

# Financial Wellbeing and the Early Release of Superannuation

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Bachelor of Economics (Honours)

Supervised by Dr Ellen Stuart

## Statement of Originality

I hereby declare that this submission is my own work and to the best of my knowledge it contains no material previously published or written by another person. Nor does it contain any material which has been accepted for the award of any other degree or diploma at the University of Sydney or at any other educational institution, except where due acknowledgment is made in this thesis.

Any contributions made to the research by others with whom I have had the benefit of working at the University of Sydney is explicitly acknowledged.

I also declare that the intellectual content of this study is the product of my own work and research, except to the extent that assistance from others in the project's conception and design is acknowledged.

Sabina Patawaran

14 November 2025

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## Disclaimer

OpenAI's GPT-5 was used to assist with debugging and troubleshooting errors in L<sup>A</sup>T<sub>E</sub>X typesetting, Stata, and R.

This paper uses unit record data from Household, Income and Labour Dynamics in Australia Survey [HILDA] conducted by the Australian Government Department of Social Services (DSS). The findings and views reported in this paper, however, are those of the author and should not be attributed to the Australian Government, DSS, or any of DSS' contractors or partners. DOI: 10.26193/J4NSZO

# Abstract

The Early Release of Superannuation (ERS) is one of the Australian federal government's policy responses to the COVID-19 pandemic, allowing individuals who were financially impacted by the crisis to withdraw up to A\$20,000 over two periods from their superannuation accounts. This thesis investigates the impact of the ERS and if it disproportionately affected low-income earners' subjective financial wellbeing relative to higher-income earners'. Using data from the Household Income and Labour Dynamics in Australia (HILDA) Survey and a triple difference framework, I find no substantial evidence supporting this. However, I find statistically significant evidence suggesting that, in general, the ERS improved individuals' reported satisfaction with their personal finances.

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# 1 Introduction

In 2020, the Early Release of Superannuation (ERS) was implemented by the Australian government in an attempt to support people's financial wellbeing during the COVID-19 pandemic. This policy granted individuals unprecedented access to the funds accruing in their respective superannuation (i.e. mandatory retirement savings) accounts. Eligible individuals could withdraw up to A\$20,000 until the end of the year, and consequently an equivalent of 2% of Australia's GDP was withdrawn from the superannuation system (Hamilton et al., 2024). While the economic downturn was certainly palpable, Australia performed relatively well compared to other OECD countries in terms of economic recovery and mortality rates in light of its various public health measures and economic responses, including but not limited to the ERS (Hamilton et al., 2024). However, questions still remain regarding how successful this particularly policy was in achieving its primary objective, and the nature of its success.

In this thesis, I examine the ERS' impact on subjective financial wellbeing for signs of heterogeneity across income groups. Using panel data from the Household Income and Labour Dynamics in Australia (HILDA) Survey, nearest neighbour matching, and a difference-in-difference-in-difference (or "triple difference") framework, I find no compelling evidence that the policy disproportionately improved low-income earners' satisfaction with their personal finances compared to higher-income earners'. After graphically inspecting the raw data and constructing an event study model, any estimates of the triple difference were likely to be biased anyway due to insufficient evidence supporting the parallel trends assumption for the triple difference estimator. However, the event study coefficients for ERS withdrawal *in general* show signs of parallel pre-trends. My baseline regression results suggest that individuals who withdrew from their superannuation (or "super") accounts via the ERS saw a statistically significant improvement in their financial

satisfaction by 2.34%. I contribute to the growing literature on the ERS by focusing on impact heterogeneity. During the discussion and analysis of my results, I also highlight potential issues regarding sample selection in existing research.

This thesis is structured as follows. I provide background on Australia's superannuation system and the ERS in Section 2. Then, in Section 3 I provide an overview of the literature related to the ERS, and early pension withdrawals overall. Section 4 addresses the conceptual framework for this study while Section 5 addresses the data that is used. This is followed by Section 6 which discusses this paper's empirical approach. Section 7 presents the regression results and discusses their implications. Lastly, Section 8 provides concluding remarks.

## 2 Policy Landscape

The Superannuation Guarantee was introduced in 1992 as a way to improve retirement incomes in Australia and reduce pressures on the federal budget (Connolly and Kohler, 2004). Australia's superannuation system requires employers to pay their employees an additional percentage<sup>1</sup> of their pre-tax wages into their superannuation accounts (or "super"). In addition, account-holders can also make voluntary contributions. These "super contributions" are then invested, and returns accumulate over time. Unless there are exceptional circumstances, account-holders are only able to access their super once they have retired<sup>2</sup> or turn 65. Individuals could then turn to their super to finance their retirement instead of solely relying on the government's Age Pension or other private savings.

The COVID-19 pandemic led to the implementation of the Early Release of Superannuation (ERS), one of many policies introduced by the federal government

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<sup>1</sup>This percentage was 12% at the time of writing. See <https://www.ato.gov.au/tax-rates-and-codes/key-superannuation-rates-and-thresholds/super-guarantee>

<sup>2</sup>And reached the 'preservation age' for their birth cohort. See: <https://www.ato.gov.au/individuals-and-families/super-for-individuals-and-families/super/withdrawing-and-using-your-super/super-withdrawal-options>

to curb the ensuing economic downturn. The ERS allowed eligible households to withdraw up to A\$10,000 in each of the 2019–20 and 2020–21 financial years (Khattar and La Cava, 2024). The primary motivation behind the ERS was to assist those who experienced significant financial impacts due to the pandemic, and help relieve their financial stress by enabling them more access to their own resources (Hamilton et al., 2024; Khattar and La Cava, 2024). A secondary motivation was to stimulate the economy by promoting aggregate spending (Khattar and La Cava, 2024).

All Australian residents<sup>3</sup> could apply for the ERS. Eligibility for the ERS was based on meeting one or more of the following conditions: being unemployed, being eligible for certain Centrelink benefits such as JobSeeker, and facing employment challenges on or after 1 January 2020. Relevant employment challenges included: being made redundant, experiencing a reduction in working hours by at least 20%, or, if they were a sole trader, their business being suspended or turnover reducing by at least 20% (Treasury, 2020b; Clare, 2022). Participation in this scheme was significant, involving approximately 1 in 6 of Australia’s working age population withdrawing an equivalent of A\$38b or 2% of Australia’s GDP from the superannuation system (Hamilton et al., 2024)). The ERS was to end on 24 September 2020 but was extended to 31 December 2020 due to the prolonged impact of COVID’s arrival, leading both withdrawal periods to be half a year long (Treasury, 2020a). Upon the ERS’ termination, account-holders could recontribute the amount they withdrew via the ERS and apply for it to be exempted from the non-concessional contributions cap if they are close to exceeding it (Australian Taxation Office, 2023).

