Self-Control and Early Withdrawal from Retirement Accounts*

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Abstract

Using a survey-elicited measure of psychological self-control and a policy change in Australia during COVID-19, we find that self-control issues significantly predict early withdrawals from retirement accounts. Individuals in the top quintile of self-control issues are 60% more likely to withdraw than those in the bottom quintile. Self-control is a strong predictor of early withdrawal, comparable to the effect of financial illiteracy, and more important than other behavioral factors like planning horizons or personality traits. The effects are economically meaningful: eliminating self-control issues would reduce predicted early withdrawals by 23%, almost as large as the effect of adverse income shocks.

*The views expressed in this paper are solely those of the authors and do not represent the views of the Federal Reserve Board or the Federal Reserve System. An earlier version of this paper was a chapter in Patrick Schneider's PhD thesis. An even earlier version of this paper was circulated with the title 'Situational and Behavioral Determinants of Early Withdrawal from Retirement Accounts'. This paper uses data from the Household, Income and Labour Dynamics in Australia (HILDA) Survey. The HILDA Project was initiated and is funded by the Australian Government Department of Social Services (DSS) and is managed by the Melbourne Institute of Applied Economic and Social Research (Melbourne Institute). The findings and views reported in this paper, however, are those of the authors and should not be attributed to either DSS or the Melbourne Institute.

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1 Introduction

Do people with self-control issues disproportionately withdraw from retirement accounts when given the opportunity to do so? This question speaks directly to one of the fundamental rationales for pension systems with restricted early access: the presumption that some individuals are myopic and lack the self-control to adequately save for retirement on their own (Diamond, 1977; Feldstein, 1985; Laibson et al., 1998). Despite this theoretical foundation, there is little empirical evidence on whether behavioral factors actually drive retirement account 'leakage' when restrictions are relaxed.

We answer this question by exploiting a unique combination of survey data on psychological traits and a major policy experiment in Australia that suddenly made retirement accounts liquid during the COVID-19 pandemic. We find that self-control issues significantly predict early withdrawals, even after controlling for adverse financial shocks and various demographic characteristics. Quantitatively, self-control issues are at least as important as income shocks in explaining aggregate withdrawal patterns, supporting an important rationale for restricted-access retirement systems.

Individual retirement accounts with substantial tax incentives are now central to retirement savings systems in many countries. These accounts are designed to be partially or fully illiquid for working-age individuals, though there is substantial heterogeneity across countries (Beshears et al., 2015). Such accounts often play a crucial role in ensuring retirement adequacy, as many individuals reach retirement age with virtually no financial assets outside of formal retirement arrangements (Poterba, 2014). The fiscal stakes are considerable: in Australia, for instance, tax concessions on retirement accounts cost the Federal government over 2% of GDP annually, rivaling expenditure on the means-tested public pension. Yet the optimal degree of illiquidity remains a subject of debate.

Despite the high fiscal stakes and presumed importance of illiquidity, an increasing number of countries have recently experimented with relaxing these restrictions during periods of economic distress.[1] These policy experiments are an example of stimulus-by-regulation that we term 'household liquidity policy' in Schneider and Moran (2026), and they have attracted substantial controversy. Proponents argue that such policies can help households weather adverse shocks, while also stimulating the economy without burdening government budgets. But critics argue that they risk undermining retirement policy by enabling precisely the behavior that the accounts were designed to prevent: impulsive spending by people with self-control issues.

In this paper we explore the extent to which early withdrawals are related to self-control issues, relative to the well-documented influence of situational factors. Our em-

[1] While there were a few early examples (see e.g. Kreiner et al., 2019), over 30 countries altered retirement rules to provide greater flexibility during the pandemic (OECD, 2021).

pirical analysis centers on Australia's early release program, which allowed most working-age people to withdraw up to A$20,000 from their retirement accounts. To evaluate the predictors of early withdrawal, we exploit data from the Household Income and Labour Dynamics in Australia (HILDA) survey, which uniquely combines a pre-pandemic measure of self-control with withdrawal decisions, and comprehensive measures of situational factors including income shocks, wealth, and demographics. Our measure of self-control comes from the 13-question Brief Self-Control Scale (BSCS) included in the 2019 survey, predating the pandemic.[2] This timing provides a clean measure of self-control that is not contaminated by the withdrawal decision itself, nor pandemic-related stressors.

Among working age Australians, we find that one in seven (roughly 14%) took advantage of the opportunity to withdraw from their retirement account during COVID-19. We find that those who withdrew were on average younger and had lower income, fewer liquid resources, and more children, consistent with past studies (Bateman et al., 2023; Hamilton et al., 2024). Building on the existing literature, we provide the first direct evaluation of the role of self-control issues. In the raw data, we see that individuals in the top quintile of self-control issues are about 60 percent more likely to withdraw from their retirement account than those in the bottom quintile.

Recognizing that self-control issues are likely related to other factors that could drive demand for liquidity, we investigate the marginal importance of self-control by estimating a series of regressions that include a growing set of situational and behavioral characteristics. We find that self-control issues are significantly and meaningfully correlated with early withdrawal when controlling for demographics, income, wealth, adverse shocks, and other behavioral traits. A one standard-deviation increase in self-control issues is associated with a 1.4 percentage point higher probability of early withdrawal.

Further, we find that self-control issues are economically meaningful, even when compared to other well-known psychological measures. The unconditional relationships between withdrawals and short planning horizons or financial illiteracy are as stark as for self-control. But planning horizons cease to be a significant predictor after we control for wealth, indicating that their effect is through the impact on wealth accumulation.

