Set It and Forget It?

Financing Retirement in an Age of Defaults

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Abstract

Retirement savings abandonment is a rising concern connected to defined contribution systems and default enrollment. We use tax data on Individual Retirement Accounts (IRAs) to establish that for a recent cohort, 0.4% of retirement-age individuals abandoned an aggregate of $66 million, proxied by a failure to claim over ten years after a legal requirement to do so. Analysis of state unclaimed property databases suggests that workplace defined contribution plans are abandoned at a higher rate than IRAs. Finally, regression discontinuity estimates show that certain accounts created by default enrollment are at higher risk of abandonment by passive savers.

JEL Codes: D83, H24, H31, J32, J14, J63
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1 Introduction

A substantial share of private retirement savings in the U.S. is accumulated in tax-preferred retirement savings plans that account-holders must manage. If individuals fail to keep track of these accounts over their lifetimes, they run the risk of leaving these funds abandoned. Despite increasing policy concerns about such behavior (GAO, 2019; Bonamici, 2020), to date even basic facts about the prevalence of such behavior is unknown. These facts are relevant in the face of trends that increase the complexity of retirement account management, specifically the shift to defined contribution plans (which require individual direction) and an increased use of default enrollment in retirement saving plans (which increases passive savings that must be remembered later in life). Understanding abandonment of retirement accounts is also informative for considering how individuals engage with complex financial products more generally, and which financial instruments might be helpful in mitigating market frictions.

Our paper offers three main sets of analyses to advance our understanding of abandoned retirement accounts. First, we use individual-level tax data from the Internal Revenue Service (IRS) to measure their prevalence. This exercise is made difficult by the nature of long-term savings vehicles, in which an individual might reasonably choose not to interact with such accounts for a long period of time, while being fully aware of the account's existence. To overcome this challenge, we exploit a tax law that mandates retirement-age individuals to withdraw a share of their account balance each year, called a required minimum distribution (RMD), upon reaching a specified age; one purpose of this requirement is to ensure that the taxes are eventually paid on these tax-deferred saving vehicles. Focusing specifically on Individual Retirement Accounts (IRAs), which are well-identified in the tax data, we document the number of account owners who fail to meet their required minimum distributions continuously for ten years after they begin. We consider this behavior to be a proxy for abandonment, our conceptual behavior of interest.[1]

We find that among retirement-age IRA owners in a recent cohort, roughly 0.4% fail to claim their accounts within ten years. The median value of an unclaimed account is $5,742 (in 2016 dollars, as used throughout this paper); for context, the median value of a claimed

[1]As we define more precisely in Section 3, our empirical approach treats failing to meet one's RMDs as a necessary but not sufficient condition for owning an abandoned account. While this implementation does not perfectly capture the concept of abandonment, which we define more precisely in Section 2, we also show evidence consistent with some portion of unclaimed accounts being permanently abandoned. In particular, controlling for account value, unclaimed accounts appear noticeably less likely to be transferred to a beneficiary upon the death of the account-holder, suggesting that the account-holder (or those managing their affairs) are unaware of the account's existence.

account is $65,366.[2] We note that the aggregate amount unclaimed is thus quite small in the context of IRA balances. Given the potentially low cost of interventions to reduce this number, however, these accounts remain worthy of policy interest.

The IRS dataset also allows us to explore which factors are correlated with abandoned accounts, which we still proxy for as those left unclaimed for ten years. We find that this estimated abandonment decreases with account balance, but remains present at higher balances – e.g., abandonment was 0.23% for accounts valued near $25,000. Holding account balance fixed, we find that measures of financial sophistication observable in the tax data – filing a tax return, earning capital income, and paying estimated tax – are negatively correlated with abandonment. Our analyses also reveal that abandonment is positively correlated with the non-white share of the population within a zip code, even after controlling for education, income, and population density.

To broaden our scope of analysis beyond IRAs, our second set of results uses state unclaimed property databases. These databases are populated with accounts sent to the state (i.e., escheated) by plan custodians who failed to locate the account owners within three to five years of the start of RMDs. Here, we take escheatment to contribute a new proxy for estimated abandonment in our overarching analysis. The data contain unclaimed retirement accounts of all types, namely including information on employer-sponsored, defined contribution (DC) retirement plans that are absent in the IRS data. Indeed, we find that 42% of escheated retirement accounts are from DC plans such as 401(k)s (versus 25% in IRAs). In this dataset, we estimate that roughly 3.3% of the older population had an abandoned retirement account. The escheated amounts are small in value, however: 47% of escheated IRAs had a balance of less than $100, suggesting that plan fiduciaries escheat mainly those accounts that have management costs exceeding returns. There are almost no escheated accounts worth more than $10,000, though there is substantial density of unclaimed IRAs in this dollar range in the IRS data.

The unclaimed property databases also allow us to examine the effectiveness of state policies in reuniting what may be abandoned retirement funds with their owners. We focus on Massachusetts and Wisconsin as they represent two extremes of effort a state expends in locating account owners. In Wisconsin, the state has adopted an automated process using administrative records (when available) to send the funds from escheated accounts to their owners. In Massachusetts, like in most other states, account-owners must actively engage with the unclaimed property database to retrieve their accounts. These policies

[2] To protect taxpayer confidentiality, all quantiles in this paper are computed as psuedo-quantiles, equal to the 30 observations nearest the true quantile.

make a substantial difference: in Massachusetts, only 3.4% of unclaimed retirement accounts reported in 2016 were claimed within two years, compared to 67% in Wisconsin. Taken together, our analysis indicates that state unclaimed property initiatives currently play a limited role in reuniting abandoned retirement funds with their owners, though they have potential to be powerful in this capacity.

Our third and final set of results offers evidence from a specific type of IRA created by a default enrollment policy; the goal here is to uncover causal pathways to retirement account abandonment. We study the behavior of individuals induced to engage in an automatic IRA rollover (also known as "forced transfer") of savings left with a former employer – i.e., a subset of individuals who could plausibly be described as "passive savers" (Chetty et al., 2014). In particular, roughly two-thirds of civilian workers have access to an employer-sponsored defined contribution (DC) retirement account such as a 401(k) plan to which both the employee and the employer can contribute (Myers and Topoleski, 2020). When an employee with such an account leaves their job, prior to 2005, employers were required to maintain any account with a balance greater than $5,000, while accounts with balances less than $5,000 could be distributed as cash (with an early distribution penalty) to the employee. Starting in 2005, however, an "automatic rollover" policy allowed accounts of separating employees that had balances between $1,000 and $5,000 to be automatically transferred to an IRA designed to hold the funds until retirement. Nearly all employers take up this policy option, which allows them to unburden themselves of small accounts, which can bear relatively high administrative costs (Hung et al., 2015).

This automatic IRA rollover policy creates two empirical discontinuities which are clearly visible in the micro-data: there is an increase in mass of IRA rollovers just to the right of $1,000 and to the left of $5,000. At each discontinuity, we (1) estimate the share of rollovers that are induced by the policy and (2) estimate the conditional mean of some outcome at the left and right limits of each discontinuity. In combination, this allows us to back out mean characteristics of the group induced to engage in a rollover solely due to the policy, even without identifying whether any particular individual is a part of that group.

We first establish that those affected by the policy exhibit passive behavior, as evidenced by enrollment in the default (principal-preserving) investment plan and by not interacting with the account over the next ten years. We then show that these individuals are also substantially less likely to update their address with the plan custodian (conditional on moving), which creates a potentially causal link to eventual account neglect or abandonment. Finally, we limit our analysis to the small subset of this sample that attains retirement age during our sample period and show that those induced by the policy to hold an automatic IRA rollover are five percentage points more likely to have missed three years of RMDs.

This analysis of forced-transfer IRAs serves two purposes connected to retirement account abandonment. First, because those affected by this default are primarily working-age, it suggests that abandonment could increase in importance as the current labor force reaches older ages. Second, if individuals induced to save by default enrollment policies are more likely to abandon, the extent to which default policies can be a lever to increase individual welfare becomes ambiguous.

This study contributes to several strands of literature. The first relates to passive behavior in retirement saving, which we connect to potential abandonment later in the lifecycle. Default policies such as auto-enrollment in retirement plans are shown to substantially increase plan participation (Thaler and Benartzi, 2004; Chetty et al., 2014; Madrian and Shea, 2001; Benartzi and Thaler, 2007). This literature is complemented by research demonstrating inertia in retirement plan choices (Kim et al., 2016) and in other settings (e.g., in tax withholding as studied in Jones 2012). Most of this prior work studies consumer choice and policy design with the purpose of shifting behavior towards an outcome deemed to be more desirable. There is continued debate, however, about the benefits of auto-enrollment in plan design (Bubb and Warren, 2020; Scott et al., 2020; Bernheim and Gastell, 2020). We contribute to this literature by emphasizing a less-recognized drawback of default policies: the possibility that such accounts, due to being less salient (Ekerdt and Hackney, 2002), are more vulnerable to becoming abandoned. Plan participants who are defaulted into saving have been shown to have lower financial literacy (Goda et al., 2020; Carroll et al., 2009), and therefore are especially at risk for abandoning accounts. Our results using the IRS data suggest this to be true also in the present setting.

Our study is also related to a broader literature[3] on financial "mistakes," such as failing to refinance a mortgage when interest rates fall (Keys et al., 2016) or paying off low-interest rate consumer debt prior to high-interest rate debt (Gathergood et al., 2019). Such costly financial mistakes can also occur when people forget to take action; compelling evidence of forgetting has been found in settings such as payment choices for a task (Ericson, 2011) and lapse-based insurance (Gottlieb and Smetters, 2021). In our context, forgetting could lead individuals to make the mistake of failing to claim their own savings.

Finally, our research is nested within a more general literature on retirement savings adequacy (Poterba, 2014) and consumption smoothing in retirement (Banks et al., 1998).

[3]See Campbell (2016) for a survey of the literature.

Prior studies have examined whether households are saving enough for retirement (Scholz et al., 2006; Skinner, 2007), while others have studied the role of specific factors such as financial literacy (Lusardi and Mitchell 2014, Clark et al. 2006), information (Mastrobuoni, 2011), and "leakages" (i.e., cash-outs) at job separation (Armour et al., 2016; Clark et al., 2014; Munnell and Webb, 2015) or more generally prior to retirement (Goodman et al., 2021). Our results suggest that even if individuals are saving during their working lives, the risk of account abandonment could carry implications for optimal lifecycle consumption.

In the next section, we provide background on unclaimed retirement accounts and define more precisely what we mean by "abandonment" conceptually. Section 3 describes the IRS and state unclaimed property datasets, and details the empirical proxies for abandonment in these settings. Section 4 contains analysis related to the prevalence, trends, and correlates of accounts that are estimated to be abandoned. Section 5 presents analysis on a specific type of default retirement saving account, the forced transfer IRA, to show how estimated abandonment changes with default enrollment. Section 6 concludes.

2 Institutional Background

2.1 Defining of Abandonment

We begin with a brief background on the policies related to abandoned accounts. We recognize that definitions are important, as the conceptual object of interest is abandonment yet the empirical analysis to follow requires different proxies for this object. To fix ideas, we define the object of interest, an abandoned account, as follows:

Definition 2.1. An account is abandoned if, in the absence of an intervention, the individual makes consumption decisions as if the assets in the account are not included in that individual's budget constraint.

An account can become abandoned for a number of reasons; for example, because the individual (1) is unaware of the existence of the account, (2) forgets about the existence of the account, or (3) makes an active choice to forgo any rights to the account.[4] We make a conceptual distinction between what we can empirically observe in, for example, the tax data – whether an account is "unclaimed" for a certain number of years — and the object of interest, whether an account is "abandoned": we consider the *abandoned* state, but not

[4]This definition is closely related to the definition that GAO (2019) uses to define "unclaimed" savings: "Unclaimed retirement savings that individuals are entitled to receive, but have not claimed because employers or other entities that maintain their retirement accounts cannot locate the individuals or because the individuals have forgotten about the savings."

the unclaimed state, to be absorbing in the absence of an intervention (e.g. a third-party reuniting the account holder with their account). In the event of such an intervention, we deem the account to no longer be abandoned. We discuss how this wedge between abandonment and its empirical implementation affects the interpretation of our results in Section 3.

2.2 Regulatory Environment and Unclaimed Accounts

The U.S. retirement system contains several pillars, including government-provided annuitized income streams (Social Security), employer-provided annuitized income streams (defined benefit (DB) pensions), and tax-preferred individual accounts. This paper studies this third pillar, which itself is made up of two components: workplace defined contribution (DC) pension plans such as 401(k) accounts, and Individual Retirement Accounts (IRAs) established by an individual with a financial institution.[5] Individuals (and, sometimes, employers) make contributions to DC plans through payroll deductions. Individuals may transfer DC wealth into an IRA without generating the 10 percent tax penalty that would otherwise apply (in most circumstances) to pre-retirement distributions from DC plans. Individuals may also make direct contributions to IRAs, but this is much rarer.[6] For the current cohort of retirees, IRAs appear to finance a larger share of retirement consumption than DC accounts: in 2015, individuals aged 65 or older withdrew $26 billion from DC accounts and $183 billion from IRAs (Goodman et al., 2021).

During most of our sample period, individuals were required to take minimum distributions (the aforementioned RMDs) from their IRAs and DC accounts beginning in the year in which they attained age 70.5. These distributions are equal to a certain fraction of the balance at the end of the prior year, with this fraction increasing as the account-holder ages. For DC accounts, the RMD applies on an account-by-account basis: the RMD for each account is based on the balance of that account. By contrast, for IRAs, the RMD applies on an aggregate basis for each individual: an individual must take aggregate IRA distributions equal to the correct fraction of their aggregate prior-year IRA balance, but the individual may allocate those distributions across IRAs as they please. If an individual is still working

[5] Both DC plans and IRAs can be further divided into "traditional" and "Roth" accounts, which differ in their tax treatment, with Roth accounts being relatively less common. Our analysis of DC plans includes both traditional and Roth accounts. However, we do not study Roth IRAs: Roth IRAs do not face RMDs, meaning that our empirical definition of abandonment would not be meaningful for these accounts. In what follows, the term "IRA" should be interpreted as referring solely to traditional IRAs.

[6] Goodman et al. (2021) finds that, in 2015, individuals and employers contributed $398 billion to DC accounts. In the same year, individuals made $387 billion in rollover (transfer) contributions and $28 billion in direct contributions to IRAs.

at or after age 70.5, they can defer the RMD from the DC plan of that employer until retirement. There is no comparable exception for RMDs from IRAs.[7]

Failure to meet one's RMD triggers a hefty penalty tax equal to 50% of the RMD; additionally, this tax contains no statute of limitations. In practice, however, we observe few individuals reporting payment of this penalty (or requesting a waiver of the penalty) on the necessary tax forms.[8] Congress has occasionally eliminated the RMD requirement during periods of national hardship: in both 2009 and 2020, Congress passed legislation that waived all RMDs so as not to force owners to liquidate funds during an anticipated economic downturn. In general, RMDs apply to accounts held by the original owner as well as to accounts inherited from a decedent. In our analysis, the sample will be restricted to cohorts of individuals aged 69.5 who remain alive through age 79.5 to allow for a 10-year reclaiming window. As a result, the individuals we study are most likely to be the original account owners. Some may be beneficiaries, however, in which case the RMD rules still apply.[9]

States use rules based on the RMD to determine whether a retirement account should be considered as an unclaimed asset. In particular, states specify a dormancy period, typically three to five years, after the date for when an RMD should have taken place. If the account owner fails to interact with the account before that extended period ends, then state policy mandates that the participant's assets be remitted to the state – a process known as "escheatment". Each state then hosts an unclaimed property database aimed to link individuals with their unclaimed assets; prior to any such claiming, the state typically treats the assets as part of general revenue. The state unclaimed property databases generate meaningful activity, with owners having claimed $25 million in retirement savings in 2016 according to data from 15 states (GAO 2019).[10] These unclaimed accounts had an average value of $601 from 401(k) plans and $5,817 from IRAs.

Reducing the number of unclaimed retirement accounts is a key policy concern in the U.S. Congress proposed the Retirement Savings Lost and Found Act of 2020, which would expand an existing online database of pension and 401(k) account. The legislation would also

[7]The 2020 Setting Every Community Up For Retirement Enhancement (SECURE) Act increased the RMD age to 72 for years after the end of our sample period. The RMD age affects personal financial decision-making in many ways including options to annuitize defined contribution savings, as studied in Horneff et al. (2020), Mortenson et al. (2019), and Brown et al. (2017). RMDs do not apply to Roth IRAs; we do not study Roth IRAs in this paper.

[8]It is possible that the IRS may impose this penalty through an enforcement action that we do not observe.

[9]The distribution rules for inherited IRAs are detailed here: `https://www.irs.gov/retirement-plans/required-minimum-distributions-for-ira-beneficiaries`.