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<sup>3</sup>As well as certain temporary visa holders, as per Treasury (2020a).

## 3 Literature Review

### 3.1 Early Release of Superannuation

There is an extant albeit small body of research that specifically addresses the Early Release of Superannuation (ERS) with respect to financial wellbeing. Using a difference-in-difference approach and data from the Household Income and Labour Dynamics in Australia (HILDA) Survey, [Akyol and La Cava \(2025\)](#) find that the ERS increases people's subjective financial satisfaction by 3.5%. [Khattar and La Cava \(2024\)](#) similarly conclude that the policy did not lead to major improvements in financial resilience. This paper seeks to contribute to this ongoing discourse by exploring how the impact of the ERS on financial wellbeing may vary depending on societal subgroup.

Other work studying the ERS has focused on the characteristics of the individuals who withdrew and the impacts on consumption and debt. Previous research found that participants generally experienced poorer financial circumstances, even prior to withdrawal ([Hamilton et al., 2024](#); [Preston, 2022](#); [Wang-Ly and Newell, 2022](#); [Clare, 2022](#)). They tended to be lower-income earners, and have "blue-collar" ([Hamilton et al., 2024](#)) occupations or work within sectors disproportionately disrupted by COVID-19 lockdowns like hospitality ([Clare, 2022](#)). People who were younger, had less formal education, lower levels of financial literacy, or male had a greater propensity to participate in the ERS. Participants withdrew as much<sup>4</sup> and as quickly as possible, leading to household consumption spiking accordingly ([Hamilton et al., 2024](#); [Bateman et al., 2023](#); [Khattar and La Cava, 2024](#); [Sainsbury et al., 2022](#)). [Hamilton et al. \(2024\)](#) and [Schneider and Moran \(2024\)](#) assert the role of present bias and self-control issues in shaping these trends, respectively.

Withdrawals were used for purposes like purchasing essentials, or adding to more

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<sup>4</sup>i.e. the maximum \$10,000 in each withdrawal period, or the entire balance of their account

liquid savings accounts (Clare, 2022; Khattar and La Cava, 2024). Using data from the Commonwealth Bank of Australia, Wang-Ly and Newell (2022) emphasise how the ERS enabled withdrawers to repay debt better and avoid arrears. However, gambling and discretionary items were also significant areas of expenditure, with Hamilton et al. (2024) noting that gambling was the largest discernable spending category based on their analysis of administrative-level and bank transactions data (Khattar and La Cava, 2024; Clare, 2022).

### 3.2 Early Pension Withdrawals in General

Other research has studied the impact of early pension withdrawals on financial wellbeing in other contexts. Kim and Koh (2020) examines a Singaporean policy that allows individuals to withdraw a proportion of their pension savings after their 55th birthday. Kim and Koh (2020) find that the early pension release policy allows for a statistically significant improvement in one's overall self-reported health. While health is the primary outcome variable investigated by Kim and Koh (2020), they briefly address how the early release policy impacts "life satisfaction regarding one's economic situation." They find that whether the policy's positive impact is statistically significant is particularly sensitive to the size of the donut holes used within their donut regression discontinuity design. Guo and Narita (2018) look at a Fijian policy which allowed individuals to withdraw from their pension accounts in the wake of 2016's Cyclone Winston to provide financial relief. Guo and Narita (2018) find that "if the shock [from the event] is large enough, or the amount allowed for early withdrawal is not 'too generous', a one-time early withdrawal can improve welfare," showing this through simulations of a dynamic optimisation model they constructed. This paper contributes to the literature by examining Guo and Narita (2018)'s claim within an applied microeconomic context and seeing if it generalises to other countries and major economic shocks like the COVID pandemic. This paper also employs a different methodological approach to Kim

and Koh (2020) and focuses more on financial wellbeing. In doing so, this paper contributes to the literature on early pension withdrawal policies in the Asia-Pacific and their impact on people’s welfare.

The broader literature on early pension withdrawal is similar to the literature specific to the ERS. There are relatively few papers focusing on financial being, and most work focuses on the determinants behind people’s participation, and how early pension withdrawal affects withdrawal behaviour and consumption (Goda et al., 2022; Kreiner et al., 2019; Schneider and Moran, 2024; Stewart et al., 2019; Butrica et al., 2010; Andersen, 2020; Fuentes et al., 2025). Derby et al. (2022) and Butrica et al. (2010) focus on changes in *savings* behaviour while Agarwal et al. (2020) and Hameed et al. (2025) examine early pension withdrawals’ influence on investment behaviour. A notable substrand of papers focus on Chile’s early pension withdrawal policy, like Fuentes et al. (2025); Castro Nofal et al. (2025), or Lorca (2021). They find that early pension withdrawal disproportionately reduced wealth for those at the lower end of the wealth distribution, and lead to issues of retirement income inadaquacy and inequality which disproportionately impacted groups like women and low-income workers. Lastly, the literature on early pension withdrawals and pension systems in general points to how these withdrawals can allow individuals to smooth their consumption, especially for those who are liquidity-constrained and are experiencing an unexpected negative shock (Andersen, 2020; Agarwal et al., 2020; Stewart et al., 2019; Guo and Narita, 2018; Preston, 2022). Although this can promote people’s welfare, the welfare implications of early withdrawal policies can be ambiguous because individuals might inefficiently allocate their financial resources (Guo and Narita, 2018; Stewart et al., 2019). Agarwal et al. (2020) witnesses this in an empirical context when they examine Singapore’s early pension withdrawal policy and, using banking data, see how it led some individuals to make suboptimal savings decisions.

## 4 Conceptual Framework

### 4.1 Primitives

I adapt the framework of [Andersen et al. \(2024\)](#) to build the intuition behind the anticipated impact of the Early Release of Superannuation (ERS) on financial wellbeing.