We next evaluate the importance of self-control issues compared to well-known situational factors, such as adverse shocks, that have previously been shown to be important determinants of withdrawal (Amromin and Smith, 2003; Andersen et al., 2024; Coyne et al., 2026). We find that unemployed individuals are 5.8 percentage points more likely to withdraw, on average, while those experiencing a pandemic-related negative income shock

[2]Developed by Tangney et al. (2004), this measure has become well established in the psychological literature, but only recently used in economic studies. Cobb-Clark et al. (2022) find that self-control is correlated with educational attainment, homeownership, and better health. To the best of our knowledge, we are the first to evaluate the relationship between self-control and early withdrawal, giving us new insight into the importance of situational versus behavioral determinants of early withdrawal.

are 19.0 percentage points more likely to do so. These marginal effects are substantially larger than those associated with self-control issues.

How do these individual-level factors contribute to the aggregate share of early withdrawals? We find that self-control issues account for a similar share of aggregate withdrawals as adverse income shocks. More specifically, we perform a back-of-the-envelope calculation to quantify the total share of withdrawals that can be directly attributed to our main variables of interest, holding all other covariates fixed. While adverse income shocks are a stronger predictor of withdrawal at the individual level, they are also much less common than self-control issues at the societal level. As a result, eliminating either adverse income shocks or self-control issues would reduce the aggregate incidence of early withdrawal by about a quarter in both cases.

While our analysis relies on correlational evidence rather than causal identification, it provides the first direct empirical evidence linking psychological self-control measures to early withdrawal from retirement accounts. Our findings suggest that behavioral factors, particularly self-control issues, are at least as important as adverse financial shocks in explaining aggregate early withdrawal patterns. These results support a key theoretical rationale for restricted-access retirement systems and contribute to ongoing research about the optimal design of retirement accounts (Andersen et al., 2024; Beshears et al., 2025; Choukhmane and Palmer, 2024), especially regarding flexibility during economic crises (Hamilton et al., 2024; Schneider and Moran, 2026). We hope that future research can build on these insights to further explore causal mechanisms and potential policy interventions that balance short-term liquidity needs with long-term retirement security.

Related literature. This paper contributes to a growing literature on demand for liquidity in retirement systems by bridging two distinct explanatory perspectives: the *situational view* and the *behavioral view*. The *situational view* attributes withdrawals to adverse life events and rational responses to economic shocks. Consistent with this view, a growing empirical literature documents that withdrawals are more likely following job loss, divorce, or income shocks (Amromin and Smith, 2003; Andersen et al., 2024; Goda et al., 2022; Goodman et al., 2021; Wang-Ly and Newell, 2022). This perspective aligns with canonical models of buffer-stock saving, where liquidity demand arises endogenously from income risk and consumption smoothing motives (Kaplan and Violante, 2014, 2022).

In contrast, the *behavioral view* suggests that some withdrawals may reflect low self-control, financial illiteracy, or other deviations from full rationality. This strand builds on foundational models of present-bias in consumption-saving behavior (Gul and Pesendorfer, 2004; Laibson, 1997; Phelps and Pollak, 1968; Strotz, 1955), which have recently been extended to explain hand-to-mouth behavior and large marginal propensities to consume out of transitory shocks (Attanasio et al., 2024; Maxted et al., 2024). A growing em-

pirical literature supports this view by linking behavioral biases to suboptimal financial outcomes. Lower wealth, for instance, is associated with various measures of behavioral bias.[3] And a small but growing body of work also documents consumption decisions that cannot be explained within rational benchmark models, but can be rationalized theoretically with models of biased decision making.[4]

Despite these advances, there is little evidence on whether behavioral biases predict demand for liquidity, nor the relative importance of behavioral vs situational factors in driving such behavior. In this paper, we bring together these two literatures, first by providing novel evidence on the role of behavioral bias in explaining demand for liquidity, and second by evaluating the relative importance of these two contrasting views.

Our work builds directly on four recent studies. First, Hamilton et al. (2024) analyze Australia's Early Release of Super program using high-frequency spending data and show that withdrawals generated unusually high consumption responses, which they interpret as evidence of behavioral bias. We complement their work by providing direct evidence of a relationship between bias (self-control issues) and withdrawal behavior. Second, Parker (2017) examines heterogeneity in MPCs out of stimulus payments and argues that situational factors matter more than a simple self-control measure. Our results, based on a broader self-control measure, suggest that both behavioral and situational factors contribute to liquidity demand. Third, Goda et al. (2019) show that present bias is associated with lower retirement wealth. Our results suggest that such biases also drive short-run withdrawal behavior, which may contribute to reduced wealth accumulation over time. Finally, Briere et al. (2026) study contribution decisions in French retirement plans and find that workers simultaneously demand both liquidity and commitment. When given the option to opt out of automatic contributions, many workers do so; but many also make voluntary contributions to long-term accounts that cannot be accessed until retirement. We provide complementary evidence from the withdrawal side, showing that demand for liquidity is driven by both situational and behavioral factors.

Section 2 describes the institutional setting of Australia's Superannuation system and Early Release program. Section 3 discusses data and our measure of self-control. Section 4 demonstrates that self-control is an important predictor of early withdrawal, similar in aggregate importance to situational factors like income loss. Section 5 concludes.

[3]For example, a reduced propensity to plan (Ameriks et al., 2003), lower numeracy and cognitive ability (Banks et al., 2010), greater present-bias (Goda et al., 2019), greater time-discounting (Epper et al., 2020; Goda et al., 2019; Stango and Zinman, 2023), and various others (Stango and Zinman, 2023).