[10]Note that this report was limited to aggregated state-level data, not account-level data as we study.

clarify the rules for categorizing account owners as "missing" and require employers and plan managers to exert greater effort to find these individuals. We note that some state policies could exacerbate the problem of abandonment: Pennsylvania in 2016 attempted to categorize retirement accounts as unclaimed if there was inactivity for just three years even during working age, but wide criticism of the law kept it from becoming enforced.[11] Determining which types of policies would be most effective in reducing abandonment requires an improved understanding of abandonment and its predictors, which our study aims to forward.

3 Data Description

Our analysis makes use of two administrative data sources: (1) federal tax and information returns and (2) state unclaimed property records. Using both datasets in tandem enables a comprehensive analysis of abandoned retirement accounts in the U.S.

3.1 Administrative Tax Data

We use data drawn from the universe of tax returns and information returns. In general, our analysis spans tax years 2003 through 2020, though we restrict to subsets of years for certain analyses.

Information returns are forms sent to the IRS by third parties, such as financial institutions, that contain tax-relevant information with respect to a certain individual. We use two information returns in particular. First is the Form 1099-R, which reports information on distributions made from pensions, IRAs, and similar accounts to a given individual. This form is used to identify the amount of a distribution and whether it came from an IRA (versus another type of account). The custodian (i.e., the financial services firm that manages the account) also reports (in Box 7) up to two codes, which give further information about the nature of the distribution. In particular, we use the presence of Box 7 codes "G" or "H" to infer that the distribution was part of a direct rollover. The Form 1099-R also includes an identifier for the custodian of retirement funds, which we can link across IRS datasets. We use Form 1099-R to identify whether an individual received a distribution from a given IRA; we also use this form to determine the rollover amount in our analysis of forced transfer IRAs.

The second information return used is Form 5498, which reports information about IRAs held by an individual. Importantly, this identifies the type of IRA (traditional, Roth,

[11] Hopkins (2018) provides a discussion of Pennsylvania's unclaimed property laws related to retirement.

or certain specialized types of small-business IRAs), the value of the IRA as of the end of the year, and any contributions made (rollover or otherwise) during the year. Form 5498 is sent to the IRS every year in which the IRA maintains a positive value, though the account holder typically receives a copy only when a contribution is made. As with Form 1099-R, Form 5498 also includes an identifier for the custodian of the account.

We also collect and use information from Form 5329, which is a tax form used to calculate the amount of penalties due to the IRS on IRAs or other tax favored accounts. If an individual missed their RMD and needed to pay the related penalty (or seek a waiver), for example, they would need to fill out and submit this form.

For our analysis using tax data, we focus on IRAs due to data availability. We observe IRA account-holders on Form 5498, even for individuals who are not interacting with the account. By contrast, the tax system does not collect analogous information on DC plans. Fortunately, Goodman et al. (2021) estimates that over 85% of distributions from the joint DC-IRA system to those age 65 or greater in 2015 were from IRAs, not DC accounts. The prevalence of IRAs among this group suggests that most individuals have rolled their DC plans into an IRA prior to reaching retirement-age.

We also make use of other components of the IRS database for our analyses including individual's date of birth, date of death, and gender. We use Form 1040 and Form 1099-SSA (an information return) to obtain a comprehensive measure of income.

3.1.1 Estimating Abandoned IRAs in Tax Data

We cannot observe whether an account is abandoned, as described in Definition 2.1. Rather, we calculate whether an account is unclaimed for a specified length of time. If unclaimed for at least ten years, beginning at age 70.5, we consider the account to be likely abandoned. To make sure our estimates are not driven by censoring owing to accounts belonging to decedents, the main analysis sample is restricted to those who are alive throughout the 10-year claiming window.

We begin with the universe of traditional IRA accounts held by individuals at age 69.5, which are indexed by the combination of individual i and custodian j.[12] We deem an account ij to have a "claiming event" at time t if any of the following four conditions are satisfied:

[12] If an individual receives multiple Forms 5498 from the same custodian, we aggregate to the individual-custodian level, after dropping Forms 5498 that appear to be duplicates on important variables. We condition on having an IRA at age 69.5, as these are the individuals for whom RMDs will begin to apply at age 70.5.

1. There is a distribution from that account ij (as measured on Form 1099-R) of any type in year t.

2. The individual i satisfies their RMD in year t.[13]

3. The individual files Form 5329 in year t to pay an RMD penalty or to request a penalty waiver.[14]

4. The individual has no positive-balance IRAs in year t.[15]

Define τ as the age when the first claiming event occurs, normalizing $\tau = 1$ in the age 70.5 year, with $\tau = .$ (i.e., missing) if we do not observe any claiming at any point. This allows us to define $U(\tau)$, which is binary and equals one if no claim is observed within τ years. We consider a range of τ from 3 to 10 years.[16]

Our baseline estimates of abandonment rely on the ten-year unclaiming definition, $U(10)$. There are several trade-offs to consider when choosing the appropriate claiming window, τ, for this baseline measure. Most simply, given that abandonment (from Definition 2.1) is an absorbing state, an account with $U(\tau) = 1$ is not abandoned if it has $U(\tau') = 0$ for some $\tau' > \tau$. This insight suggests that it would be ideal to choose the largest possible τ for this purpose. However, there are several costs to increasing τ. First, when using a larger τ, the share of the sample who dies prior to the end of the measurement period increases noticeably, which reduces the external validity of the estimate to the broader population. Second, a larger τ reduces the set of cohorts that we can consider. Third, we must contend with a measurement challenge. As discussed above, custodians are required to escheat accounts after a three to five year dormancy period. Such an escheatment has the potential to trigger a Form 1099-R or cause the custodian to cease issuing a Form 5498 to the individual – which would appear to be a claiming event in the data.[17] As we will show in the analysis of state unclaimed property data, however, most plans do not escheat funds

[13] If an individual held only one account, then condition (2) would imply condition (1). However, the RMD is calculated with respect to *all* IRA distributions and *all* IRA assets held by the taxpayer; the taxpayer can remain in compliance with RMDs in year t by taking a larger distribution from one IRA (j') and taking no distribution from another (j). Our algorithm conservatively would consider both j and j' to be claimed at time t. Furthermore, for this purpose, we measure compliance with RMDs using the larger of 1099-R distributions and taxable IRA distributions reported on Form 1040. In years with an RMD holiday (2009 and 2020), we use the RMD that would have applied in the absence of the holiday.

[14] In the context of RMDs, Form 5329 is often attached to amended tax returns. For the purpose of this claiming definition, year t refers to the year when the form is filed.

[15] This situation covers the unusual cases where the account value is eroded entirely by fees, or the investment return in a given year is -100%.

[16] That is, if $U(3)$ would equal one if it was not claimed in the 70.5 year, the 71.5 year, or the 72.5 year.

[17] In 2018, the IRS clarified that escheatment should trigger a 1099-R: `https://www.irs.gov/pub/irs-drop/rr-18-17.pdf`. But the practices prior to 2018 are unknown to us.

from abandoned accounts, limiting this measurement concern. Yet, with a larger τ, it is possible that some accounts that look like they have been claimed in fact remain unclaimed. We believe that setting $\tau = 10$ balances the trade-off between maintaining a long reclaiming window without the survival conditioning being overly severe.

We additionally highlight the $U(3)$ measure allows us to make inference about additional cohorts and allows us to abstract from escheatment. We view this three-year measure as an estimate of accounts that are *at risk* of abandonment – rather than those that we estimate to have been abandoned under the stricter ten-year definition. To maintain a constant sample, we usually restrict attention to those individuals for whom we can observe the entire period: that is, we drop all individuals who die prior to their 79.5 year. However, in the specifications that analyze more recent cohorts, we amend this restriction (for the $U(3)$ series only) to require survival only through age 72.5.

We stress that, regardless of the claiming window τ, it is possible that some accounts identified by this procedure are not truly "abandoned." In particular, some account-holders might be aware of the account but failed to comply with RMD rules, either intentionally or because they are unfamiliar with the RMD rules. On the other hand, the possibility of a third party intervention may increase with τ such that claimed accounts might in fact have been previously abandoned. We consider these possibilities to be sources of measurement error that we examine further in Section 4.2.

3.2 State Unclaimed Property Data

Our data on escheated retirement accounts comes from state unclaimed property (SUP) databases. These data contain account-level information on each unclaimed property, and include details such as the type of account (IRA or pension, for example), account balance, and names and addresses of the account owner and account custodian. The name and geographic information of the account owner enable inference of owner characteristics such as ethnicity, gender, and neighborhood covariates. The data are collected separately from each state's division of unclaimed property (or related agency). An advantage of the SUP data is that all states use a standard reporting format following guidance from the National Association of Unclaimed Property Administrators (NAUPA). Our sample includes as many states as possible (up to 13) for different analyses.[18]

[18]States vary in their policies for sharing data on unclaimed property with researchers. Most states referenced us to aggregated information on their websites. The 13 states that responded with data containing account-level property type and account balance of unclaimed properties were AK, CA, FL, HI, LA, MA, MN, ND, NV, OH, PA, TX, and WI.

We use property codes associated with each unclaimed property to identify retirement accounts. The SUP data contain numerous property types – NAUPA lists 123 categories – including uncashed checks, securities, insurance property, mineral proceeds, and trusts. We isolate retirement accounts according to the codes listed in Table C.2, which include pension checks, traditional IRAs, pension and profit-sharing plans, and annuities. We supplement these data with information from the American Community Survey, the U.S. Census, and Social Security names databases to further ascertain the characteristics of these unclaimed account owners. We also analyze information on claims from unclaimed property from two states, Massachusetts and Wisconsin, to better understand the effects of state policy on reducing abandonment.

While much of our primary analysis will focus on results derived from tax data, an advantage of the SUP data is that we can look at estimated abandonment across all types of retirement plans, not just IRAs. We use this information to construct a national estimate of abandoned retirement accounts of all types that are held in these state portals. We also conduct an analysis focusing on traditional IRAs to enable some comparisons with the administrative tax data.

4 Stylized Facts on Abandoned Accounts

We begin with an analysis of abandoned IRAs in the IRS data. We find evidence that a small share of IRAs become abandoned at old age. We begin by plotting in Figure 1 the share that are continually unclaimed over τ years as a function of τ – more precisely, these are the mean values of $U(\tau)$, as discussed in Section 3.1.1. Approximately 1.8% of accounts are unclaimed through age 72.5 ($\tau = 3$); this falls to 1.3% through age 73.5 and then continuously falls to about 0.3% through age 79.5 ($\tau = 10$). This right-most point – which represents a total of $389 million dollars – is our baseline estimated abandonment, i.e., using the proxy of failing to claim for at least ten years, for the full sample. This sample includes all cohorts attaining age 70.5 between 2004 and 2011.

Next, we plot the share of individuals failing to claim over time using both the $U(3)$ and $U(10)$ definitions in the left panel of Figure 2. The left axis uses the $U(10)$ definition: failure to claim increases from about 0.2% for 70.5-year-olds in 2004 to nearly 0.4% for 70.5-year-olds in 2011. The right axis uses the $U(3)$ definition: here, the share unclaimed rises from 1.4% in 2004 to 2.4% in 2017 and 3.0% in 2018. The right panel shows the relevant dollar amounts. Using the $U(10)$ definition, the dollar value of abandoned accounts increased from $27 million to $66 million between 2004 and 2011 (measured in 2016 dollars). Using the $U(3)$ definition, the dollar value of abandoned accounts grew from \$352 million in 2004 to \$1.14 billion in 2017 and \$1.63 billion in 2018. Using the 2011 values, accounts satisfying $U(10)$ represented 0.04% of all IRA assets held by this cohort, while accounts satisfying $U(3)$ represented 0.4%.

The points identified with squares are years where the estimated abandonment shares may be affected by the RMD suspensions that occurred in 2009 and 2020. In the $U(3)$ series, these are cohorts where the claiming window included one of the holiday years: $U(3)$ is artificially inflated for these cohorts, since even in the absence of abandonment fewer individuals would have taken distributions from IRAs in one of the years. In the $U(10)$ series, the issue is more subtle. While all of the cohorts earlier than 2009 were also exposed to this RMD holiday, it is possible that the 2009 cohort was uniquely affected due to the holiday occurring in their first RMD year. For example, this cohort may have not received the same RMD-related information that other cohorts received from their custodians in their age 70.5 year. The slight spike in $U(10)$ for this cohort provides some suggestive evidence that our definition of "abandonment" includes a mix of true abandonment and unawareness of RMD rules.

Next, we examine the relationship between estimated abandonment using $U(10)$ and account balance. This analysis sheds light on the mechanisms leading to abandonment. If rational inattention is a key factor, we would expect to see abandonment concentrated among low-value accounts. Alternatively, if forgetting plays a significant role, we would expect to see a substantial level of abandonment more dispersed throughout the account value distribution (though likely forgetting is also a function of account balance). We uncover evidence consistent with a mix of these forces, as abandonment decreases with account balance, but remains present even for high balance accounts. These results are shown in Figure 3, which plots the share abandoned under $U(10)$ and $U(3)$ proxies for abandonment by account value at age 69.5. The relationship appears roughly linear on the log-log scale, with both measures decreasing in account size; the share with $U(10)$ is 3% and the share with $U(3)$ is 13% for the smallest accounts. For accounts worth \$10,000, about 0.4% satisfy $U(10)$, while 2.7% satisfy $U(3)$.

We provide individual-level context for claimed and unclaimed accounts in Table 1. Columns (1) and (2) provide information about claimed accounts, columns (3) and (4) provide information about accounts that satisfy $U(3)$, and columns (5) and (6) provide information about accounts that satisfy $U(10)$. Columns (1), (3), and (5) present the 25^{th}, 50^{th}, 75^{th}, and 90^{th} percentile of the value of the accounts. Columns (2), (4), and (6) report the same quantiles for the *annuitized* value of the IRA as a share of income.[19] Unsurprisingly, abandoned accounts tend to be much smaller than claimed accounts: the median values are \$10,314 ($U(3)$) and \$5,742 ($U(10)$), compared to \$65,366 for claimed accounts. The annuity value of these accounts is, at the median, about 1.6% of income for accounts satisfying $U(3)$ and 1.0% for accounts satisfying $U(10)$, relative to 10.9% for claimed accounts. Nevertheless, we also observe that a non-trivial minority of abandoned accounts are much larger. At the 90^{th} percentile, the annuity value of an abandoned IRA represents 14.7% ($U(3)$) or 11.0% (10-year) of income.

4.1 Factors Correlated with Estimated Abandonment

As shown in the left panel of Figure 2, we estimate that 0.4% of IRA accounts owned by individuals turning 70.5 in 2011 were abandoned using the $U(10)$ proxy. In this section, we examine individual-level factors that are correlated with this estimate of abandonment.[20] Table 2 shows estimates of a regression of abandonment on relevant covariates, conditional on year fixed effects interacted with granular bins of account value; the interactions mean that these results can be interpreted as holding account value fixed. To ease readability, we multiply all coefficients by 100. The first column includes four measures of financial sophistication: filing a tax return, paying estimated tax during the year, having non-zero capital gains or dividend income, and having interest income. Since prior literature (Anderson et al., 2017) indicates that financial sophistication is positively related to retirement planning, we expect this metric to reduce abandonment; indeed, this is what we find. Additionally, the magnitudes of these coefficients are stable across the columns as controls are added. This suggests that intentional non-compliance is not the main driver of our measure of abandonment, since we expect that individuals consciously non-complying would tend to be more financially sophisticated.

The second column adds two demographic variables: gender and race. We examine these variables as they may capture a range of behaviors or vulnerabilities related to abandonment. We directly observe gender for each individual as reported in the tax data, but information on race is not available – instead, we use the zip code of the account owner and calculate the share of population that is white for that zip code (from the American Community Survey) as a proxy. We find that men are slightly (0.024 percentage points) more likely to abandon

[19] Our measure of income is adjusted gross income, plus non-taxable Social Security, minus taxable IRA distributions. The measure is meant to capture disposable income and therefore includes income sources that are not taxed but still available for consumption. We convert the individual account balances to an annuity value, using the Social Security life expectancy tables and a (conservative) assumption of a 1% interest rate.

[20] In Table C.1, we show similar results with $U(3)$.

accounts. More substantially, we find that the white share in a zip code strongly predicts abandonment. Relative to a zip code that is 50% white, a zip code that is 100% white has abandonment that is 0.31 percentage points lower – a large effect relative to the mean abandonment of 0.29 percentage points. Column (3) adds a covariate for the population density of the account owner's zip code, which reduces the coefficient on the white share by about 13%. Column (4) adds additional zip code level demographics, including education and poverty status – these have little effect on the estimated coefficients. Column (5) adds fixed effects for year interacted with the custodian (j); these additional fixed effects have little effect on the coefficient estimates. This stability suggests that the correlations between other covariates and having an unclaimed accounts are not driven by different types of people selecting into different financial service firms. [21]

A striking pattern in Figure 2 is the near-doubling of estimated abandonment from 2004 to 2011 and the more-than-doubling of three-year unclaiming of IRAs between 2004 and 2018. One potential explanation for this pattern is that the composition of IRA-holders changed over this period, toward lower-value accounts held by less financially sophisticated individuals. To explore whether these factors are responsible for this rise, we perform an Oaxaca-Blinder style decomposition of the increase into the amounts explained by changes in observable characteristics such as account value and financial sophistication.[22] These characteristics are unable to explain the rise in unclaiming: the share of the increase explained by changes in observable characteristics is actually slightly negative, which is driven by increasing real IRA account values. This analysis is presented in Appendix Figure C.1. Further explanations for the increase in unclaiming over time is a fruitful area for further research.