I present a simple two-period model where agents earn  $w$  gross income in the first period, and can voluntarily save  $s$ . Additionally, there is a mandatory superannuation contribution  $a$  which is a fixed amount. Within this simple model, both  $s$  and  $a$  earn the same gross return  $R$ . The agent, who wants to smooth their lifetime consumption, solves the following utility maximisation problem:

$$\max_{C_0, C_1, S} u(C_0) + \beta u(C_1) \quad (1)$$

$$\text{s.t. } C_0 = w - a - s \quad (2)$$

$$C_1 = R(a + s) \quad (3)$$

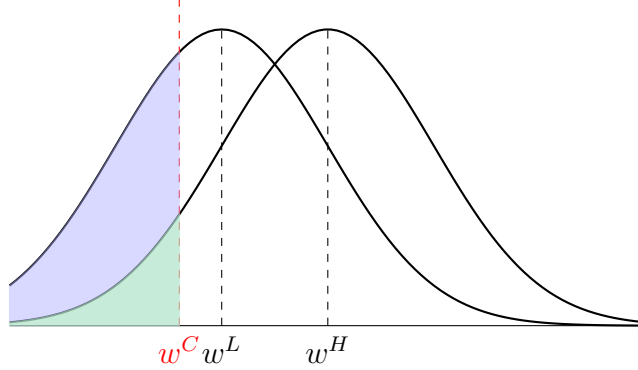
The first order conditions for this utility maximisation problem are represented by the Euler equation:

$$-u'(C_0) = R\beta u'(C_1) \quad (4)$$

$C_0$  represents the agent's consumption when they are young, and  $C_1$  when they are old. The utility function  $u(\cdot)$  has standard properties, and  $\beta$  represents the agent's subjective discount factor. In this simple model, utility represents financial wellbeing. Equations (2) and (3) represent budget constraints when they are young and old, respectively.  $\chi = R(a + s)$  can be interpreted as the agent's retirement wealth.

This model allows for wage heterogeneity among agents. A lower-income earner's

$w$  is drawn from a probability density function  $f(w)$  which has a mean  $w^L$ . A higher-income earner’s  $w$  is drawn from a probability density function  $g(w)$  with mean  $w^H$  such that  $w^H > w^L$ .



**Figure 1:** Wage Heterogeneity

## 4.2 Borrowing Constraint

Prior to the ERS, individuals were generally prohibited from early superannuation withdrawals, i.e. borrowing against one’s future self. In terms of the model, this is equivalent to placing a borrowing restriction such that  $s(w, a) \geq 0$ . Define a wage cut-off  $w^C$  that corresponds to this zero saving corner solution where  $s = 0$ , and where individuals drawn from  $f(w)$  (i.e. lower-income earners) are more likely to fall below this threshold than higher-income earners (from  $g(w)$ ) (as seen in Figure 1).

Within the model,  $\frac{\partial s}{\partial a} = -1$ . That is, an increase in the superannuation contribution proportionally “crowds out” voluntary savings. Thus, as per [Andersen et al. \(2024\)](#), changes in the mandated contribution only affects agents for whom the borrowing constraint binds.

The ERS can be conceptualised as a relaxation of this borrowing constraint. The policy now allows people to borrow from their future self, meaning  $s$  can be negative. Analytically, this would be equivalent to a reduction in  $a$ .

Suppose an agent  $i$  is bound by the borrowing constraint while some agent  $j$  is

not. Only agent  $i$ 's retirement wealth  $\chi_i$  will be affected by this policy change, and it decreases because  $\frac{\partial \chi_i}{\partial a} = 1$ . Since  $\frac{\partial C_0}{\partial a} = -1$ , agent  $i$ 's reallocation of those funds to the present boosts present-day consumption  $C_0$ . In doing so, agent  $i$  supports their short-term financial wellbeing  $u(C_0)$  but compromises their long-term financial wellbeing  $u(C_1)$ . Given that individuals with wages drawn from  $f(w)$  are more likely to be constrained, I anticipate a discrepancy across income groups when it comes to how short-term financial wellbeing evolves.

## 5 Data

I use the Household Income and Labour Dynamics in Australia (HILDA) Survey, a household-based panel study coordinated by the Melbourne Institute of Applied Economic and Social Research, and the Department of Social Services. Since 2001, the HILDA Survey has annually interviewed participants, collecting microdata regarding participants' social and economic welfare, spanning topics like family life and labour market outcomes (Watson, 2021). The HILDA Survey aims to be nationally representative, and employs a complex survey design which is multi-stage, clustered, and stratified. In the most recent available wave (i.e. wave 23), 21,819 enumerated individuals living among 8,928 responding households were captured (Summerfield et al., 2024).

I focus on Waves 15 to 21 in my analysis. This includes the two post-treatment waves as well as five years to evaluate pre-trends.

### 5.1 Key Variables

#### 5.1.1 Early Release of Superannuation

While some topics are surveyed on an annual basis, the HILDA Survey contains 'special modules' on topics like wealth which are surveyed every four years on a rotating basis (Summerfield et al., 2024). As a special module, the Survey's coro-

navirus module differs in how it was extemporaneously created and included for waves 20 and 21 (i.e. 2020 and 2021) to document the pandemic's impact on a microdata level.

Responders were asked two questions specific to the Early Release of Superannuation (ERS):

1. "Prior to 30 June [this year], did you withdraw superannuation under the COVID-19 scheme for early release of super?" ([Department of Social Services and Melbourne Institute of Applied Economic and Social Research, 2024](#))
2. "How much did you withdraw prior to 30 June [this year]?"

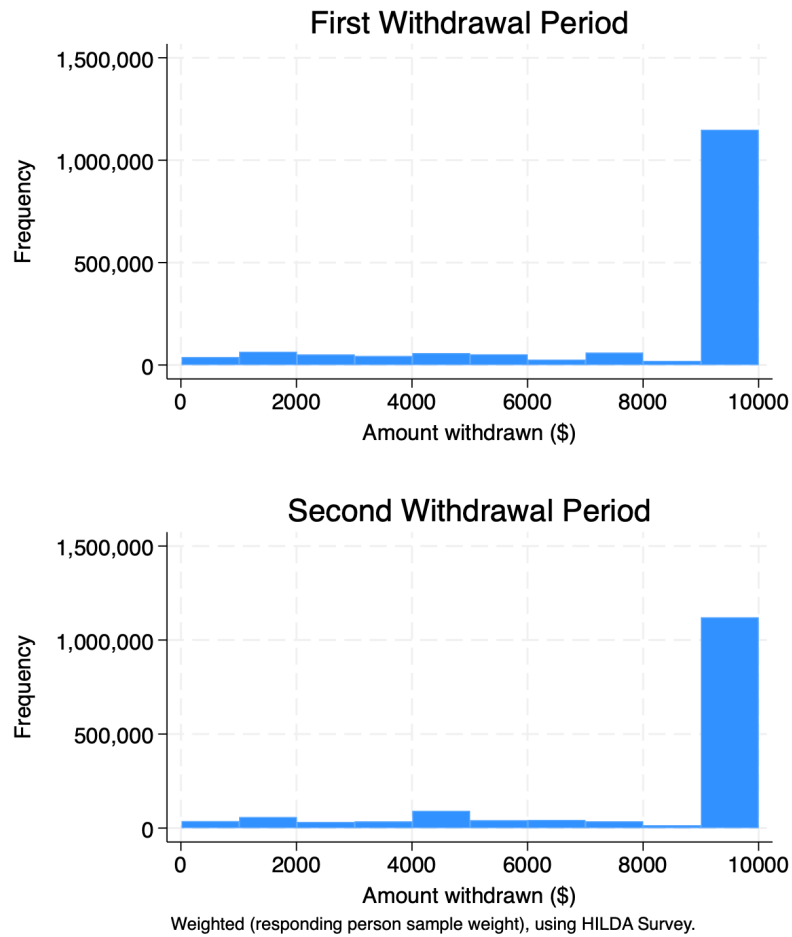
All respondents were asked the first question and could reply either 'yes' or 'no.' Information regarding this question would be stored accordingly as an indicator variable. Individuals who said 'yes' would then be asked the second question, and report a whole dollar amount. No imputations were created by the HILDA Survey team for this variable.