[4]For example, Hamilton et al. (2024) interpret patterns of spending after early withdrawal as evidence of present-bias. For evidence in other contexts, see Ganong and Noel (2019); Gelman (2022); Gerard and Naritomi (2021); Kovacs and Moran (2022); Kovacs et al. (2021); Laibson et al. (2024).

2 Setting

During the COVID-19 pandemic, many countries allowed individuals to access their retirement savings to provide financial relief during the economic crisis. In the United States, for example, the CARES Act permitted individuals to withdraw up to $100,000 from their retirement accounts without the usual penalties. Overall, at least 30 countries implemented policies that allowed for early withdrawal or delayed contributions to retirement accounts during the pandemic (Madeira, 2024; OECD, 2021).

In this paper, we focus on the Australian case, where people were allowed to withdraw up to A$20,000 from their accounts, because of the opportunity presented by high quality data measuring both self-control issues *and* early withdrawals. No such data exists, to the best of our knowledge, for any of the other countries that have used these policies. Furthermore, Australia's early withdrawal policy was one of the larger programs of this kind, and has already attracted considerable attention in the recent literature. As well as exploring how important self-control issues are for driving retirement saving behavior, we can also compare their importance for engagement in this particular policy, relative to other better studied factors like job-loss.

Australia's Superannuation system Australia's system of mandatory retirement savings, known as superannuation, requires employer contributions of 12% into defined-contribution accounts. Superannuation accounts receive substantial tax concessions and are almost entirely illiquid: withdrawals are not allowed until 'preservation age' (60 for most current workers), with only a few exceptions (e.g. terminal illness). Australia's approach is similar to other countries with mandatory defined-contribution systems (Beshears et al., 2015; OECD, 2023).

Australia's Early Release of Super program In 2020, Australia introduced a policy allowing individuals to access up to A$10,000 from their individual retirement accounts by July 1, 2020, and an additional A$10,000 by December 31, 2020. The policy was widely publicized and saw significant uptake, with millions of Australians withdrawing a total of A$36.4 bn (Australian Prudential Regulation Authority, 2021). Most who withdrew took the maximum of A$20,000 (Hamilton et al., 2024; Wang-Ly and Newell, 2022).

While superannuation accounts are generally quite illiquid, the early release program made these funds easily accessible. Applications for early withdrawal from superannuation accounts were made via an online form without requiring supporting documentation (Bateman et al., 2023), and 95% were processed within five days (Australian Prudential Regulation Authority, 2021). While eligibility was supposed to be limited to individuals who had been financially affected by the pandemic, the conditions were relatively

broad and covered more than 70% of the working age population (Hamilton et al., 2024).[5] Further, eligibility was self-reported, with no independent verification.

Despite its popularity, the policy was controversial. Supporters saw it as a necessary measure for immediate financial relief that avoided short-term budget impacts. By contrast, critics argued that it could undermine retirement security and impose long-term fiscal costs through greater future pension dependency and lower future tax revenue on superannuation earnings (Coates and Nolan, 2020; Hamilton et al., 2024; Super Members Council, 2024).

To this list we add a further fiscal cost: the dissipation of past tax concessions that the system had already paid out in exchange for commitment. Superannuation contributions and returns are taxed at concessional rates, a substantial fiscal cost to the government that compensates savers for the extreme illiquidity of superannuation accounts. The Early Release program allowed the withdrawal of these tax-advantaged funds without requiring that the concessions be repaid. In a back-of-the-envelope calculation, we estimate that 15.9% of withdrawn funds represented past tax deductions, implying that the early release program dissipated approximately A$5.8 bn in accumulated contribution-stage tax deductions (Supplemental Appendix A.1).

Beyond these fiscal considerations, the early release program raises a more fundamental question about retirement saving. Mandatory superannuation is, by design, a commitment device: its illiquidity is what makes it effective for workers who would otherwise under-save (Beshears et al., 2025; Laibson et al., 1998). The Early Release program temporarily disabled this device, and so we would expect stronger reactions from those on whom it was the most binding. The relative importance of situational or behavioral factors in driving the decision to withdraw is the empirical question we take up below.

3 Data

We use data from the Household, Income and Labour Dynamics in Australia (HILDA) Survey. HILDA is a nationally representative longitudinal study that collects information on employment, income, and wealth from Australian households. Crucially for our analysis, HILDA combines financial data with psychological measures, including self-control assessments, used by a variety of past studies (see e.g. Todd and Zhang, 2020).

Sample selection. We restrict the sample to individuals aged 21 to 58 in 2020, since 58 is the 'preservation age' at which superannuation accounts became partially liquid regardless of retirement. We further limit the sample to those interviewed in the four

[5] Residents needed to meet one of three criteria: (1) unemployment, (2) eligibility for a range of other government benefits, or (3) had been made redundant, working hours reduced by more than 20% or, if a sole trader, business suspended or revenue reduced by more than 20%.

survey waves from 2018 to 2021, allowing us to measure pre-pandemic wealth (in 2018), personality traits (in 2019), and early withdrawals (in 2020 and 2021). We retain individuals who completed the 2019 self-completion questionnaire, which measures personality traits, and answered at least 10 BSCS items. These restrictions yield a sample of 7,214 individuals.

