGI differs from Federal AGI in two ways: (a) it includes only California source income; and (b) California and Federal law differ slightly in their definitions of AGI.

Figure 1: Annual Distributions of Individual Retirement Account (IRA) Distributions for California Households (2019 and 2020)

Figure 2: Median Individual Retirement Account (IRA) Distribution for California Households Over Time (2000-2020)

Figure 3: Individual Retirement Account (IRA) Distribution for California Households By Age Group Over Time (2000-2020)

Figure 4: Individual Retirement Account (IRA) Distribution for California Households By Income Shock Over Time (2000-2020)

Table 2: Event Study Estimates of Early IRA Withdrawals By Age Band

	Age Band Sample (\$)		
	All Ages	Ages 57.5-59.5	Ages 60.5-62.5
$TreatedYearIndicator2020_i$			
$TreatedYearIndicator2008_i$			
$TreatedYearIndicator2001_i$			
$Lagged5YearAvgIncome_i$			
$HealthCareExpenses_i$			
$FamilySize_i$			
Age_i			
$Constant$			
F-test			
N			

Notes: $^{*} p < 0.1$; $^{**} p < 0.05$; $^{***} p < 0.01$

Table 3: Age Cutoff Difference-In-Difference Results By Different Age Bands

	Sample	
	Ages [58.5-59.5, 60.5-61.5]	Ages [57.5-59.5, 60.5-62.5]
$Treated$		
$Post$		
$Treated * Post$		
$Covariate1$		
$Covariate2$		
$Covariate3$		
$Constant$		
F-test		
N		

Notes: $^{*} p < 0.1$; $^{**} p < 0.05$; $^{***} p < 0.01$

Table 4: Age Cutoff Difference-In-Difference Results By Magnitude of Income Shock

	Sample		
	Less than 5% income shock	5%-20% income shock	20%+ income shock
$Treated$			
$Post$			
$Treated * Post$			
$Covariate1$			
$Covariate2$			
$Covariate3$			
$Constant$			
F-test			
N			

Notes: $^{*} p < 0.1$; $^{**} p < 0.05$; $^{***} p < 0.01$