Given the questions' phrasing, information regarding people's engagement with the ERS is split across waves 20 and 21 even if the ERS was only active during the calendar year 2020. Wave 20 captures information relevant to the ERS' first withdrawal period while wave 21 captures information relevant to the second.

Based on the survey data, approximately 10% of the population withdrew from their super via the ERS. Among those withdrawers, approximately 88% withdrew in both periods (see Appendix A). As seen in Figure 2, the distributions for withdrawal amounts are heavily skewed to the left for both withdrawal periods, indicating that withdrawers often withdrew the maximum amount possible (i.e. \$10,000, or their whole super balance if it does not exceed that amount) in each period. This behaviour notably aligns with what was reported in other literature such as [Hamilton et al. \(2024\)](#); [Preston \(2022\)](#) and [Bateman et al. \(2023\)](#).

Data regarding where and how these early release amounts were used was not

collected in the HILDA Survey. This includes but is not limited to: whether these funds were re-contributed into one's super, or if they were used to make new investments or acquire assets. Data regarding personal super contributions and the nature of one's investments are particularly limited, especially during the period where the ERS has been implemented (see Appendix B for further discussion). Due to such gaps within the dataset, exploration of such topics are not feasible without access to a more granular and appropriate dataset. I include wealth-related variables in Section 5.2 to provide context or background on this topic nonetheless.



**Figure 2:** Amount Withdrawn From Super Accounts via ERS

### 5.1.2 Equivalised Disposable Household Income

I define "low-income" as per the definition used by the Australian Bureau of Statistics (ABS) and the HILDA Survey team when reporting on issues regarding the distribution of income. That is, to be "low-income" is to be in the bottom quintile of the equivalised disposable household income distribution (i.e. [0.03, 0.2]) ([Australian Bureau of Statistics, 2022](#)). Equivalised household disposable regular income is not readily provided in the HILDA dataset. As such, I construct it according to the process described in [Wilkins et al. \(2024\)](#).

I use the variable which captures household disposable regular income for the financial year, and already contains imputed<sup>5</sup> values. Given that survey respondents would report their household disposable regular income in nominal values at the time they were interviewed, I calculate their real value in present dollar terms (i.e. 2024-25 dollars).<sup>6</sup>

I then use the modified OECD scale as per [Wilkins et al. \(2024\)](#) to calculate the equivalised disposable regular household income for each household:

$$\frac{Y_i}{1 + (0.5 * a_i) + (0.3 * k_i)} \quad (5)$$

where  $Y_i$  is household disposable regular income for household  $i$ ,  $a$  is the number of each additional household member who is 15 years old or older, and  $k$  is the number of additional household members who are less than 15 years old. The 1 is for the first person in the household. The equivalised income that is calculated is then assigned to each member of household  $i$ .

Table 1 captures the pre- and post-treatment distributions of equivalised income:

In wave 19 (i.e. the wave just prior to the ERS' implementation), the mean

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<sup>5</sup>Most income variable imputations for responding persons in the HILDA dataset use the Little and Su method. Nearest neighbour regressions are used for the rest. See [Summerfield et al. \(2024\)](#) for further details.

<sup>6</sup>The deflators are calculated using the CPI rates publicly available on the Australian Taxation Office website. See <https://www.ato.gov.au/tax-rates-and-codes/consumer-price-index>

**Table 1:** Summary Statistics - Equivalised Household Disposable Income

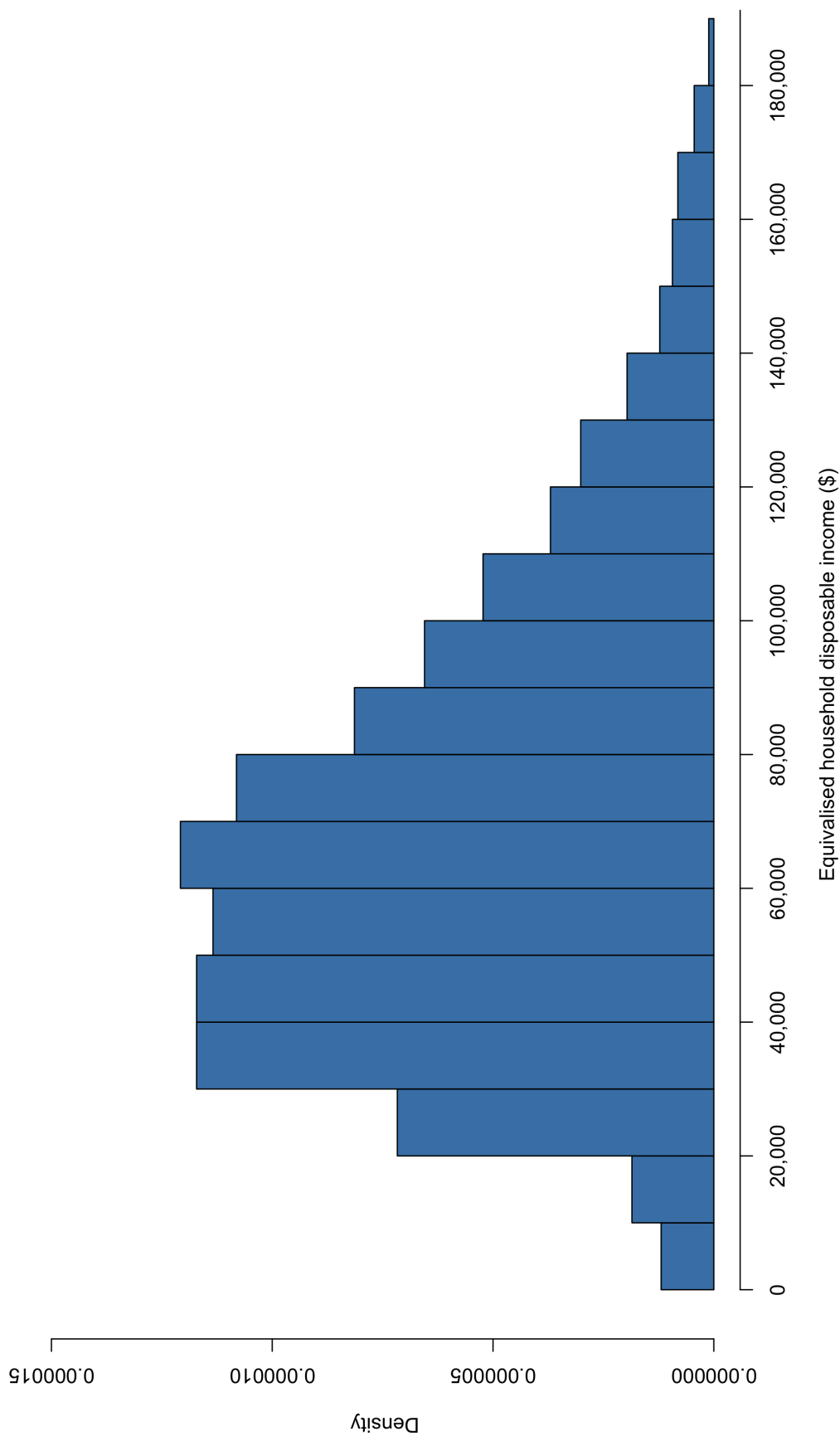
	Mean	SE	P3	P20	P40	P50	P60	P80	P98
Wave 19	72,950	945	20,077	38,593	55,948	65,096	73,780	98,368	184,130
Wave 20	75,096	920	22,142	41,775	58,715	67,519	75,443	100,064	183,189
Wave 21	75,300	917	20,098	40,232	58,485	67,423	76,688	102,547	187,993