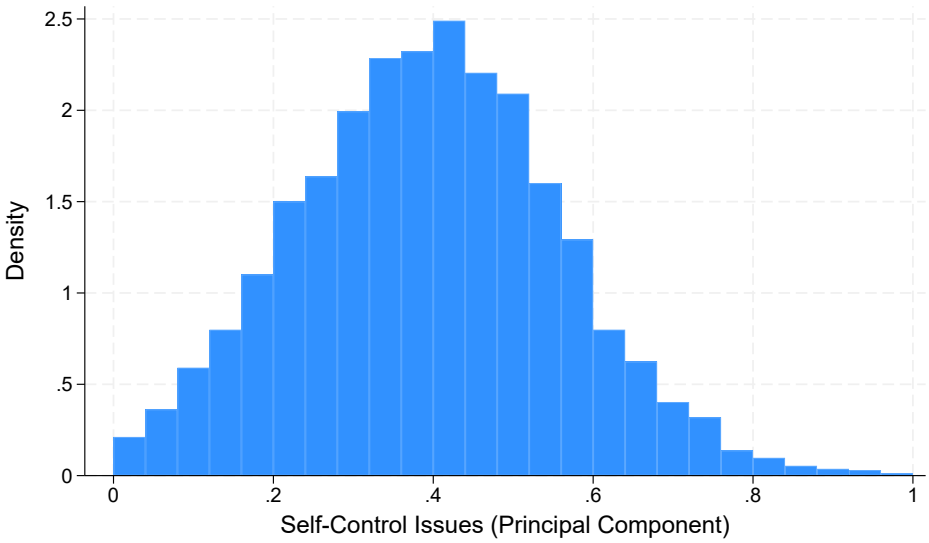
Throughout our analysis, we focus on individual level data, as superannuation accounts are individually controlled, and the decision to withdraw was an individual decision. All variables of interest are measured at the individual level with the exception of wealth, which is measured at the household level.

Early Withdrawal. HILDA respondents were asked "Did you withdraw superannuation under the COVID-19 scheme for early release of super" and, if yes, what amount was withdrawn. In our data, 13.8 percent of working-age individuals withdrew early, matching estimates from other papers (Bateman et al., 2023; Hamilton et al., 2024) and official statistics. Previous research has shown that the vast majority of individuals who withdrew decided to withdraw the maximum amount permitted each round (Bateman et al., 2023; Hamilton et al., 2024; Wang-Ly and Newell, 2022). As a result, we focus on the discrete choice to withdraw in this paper.

Self-control. In 2019, survey participants were asked to complete the Brief Self-Control Scale (BSCS), which is widely used in the psychological literature, and consists of 13 targeted questions on impulse control and goal adherence. Established by Tangney et al. (2004), the scale is designed to measure self-control, defined as "the capacity to regulate attention, emotion, and behavior in the presence of temptation", by asking respondents to score on a scale of 1 to 5 how much a series of 13 statements applies to them. The statements include "I am good at resisting temptation," "I often act without thinking," and "I am able to work effectively toward long-term goals." Previous work has found that this scale shows good internal consistency and retest reliability (Cobb-Clark et al., 2023; Tangney et al., 2004), and that higher self-control is correlated with educational attainment, homeownership, and better health (Cobb-Clark et al., 2022).

We use Principal Components Analysis (PCA) to reduce variation in the 13 BSCS items to one dimension, a standard approach in the literature (Manapat et al., 2021). The first component explains roughly one-third of the variation across the 13 item scale, and the sign of each loading is as expected (see the Supplemental Appendix). We rescale the first component so that it ranges between zero and one, where zero represents no self-control issues on all 13 items, while one corresponds to full self-control issues. Figure 1 shows the distribution of self-control issues; they are widespread but vary across individuals, with an average of 0.39, standard deviation of 0.16, and a long right tail.

Figure 1: Distribution of Self-Control Issues



Other Psychological Traits. While we focus on self-control, there are other behavioral biases that may justify illiquidity in retirement systems. To explore their importance, we augment our set of control variables with other psychological measures including financial literacy, the 'Big Five' personality traits, and planning horizon.

Financial Literacy is measured using the well-established 'Big Three' measure of Lusardi and Mitchell (2014), which is a binary measure equal to one if the respondent correctly answered all three questions on interest rates, inflation, and diversification. Poor financial literacy has been shown to predict early access to superannuation in Australia (Bateman et al., 2023). In other settings, withdrawals are also associated with lower financial literacy, particularly so for people who are *overconfident* in their acumen (Lee and Hanna, 2020).

The Big Five personality traits – Openness, Conscientiousness, Extroversion, Agreeableness, and Neuroticism – are measured through a series of standardized questions. Past research has used HILDA data to document the importance of the Big Five traits for schooling and labor market outcomes (Flinn et al., 2018; Todd and Zhang, 2020).

Planning horizon is measured based on individuals' response to the question "In planning your savings and spending which of the following time periods is most important to you?" While planning horizon is not a perfect measure of time preference, it is correlated (Adams and Nettle, 2009), and often used as a proxy when a direct measure is not available (Samwick, 1998).

Wealth. The HILDA survey collects household wealth through approximately 20 to 30 questions, covering a wide range of asset and liability categories. This includes information on real estate, financial assets, vehicles, business investments, and liabilities such as

mortgages and personal loans. The wealth module is administered every four years. We use the most recent wave of wealth data prior to COVID-19, collected in 2018.

We divide wealth between three categories. Liquid wealth: the sum of cash holdings, equity investments, bank accounts, net of credit cards and overdue bills. Illiquid wealth: the sum of housing, other property, businesses, vehicles, collectibles, net of mortgages and other debt. And superannuation wealth: the sum of all superannuation accounts. Wealth is measured at the household level, so we cluster standard errors by household.

Adverse shocks. We collect two important measures of adverse labor market shocks: unemployment and pandemic-induced negative income shocks. We record an individual as experiencing unemployment if they report unemployment in either 2020 or 2021. Roughly 14 percent of our sample experienced unemployment during this period, much higher than usual. Second, we measure pandemic-related income shocks based on individuals' response to the question "Did the income you normally receive from paid employment increase or decrease because of the coronavirus? Or did it not change much?" which was asked to all individuals employed as of March 2020. In our sample, 17.6 percent of individuals reported a decrease in income due to the pandemic.