There remain other factors correlated with estimated abandonment that we cannot directly empirically test in our data. For example, individuals could fail to manage their finances for a period of time due to a health or other shock that causes temporary distraction. Or, individuals may be unaware of RMD rules in ways that are not captured by our measures of financial sophistication. While these factors are likely to be limited given the 10-year claiming window we use as the main proxy for abandonment, these other channels are important to keep in mind as we consider the underlying mechanisms.

[21] Additionally, a small share (0.39%) of our data include individuals residing outside the U.S., as indicated on Form 1040 or 1099-SSA. Conditional on year and IRA value fixed effects, such individuals are 0.7 percentage points more likely to fail to claim their accounts over 10 years.

[22] For this exercise, we use the $U(3)$ proxy for abandonment to maximize the length of the time series.

4.2 Evidence on the link between failure to claim and abandonment

As discussed above, we cannot directly identify whether a given account is abandoned. The slight increase in 10-year unclaiming for the 2009 cohort suggests that unawareness of RMDs plays some role, as we have hypothesized. Individuals in this cohort turn 70.5 in a year when RMDs were suspended. As a result of this suspension, this cohort may not have received the usual communication custodians might send to their account-holders in their first RMD year, which could have had a causal effect on RMD knowledge throughout the entire claiming window.

Alternatively, it may be the case that individuals forget about accounts but subsequently remember and reclaim them. Among those who had not claimed their account for ten years (i.e., with $U(10) = 1$), we find that approximately 40% of accounts are reclaimed within the subsequent five years, suggesting that meaningful reclaiming continues even after ten years.[23] Under Definition 2.1, such accounts would not be considered "abandoned", unless the reclaiming is driven by the intervention of a third party, such as an adult child investigating the parent's finances.

We find evidence consistent with at least some unclaimed accounts being truly abandoned according to our own definition. First, we investigate the prevalence of custodians creating a Form 5498 for individuals in years following their death. In general, when a custodian is made aware of the death of an account-holder (typically by the account-holder's family or the executor of the estate), the assets are transferred to the beneficiary; the decedent is no longer treated as the owner of those assets. Thus, if a Form 5498 is created in an individual's name after their death, then that is an indication that those in charge of the decedent's affairs were unaware of the account. We acknowledge that this is not equivalent to abandonment, both because (1) it is possible for a decedent, but not their family, to be aware of an account and (2) it is possible for an individual to abandon an account but for that account to be found by an executor (or adult child). Nevertheless, we believe that this is a useful test: we suspect that meeting the definition of abandonment in Definition 2.1 is correlated with a custodian being unaware of the death of the original account holder.

Columns (1) and (2) of Table 3 presents this empirical test. In columns (1) and (2), we restrict the sample to those who die after attaining age 72.5 but no later than 2019, and

[23] This estimate restricts to the subset of individuals who survive through age 84.5 and who attain that age no later than 2020. Additionally, to minimize false positive claiming events, we do not consider satisfaction of the RMD alone to be a claiming event (as this could be satisfied by a distribution from another account). That is, for this exercise, a claiming event requires a direct interaction (contribution or distribution) with the IRA in question, a filing of Form 5329 for penalty waiver, or the cessation of all Forms 5498 providing IRA information for the individual.

who we observe to have had a Form 5498 generated in their name in the year prior to their death.[24] The outcome variable is a dummy for receiving a Form 5498 in the year after death — for example, if an individual dies at any point in 2013, the dummy equals one if there is a Form 5498 in the decedent's name in 2014. We are interested in comparing those who have had a claiming event at any point prior to their death ("claimed") and those that have not ("unclaimed"). Column (1) reports the raw means of after-death generation of Form 5498: while only 9.3% of claimed accounts trigger an after-death Form 5498, over four times as many (39.1%) of unclaimed accounts do. In column (2), we regress the outcome variable on being unclaimed, controlling for the three-way interactions of cohort, value (in $500 bins), and year of death. These covariates reduce the difference in levels from 30 to 20 percentage points, but a substantial difference remains.[25]

In columns (3) and (4), we perform a related test: whether unclaimed accounts are less likely to be bequeathed to the account owner's spouse at death. This exercise is based on the introspective hypothesis that abandoned accounts should be bequeathed less often than non-abandoned accounts, as the step of designating a beneficiary typically requires interaction with the account. To proxy for bequests in the data, we use the presence of either (1) a death-coded distribution from an IRA on the spouse's Form 1099-R or (2) the presence of a new Form 5498 in the spouse's name. We restrict to those individuals who die after attaining age 72.5 (before 2020) and who were married at the time of death.[26] To be clear, our proxy for bequests is likely to miss certain types of bequests. For instance, the surviving spouse is allowed to roll the decedent's IRA into their own; in such a case, our proxy would not identify the bequest as having occurred.

We find that our proxy for bequests finds a spousal bequest in 50.8% of cases for claimed accounts and 35.4% for unclaimed accounts, as reported in column (3) of Table 3. In column (4), we again add the controls for the three-way interactions of cohort, value, and year of death, which increases the difference from 15 to 19 percentage points. We stress that the same caveats apply to the interpretation of these results as applied to the receipt of Form 5498 at death: namely, abandonment does not imply no spousal bequest (e.g., an abandoned account might be located by a third party at death and be given to the spouse) and non-abandonment does not imply spousal bequest (the account could have a different

[24] To be more precise, we require the death to occur after the calendar year in which the individual attained 72.5. This means that any unclaimed accounts in this sample satisfy at least $U(3)$.

[25] In results available upon request, we find that unclaimed accounts are 24 percentage points more likely to lead to the generation of Form 5498 *two* years after death. This difference falls to 15 percentage points after regression adjustment.

[26] Because we cannot to determine *which* IRA was bequeathed, we drop individuals who have *both* claimed and unclaimed accounts.

beneficiary). Nevertheless, the correlations uncovered by these regressions help support our empirical implementation of abandonment.

In sum, we interpret these pieces of evidence as suggesting that at least some accounts that we observe to be unclaimed are in fact abandoned according to our conceptual definition.

4.3 Estimating Abandonment in the SUP Data

We supplement our results from the tax data with estimates on abandonment using state unclaimed property records – here, escheatment is the proxy for abandonment. The analysis is presented in Table 4: in our sample of 13 states, about 36,500 retirement accounts totaling $18.3 million were escheated in 2016. The summary statistics reveal that abandonment is a problem that extends beyond IRAs – only 24% of the escheated accounts are of this type. The other large categories of escheated retirement accounts are pension and profit sharing plans (42%), uncashed pension checks (30%), and Roth IRAs (2%). Despite its name, the pension and profit sharing plans category consists of DC accounts such as 401(k)s.[27] Pension checks are a less defined category and could include uncashed defined benefit (DB) distributions as well as required minimum distributions sent by DC account custodians. Given that (1) more DC accounts are escheated to states than IRAs and (2) retirement-age individuals appear to hold more wealth in IRAs than DC plans (Goodman et al., 2021), we conclude that DC plans are likely to be abandoned at a higher rate than IRAs. One explanation for this pattern is that IRA savers in more recent cohorts may generally be more financially sophisticated (or "active") than DC savers, because setting up an IRA with a financial institution requires more financial knowledge than participating in a DC plan with an employer.

Next, for the purposes of producing a national estimate of abandoned accounts using the escheatment proxy, we assume that these accounts belong to 74 year-olds and extrapolate the account-level data to the entire U.S. using regressions detailed in Appendix B. We estimate that about 70,000 retirement accounts totaling $38 million were escheated in 2016. This amounts to about 3.3% of 74 year-olds having an abandoned retirement account (of any type, not only IRAs) in 2016 with an average value of $547.

We also use state unclaimed property records to help understand the extent to which plan custodians escheat retirement assets that are presumably abandoned, or at least at risk of being abandoned. While state policies prescribe escheatment after a dormancy period of two to five years, federal guidance causes this process to be unevenly applied. Plans may

[27] https://www.dol.gov/general/topic/retirement/typesofplans

choose to do so when accounts are too costly to manage, or when they experience a structural change such as a merger or termination. Figure 4 shows the distribution of IRA account values, separately in the escheatment and tax datasets, in 2016. The escheated accounts are dormant for three to five years, and next to these bars we plot the unclaimed tax data accounts using both the $U(3)$ and $U(10)$ proxies for abandonment from the administrative tax data. Note that these samples are not subsets of each other; yet, plotting them side by side helps illustrate what types of accounts are in the escheatment data versus in the tax data.[28] An immediate observation is that 47% of individuals in the escheatment data have account balances below \$100 – a closer look reveals that the vast majority of these accounts are actually below \$50 – suggesting that plans may be more likely to escheat accounts that have management costs exceeding returns. (It could also be that custodians act altruistically and attempt to locate abandoned account owners, but decide that the benefit of reuniting accounts below \$50 with their owners is too small to justify that altruism.) There are almost no escheated accounts valued over \$10,000, though there is substantial density in this range in both the $U(3)$ and $U(10)$ distributions of the tax data. In total, Figure 4 shows that only 2.6% of abandoned IRA dollars, using the more comparable $U(3)$ distribution, are escheated (\$4.4 million out of \$170 million). We note that the tax sample satisfying $U(10)$ is a subset of the tax sample satisfying $U(3)$; thus, as expected, many of the higher account values have a greater mass for $U(3)$ than $U(10)$.

A takeaway from Figure 4 is that state unclaimed property databases are not currently the most effective means of uniting holders of abandoned retirement accounts with their unclaimed funds. In part, this is because a large portion of the escheated accounts are likely to be rationally abandoned, as the hassle costs of claiming can exceed the small account value. For example, most state unclaimed property departments require account holders to provide proof of ownership via pay stubs or bank account statements to claim funds. We also note that from an individual welfare perspective, these low-value accounts are the least important in terms of enhancing retirement security.

[28] The tax data is used to plot the distributions using both the $U(3)$ and $U(10)$ definitions for our main sample of individuals who live through age 79.5. Because the RMD is triggered at age 70.5, the $U(3)$ definition consists of individuals aged 72.5, while the $U(10)$ definition consists of individuals aged 79.5. The escheatment data is used to plot all accounts sent to state unclaimed property – we don't observe age in these data, though likely the individuals are between age 72 and 75 based on the prescribed dormancy periods after RMDs are missed.

4.4 Reclaiming escheated accounts

4.4.1 Variation by state policy

Next, we consider variation in reclaiming by state policy. In general, each state employs its own procedure for attempting to reunite escheated accounts with their owners. We focus on Massachusetts and Wisconsin because they help illustrate the spectrum of such procedures. In Massachusetts, like in most states, unclaimed account owners must initiate claims to their funds through the state. By contrast, in Wisconsin, the state uses Social Security Number information to match unclaimed funds with their owners. This process started in June 2015 and is rare among states; it is known as the "Wisconsin model". In Wisconsin, it is known as the Department of Revenue (DOR) Auto Match.

Table 5 shows summary statistics on claiming for the two states. In Massachusetts, there were 3,320 retirement accounts reported as unclaimed to the state in 2016, of which only 3.4% were claimed within two years. The average account value of claimed accounts was much higher at $2,110 than unclaimed accounts ($581), consistent with our analysis of tax data. The Wisconsin claims data are available from 2016 to 2018, limiting our ability to study long-term claiming behavior. We observe that in 2016, there were 815 unclaimed retirement accounts reported to the state, of which 67% were claimed within two years. The average account value is higher than the national average at $980, and the ones that remain unclaimed are of higher value ($1,315 versus $812). The state's auto match appears successful, as 54%[29] of accounts are reunited with their owners via the process. Of the accounts that are claimed, 80% are done through this method; an additional 12% of account owners initiate claims on the state's website, and 6.5% of owners are connected to their lost accounts via an online locator service.

The high success rate for unclaimed accounts in Wisconsin contrasts with the interventions studied in Rosen and Sade (2021). Rosen and Sade (2021) studies reclaiming behavior in the context of a government-run fintech product in Israel that dramatically reduced search frictions. Specifically, the product aggregated the information about all retirement accounts, which would otherwise be located on the website of each individual account custodian, into one central, searchable database. This intervention was accompanied by a sizeable advertising campaign. Nevertheless, this intervention led to a reclaiming rate of only 15%, suggesting that search frictions are not the only barrier to reclaimed accounts. It is possible that the DOR Auto Match in Wisconsin was more successful because it was able to eliminate

[29] This equals the proportion claimed, 0.67, multiplied by the proportion claimed via DOR Auto Match, 0.80, from Table 5.

other costs associated with reclaiming, such as the hassle costs of figuring out how to reclaim an account even after becoming aware of its location.

4.4.2 Variation in reclaiming by account value

As we saw in Figure 3, accounts of higher value are more likely to be reclaimed in a ten year horizon. We investigate whether this relationship also holds for escheated accounts. Table 5 suggests this to be the case, however we provide a formal test below. The Massachusetts data are more representative of the country as most states are unable to use Social Security numbers to match unclaimed funds with their owners. As such, we continue with an analysis of the Massachusetts data, available from 1998 to 2018, to examine whether account value predicts claiming behavior.

We take this estimation approach because the parametric analysis is less demanding of the (much) smaller dataset here compared to the tax data. Additionally, due to the varied content of the data, controls for property type are helpful in assessing the impact of account value with reclaiming. We estimate the following regression for each unclaimed account i separately for cutoffs of 1, 2,..., 13 years since the property was reported as unclaimed:

$$\text{Claimed}_i = \beta \ln(\text{Account Value}_i) + \eta_p + \gamma_y, \tag{1}$$

where $Claimed_i$ is equal to 1 if the property was claimed within 1, 2,..., 13 years (13 separate regressions), and $AccountValue$ is in units \$10,000. The first regression contains all properties reported as unclaimed 1998-2017, and the dependent variable is whether they were claimed within one year (by 2018); the second regression contains all properties reported as unclaimed 1998-2016 and the dependent variable changes to whether the account was claimed within two years; we continue until the 13^{th} regression, which contains all properties reported as unclaimed in 1998-2005, with the dependent variable of whether they were claimed within 13 years. The sample size decreases steadily as the claiming observation window increases from one year to 13 years because the sampling structure removes one year of the more recent data in each step to expand the claiming window by that period.

The fixed effects η_p and γ_y are for property codes and year reported as unclaimed, respectively. Figure 5 (with corresponding regression results in Appendix Table C.4) shows that the relationship between account value and claiming increases with time since the property is reported as unclaimed. In other words, higher value accounts are more likely than lower value accounts to be claimed many years after being reported as unclaimed. This pattern is consistent with rational inattention as a driver of abandonment, as that theory would predict that individuals are more willing to knowingly abandon accounts with balance lower than the utility costs of claiming that account.

5 Defaults and Account Abandonment

The previous section reported our best estimates of abandonment of IRAs and DC accounts among RMD-aged individuals. We found that IRA abandonment was very low, while DC abandonment appears to be somewhat higher. This pattern is consistent with IRA savers – who would have had to create an account at a financial institution – being more financially sophisticated (or "active", in the language of Chetty et al. (2014)) than savers whose money remains in a DC account. Yet, over the past two decades, there has been a policy push to expand participation in retirement plans using interventions such as automatic enrollment, which by construction targets passive savers. In this section, we study a population that is likely to be even more passive than the populations studied so far: those induced into an IRA at job separation through what is known as an "automatic IRA rollover".

It is important to study the abandonment behavior of passive savers because it directly informs the policy effectiveness of the interventions designed to bring them into the retirement savings system. In particular, if the savings created by a behavioral intervention are abandoned at a sufficiently high rate, the intervention could reduce the welfare of the individuals intended to be helped by the policy. Relatedly, these interventions could prove more beneficial when complemented by efforts in helping account owners remember and locate their savings (at least in retirement).

Our analysis that follows helps assess the extent to which auto-enrollment policies might be undermined by high rates of eventual abandonment. The goal of the automatic IRA rollover policy is, in principle, to help support retirement savings by having these funds go to IRAs and thus preserved for retirement consumption instead of leading to cash-outs and potentially leading to immediate consumption. Evaluating the value of that program depends in part on knowing the extent to which people may abandon these automatic rollovers. There are reasons to worry that these accounts may have substantial rates of abandonment both because the people who have not actively made other plans may at baseline be less attentive and the automatic nature of the account creation may lead to low awareness.

To study this population empirically, we examine a policy that allows firms to "force out" accounts of separating employees based on their account balance. The firm default policy and account owner option set for each range of balance are shown in Table 6.[30] If the employee takes no action, the employer is allowed to distribute in cash the balance of any account under $1,000 (with account owners below age 59.5 generally paying a 10% early withdrawal penalty on DC distributions). For balances between $1,000 and $5,000, the policy mandates that any force-out distribution must be in the form of an IRA established for this purpose; these IRAs are known as forced-transfer IRAs or automatic IRA rollovers (we use these terms interchangeably).[31] Employers must allow accounts with balances in excess of $5,000 to remain with the plan if no action is taken by the employee. Regardless of account balance, separating employees are always free to perform an IRA rollover, roll the balance over to a new employer's defined contribution (DC) account if the destination plan allows it, or take a cash distribution (with early withdrawal penalty) on their own.