Weighted (with responding person weights), using HILDA Survey and information from ATO regarding consumer price index (CPI) rates. Expressed in 2024-25 dollars. Results rounded to the nearest dollar. 'SE' refers to 'standard error.'

level of equivalised disposable household income was \$72,950 p.a. and the median was \$65,096 p.a. As shown in Figure 3, the distribution of equivalised household disposable income was positively skewed before the implementation of the ERS. This is the case even if we exclude those in the 98th percentile and higher. Thus, the data reflects the presence and nature of income inequality in Australia at the time, where the ratio of the 80th percentile to the 20th is 2.55 (2dp).

For later analysis, I then tag individuals as "low-income" if they are considered to be in the bottom quintile for waves 20 *and* 21 (i.e. they must be low-income throughout the whole time they were able to participate in the ERS). Hence, the "low-income" individuals in my dataset had an equivalised disposable household income between \$22,142 and \$41,775 p.a. in wave 20, and \$20,098 and \$40,232 in wave 21.

### Distribution of Equivalised Household Disposable Income at Wave 19

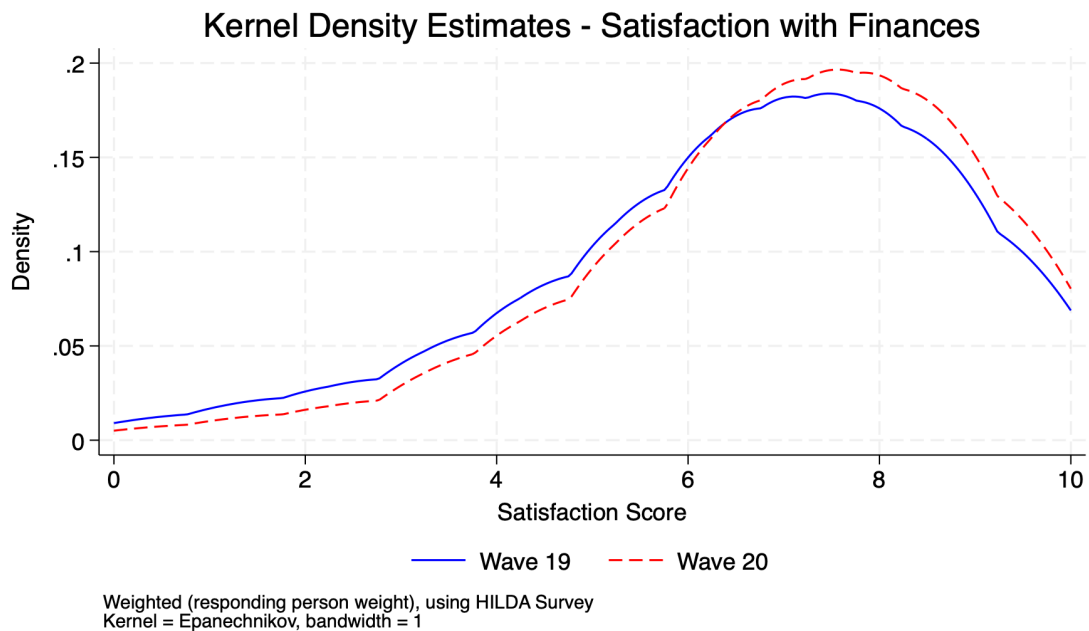


Weighted (responding person weights), and expressed in 2024-25 dollars, using HILDA Survey and ATO information on consumer price index (CPI) rates. Individuals (n=51) with equivalised household disposable regular income in the 98th percentile and above (i.e. > \$184,130) are excluded. Negative values are set to 0.

**Figure 3:** Pre-Treatment Distribution of Equivalised Household Income

### 5.1.3 Financial Satisfaction

Financial welfare can be defined in an objective or subjective manner. In this paper, I focus on the subjective sense of financial welfare. In particular, my primary outcome of interest is the "financial satisfaction" variable in HILDA. This is a continuous variable that has been recorded annually since the HILDA Survey's inception. Respondents are asked to rate their level of satisfaction with their own finances from a scale of 0 to 10, with 0 being "totally dissatisfied" and 10 being "totally satisfied" ([Department of Social Services and Melbourne Institute of Applied Economic and Social Research, 2024](#)).