Demographics. We also collect a rich set of demographics for each individual. These include age, gender, education, marital status, number of children, and income (defined as financial year wages and salaries). All demographic variables are measured in 2020, the time when individuals were allowed early access to retirement wealth.

4 Analysis

We analyze the relationship between self-control and early withdrawal. We begin by documenting how withdrawal probabilities vary across various situational and behavioral characteristics. We then assess how the marginal effect of self-control changes when conditioning on these other factors in Section 4.3. Finally, we evaluate the aggregate importance of self-control versus other important situational factors in Section 4.4.

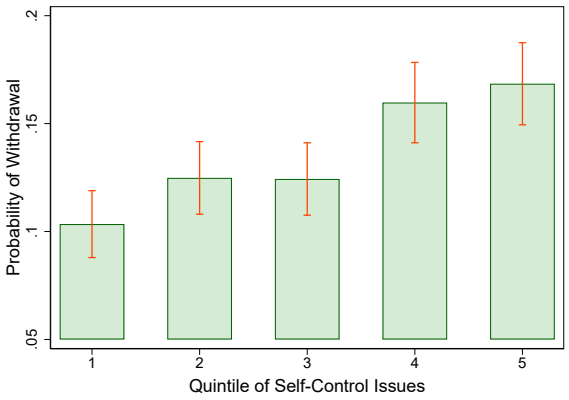
4.1 Descriptive Statistics

Roughly one in seven (13.8%) working age individuals withdrew from their retirement account during the pandemic, consistent with other studies using alternative data (e.g. Bateman et al., 2023; Hamilton et al., 2024). This aggregate masks substantial heterogeneity in behavior across various behavioral and situational dimensions, as shown in Figure 2. Withdrawal is notably more common among individuals with greater self-control issues, consistent with self-control playing a key role in shaping behavior. But it is not the only driver: withdrawal is also more likely among those with shorter planning

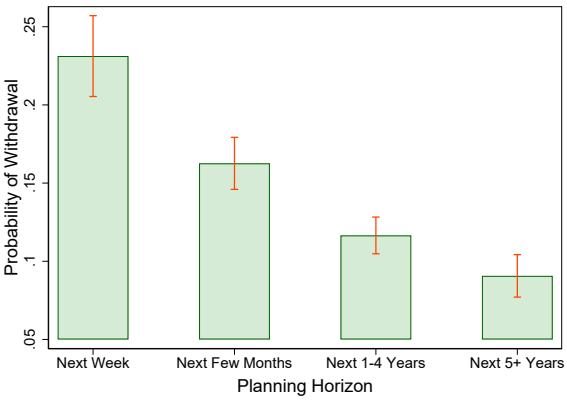
horizons, lower income, and fewer assets (particularly liquid assets).

Figure 2: Probability of Withdrawal based on Situational and Behavioral Factors

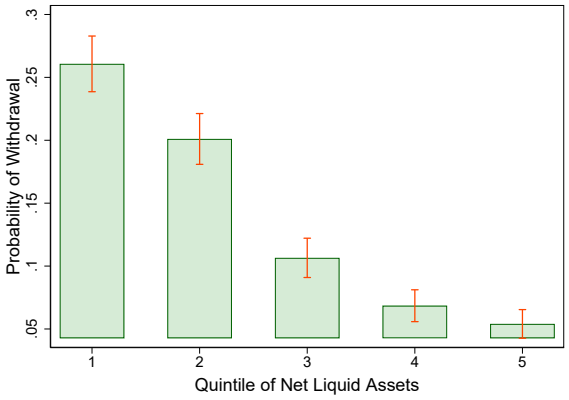
(a) Self-control



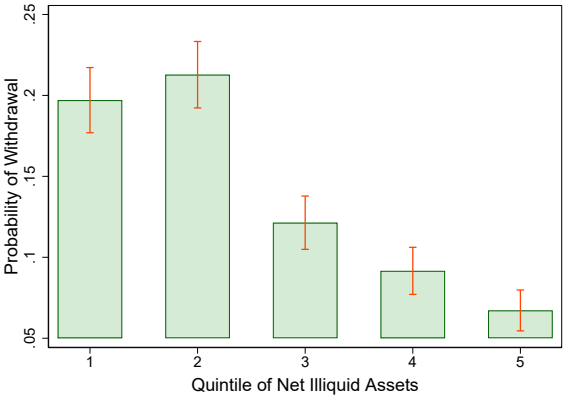
(b) Planning Horizon



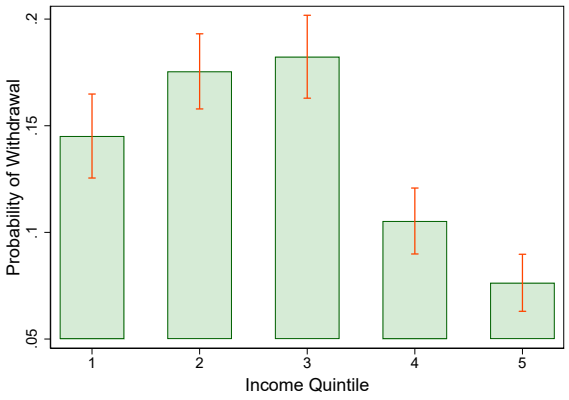
(c) Liquid Assets



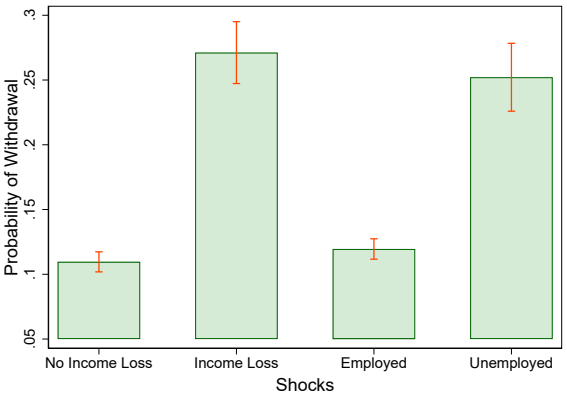
(d) Illiquid Assets



(e) Income



(f) Income Shocks



Note: Each figure shows the withdrawal probability based on a different observable characteristic. Income quintiles are computed within age group, since otherwise the income results are mostly driven by age effects.