We note that these rules are a minimum standard: employers are allowed to keep accounts below $5,000 in their own plan, or use the automatic IRA rollover option for accounts below $1,000. However, using data on plans maintained by Vanguard, Hung et al. (2015) find that most plans follow the defaults and maintain only this minimum standard. Additionally, we show below that the $1,000 and $5,000 thresholds appear to be binding for many participants.

5.1 Sample and methodology

We begin by assembling a dataset of all individuals who make a rollover distribution to an IRA between 2005 and 2010, either because they made an active choice or because they were induced by the default enrollment policy.[32] Figure 6 plots the counts of observations in $10 bins; the negative slope in this figure simply comes from there being many more smaller balance accounts than larger balance accounts. There are approximate discontinuities in these counts exactly at each of the two policy thresholds. The counts jump immediately to

[30] These policies are intended to relieve employers of the administrative burden of maintaining small accounts of former employees. See John et al. (2021) for further discussion of the policy challenges facing small accounts.

[31] Typically, the new IRA provider contacts these employees with information on how to roll their funds over prior to the force-out, and they are given 30 to 60 days to take action. If none is taken, the retirement savings are transferred to the automatic IRA rollover. The funds are invested in a default plan designed to protect principal, and the new account holders are mailed paperwork designating their ownership of a new plan.

[32] Specifically, we require the distribution (from Form 1099-R) to have a "direct rollover" code (typically "G") and to arise from a non-IRA, and we include the distribution in the sample only if we observe a Form 5498 with a similar rollover contribution amount (within 20%). We drop distributions that are even multiples of $500; such distributions predominantly represent partial distributions (i.e., distributions of less than the full account balance), which by construction are not induced by the forced transfer policy. We discuss this point further in Appendix A.

the right of \$1,000. In the language of treatment effects (Angrist et al., 1996), individuals to the left of \$1,000 are always-takers (AT): those who would have made an IRA rollover (voluntary or forced) regardless of their location with respect to the \$1,000 threshold. Those to the right of \$1,000 are a mix of always-takers and compliers (C): the always-takers voluntarily rolled over savings to an IRA, whereas the compliers did so due to the policy default. Likewise, the counts fall immediately to the right of \$5,000; those to the left of \$5,000 are a mix of compliers and always-takers, while those to the right of \$5,000 are always-takers. The jumps in IRA rollovers occurring at the policy thresholds of \$1,000 and \$5,000 in Figure 6 provide compelling evidence that the policy defaults do indeed generate IRA rollovers that would not have otherwise occurred.

While we cannot identify whether any given rollover between \$1,000 and \$5,000 is part of the AT or C group, we can nevertheless estimate means of some outcome Y within the C groups at each threshold using a two-step regression discontinuity approach. The first step is to use regression discontinuity to estimate the share of compliers at each threshold, denoted α_1 and α_5 at the \$1,000 and \$5,000 thresholds, respectively. This is simply equal to the magnitude of each discontinuity in counts, scaled by the counts immediately to the right (\$1,000) or left (\$5,000). In the second step, we run a local linear regression (separately at each threshold) using Y at the outcome variable which allows us to recover the mean Y for compliers at the threshold.

To be precise, consider the \$1,000 threshold and let x denote the running variable (the rollover amount). The limit of $E(Y|x)$ from the left represents $E(Y|AT, x = \$1{,}000)$ since everyone on the left of the threshold is an always-taker. The limit of $E(Y|x)$ from the right represents the mean value of Y, at $x = \$1{,}000$, for a mix of always-takers and compliers. Specifically, the following equation holds:

$$\lim_{x \to \$1{,}000^+} E(Y|x) = \alpha_1 E(Y|C, x = \$1{,}000) + (1 - \alpha_1) E(Y|AT, x = \$1{,}000) \tag{2}$$

We estimate α_1 using a regression discontinuity design in the first step. In the second step, we use a similar regression discontinuity to estimate $\lim_{x \to \$1{,}000^+} E(Y|x)$ and $E(Y|AT, x = \$1{,}000)$ (with the latter being equal to $\lim_{x \to \$1{,}000^-} E(Y|x)$). This allows us to solve for $E(Y|C, x = \$1{,}000)$ algebraically. The procedure at the \$5,000 threshold is precisely analogous. We compute confidence intervals by bootstrapping the two-step procedure, clustered by unique values of the running variable.

This procedure relies only on the assumption that the local linear regressions correctly measure (1) the counts of observations and (2) the conditional mean of Y at the thresholds.

The only slight complication is that, empirically, the discontinuities (both in counts and in mean outcomes) are not fully sharp, suggesting that there is a slight measurement error between the true running variable (the account balance when it is measured for the purpose of determining location relative to the $1,000 or $5,000 threshold) and the running variable that we observe (the rollover amount). One simple explanation for this discrepancy could be that there are some fees deducted prior to the rollover. We address this small complication by dropping observations within a small donut hole around each threshold: $125 at the $1,000 threshold and $200 at the $5,000 threshold. In the appendix, we consider alternative approaches: in Appendix Figure C.4 we show robustness to donut hole size and in Appendix Figure C.3, we obtain similar results using an explicit local functional form (the cumulative normal distribution) for the outcome of interest around the discontinuity. We use a default bandwidth of $400 at the $1,000 threshold and $800 at the $5,000 threshold; Appendix Figure C.4 shows that our results are robust to a wide range of bandwidths. In Appendix Tables C.5 and C.6, we apply the bias correction of Calonico et al. (2014)[33] and obtain very similar results for most outcomes.[34]

5.2 Passivity of compliers

We begin by showing clear evidence that automatic-rollover compliers tend to behave much more passively than always-takers with similar rollover amounts. We do so by considering two outcomes. First, we define Y as a dummy for taking a distribution or making a contribution to that IRA in any of the ten years after the rollover year. The plot of $E(Y|x)$ is in the top panel of Figure 7: the always-takers (left of $1,000 or right of $5,000) clearly have a higher $E(Y)$ than the mix of always-takers and compliers on the other side of the threshold. Columns (1) and (2) of Table 7 report the complier share (α_1 and α_5), $E(Y|AT)$, and $E(Y|C)$ at each threshold. As discussed in the previous subsection, $E(Y|AT)$ is the left-limit at the $1,000 threshold and the right-limit at the $5,000 threshold; $E(Y|C)$ is calculated algebraically using Equation (2) at the $1,000 threshold and using its analogue at the $5,000 threshold. The table reports that while approximately 67-70% of always-takers

[33] We use the `rdrobust` command in Stata (Calonico et al., 2020). We are unable to use the data-driven bandwidth selection procedure of Calonico et al. (2014) in the presence of the donut hole, as the method tends to choose a bandwidth smaller than the donut hole, causing the estimate to become degenerate. Additionally, as we bootstrap our confidence intervals, we do not directly use the alternative analytic confidence intervals implied by the Calonico et al. (2014) method.

[34] The one exception to the qualitatively similar results is the RMD-based abandonment definition. The Calonico et al. (2014) method does not reliably detect a first stage (that is $\alpha > 0$) in these specifications. One possible explanation for this finding is that the Calonico et al. (2014) bias correction may not perform optimally in a setting with a donut hole.

have a subsequent interaction over the next ten years, the same is true for only 45-47% of compliers.

The second outcome explores the extent to which compliers appear to remain in the default principal-preserving investment option. This investment option is very unlikely to be the optimal investment allocation for a long-term vehicle. To measure this, we compute an estimate of returns for each individual in each of the ten-years following the rollover, taking distributions and contributions into account. We then take a weighted average return within individual account, weighting by account balance. We define the outcome Y as a dummy for the mean return being no more than 0.5 percentage points above or 3 percentage points below a reference rate of return.[35]

The plot of $E(Y|x)$ in the bottom two panels of Figure 7 and columns (3) and (4) of Table 7 report the complier share (α_1 and α_5), $E(Y|AT)$, and $E(Y|C)$ at each threshold: while 12-13% of always-takers have mean returns consistent with a principal-preserving plan, 40-47% of compliers do. We stress that our measure of Y is an imperfect proxy for remaining in the principal-preserving option: some share of individuals may have $Y = 1$ by chance despite having chosen a riskier investment allocation, and some share of individuals may have $Y = 0$ despite remaining in the default plan due to high fees. Nevertheless, these results provide strongly suggestive evidence that automatic-rollover compliers appear to behave much more passively with respect to their accounts than others with similar rollover balances.

5.3 Estimating risk of abandonment

We take two approaches for estimating the extent to which automatic-rollover compliers are at risk of abandoning their accounts. First, we examine an outcome that plausibly has a causal effect on abandonment: updating your address with the IRA custodian when you move. If the IRA custodian does not have an account-holder's current mailing address, then there is higher risk that a communication breakdown will occur in the future, potentially leading to abandonment. For this analysis, we restrict to individuals who we identify to have moved, based on the zip code reported on Form 1040 across years. We define our outcome Y as a dummy for the individual changing their address on Form 5498 within ten years of the account's creation. The results are in the top panels of Figure 8 and in columns (1) and (2) of Table 8. The restriction to movers reduces the sample size by about 80%; nevertheless, there is a clear discontinuity in the share of individuals updating their address. While 86-90%

[35] We use the average yield for three month Treasury yields experienced over these ten years as the reference rate. We allow for a larger downside error to account for the possibility of account fees.

of always-takers correctly update their addresses within ten years, only 60% (at the $1,000 threshold) or 74% (at the $5,000 threshold) of compliers do. Put differently, the share of compliers who do *not* update their address is roughly 2.5 times the share of always-takers that fail to do so.

Our second strategy is to focus on the subset of the automatic-rollover sample that attains RMD age through 2018. For this population, we can use the RMD-based definition of abandonment with the three-year window, i.e., $U(3)$.[36] To be clear, those affected by forced transfer IRAs are primarily working age: this severe sample restriction reduces the sample size by 85-90% depending on the threshold. Additionally, as reported in the first row of columns (3) and (4) of Table 8, the magnitude of the first stage (that is, the share of observations just to the right of $1,000 or left of $5,000 that are compliers) is also smaller. For both of these reasons, these estimates are substantially noisier, as is apparent from the plots in the bottom two panels of Figure 8. Nevertheless, this method does uncover a much higher share fitting the abandonment proxy of $U(3)$ for compliers (approximately 6-8%) than always-takers (approximately 1%), and this difference is significant at both thresholds.

5.4 Discussion

Auto-enrollment in retirement plans is on the rise across employers in the US. Conceptually, it is not clear whether these policies will help all workers – in particular, some who have many job changes or otherwise face claiming frictions may be made worse off due to defaulted savings. Using a specific policy related to the treatment of smaller savings accounts ($1,000 to $5,000) that are left behind with an employer at job changes, we find that indeed individuals who appear to be passive savers are more likely to fail to meet their RMDs (among the workers for whom we can observe for a sufficiently long window), and are also less likely to report address changes to their financial institutions (among the majority of workers for whom we cannot yet observe abandonment as defined in this paper). As mentioned, the latter behavior generates a risk of a communication breakdown that may last into RMD-age. Whether these risks will ultimately lead to abandonment under a longer time horizon is not yet known, but warrants attention as default enrollment in retirement saving plans continue to be encouraged for many workers.

We wish to be careful in acknowledging that default enrollment in forced transfer IRAs or other default vehicles can also be welfare improving for the saver. The tradeoff between such default options and an alternative such as cash-outs, for example, would depend on

[36] To be precise, we require an individual to survive through age 72.5 and attain that age no later than 2018.

the rate of abandonment, discount factor, and return rate earned on the default savings. To explore these tradeoffs in a two-period model (denoted as periods 0 and 1), let's assume that the cash-out is small, so we can look at decisions on the margin. Assume further that a cash-out is immediately consumed – this is not unrealistic on the margin for non-salient default savings – yielding marginal utility per dollar of $u'(c_0)(1-t-p)$, where t is the income tax rate (assumed constant between working age and retirement) and p is the 10% tax penalty on early distributions. The default saving becomes retirement consumption, yielding marginal experienced utility per dollar of $\beta Ru'(c_1)(1-t)$ with probability $1-a$, where a is the probability of abandonment, β is a discount factor associated with experienced utility (as opposed to decision utility), and R is the gross rate of return in the default savings, assumed equal to the rate of return on active marginal savings.[37]

In this simplified model, the forced transfer IRA is welfare improving when $\beta Ru'(c_1)(1-t)(1-a)$ exceeds $u'(c_0)(1-t-p)$. if people are saving rationally (e.g., in the absence of myopia), then the discount factor associated with decision utility and experienced utility are the same, so the individual selects consumption such that $u'(c_0)=\beta Ru'(c_1)$. Then, the cash-out is welfare improving to the saver if $a>\frac{p}{1-t}$. In a behavioral model, however, there is an additional friction (such as myopia) that leads the decision-maker to select consumption such that $u'(c_0)<\beta Ru'(c_1)$ — thus, to a social planner, there is an additional force in favor of forced transfers. Taken together, this simplified exercise illustrates that the tension between cash-outs and default savings, for example, is characterized by the relative forces of myopia and abandonment.

6 Conclusion

The U.S. retirement savings landscape places a great deal of responsibility on individuals: how much to save, which saving vehicles to use, how to allocate investment funds, and how to decumulate savings. Additionally, individuals must keep track of numerous savings accounts accumulated over their working lives. Failing to do so can result in account abandonment, either due to rational inattention, forgetting, or hassle costs that likely increase with the age of these accounts. Prior papers have examined many important behavioral aspects of retirement saving, including peer effects (Beshears et al., 2015), portfolio choice as a function

[37] We note that in the case where the default saving is in an automatic rollover IRA, the rate of return is likely to be lower than the rate of return on the marginal source of active saving because automatic rollover IRAs are required to be in principal-preserving investment options. If we were to explicitly take this into account, it would create a wedge disfavoring automatic rollover IRAs.

of investment returns (Choi et al., 2009), and, of course, the role of defaults (Brown et al., 2016; Choi et al., 2003); to date, however, little is known about unclaimed retirement assets.

The present paper fills this gap by providing the first set of stylized facts regarding the extent of abandoned retirement assets, as proxied by different windows of failure to claim or escheatment. We do this by analyzing individual level tax and information returns, along with account-level data from state unclaimed property. The descriptive analysis contains estimates and correlates of unclaimed accounts, including the extent to which they are "reclaimed" after missing their legal withdrawal minimums or being escheated to state unclaimed property. We also explore the apparent abandonment of automated rollover IRAs, a type of default savings account, where we exploit sharp policy thresholds that enable a regression discontinuity analysis.

We find that 0.4% of retirees own an abandoned retirement account as proxied by a failure to claim over 10 years, and this percentage is increasing over time. The amounts abandoned in IRAs after a decade of missed required minimum distributions total about $66 million in the most recent cohort. We also find that policies which promote retirement saving, such as auto-enrollment, may unintentionally encourage the accumulation of smaller balance accounts that appear to be about 10 times more likely to be abandoned over the lifecycle. Current policy to mitigate abandonment is focused on the use of escheatment to unclaimed property. Yet plan participation is mostly voluntary, and most accounts are neither escheated nor reclaimed upon escheatment.

One path to reducing unclaimed accounts could involve the government using Social Security Numbers attached to IRAs to remind individuals about their RMD obligations, as most of this population has a current address due to the receipt of Social Security benefits. The Government Accountability Office suggested in a recent report (2018) that the IRS reinstate a letter forwarding program that would send communication from plan managers to owners of unclaimed accounts, but the IRS determined that reviving this program is infeasible due to resource constraints. Yet, our results help inform a broad set of other possible policies. For example, tax policy providing preferential treatment for IRAs may require modification as many do not withdraw their savings and pay taxes at the expected ages. Defaults into retirement saving plans may require safeguards to prevent forgetting these accounts. State policy for connecting unclaimed property with their owners could feature greater automation to improve these efforts. We do not take a stand on any one of these policies, but believe that policymakers should pay attention to interventions that could reduce abandoned retirement savings. There may be particular scope to introduce financial products that help individuals mitigate abandonment risk as prior work shows that people are willing to invest in costly commitment devices to deal with dynamic inconsistency in retirement planning (Eisenbach and Schmalz, 2016).