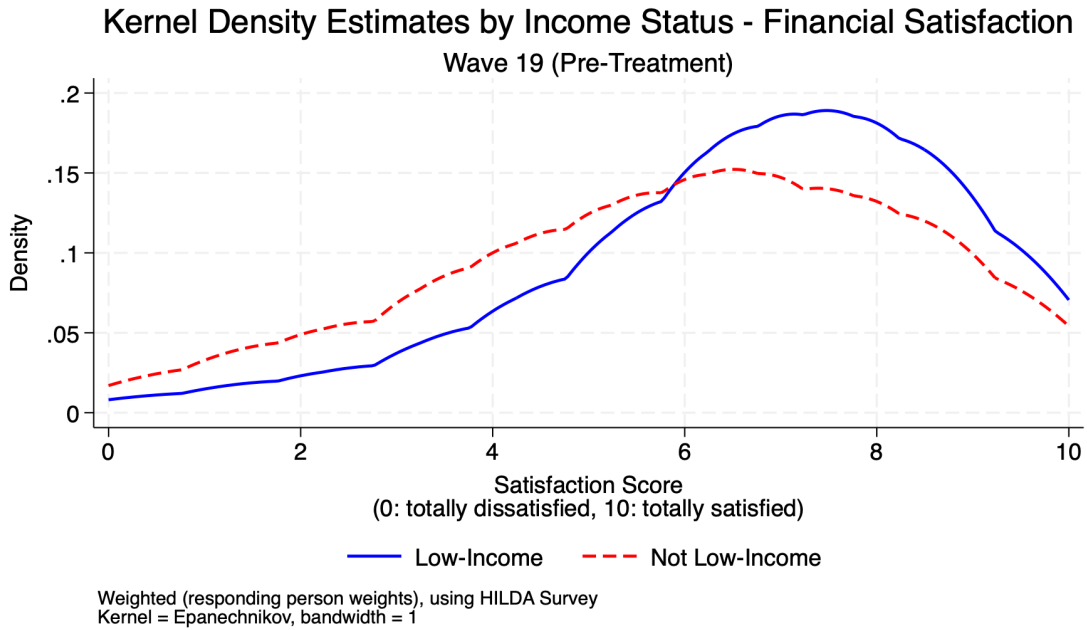


**Figure 4:** Distribution for Satisfaction with Finances Pre- and Post-Treatment

The pre-treatment distribution has a range of 10 and a median of 7, suggesting that most of the population is somewhat<sup>7</sup> satisfied with their respective financial situations. Figure 4 shows how the post-treatment distribution generally appears to be similar (See Table 12 in Appendix D for summary statistics).

<sup>7</sup>In the HILDA Survey, a score of 5 means the individual is "neither satisfied nor dissatisfied" ([Department of Social Services and Melbourne Institute of Applied Economic and Social Research, 2024](#)), i.e. they are indifferent.

However, when analysing the pre-treatment distribution by income status, the distribution for low-income earners' financial satisfaction notably differs to the distribution for higher-income earners' (i.e. those who are above the bottom quintile of the equivalised household disposable income distribution). As seen in Figure 5, the distribution for the financial satisfaction of higher-income earners has a more prominent negative skew than the distribution of low-income earners'. Low-income earners had a median of 6 while higher-income earners had a median of 7. Thus, prior to the ERS' implementation, higher-income earners were often more satisfied with their financial situation compared to low-income earners. This is consistent with what is found in other research ([Wang-Ly and Newell, 2022](#)).



**Figure 5:** Pre-Treatment Financial Satisfaction Distributions by Income Status

## 5.2 Sample Selection and Pre-Treatment Demographics

I restrict my sample to individuals who have non-missing ERS participation (i.e. Question 1 in Section 5.1.1) and financial satisfaction values. This is because these variables are critical to my research question. I balance my sample such that indi-

viduals must be present in waves 19 to 21 as these are the key waves that capture the pre- and post-treatment period(s). I include wave 21 because, as previously mentioned, crucial information regarding individuals' participation during the second withdrawal period is stored here. Applying these restrictions roughly halves our dataset, yielding a sample of 14,926 individuals (see Appendix E for further details).

Table 2 shows the differences in the pre-treatment characteristics of the individuals included in this "general sample" (see Table 17 in Appendix G for population-level statistics). General sample results are shown in the "Non-Withdrawer" and "Withdrawer" columns, and the "p-value" column shows that all these differences are statistically insignificant. The last column shows the summary statistics for the non-withdrawers who are included in the "matched sample," which I address in Section 5.4 and use in my analysis (see Table 18 in Appendix G for p-values and all statistics).

### 5.3 General Sample

Withdrawers tend to be younger, and are more likely to be male. They are also more likely to have children, either as a single parent or with their partner. Non-withdrawers are more likely to have a university-level education, with 17% of the non-withdrawer subgroup having a bachelor's or honours degree as their highest level of study compared to 9.7% of the withdrawer subgroup. These observations align with what was seen in other research on the ERS ([Hamilton et al., 2024](#); [Bateman et al., 2023](#); [Wang-Ly and Newell, 2022](#); [Clare, 2022](#); [Preston, 2022](#)). Interestingly, withdrawers are less likely to have a long-term health condition or disability. A possible reason could be that individuals' disabilities render them ineligible for the ERS because the criteria virtually requires individuals to be part of the labour

force ([Treasury, 2020b](#)).<sup>8</sup> To the best of my knowledge, no other literature on the ERS has explored and hence confirm if disability determines withdrawal.<sup>9</sup>

Withdrawers are more likely to be casual workers, or unemployed in the year prior to the ERS' implementation. This corresponds with previous findings in the literature ([Akyol and La Cava, 2025](#); [Preston, 2022](#)). Withdrawers within the sample are also more likely to have been full-time workers and have higher weekly wages/salary. A possible reason for this is how withdrawals in general are higher for those facing adverse life events like sudden unemployment, and how individuals who were employed just prior to the pandemic were more likely to withdraw via the ERS ([Preston, 2022](#)). Non-withdrawers are more likely to be white-collar workers, and have larger levels of household debt, disposable income, and super balances. This aligns with previous literature ([Hamilton et al., 2024](#); [Akyol and La Cava, 2025](#)).

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<sup>8</sup>Recall that being in the labour force requires individuals to be able to work, but disabilities may permanently disallow this. See <https://www.aihw.gov.au/reports/disability/people-with-disability-in-australia/contents/employment>

<sup>9</sup>[Preston \(2022\)](#) finds that people with poorer self-reported health are more likely to withdraw, but this is not the same as having a disability.