Figure 2a shows that the withdrawal probability increases markedly with self-control issues, rising from roughly 10% in the bottom quintile of self-control issues to around 17% in the top quintile, a statistically significant gap. This is not the only behavioral trait correlated with withdrawal. Figure 2b shows that shorter planning horizons are also

correlated with withdrawal, and others are reported in the Supplemental Appendix. As a result, we will include all of these behavioral traits in our empirical specification.

Situational factors are also strongly correlated with withdrawal. Figures 2c and 2d show that withdrawal declines with both liquid and illiquid wealth, with a stronger gradient for liquid assets, consistent with evidence on the primacy of liquid wealth in household spending (Kaplan and Violante, 2014). Figure 2e shows that withdrawal is most common in the bottom three income quintiles, adjusted for age, and declines for higher income individuals. Figure 2f shows that withdrawal is sharply higher among those reporting adverse shocks, such as unemployment or pandemic related income loss. Though these shocks are relatively rare, they are strongly predictive of withdrawal. Our findings line up with Goda et al. (2022), Choukhmane et al. (2023), and Andersen et al. (2024), who show in other contexts that withdrawal is more common following income declines.

That situational factors predict withdrawal is neither surprising nor concerning. Wang-Ly and Newell (2022) document this pattern in Australia and argue it shows self-selection worked as intended. Yet retirement policy must balance flexibility against commitment. Our findings suggest the program may have attracted not only those with genuine needs, but also those with low self-control.

4.2 Empirical Specification

While the above section shows the unconditional probability of withdrawal for each of our main variables, there are likely to be meaningful correlations between these variables. For instance, self-control may be correlated with financial literacy or wealth. Rather than assume ex-ante which of the potential determinants matter most, we include all candidate variables in a series of regressions to assess which have significant explanatory power. More specifically, we estimate the following logistic regression:

$$\ln\left(\frac{p_i^{ew}}{1-p_i^{ew}}\right) = \beta_0 + \beta_1 \cdot \text{self-control}_i + \beta_2 \cdot \mathrm{X}_i + \epsilon_i \tag{1}$$

where p_i^{ew} is the probability of withdrawal for individual i, self-control is the first principal component of the BSCS, and X_i is a vector containing a range of behavioral and situational controls. These include measures of (i) demographics such as education, family size, age, sex, relationship status, log income, and a dummy for missing income, (ii) shocks like unemployment and loss of income during COVID-19, (iii) the psychological measures of financial literacy, planning horizon, and the big five personality traits, and (iv) wealth in liquid, illiquid, and Superannuation asset quartiles, as well as mortgage debt and mortgage payments. All regression estimates use longitudinal weights, balanced between waves 18 to 21, and standard errors are clustered at the household level.

4.3 Individual-Level Results

Table 1 reports the average marginal effects (AME) in a series of specifications, which build toward the full set of controls outlined in Equation (1). We find that while the relationship between self-control becomes weaker with the inclusion of other factors, it remains both statistically and economically significant. We also show that situational factors are significantly correlated with withdrawal, and that self-control is among the most important of the behavioral factors we consider.

Self-control and other psychological traits. Our main object of interest is the marginal effect of self-control issues, shown in the top row of Table 1. We find that self-control issues have an economically meaningful and statistically significant relationship with early withdrawal. In specification (1), which controls only for demographics, we find an AME of 16 pp, which implies that a one standard deviation increase in self-control issues is associated with a 2.6 pp increase in withdrawal probability, all else equal.[6]

As we move through the specifications, adding controls for adverse shocks (2), behavioral factors (3), and wealth (4), we find that the AME of self-control diminishes but remains economically meaningful. In specification (4), which includes all our controls, the AME is 8.6 pp. Here a one standard deviation increase in self–control issues translates to a 1.4 percentage point increase in withdrawal probability, all else equal. This may be viewed as a lower bound if self-control issues also lead to lower wealth accumulation.[7]

Low self-control is not the only behavioral bias used to justify retirement illiquidity. We find that other psychological factors also play a role in predicting withdrawal, although self-control remains one of the most important. Column 3 shows the marginal effects once we control for the full battery of psychological factors including financial literacy, planning horizon, and the big five personality traits. We find that financial literacy is correlated with a 4.2 percentage point reduction in the probability of withdrawal, although this relationship is nearly halved once we control for wealth in Column 4.[8] Further, individuals with longer planning horizons have a lower withdrawal probability. This effect disappears after controlling for wealth, however, suggesting that the effect of shorter planning horizons on withdrawal is mediated mainly through wealth. Overall, of all the psychological measures we consider, self-control and financial literacy are the most important determinants.[9] This suggests that these issues may be the most important factors that retirement illiquidity guards against.

[6] Recall that our measure of self-control issues ranges between zero and one, so the AME tells us the implied impact, all else equal, of moving from no self-control issues to the maximum.