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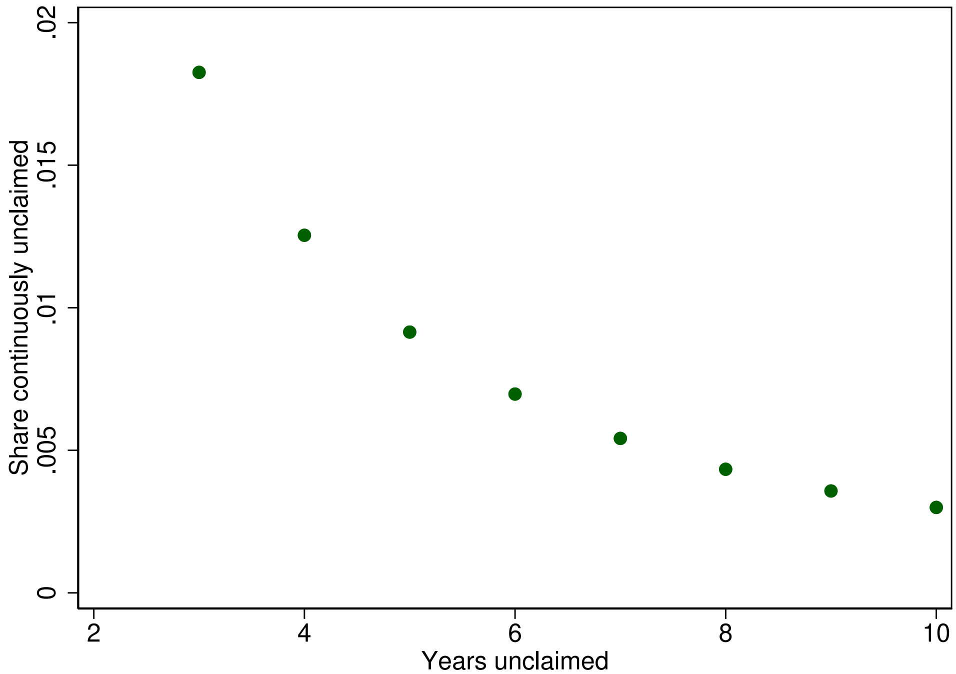
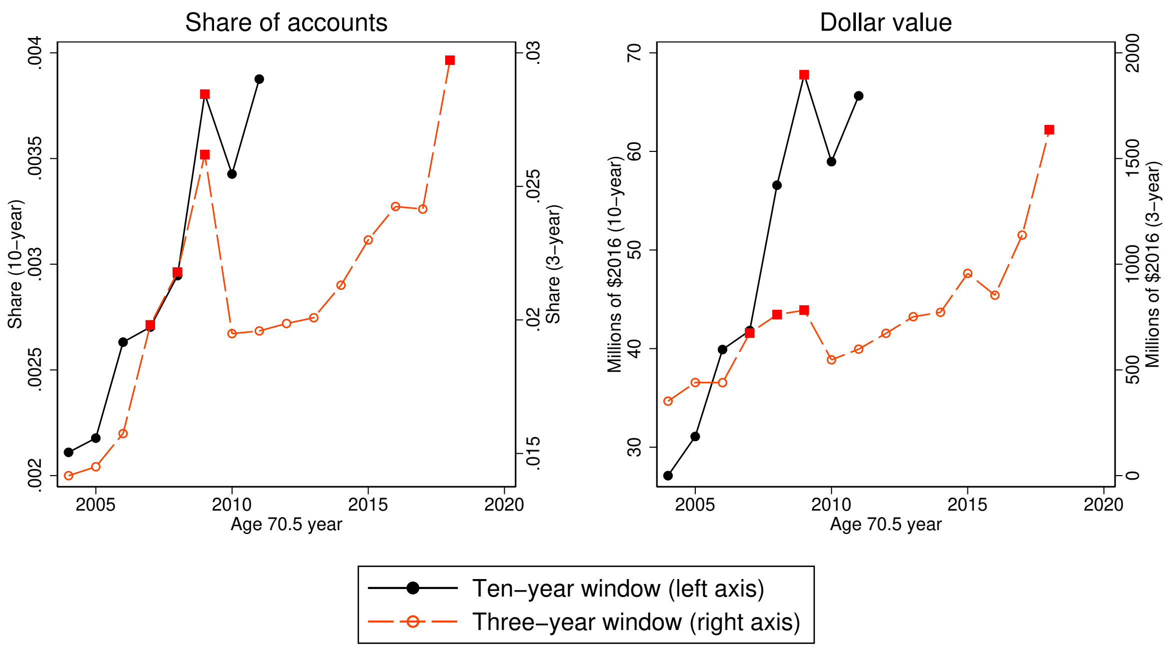
Figure 1: Share of unclaimed IRAs by window length



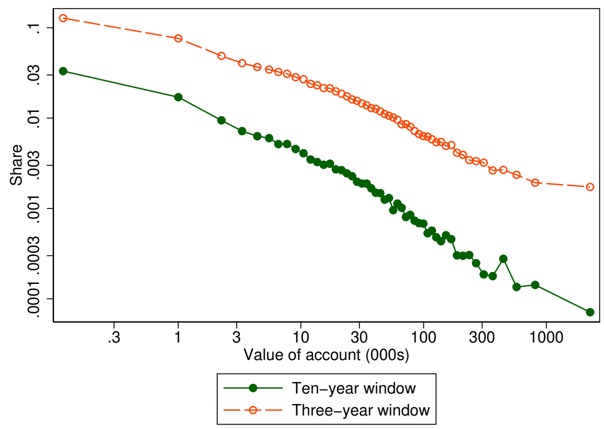
Notes: This figure plots the fraction of accounts continuously unclaimed (satisfying $U(\tau)$) as a function of the number of years of continuous failure to claim (τ) after the legal requirement to do so. The sample is restricted to cohorts attaining age 70.5 no later than 2011 and who live through age 79.5. Data Source: U.S. tax and information records.

Figure 2: Time series of IRAs unclaimed for ten years and three years



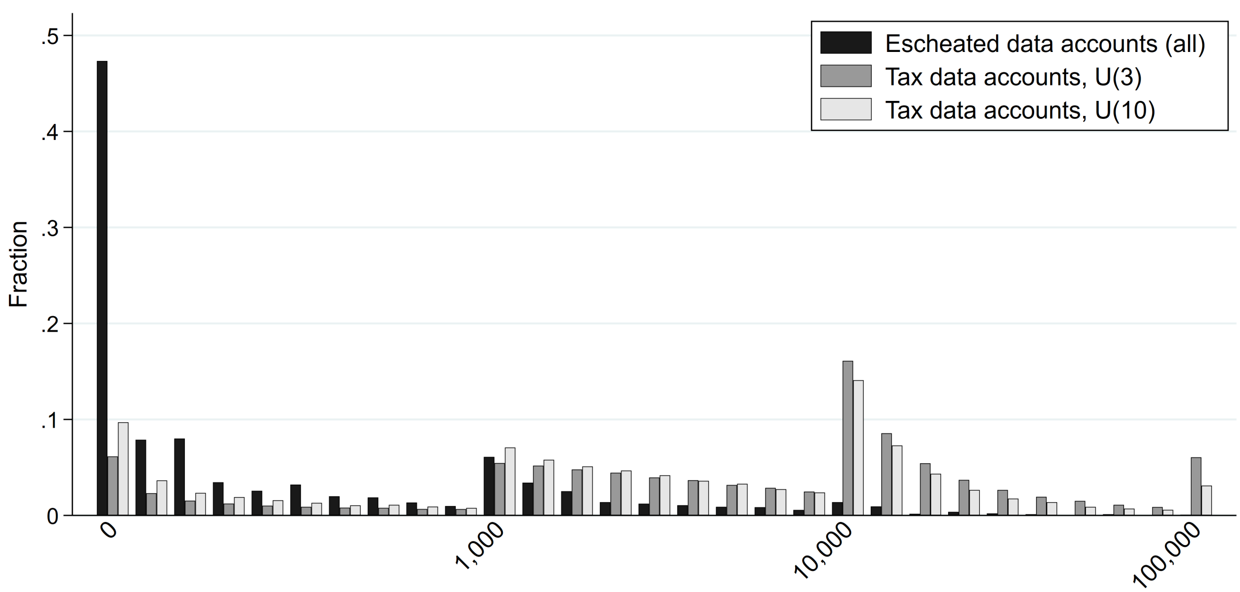
Notes: Left panel: The solid series (left axis) plots the share of traditional IRAs of 70.5-year-olds that are unclaimed for ten continuous years (representing our baseline estimate of abandonment) in each cohort, where an account is defined as the combination of individual and custodian. The dashed series (right axis) plots the analogous share of accounts that are unclaimed for three years beginning at age 70.5. Right panel: The lines plot the dollar value of these accounts that are unclaimed for ten years (solid series, left axis) or three years (dashed series, left axis). Dollars are adjusted to 2016 dollars via the PCE deflator. The points marked in red squares are observations where the estimate is affected by the RMD holidays in 2009 and 2020; see Section 4 for details. For the ten-year series, the sample is restricted to individuals who live through age 79.5. For the three-year series, the sample is restricted to individuals who live through age 72.5. Data Source: U.S. tax and information records.

Figure 3: Probability of IRAs being unclaimed for three and ten years by account balance



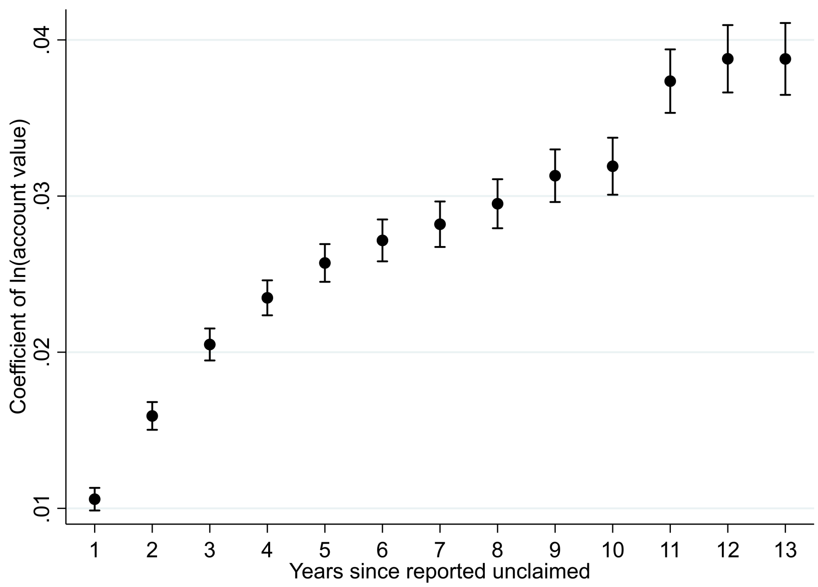
Notes: This figure plots the non-parametrically estimated probability of ten-year and three-year unclaiming at age 70.5 as a function of the account value at age 69.5, measured in 2016 dollars. For both series, the sample is restricted to those who remain alive through age 79.5 and who attain age 70.5 between 2004 and 2011. Data Source: U.S. tax and information records.

Figure 4: Comparing unclaimed IRAs in SUP and tax databases



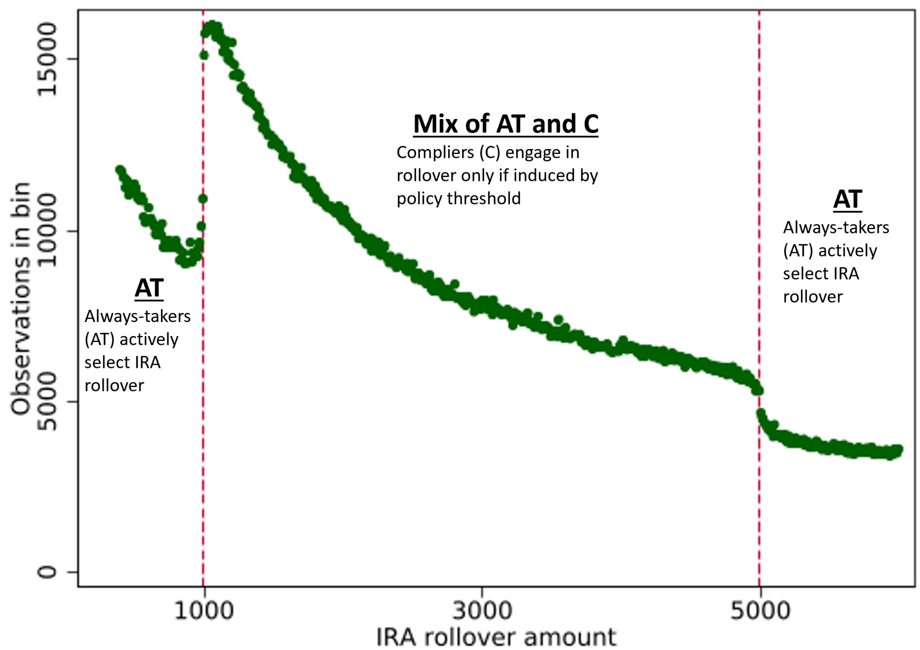
Notes: This figure shows a histogram of the monetary distribution of accounts that appear in the SUP and tax databases in 2016. The analysis for the tax data uses the three- and ten-year windows for not claiming, as denoted by $U(3)$ and $U(10)$. The sample is the same as in the main analysis, i.e., individuals who live through age 79.5 and who attain age 70.5 between 2004 and 2011. The SUP data include all accounts from the 13 available states. Note that the horizontal axis is not linear. Data Source: State unclaimed property (SUP) records; U.S. tax and information records.

Figure 5: Impact of account value on reclaiming escheated accounts (MA)



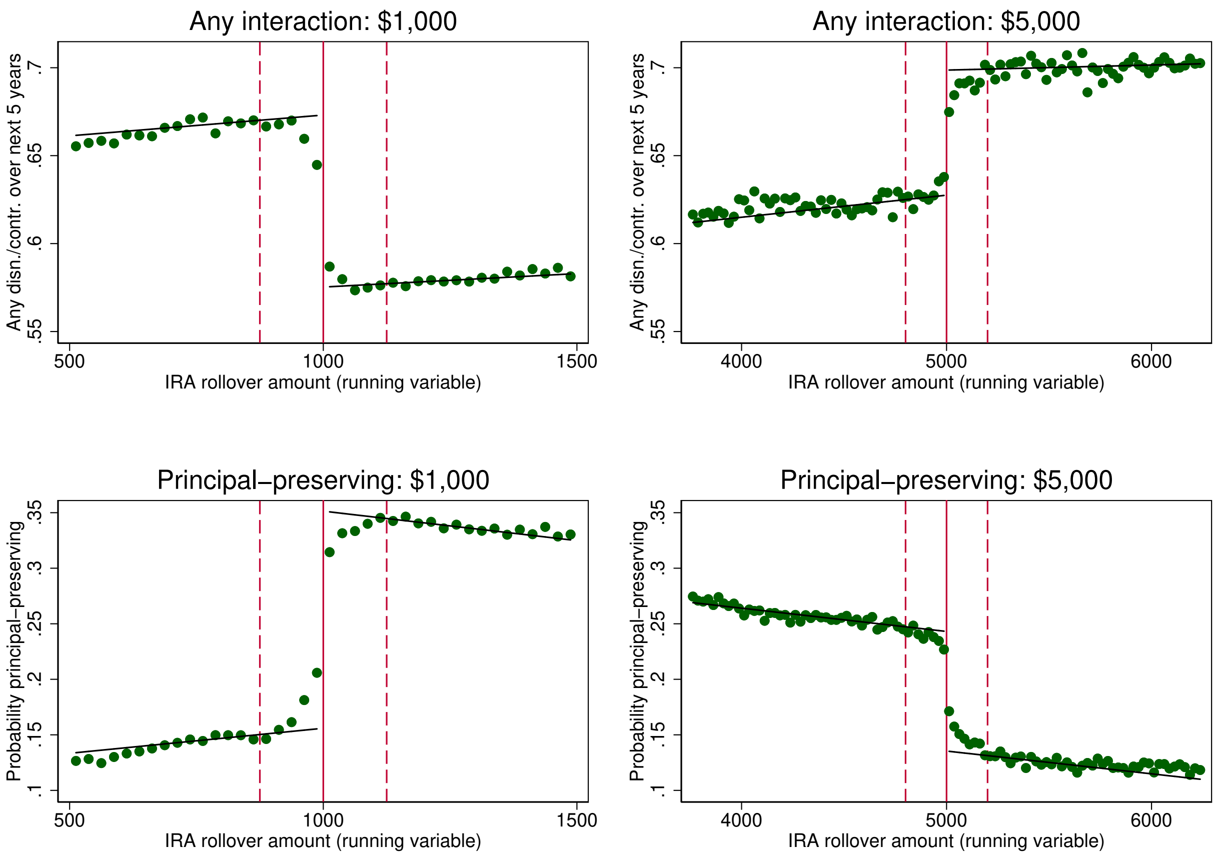
Notes: This figure shows the coefficients, each from a separate regression, on ln(Account Value) as the window of years since reported unclaimed increases from 1 to 13. The coefficients are from regressions of the following form: Claimed = $\beta \ln(\text{Account Value}) + \eta + \gamma$, where *Claimed* is whether the property was claimed within 1, 2,...,13 years (each separate regressions), *Account Value* is measured in units of $10,000, η represents property type fixed effects, and γ represents year reported as unclaimed fixed effects. The full regression results corresponding to these coefficients are shown in Table C.4. Data Source: Massachusetts unclaimed and claimed property records, 1998-2018.