**Table 2:** Summary statistics for pre-treatment demographics

Characteristic	Non-Withdrawer	Withdrawer	p-value	Non-Withdrawer (Matched)
N	13,436	1,490		881
Age (years)	44 (19)	35 (12)	<0.001	34 (12)
Sex			<0.001	
Female	7,215 (54%)	716 (48%)		422 (48%)
Male	6,221 (46%)	774 (52%)		459 (52%)
Single parent	404 (3.0%)	112 (7.5%)	<0.001	60 (6.8%)
Couple with children	3,383 (25%)	550 (37%)	<0.001	308 (35%)
Couple without children	4,330 (32%)	292 (20%)	<0.001	187 (21%)
Long term health condition/disability	3,921 (29%)	372 (25%)	<0.001	174 (20%)
Current labour force status			<0.001	
Employed	8,454 (63%)	1,210 (81%)		881 (100%)
Not in the labour force	4,509 (34%)	202 (14%)		0 (0%)
Unemployed	473 (3.5%)	78 (5.2%)		0 (0%)
Highest education level achieved			<0.001	
Postgrad - masters or doctorate	946 (7.0%)	47 (3.2%)		38 (4.3%)
Grad diploma, grad certificate	889 (6.6%)	58 (3.9%)		28 (3.2%)
Bachelor or honours	2,248 (17%)	144 (9.7%)		103 (12%)
Adv diploma, diploma	1,322 (9.8%)	179 (12%)		99 (11%)

**Table 2:** Summary statistics for pre-treatment demographics (*continued*)

Characteristic	Non-Withdrawer	Withdrawer	p-value	Non-Withdrawer (Matched)
Cert III or IV	2,916 (22%)	514 (34%)		287 (33%)
Year 12	2,020 (15%)	231 (16%)		194 (22%)
Year 11 and below	3,087 (23%)	316 (21%)		132 (15%)
Undetermined	8 (<0.1%)	1 (<0.1%)		0 (0%)
Casual worker	1,615 (22%)	306 (29%)	<0.001	244 (28%)
Full-time worker	5,548 (41%)	862 (58%)	<0.001	620 (70%)
Household annual disposable regular income (\$, real)	133,143 (103,311)	116,411 (72,773)	<0.001	122,543 (57,476)
Weekly gross wages and salary (\$, real)	976 (1,326)	1,091 (1,039)	<0.001	1,431 (877)
White-collar worker	3,569 (42%)	284 (23%)	<0.001	217 (25%)
Household debt (\$, real)	291,024 (565,103)	240,745 (477,677)	<0.001	257,672 (361,317)
Total superannuation (\$, real)	370,088 (661,450)	170,143 (264,670)	<0.001	219,763 (337,868)
Total household net worth (\$, real)	1,368,490 (1,955,460)	556,830 (1,096,986)	<0.001	729,697 (1,129,507)

*Notes:* Unweighted, using HILDA data from wave 19. Continuous variables are reported as mean (standard deviation) with p-values from Welch's t-test. Categorical variables are reported as count (%) with p-values from Pearson's  $\chi^2$  test. Wealth variables correspond to Wave 18 data, as the wealth module was not surveyed in Wave 19. See Appendix F for variable definitions and Table 18 in Appendix G for matched dataset p-values and statistics.

## 5.4 Nearest Neighbour Matching

I apply nearest neighbour matching (with replacement) to my general sample to create a "matched sample." This is important because of the limited size of the HILDA Survey relative to census-level data and to address any issues with randomisation that may not be guaranteed within a natural experiment setting (Abadie and Imbens, 2011). I match observations based on the characteristics in Table 2 and their values in wave 19, the wave that immediately precedes the ERS' implementation. Hence, I exclude wealth-related characteristics because data was not collected at that time. I adjust for bias for the continuous covariates as per Abadie and Imbens (2011), and match one observation to one other observation ( $k : 1$  matching).

The results are shown in Tables 3 and 4 below, with full covariate results available in Table 19 in Appendix H.

**Table 3:** Nearest Neighbour Matching Results

Financial Satisfaction	
ATET	
Withdrawer = 1	-0.652*** (0.089)

Standard errors in parentheses

ATET = average treatment effect on the treated. Bias-adjusted for continuous variables.

Robust standard errors, HLDA Survey Wave 19 data used.

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

**Table 4:** Covariate Balance Summary - Size

	Raw	Matched
Number of obs	8311	2106
Treated obs	1053	1053
Control obs	7258	1053

k:1 matching, with replacement.

I successfully gained a close match, with standardised differences being close to 0 and variance ratios close to 1. This is statistically significant, as per Table 3. This

process results in the final *matched* sample that will be used for my main regression. This matched sample has 2,106 observations equally split between "Treated" (i.e. Withdrawer) and "Control" (i.e. Non-Withdrawer) groups, as seen in Table 4.

The summary statistics in Table 2's "Non-Withdrawer (Matched)" column corresponds with our matching process' outcome, with matched non-withdrawers exhibiting similar estimates for characteristics like age, sex, and type of employment, among others. Notably, the withdrawers and non-withdrawers selected for the matched sample were all employed just prior to the pandemic. Overall, no differences are statistically significant except for the "highest education level achieved", super balance, and household net worth variables, which I attribute to the relatively limited scale of the HILDA Survey and wealth's previously mentioned exclusion from the matching criteria (see Table 18 in Appendix G).

## 6 Empirical Approach

Using the HILDA dataset, I estimate the Early Release of Superannuation's (ERS) average treatment effect *on the treated*. Because of my interest in identifying different impacts based on subgroups (in this instance, low-income individuals), I employ a difference-in-difference-in-difference (or "triple difference") approach as per [Olden and Møen \(2022\)](#).

I use the empirical specification below:

$$\begin{aligned}
 Y_{ijt} = & \beta_0 + \theta \mathbf{X}_{ijt} + \beta_1 Post_t + \beta_2 Low_j + \beta_3 Withdrawer_i + \\
 & \beta_4 (Low \times Post)_{jt} + \beta_5 (Post \times Withdrawer)_{ti} + \quad (6) \\
 & \beta_6 (Low \times Withdrawer)_{ij} + \beta_7 (Post \times Withdrawer \times Low)_{ijt} + \varepsilon_{ijt}
 \end{aligned}$$

where  $Y_{ijt}$  is the outcome variable at time (i.e. HILDA wave)  $t$  for an individual  $i$  who is from group  $j$ . In this case,  $Y_{ijt}$  is the "financial satisfaction" variable explained in Section 5.1.3.  $\beta_0$  is the intercept, while  $\mathbf{X}_{ijt}$  is a matrix of individual

characteristics that I control for and will elaborate on later.  $Post_t$  is an indicator variable that equals 1 when the ERS has already been implemented, and equals 0 before the treatment.  $Low_j$  is an indicator variable that equals 1 if the observation is tagged "low-income" as per the definition in Section 5.1.2.  $Withdrawer_i$  is an indicator variable that equals 1 if individual  $i$  withdrew from their super via the ERS in 2020. The individual could have participated in either withdrawal period or both. Lastly,  $\varepsilon_{ijt}$  is the error term. The main coefficient of interest is  $\beta_7$  which is the triple difference estimator and can help us determine if low-income individuals are impacted differently by this policy in terms of financial satisfaction.