[7] If wealth is a mediator for self-control issues, then it is a bad control, absorbing variation that should rightly be attributed to self-control.

[8] Similarly, when predicting individual retirement wealth in the US, Goda et al. (2019) find that present bias and financial literacy are both important, with present-bias being the stronger predictor.

[9] Results for the Big Five personality traits are reported in the Supplemental Appendix.

Table 1: Marginal Effects

	(1)	(2)	(3)	(4)
Self-Control Issues	0.16***	0.13***	0.11***	0.086**
	(0.036)	(0.034)	(0.036)	(0.034)
Log Income	−0.035***	−0.022***	−0.016***	−0.0097
	(0.007)	(0.006)	(0.006)	(0.006)
Children: 1	0.070***	0.078***	0.069***	0.060**
	(0.024)	(0.025)	(0.024)	(0.023)
Children: 2	0.067***	0.067***	0.064***	0.055***
	(0.020)	(0.020)	(0.020)	(0.019)
Children: 3+	0.11***	0.11***	0.10***	0.085***
	(0.022)	(0.021)	(0.020)	(0.019)
Income Loss from Covid		0.19***	0.18***	0.19***
		(0.023)	(0.021)	(0.021)
Unemployed		0.068***	0.066***	0.058***
		(0.016)	(0.015)	(0.016)
Financial Literacy			−0.042***	−0.028**
			(0.013)	(0.012)
Planning Horizon: Few Months			−0.031*	−0.012
			(0.018)	(0.017)
Planning Horizon: 1-4 Years			−0.058***	−0.023
			(0.018)	(0.016)
Planning Horizon: 5+ Years			−0.065***	−0.023
			(0.020)	(0.019)
Liquid Assets: 2nd Quartile				−0.079***
				(0.017)
Liquid Assets: 3rd Quartile				−0.12***
				(0.017)
Liquid Assets: Top Quartile				−0.11***
				(0.022)
Illiquid Assets: 2nd Quartile				0.017
				(0.018)
Illiquid Assets: 3rd Quartile				−0.032*
				(0.020)
Illiquid Assets: Top Quartile				−0.049**
				(0.020)
Observations	7214	7214	7214	7214
Demographics	*Yes*	*Yes*	*Yes*	*Yes*
Adverse Shocks		*Yes*	*Yes*	*Yes*
Psych Controls			*Yes*	*Yes*
Wealth Controls				*Yes*

Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Adverse shocks. Consistent with past studies, we find that adverse shocks play an important role in predicting withdrawal. Unemployment and pandemic-related negative income shocks increase the withdrawal probability by 5.8 and 19.0 pp respectively.

Our results indicate that negative income shocks are a stronger predictor of withdrawal than self-control at the individual level. That said, the incidence of self-control issues is higher than either of these adverse shocks, a topic that we return to when evaluating the aggregate implications in Section 4.4.

Wealth. Finally, we also find that wealth is an important predictor of withdrawal. Individuals with low liquid assets are much more likely to withdraw, and liquid wealth plays a more important role than illiquid wealth, similar to Kaplan and Violante (2014). Of course, wealth is likely endogenous to personality traits like self-control. Even when controlling for wealth, however, we still see a significant and meaningful relationship between self-control and withdrawal. This finding lends support to theories of present-bias contributing to high MPCs, above and beyond the effects of situationally low liquidity (Attanasio et al., 2024). In contrast, planning horizons cease to be important after controlling for wealth.

Related literature. Our results speak to the literature on situational drivers of early withdrawal. Amromin and Smith (2003) and Coyne et al. (2026) show that withdrawals from US retirement accounts are strongly predicted by adverse liquidity events such as income shocks, with larger effects among households with low liquid wealth or limited access to credit. We control for the main observable drivers of liquidity demand, including income, unemployment, pandemic-related income loss, and wealth, many of which Bateman et al. (2023) show matter in the Australian setting. The association between self-control issues and withdrawal is robust to the inclusion of these situational factors.

Our findings support Hamilton et al. (2024), who find Australians withdrawing during COVID-19 spent around 40% within two months, despite a modal withdrawal of A$20,000. The authors argue that this high MPC out of a large withdrawal is inconsistent with traditional models and suggests present-bias. We complement this by directly measuring self-control at the individual level, rather than inferring it based on spending behavior. Our results confirm that self-control matters for early withdrawal, and heterogeneity in self-control is an important determinant of behavior, supporting recent models that explicitly incorporate such heterogeneity (e.g. Andersen et al., 2024; Choukhmane and Palmer, 2024).