Figure 6: Automatic IRA rollover counts in $10 distribution bins



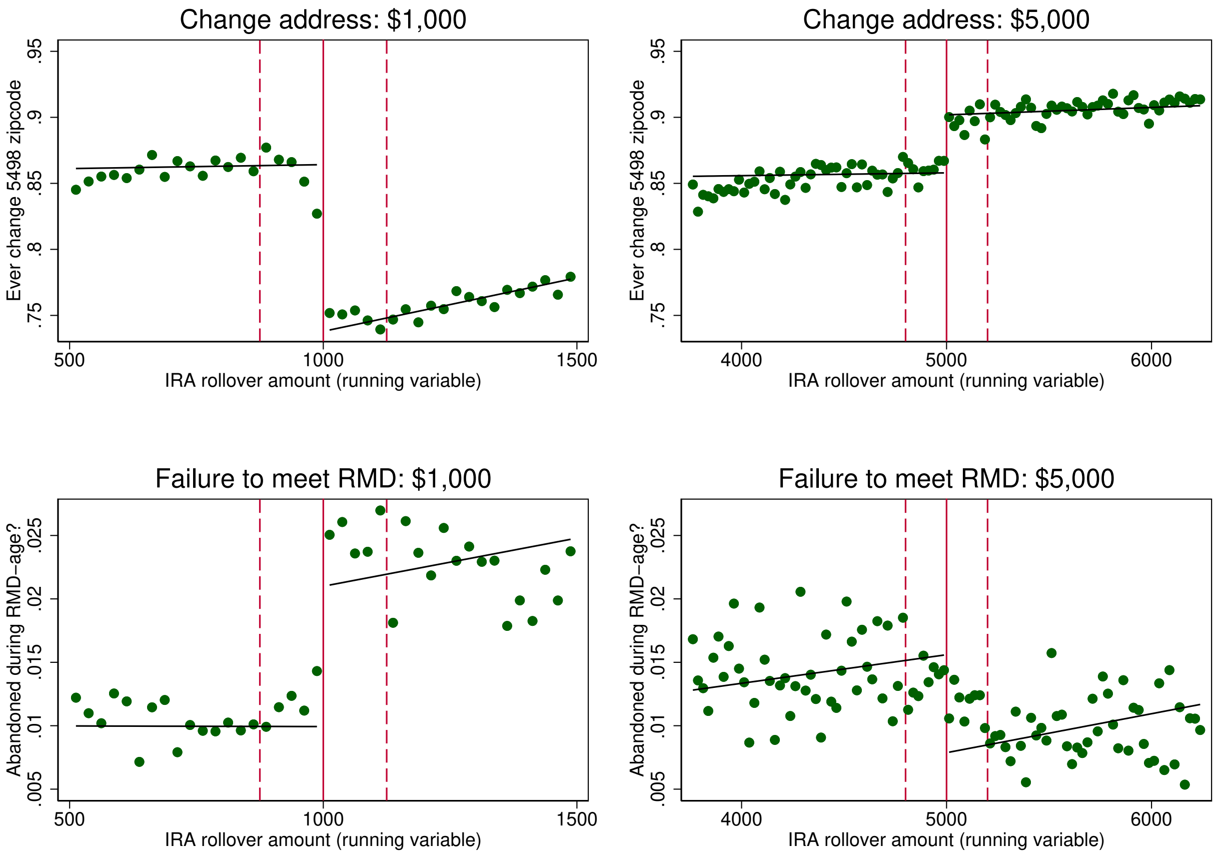
Notes: This figure plots raw counts of observations in the forced-transfer IRA sample with direct rollovers in Form 1099-R as a function of the nominal distribution amount, in $10 bins. Distributions that are exact multiples of $500 are dropped. This figure uses distribution data from 2005 through 2010. Dotted lines indicate the policy thresholds at $1,000 and $5,000. Data Source: U.S. tax and information records.

Figure 7: Proxies for passivity among automatic IRA rollover compliers



Notes: In this figure, each panel plots the expected mean of some outcome as a function of the nominal distribution amount. Each panel also plots the linear fit on each side of the threshold, weighted using a triangular kernel, dropping observations within the donut hole indicated by the dashed vertical red lines. The left two panels use the $1,000 threshold while the right two panels use the $5,000 threshold. In the top two panels, the outcome is a dummy for having any interaction with the account – distributions or contributions – within ten years of the initial distribution. In the bottom two panels, the outcome is a dummy for appearing to be invested in a principal-preserving investment plan; see Section 5.2 for measurement details. Data Source: U.S. tax and information records.

Figure 8: Proxies for abandonment and risk factors among automatic IRA rollover compliers



Notes: In this figure, each panel plots the expected mean of some outcome as a function of the nominal distribution amount. Each panel also plots the linear fit on each side of the threshold, weighted using a triangular kernel, dropping observations within the donut hole indicated by the dashed vertical red lines. The left two panels use the $1,000 threshold while the right two panels use the $5,000 threshold. In the top two panels, the outcome is a dummy for updating the address with the IRA custodian within ten years, as measured using the address reported by the custodian on Form 5498; in these panels, we condition on the individual moving during this period, measured using the addresses reported on Form 1040 and/or Form 1099-SSA. In the bottom panels, the outcome is failing to claim the IRA for three years beginning at age 70.5; in these panels, we restrict to those who would have attained age 72.5 during our sample window (and who did not die prior to that age). Data Source: U.S. tax and information records.

Table 1: Summary statistics for abandoned and non-abandoned IRA accounts

	Claimed accounts		Unclaimed for three years		Unclaimed for ten years	
	Value (2016 dollars)	Annuitized value (share of income)	Value (2016 dollars)	Annuitized value (share of income)	Value (2016 dollars)	Annuitized value (share of income)
	(1)	(2)	(3)	(4)	(5)	(6)
25^{th} percentile	\$ 23,874	0.036	\$ 2,676	0.003	\$ 946	0.002
50^{th} percentile	\$ 65,366	0.109	\$ 10,314	0.016	\$ 5,742	0.010
75^{th} percentile	\$167,701	0.293	\$ 32,641	0.056	\$ 19,398	0.038
90^{th} percentile	\$399,884	0.661	\$ 79,520	0.147	\$ 48,559	0.110
Observations	4,757,700	4,757,700	105,400	105,400	18,000	18,000

Notes: Column (1) reports quantiles of the values of IRAs that are claimed by age 79.5, i.e., within ten years of the start of RMDs. Column (2) reports quantiles of the ratio of the value of the claimed IRA, converted to an annuity stream, to income at age 72.5. The annuity calculation assumes an interest rate of 1% and uses estimated mortality rates from the Social Security Administration, separately by sex. Income is defined as adjusted gross income, less taxable IRA distributions, plus any untaxed Social Security income. Columns (3) and (4) repeat the same calculation for accounts that are unclaimed for three years (i.e., accounts that satisfy $U(3)$). Columns (5) and (6) do so for accounts that are unclaimed for ten years (i.e., accounts that satisfy $U(10)$). To protect taxpayer privacy, all quantiles are computed as psuedo-quantiles, equal to the 30 observations nearest the true quantile. In all columns, the sample is restricted to those who remain alive through age 79.5 and who attain age 70.5 between 2004 and 2011. Data Source: U.S. tax and information records.

Table 2: The impact of financial sophistication and demographics on abandonment

	(1)	(2)	(3)	(4)	(5)
Financial sophistication metrics:					
Files tax return	-0.613	-0.623	-0.626	-0.624	-0.635
	(0.023)	(0.023)	(0.023)	(0.023)	(0.024)
Pays estimated tax	-0.030	-0.028	-0.030	-0.036	-0.033
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Has dividends or capital gains	-0.104	-0.085	-0.089	-0.093	-0.093
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Has interest	-0.142	-0.132	-0.132	-0.132	-0.115
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Demographics:					
Male		0.024	0.028	0.028	0.022
		(0.004)	(0.004)	(0.004)	(0.004)
Zip share white		-0.612	-0.533	-0.512	-0.487
		(0.013)	(0.014)	(0.018)	(0.019)
Observations	6,777,000	6,773,000	6,773,000	6,773,000	6,756,000
Baseline mean	0.287	0.287	0.287	0.287	0.287
Year-by-value FE	X	X	X	X	X
Control for zip density			X	X	X
Control for zip educ. and poverty				X	X
Year-by-payer FE					X

Notes: This table reports regression estimates for a regression of a dummy for ten-year unclaiming (that is, $U(10)$) on various outcomes, restricted to those observations with valid zip codes from Form 1040 and/or Form 1099-SSA). Each column corresponds to a different regression. Each regression includes fixed effects for year interacted with 500 bins of real IRA value. To ease interpretation, all coefficients are multiplied by 100. All coefficients are statistically significant ($p < 0.001$). In all columns, the sample is restricted to those who remain alive through age 79.5 and who attain age 70.5 between 2004 and 2011. Data Source: U.S. tax and information records, zipcode characteristics from the American Community Survey.

Table 3: Linking failure to claim and abandonment: path of accounts at death

	Received Form 5498 after death		Apparent bequest to spouse	
	Raw	Reg. adj	Raw	Reg. adj
	(1)	(2)	(3)	(4)
Claimed accounts	0.093		0.508	
Unclaimed accounts	0.391		0.354	
Difference	0.298	0.198	-0.153	-0.192
	(0.004)	(0.004)	(0.014)	(0.015)
Observations	1,077,100	1,077,100	467,000	467,000
Value-by-cohort-by-year-of-death FEs		X		X

Notes: This table refers to analysis described in Section 4.2. In all columns, the sample is restricted to those who die in 2019 or earlier and no earlier than the calendar year following the calendar year in which they attained 72.5. The outcome in columns (1) and (2) is a dummy for receiving Form 5498 in the year following death. The sample in these columns is additionally restricted to those who received Form 5498 in the year prior to death. The outcome in columns (3) and (4) is a dummy for the surviving spouse being bequeathed the account, as proxied by a death-coded distribution from an IRA on Form 1099-R or the receipt of an additional Form 5498. The sample in these columns is additionally restricted to those married in the year prior to death; individuals who hold both unclaimed and claimed accounts are dropped. Columns (1) and (3) report raw means; the regression-adjusted estimates in columns (2) and (4) control for the three-way interaction of account value (in $500 bins), cohort, and year-of-death. Data Source: U.S. tax and information records.

Table 4: Escheated account summary and extrapolation, 2016

Sample	# Accts	Total ($)	Mean ($)	Pop. age 74	Accts per 74	% 74 pop
All accounts (observed)	36,529	18,347,524	633	898,227	.041	.43
DC Accounts	15,469	6,360,315	411			
Uncashed pension checks	11,553	3,144,346	336			
IRAs	8,717	8,534,335	1,070			
Roth IRAs	790	308,530	307			
All accounts (US extrapolation)	69,507	38,012,684	547	2,094,035	.033	1.00

Notes: Table reports aggregate retirement-related unclaimed properties by our sample of 13 states and the extrapolated US sample. DC accounts include escheated 401(k)s and are labeled as "pension and profit sharing" plans in the escheatment data. IRAs refer to Traditional IRAs, which is the financial product we study in the IRS data. Data Source: State unclaimed property records, American Community Survey county-level data, and the U.S. Census Bureau Estimated State Population by Characteristics for 2016.

Table 5: Comparison of escheated accounts in MA and WI

	MA	WI
Summary		
# unclaimed retirement accounts in 2016	3,320	815
Proportion claimed within 2 years	0.034	0.666
Avg account value	$633	$980
...of claimed accounts	$2,110	$812
...of accounts remaining unclaimed	$581	$1,315
Proportion of claims by initiation type		
DOR Auto Match	—	0.801
Online (own)	—	0.122
Online (locator service)	—	0.065
Other	—	0.013

Notes: Table shows summary statistics on unclaimed and claimed retirement accounts in Massachusetts and Wisconsin. Statistics are for accounts escheated in 2016. The claim initiation data are not available for Massachusetts. Data Sources: Massachusetts and Wisconsin unclaimed and claimed property records, 2016 to 2018.

Table 6: Default paths of defined contribution savings at job separation

Balance	**Plan default**	**Account owner choice set**
$0-$1,000	Cash	Cash; voluntary IRA rollover; voluntary rollover to DC account with new employer*
$1,001 to $5,000	Automatic IRA rollover	Cash; voluntary IRA rollover; voluntary rollover to DC account with new employer*; automatic IRA rollover
$5,001+	Remain with plan	Cash; voluntary IRA rollover; voluntary rollover to DC account with new employer*; remain with plan

Notes: ∗: if allowed by the plan of the new employer.
Table describes the default paths of defined contribution savings left behind at job separation. The final column indicates the account owner choice set: the cash option necessitates payment of an early withdrawal penalty (currenty 10%). Voluntary IRA rollovers can be to an individual IRA or to an account with a different employer. Automatic IRA rollovers, or forced transfer IRAs, preserve the retirement saving balances of separating employees. Voluntary rollover to a DC account with a new employer is also an option for some individuals (depending on the rules of the new employer's plan), so we have listed that in the choice set.

Table 7: Proxies for passivity for automatic IRA rollover compliers

	Any interaction over next five years		In principal-preserving investment	
	(1)	(2)	(3)	(4)
	$1,000 threshold	$5,000 threshold	$1,000 threshold	$5,000 threshold
Share compliers	0.483	0.294	0.483	0.294
	[0.471, 0.493]	[0.280, 0.307]	[0.471, 0.493]	[0.280, 0.307]
$E(Y\|AT)$	0.673	0.699	0.127	0.124
	[0.666, 0.681]	[0.692, 0.705]	[0.122, 0.132]	[0.119, 0.129]
$E(Y\|C)$	0.470	0.457	0.474	0.402
	[0.455, 0.485]	[0.426, 0.486]	[0.461, 0.490]	[0.379, 0.431]
Observations	672,000	593,000	672,000	593,000

Notes: This table reports characteristics of compliers and always-takers in the forced transfer sample. Always-takers are those who would have performed a rollover regardless of their location with respect to the $1,000 and $5,000 thresholds. Compliers are those who perform a rollover only if their rollover amount is between $1,000 and $5,000. In columns (1) and (2), we use as the outcome a binary variable for having any interaction with the account – distributions or contributions – within ten years of the initial distribution. In columns (3) and (4), we use a dummy for appearing to be invested in a principal-preserving investment plan; see text for measurement details. Columns (1) and (3) exploit the $1,000 threshold, while columns (2) and (4) exploit the $5,000 threshold. In the first row, we report the estimated share of compliers immediately to the right of the $1,000 threshold or left of the $5,000 threshold in the sample in question. The second row reports the estimated mean outcome for always-takers. The third row reports the estimated mean outcome for compliers. Data Source: U.S. tax and information records.

Table 8: Risk factors and proxies for abandonment among automatic IRA rollover compliers

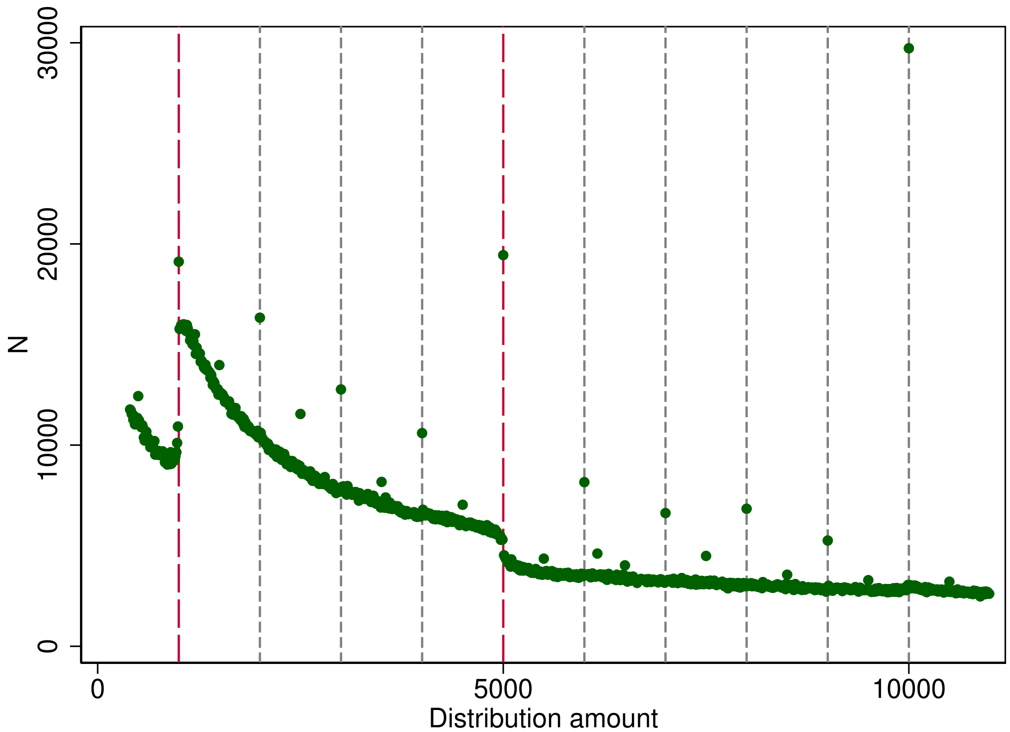
	Update address over next five years		Fail to claim through age 72.5	
	(1)	(2)	(3)	(4)
	$1,000 threshold	$5,000 threshold	$1,000 threshold	$5,000 threshold
Share compliers	0.476	0.265	0.216	0.115
	[0.448, 0.503]	[0.232, 0.296]	[0.163, 0.266]	[0.070, 0.159]
$E(Y\|AT)$	0.864	0.902	0.010	0.008
	[0.850, 0.878]	[0.892, 0.912]	[0.005, 0.015]	[0.005, 0.011]
$E(Y\|C)$	0.599	0.736	0.061	0.075
	[0.563, 0.632]	[0.681, 0.781]	[0.028, 0.103]	[0.033, 0.143]
Observations	126,000	102,000	77,000	84,000

Notes: This table reports characteristics of compliers and always-takers in the forced transfer sample. Always-takers are those who would have performed a rollover regardless of their location with respect to the $1,000 and $5,000 thresholds. Compliers are those who perform a rollover only if their rollover amount is between $1,000 and $5,000. In columns (1) and (2), we use the outcome of updating the address with the IRA custodian within ten years, as measured using the address reported by the custodian on Form 5498; in these columns, we condition on the individual moving during this period, measured using the addresses reported on Form 1040 and/or Form 1099-SSA. In columns (3) and (4), the outcome is failing to claim the IRA for three years beginning at age 70.5; in these panels, we restrict to those who would have attained age 72.5 during our sample window (and who did not die prior to that age). Columns (1) and (3) exploit the $1,000 threshold, while columns (2) and (4) exploit the $5,000 threshold. In the first row, we report the estimated share of compliers immediately to the right of the $1,000 threshold or left of the $5,000 threshold in the sample in question. The second row reports the estimated mean outcome for always-takers – those who enroll in an IRA voluntarily. The third row reports the estimated mean outcome for compliers – those who are induced to enroll in an IRA due to the forced transfer policy. Data Source: U.S. tax and information records.