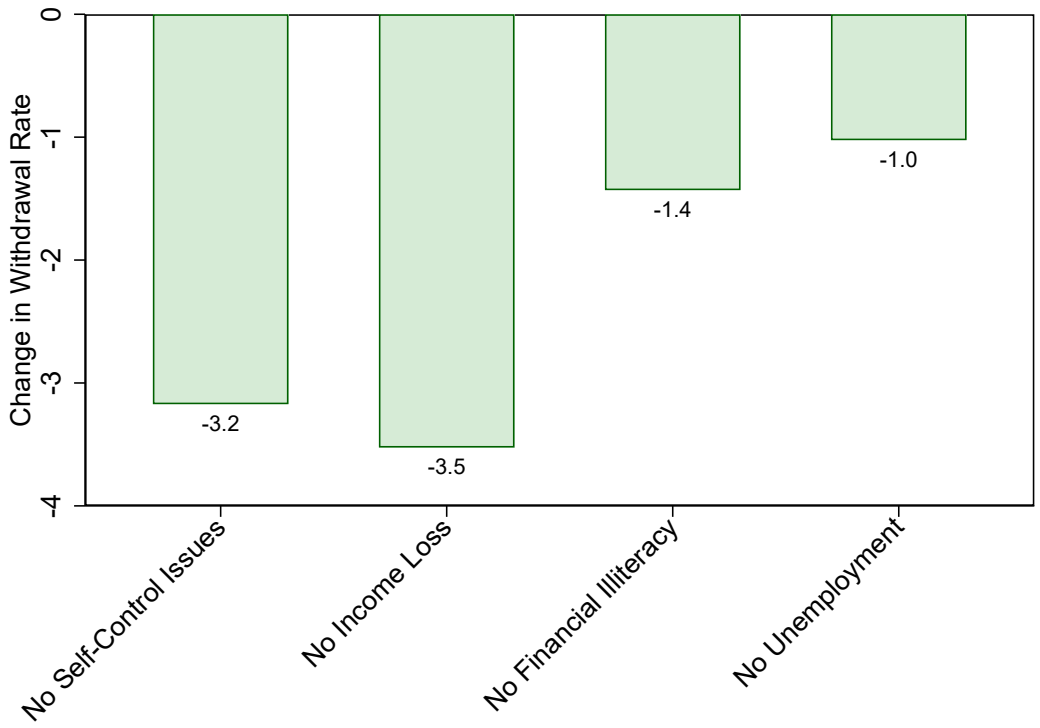
We also complement Goda et al. (2019), who use a survey measure of present-bias to predict retirement wealth. They find a one standard deviation increase in present-bias is associated with approximately $19,000 (10%) less retirement wealth at age 65. Two channels could cause this: fewer contributions or more withdrawals. While their setting differs (contributions are optional in the US and withdrawals generally permitted), our results support the view that present-bias contributes to greater leakage from retirement accounts, absent regulations preventing early withdrawal.

4.4 Aggregate Implications

What do the individual level results in Table 1 imply in aggregate? To what extent is the aggregate propensity to withdraw from retirement accounts driven by psychological vs situational factors? To estimate the relative importance of these different factors, we need to think about how the composition of each varies across the population.

Figure 3 shows the change in the aggregate withdrawal rate under various counterfactuals where we eliminate self-control issues, pandemic related negative income shocks, financial illiteracy, and unemployment. The counterfactuals are computed by setting each of these explanatory variables to zero in Equation (1), turning off their direct effect on withdrawal.[10] We then find and aggregate the fitted values to estimate the share that withdraw under each alternative assumption. This approach gives a lower bound of the effect of each factor because the traits are likely to have direct effects, as well as indirect ones mediated through income, wealth, or other controls; because we are only turning off the former, the aggregate importance we estimate does not include indirect effects.

Figure 3: Implications for Aggregate Early Withdrawals



Overall, we find that self-control issues account for a similar share of withdrawals as negative income shocks. While negative income shocks have a larger AME, they are relatively concentrated; by contrast, self-control issues have a smaller AME but are much more widespread, and the net effect is only slightly smaller. Specifically, 17.6 percent of individuals in our sample lost income due to the pandemic. If we were to eliminate

[10] We use the full specification (Table 1, Column 4) for this exercise.

such shocks, the predicted withdrawal rate would decline by 3.5 percentage points. In contrast, self-control issues are dispersed and widespread, with a mean value of 0.39. If we were to eliminate self-control issues by setting this value to zero, while holding all other covariates fixed, the predicted withdrawal rate would decline by 3.2 percentage points.

The magnitudes of the above effects are sizable, considering that the aggregate early-withdrawal propensity is 13.8 percent in our data. As a result, eliminating pandemic-related negative income shocks, which lowers the withdrawal rate by 3.5 percentage points, results in a 25 percent reduction in withdrawals. Similarly, eliminating self-control issues translates to a 23 percent reduction in withdrawals.

Self-control and negative income shocks both account for a larger share of withdrawals than either financial illiteracy or unemployment. If we eliminate financial illiteracy, the predicted withdrawal rate lowers by 1.4 percentage points. The relative importance of self-control compared to financial literacy is consistent with Goda et al. (2019), who find that present bias is a more important predictor of retirement wealth than financial literacy. Similarly, if we were to eliminate the direct effects of unemployment, the predicted withdrawal rate falls by 1.0 percentage points.

5 Conclusion

Our results highlight an important trade-off faced by policymakers: whether providing liquidity from consumers' own funds during economic distress will interfere with their ability to lock away wealth for retirement in the face of self-control issues. We distinguish between situational needs and behavioral tendencies influencing demand for liquidity. Using a survey measure of self-control collected just before the pandemic, linked to withdrawal decisions, we provide direct evidence that self-control issues meaningfully contribute to retirement account leakage. While situational factors are generally stronger predictors of withdrawal at the individual level, situational and behavioral factors are similarly important in aggregate, with self-control issues explaining up to a quarter of early withdrawals.

While the particular implementation of this program was quite expensive, future programs could be designed with greater attention to value for money. One option would be to impose an exit tax on early withdrawals to recoup past concessions. This would be analogous to existing tax treatment for certain abnormal withdrawals before preservation age. Another option would be to structure early access as a loan against superannuation balances, with participants required to replenish withdrawn amounts through higher contributions in later years (Wang-Ly and Newell, 2022). Such an approach could provide short-term liquidity while better preserving the fiscal and retirement-income rationale of the retirement system.

Taken together, these results support both the original rationale for illiquidity in retirement systems and the skepticism about using retirement funds for short-term purposes. They also suggest that the fiscal case for stimulus-by-regulation depends heavily on whose behavior the policy unlocks. When commitment devices are temporarily disabled, the workers most affected are inevitably those the system was originally designed to protect.

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