– Appendices for Online Publication –

A Round-number bunching in rollover IRAs

Figure A.1: Counts of distribution amounts (including round numbers)

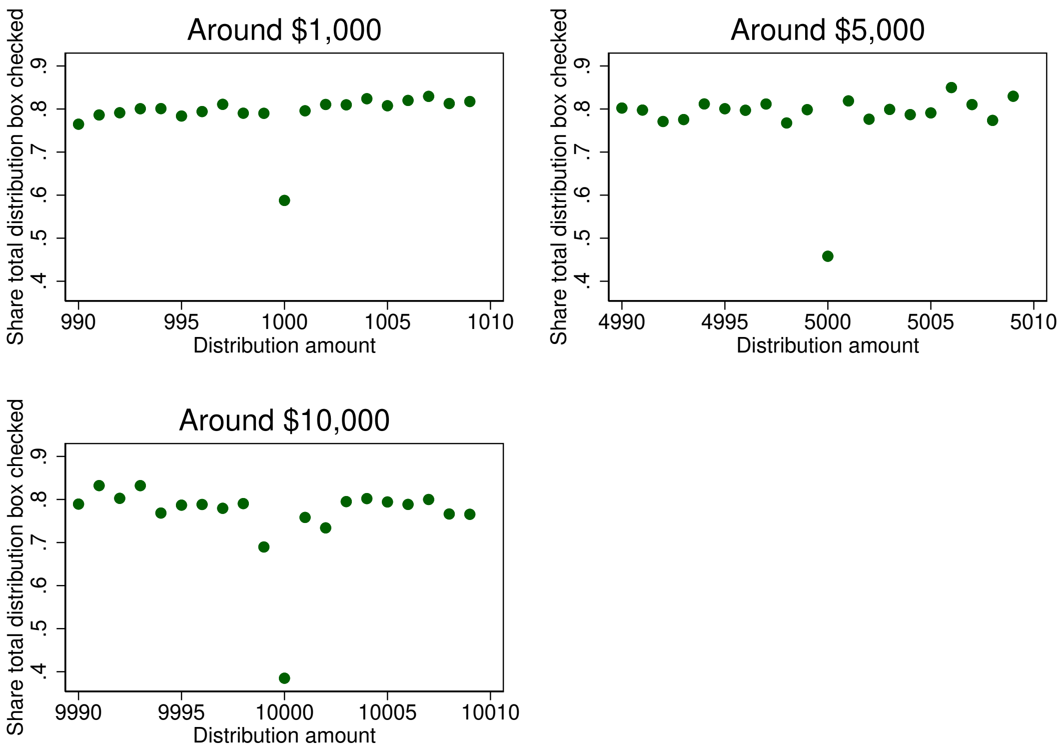


Notes: This figure plots raw counts of observations in the automatic IRA rollover sample with direct rollovers (Form 1099-R) as a function of the nominal distribution amount, in $10 bins, without dropping round numbers. Dotted lines indicate even multiples of $1,000. Data Source: U.S. tax and information records.

Figure A.1 plots raw counts of 1099-R rollover distributions as a function of distribution amount, in $10 bins, for distributions between $400 and $11,000, between 2005 and 2015. This figure shows the clear round number bunching at multiples of $1,000 and (to a lesser extent) multiples of $500. The bunching at $5,000 is very large; however, the even larger bunching at $10,000 is reassuring that the magnitude of the $5,000 spike is related to the "roundness" of $5,000 rather than the policy threshold.

The spike of distributions exactly at $1,000 and $5,000 (among other places) would be highly problematic in the empirical approaches that we pursue, especially because round number bunchers are likely to be quite different than those with distribution amounts nearby. In particular, round number bunchers are much more likely to be rolling over only a portion of the account balance, rather than the entire balance. Such distributions could very plausibly bunch at round numbers. And, furthermore, such distributions will generally be unaffected by our policy variation, while differing from those taking full distributions in important ways.

Figure A.2: Share of distributions with total distribution box checked

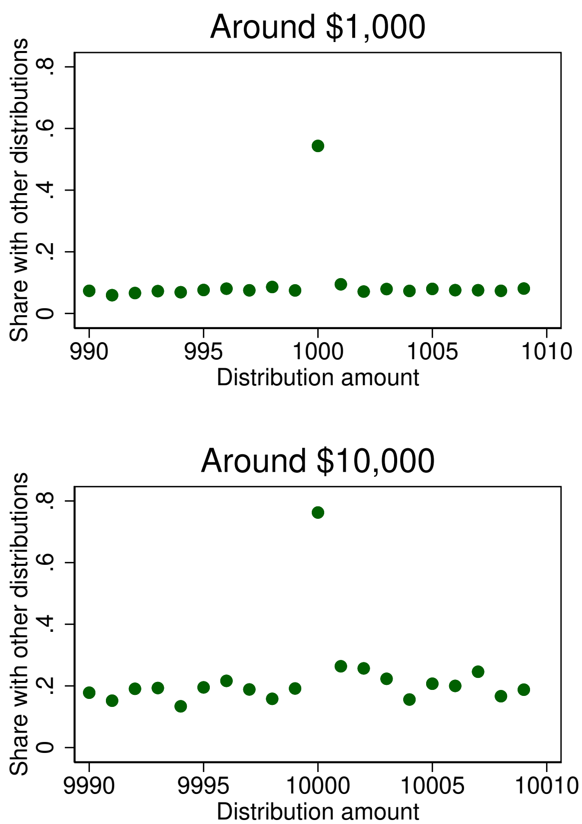


Notes: This figure plots the share of distributions in the forced transfer sample with the "total distribution" check-box checked, by single dollar of distributions. The three panels zoom in on thresholds of \$1,000, \$5,000, and \$10,000 respectively. Data Source: U.S. tax and information records.

To explore this, we plot in Figure A.2 the share of distributions in our data that have the "total distributions" checkbox checked on Form 1099-R, as a function of the distribution amount, by exact dollar of distributions around \$5,000 and \$10,000. Indeed, the share of distributions with the total distribution box checked declines substantially at round numbers, including round numbers (such as \$10,000) that are outside of our policy variation.

One strategy to proceed would be to restrict attention to 1099-R's with the total distribution checkbox checked, since the policy variation affects only total distributions. Unfortunately, there appears to be too much measurement error in the checkbox variable: some portion of distributions with the checkbox checked would in fact not be a total distribution. One common example of mismeasurement is the case when an individual makes two distributions to close out an account; e.g., suppose an individual at separation has a balance of \$7,000, chooses to roll over \$5,000 and take a cash distribution of \$2,000. This

Figure A.3: Share of individuals with same-year regular distribution from same payer, conditional on total distribution box checked



Notes: This figure analyzes the forced transfer sample, restricted to those with the total distributions checkbox checked. The figure plots the share of such observations that have some other distribution (with a Box 7 code of 1, 2, or 7, indicating a non-rollover distribution) from the same payer in the same year, by single dollar of distributions. The three panels zoom in on thresholds of $1,000, $5,000, and $10,000 respectively. Data Source: U.S. tax and information records.

would generate two different Forms 1099-R, which sometimes would both have the total distribution box checked. Figure A.3 explores this further. Among distributions with the total distribution box checked, we determine whether the individual received a different Form 1099-R from the same payer with a distribution code indicating a "normal" distribution (with codes 1, 2, or 7). We indeed find a large spike at both the $5,000 and $10,000 threshold. This suggests that this type of mismeasurement would cause the problem of round number bunching to remain if we used this restriction. For this reason, we take a simpler approach: we drop those with round number distributions (that is, at even multiples of $500) from our data. This conservative approach allows us to focus primarily on those rolling over the full account balance.

B Extrapolation of state unclaimed property data

The state unclaimed property data include information from 13 states. To construct a national estimate, we extrapolate to the missing states by estimating the following regressions:

$$\log(\text{Number of accounts})_s = \alpha_1 + \beta_1 \log(\text{Population 74})_s + \varepsilon_{1,s} \tag{3}$$
$$\log(\text{Total funds})_s = \alpha_2 + \beta_2 \log(\text{Population 74})_s + \varepsilon_{2,s}$$

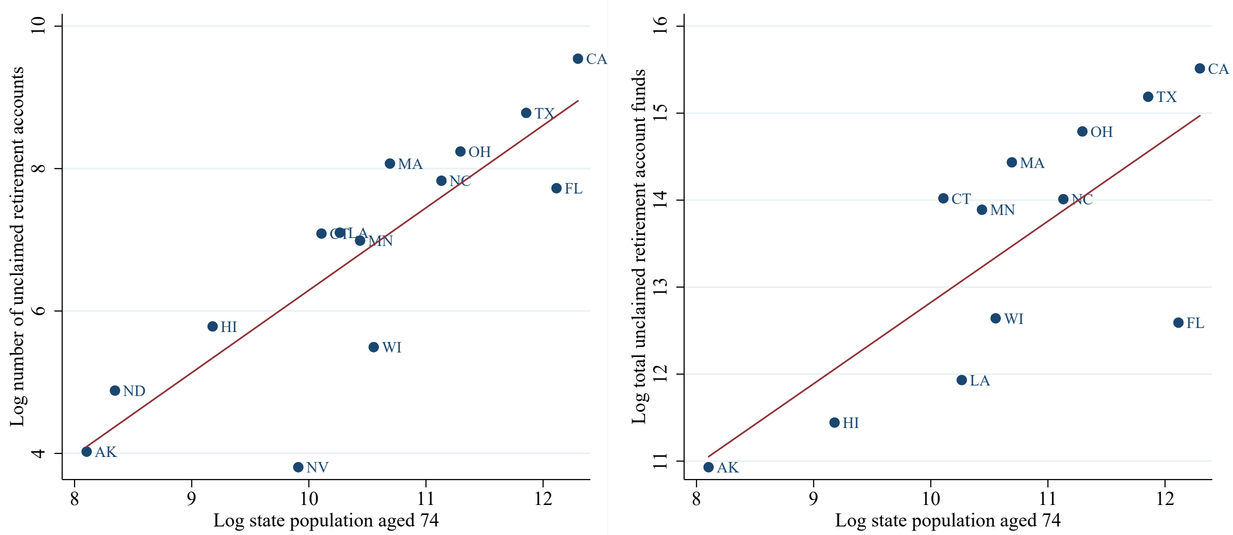
where "Number of accounts" is the total number of retirement accounts in state s in 2016, "Total funds" is the total amount in the retirement accounts in state s in 2016, and "Population 74" is the population aged 74 in state s in 2016, as provided by Census population estimates for 2016.[38] Figure B.1 depicts the fit of these regressions (number of accounts in (a) and total funds in (b)), and shows that the data fits a log-linear pattern reasonably well, motivating the log specification for both the outcome and explanatory variables.

Using the estimates for $\hat{\alpha}_1$, $\hat{\alpha}_2$, $\hat{\beta}_1$ and $\hat{\beta}_2$, we impute the total number of accounts and total amount of funds for the states for which we have missing data, and then calculate the average size of the accounts using both the raw and imputed data. Table 4 shows that extrapolating to the entire US suggests that 69,507 unclaimed retirement accounts entered state unclaimed property databases in 2016 totaling over $38 million, and that suggests about 3.3% of 74 year olds in 2016 have an unclaimed retirement account averaging $547.

[38]The Census population estimate data comes from the 2010 survey: `https://www.census.gov/data/tables/time-series/demo/popest/2010s-state-detail.html`.

Figure B.1: National extrapolation of state unclaimed property data, 2016

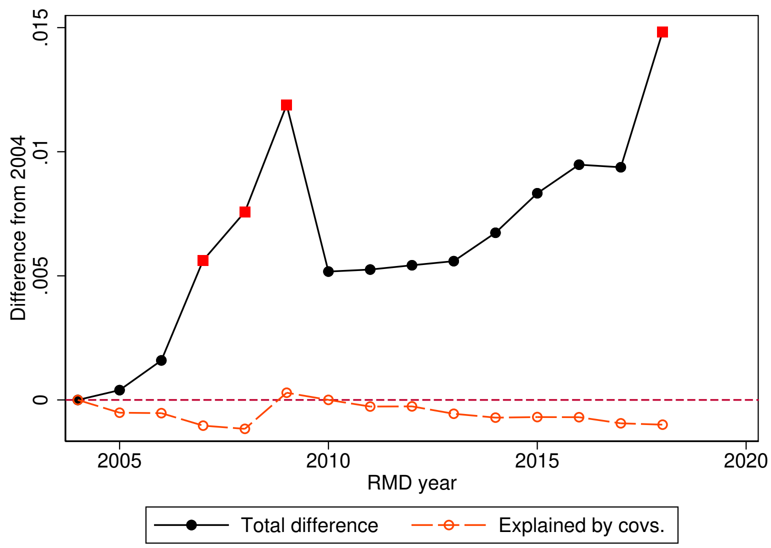
(a) Number of unclaimed retirement accounts (b) Unclaimed retirement account funds ($)



Notes: This figure plots the log number of unclaimed retirement accounts in a state (y-axis) against the log state population aged 74 in that state (x-axis). The line is the linear regression fit of the data. Data sources: State unclaimed property records, American Community Survey county-level data, both for 2016.

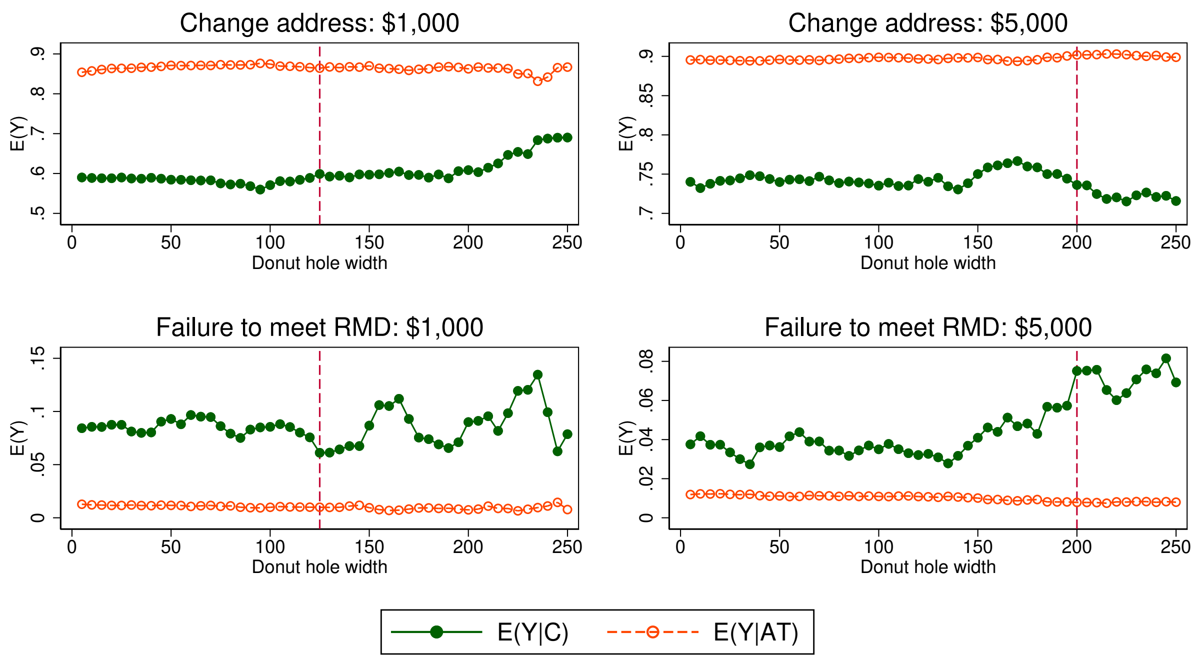
C Additional Figures and Tables

Figure C.1: Oaxaca-Blinder decomposition of three-year unclaiming increase since 2004



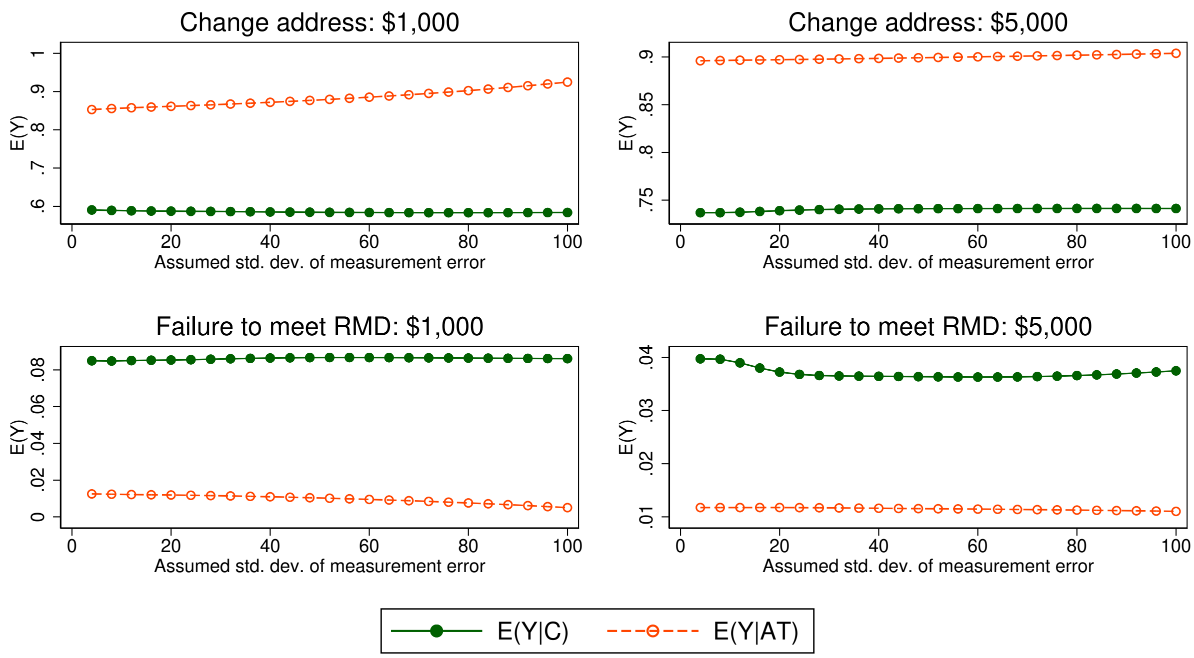
Notes: In this figure, the solid series plots the share of IRAs satisfying $U(3)$ in year t minus the share satisfying $U(3)$ in 2004. The dashed series plots the amount of this difference that can be explained by covariates, $(X_t - X_{2004})'\beta_{2004}$. X includes a fully-interacted set of fixed effects for (1) real value of the IRA (in 50 bins), (2) 10 bins of Social Security income relative to the national distribution, (3) 10 bins of the white share of the zip code, (4) a dummy for being male, (5) a dummy for having any interest income, and (6) a dummy for having non-zero capital gains or dividend income. The coefficient β_{2004} is the coefficient from a regression of $U(3)$ on X using observations in 2004. The points marked in red reflect years when we expect the three-year unclaiming rate to be affected by the RMD holidays in 2009 and 2020. The sample is restricted to those who remain alive through age 72.5. Data Source: U.S. tax and information records.

Figure C.2: Estimated abandonment of forced transfer compliers: robustness by donut hole width



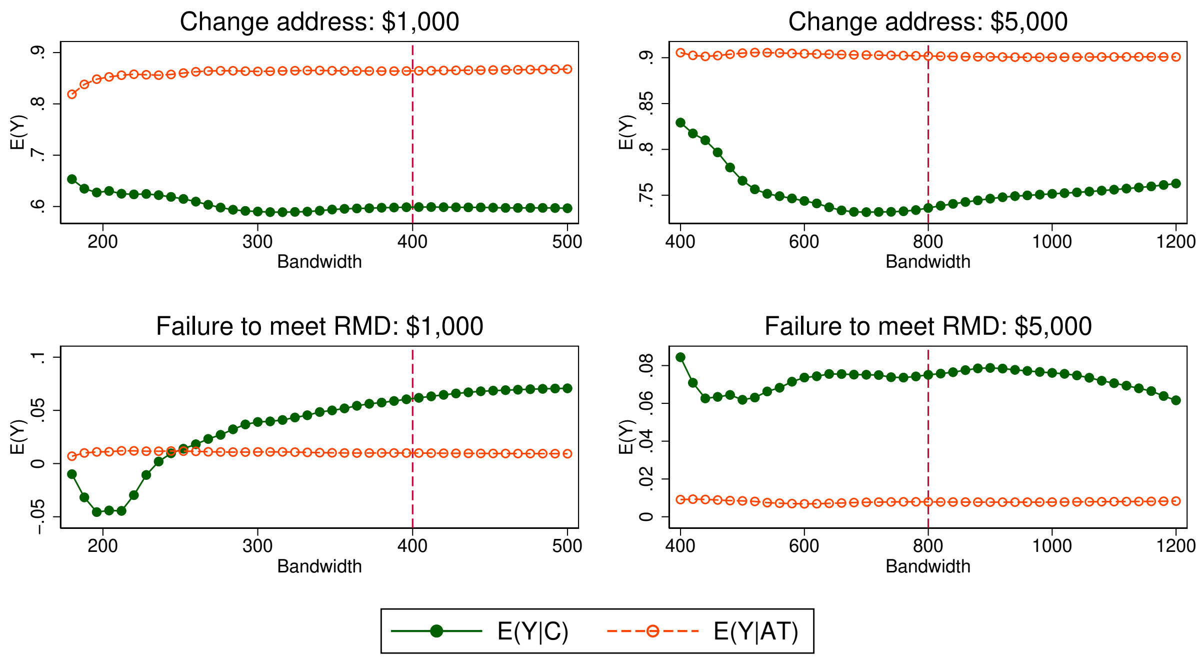
Notes: This figure plots mean outcomes for always-takers and compliers as estimated using the method of Section 5, varying the width of the donut hole. The default bandwidths ($400 at $1,000 and $800 at $5,000) are used. In the top two panels, the outcome is a dummy for updating the address with the IRA custodian within five years, as measured using the address reported by the custodian on Form 5498; in these panels, we condition on the individual moving during this period, measured using the addresses reported on Form 1040 and/or Form 1099-SSA. In the bottom panels, the outcome is failing to claim the IRA for three years beginning at age 70.5; in these panels, we restrict to those who would have attained age 72.5 during our sample window (and who did not die prior to that age). The left two panels use the $1,000 threshold; the right two panels use the $5,000 threshold. See text for details of the calculation and sample restrictions. Data Source: U.S. tax and information records.

Figure C.3: Estimated abandonment of default compliers: alternative treatment construction, varying σ



Notes: This figure plots mean outcomes for always-takers and compliers, taking account of the slight imprecision of the discontinuity in an alternative fashion. In particular, in the two regression discontinuities underlying our Section 5 analysis, we replace the binary treatment dummy with $\Phi\left(\frac{x_i - c}{\sigma}\right)$, where c is the cutoff in question, $\Phi(\cdot)$ indicates the normal cumulative distribution function, and σ is a parameter that varies along the x-axis. The default bandwidths ($400 at $1,000 and $800 at $5,000) are used. There is no donut hole. In the top two panels, the outcome is a dummy for updating the address with the IRA custodian within five years, as measured using the address reported by the custodian on Form 5498; in these panels, we condition on the individual moving during this period, measured using the addresses reported on Form 1040 and/or Form 1099-SSA. In the bottom panels, the outcome is failing to claim the IRA for three years beginning at age 70.5; in these panels, we restrict to those who would have attained age 72.5 during our sample window (and who did not die prior to that age). The left two panels use the $1,000 threshold; the right two panels use the $5,000 threshold. See text for details of the calculation and sample restrictions. Data Source: U.S. tax and information records.

Figure C.4: Estimated abandonment of default compliers: robustness to bandwidth



Notes: This figure plots mean outcomes for always-takers and compliers, varying the bandwidth. The default donut holes ($250 at $1,000 and $400 at $5,000) are used. In the top two panels, the outcome is a dummy for updating the address with the IRA custodian within five years, as measured using the address reported by the custodian on Form 5498; in these panels, we condition on the individual moving during this period, measured using the addresses reported on Form 1040 and/or Form 1099-SSA. In the bottom panels, the outcome is failing to claim the IRA for three years beginning at age 70.5; in these panels, we restrict to those who would have attained age 72.5 during our sample window (and who did not die prior to that age). The left two panels use the $1,000 threshold; the right two panels use the $5,000 threshold. See text for details of the calculation and sample restrictions. Data Source: U.S. tax and information records.

Table C.1: The impact of financial sophistication and demographics on three-year unclaiming

	(1)	(2)	(3)	(4)	(5)
Financial sophistication metrics:					
Files tax return	-1.760	-1.798	-1.814	-1.810	-1.853
	(0.046)	(0.046)	(0.046)	(0.046)	(0.046)
Pays estimated tax	-0.126	-0.118	-0.130	-0.182	-0.174
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Has dividends or capital gains	-0.314	-0.232	-0.259	-0.293	-0.311
	(0.012)	(0.012)	(0.012)	(0.012)	(0.013)
Has interest	-0.559	-0.512	-0.514	-0.517	-0.425
	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)
Demographics:					
Male		0.058	0.078	0.080	0.037
		(0.010)	(0.010)	(0.010)	(0.010)
Zip share white		-2.645	-2.146	-2.123	-1.932
		(0.028)	(0.031)	(0.040)	(0.042)
Observations	6,777,000	6,773,000	6,773,000	6,773,000	6,756,000
Baseline mean	1.783	1.783	1.783	1.783	1.783
Year-by-value FE	X	X	X	X	X
Control for zip density			X	X	X
Control for zip educ. and poverty				X	X
Year-by-payer FE					X

Notes: This table reports regression estimates for a regression of a dummy for three-year unclaiming (that is, $U(3)$) on various outcomes, restricted to those observations with valid zip codes from Form 1040 and/or Form 1099-SSA. Each column corresponds to a different regression. Each regression includes fixed effects for year interacted with 500 bins of real IRA value. For the sake of interpretation, all coefficients are multiplied by 100. All coefficients are statistically significant ($p < 0.01$). In all columns, the sample is restricted to those who remain alive through age 79.5 and who attain age 70.5 between 2004 and 2011. Data Source: U.S. tax and information records, zipcode characteristics from the American Community Survey.

Table C.2: NAUPA codes categorized as retirement accounts

Code	Description
CK11	PENSION CHECKS
IR01	TRADITIONAL IRA - CASH
IR02	TRAD IRA - MUTUAL FUNDS
IR03	TRAD IRA - SECURITIES
IR04	RESERVED FOR TRADITIONAL IRA
IR05	ROTH IRA - CASH
IR06	ROTH IRA - MUTUAL FUNDS
IR07	ROTH IRA - SECURITIES
IR08	RESERVED FOR ROTH IRA
IR09	IRA OTHER - RESERVED 1
IR10	IRA OTHER - RESERVED 2
MS14	PENSION & PROFIT SHARING PLANS
05	IRA's-Securities
55	Annuities
71	IRAs
78	Pensions, retirement funds

Notes: NAUPA (National Association of Unclaimed Property Administrators) Codes used to categorize unclaimed property. Codes starting with "IR" were introduced in 2010 and gradually adopted by states. Pension checks are uncashed checks sent by plans to encourage required minimum distributions. Pension and profit-sharing plans, despite their name, consist of defined contribution plans (GAO, 2019). Codes without any alphabetic characters are exclusive to California.

Table C.3: Characteristics of escheated account owners

	Unclaimed retirement account owners	Overall 74 year old population
Name analysis		
Proportion female	0.45	0.54
Proportion Hispanic	0.24	0.12
County-level analysis		
Average county population	2,116,785	158,137
Proportion age 65+	0.13	0.14
Proportion white	0.69	0.72
Proportion married	0.48	0.48
Proportion bachelor degree	0.31	0.30
Proportion born in state	0.57	0.57
Proportion moved across state in past year	0.02	0.02
Proportion own home	0.63	0.63
Median household income ($)	60,167	58,881
Proportion of families below poverty line	0.11	0.11
Unemployment rate	8.60	7.60

Notes: Table reports average characteristics of individuals with unclaimed retirement assets (column 1) and average characteristics of 74 year olds (column 2). Data Sources: State unclaimed property records, American Community Survey county-level data, names databases derived from 2000 Census data and Social Security Administration data, and the U.S. Census Bureau Estimated State Population by Characteristics for 2016.

Table C.4: Impact of account value on claiming an escheated account (MA)

	Claimed?						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
ln(Account Value)	0.0106	0.0159	0.0205	0.0235	0.0257	0.0272	0.0282
	(0.0004)	(0.0005)	(0.0005)	(0.0006)	(0.0006)	(0.0007)	(0.0007)
R-squared	0.172	0.154	0.145	0.139	0.136	0.138	0.133
Observations	50,063	46,524	43,204	41,436	39,709	36,025	34,356
Years Unclaimed	1	2	3	4	5	6	7
	(8)	(9)	(10)	(11)	(12)	(13)	
ln(Account Value)	0.0295	0.0313	0.0319	0.0374	0.0388	0.0388	
	(0.0008)	(0.0009)	(0.0009)	(0.0010)	(0.0011)	(0.0012)	
R-squared	0.130	0.132	0.135	0.139	0.129	0.129	
Observations	32,760	30,777	28,063	26,362	25,709	24,376	
Years Unclaimed	8	9	10	11	12	13	

Notes: Table shows coefficients on ln(Account Value) from separate regressions of whether the account was claimed within 1, 2,..., or 13 years (denoted by the Years Unclaimed row), including property code and year reported unclaimed fixed effects. The first column contains all properties reported as unclaimed 1998-2017, the second column contains all properties reported as unclaimed 1998-2016,..., and the final column contains all properties reported as unclaimed in 1998-2005. Data Source: Massachusetts Unclaimed and Claimed Property Data, 1998 to 2018.

Table C.5: Proxies for passivity for automatic IRA rollover compliers: CCT method

	Any interaction over next five years		In principal-preserving investment	
	(1)	(2)	(3)	(4)
	\$1,000 threshold	\$5,000 threshold	\$1,000 threshold	\$5,000 threshold
Share compliers	0.489	0.264	0.489	0.264
	[0.448, 0.521]	[0.218, 0.304]	[0.448, 0.521]	[0.218, 0.304]
$E(Y\|AT)$	0.666	0.687	0.117	0.134
	[0.639, 0.692]	[0.667, 0.709]	[0.098, 0.132]	[0.119, 0.149]
$E(Y\|C)$	0.487	0.511	0.494	0.372
	[0.422, 0.535]	[0.413, 0.590]	[0.452, 0.551]	[0.286, 0.454]
Observations	672,000	593,000	672,000	593,000

Notes: This table is analogous to Table 7, except that the regression discontinuities incorporate the bias correction of Calonico et al. (2014) at the default bandwidth. Confidence intervals are computed via bootstrap. Data Source: U.S. tax and information records.

Table C.6: Risk factors and proxies for abandonment among automatic IRA rollover compliers: CCT Method

	Update address over next five years		Fail to claim through age 72.5	
	(1)	(2)	(3)	(4)
	$1,000 threshold	$5,000 threshold	$1,000 threshold	$5,000 threshold
Share compliers	0.473	0.243	0.153	0.113
	[0.381, 0.550]	[0.139, 0.343]	[-0.087, 0.326]	[-0.034, 0.247]
$E(Y\|AT)$	0.863	0.909	0.012	0.007
	[0.814, 0.915]	[0.883, 0.937]	[-0.003, 0.029]	[-0.003, 0.016]
$E(Y\|C)$	0.580	0.749	-0.047	0.067
	[0.436, 0.694]	[0.530, 0.888]	[-0.986, 0.541]	[-0.311, 0.551]
Observations	126,000	102,000	77,000	84,000

Notes: This table is analogous to Table 8, except that the regression discontinuities incorporate the bias correction of Calonico et al. (2014) at the default bandwidth. Confidence intervals are computed via bootstrap. Data Source: U.S. tax and information records.