I control for these covariates, of which many have been noted in Section 5.2: age, sex, long-term health condition (or disability), being a single parent household, being a household that consists of a couple with children, having an undergraduate degree, casual employment, full-time employment, being a white-collar worker, household annual disposable income, and weekly wages. Age, household annual disposable income, and weekly wages are continuous variables. The rest are indicator variables (see Appendix F for more details regarding definitions).

## 6.1 Identification

There are two main identifying assumptions that determine the ability of the triple difference framework to identify a causal impact: "no anticipation" and parallel trends (Baker et al., 2025). The "no anticipation" assumption refers to a treatment having no causal effect prior to its implementation (Roth et al., 2022). Given the unprecedented and sudden nature of the COVID-19 pandemic and the Early Release of Superannuation (ERS), there is no evidence that individuals could have predicted or anticipated the policy (Hamilton et al., 2024).

The parallel trends assumption is the most critical, and generally refers to how, in the absence of treatment, the average outcome for the treated and untreated groups would have evolved in parallel (Olden and Møen, 2022; Roth et al., 2022). In

practice, since it is not possible to observe this counterfactual, researchers examine if this is the case in the period *before* the treatment was implemented, i.e. they examine if there are parallel *pre*-trends (Olden and Møen, 2022).

Interestingly, very few authors within the triple difference literature actually discuss the parallel trends assumption despite its criticality (Olden and Møen, 2022). As such, to the best of my knowledge, a widespread "best practice" for demonstrating parallel trends has yet to emerge within the triple difference literature, especially when comparing it to the difference-in-difference literature it is adjacent to. In recent years, difference-in-difference researchers have commonly assessed the parallel trends assumption by constructing an event study model and generating coefficient plots in the style of Miller et al. (2019). Cunningham (2021) proposes adopting this approach within a triple difference context.

In light of this, I explore two approaches for verifying the parallel trends assumption: the event study approach, and the approach in Olden (2018) which focuses on graphically inspecting raw data.<sup>10</sup>

### 6.1.1 Event Study Approach

I create an event study that allows me to graphically represent what the estimates for the triple difference estimator would have looked like in the 5 years leading up to the ERS' implementation.

I use the following model, in line with works like Cunningham (2023a); Miller et al. (2019) and Akyol and La Cava (2025):

$$Y_{ijt} = \alpha_i + \lambda_t + \phi_j + \sum_{\substack{y=2015 \\ y \neq 2019}}^{2021} \gamma_y \times I(t = y) \times D_i \times \delta_j + \theta \mathbf{X}_{ijt} + \varepsilon_{ijt} \quad (7)$$

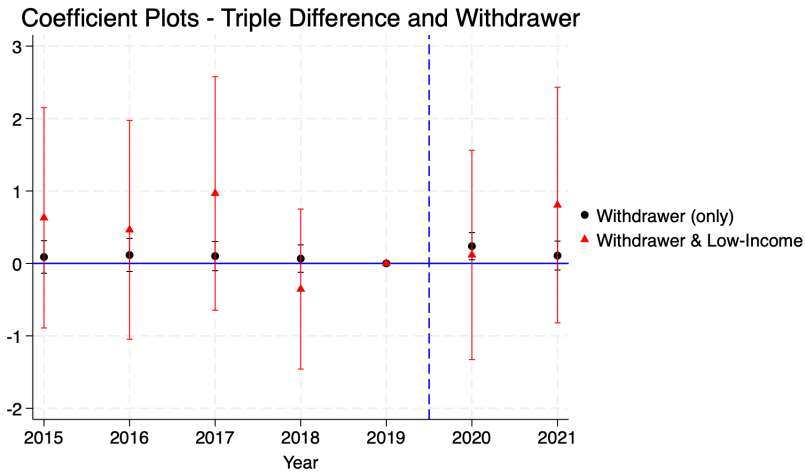
where  $Y_{ijt}$  is the outcome (i.e. financial satisfaction) for individual  $i$  in group  $j$

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<sup>10</sup>Olden and Møen (2022) is the paper that accompanies and formalises the underlying theory in this empirical paper.

at time  $t$ .  $\alpha_i$ ,  $\lambda_t$ , and  $\phi_j$  are individual-, time- and group-specific fixed effects, respectively. Indicator variables  $I(t = y)$  capture the years being examined (i.e. 2015 to 2021, with 2019 being omitted as it is the year before the ERS is implemented).  $D_i$  is an indicator variable that equals 1 if the individual is a withdrawer, and  $\delta_j$  is an indicator variable that equals 1 if the observation is deemed "low-income" as per Section 5.1.2.  $\mathbf{X}_{ijt}$  is the matrix of control variables explained in Section 6, and  $\varepsilon_{ijt}$  is the error term.

The specification in (7) differs in how each estimate of  $\gamma_y$  can specifically capture the triple difference estimate in year  $y$ , whereas the  $\beta_7$  estimate from model (6) would summarise the effect across all post-implementation years (Miller et al., 2019). The coefficient estimates plotted in the style of Miller et al. (2019) and Cunningham (2023b) are presented in Figure 6 below (see Appendix I for full results).



**Figure 6:** Event Study Coefficient

In a scenario where parallel trends could be plausibly argued, the pre-treatment coefficients would be precisely estimated to be (near-)zero, supporting the notion that there were no income status-driven disparities between the withdrawer and non-withdrawer group during the pre-policy period (Cunningham, 2021, 2023a). Post-treatment coefficient point estimates far from zero would support the notion that there is a clear disparity between low-income and higher-income withdrawers'

outcomes after the policy was implemented. Based on Figure 6, we cannot plausibly claim that the triple difference estimator fulfills the parallel trends assumption in light of its exceptionally wide confidence intervals.

Interestingly, model (7)'s pre-treatment coefficients for being a withdrawer (regardless of income status) better fulfil the above criteria, bearing precisely estimated point estimates of zero. This supports the notion that parallel pre-trends are fulfilled if we were to look at the policy's impact on financial satisfaction *in general*. That said, the point estimates in the post-policy period are fairly close to zero, suggesting that any improvements in financial satisfaction that may have occurred would be minimal.

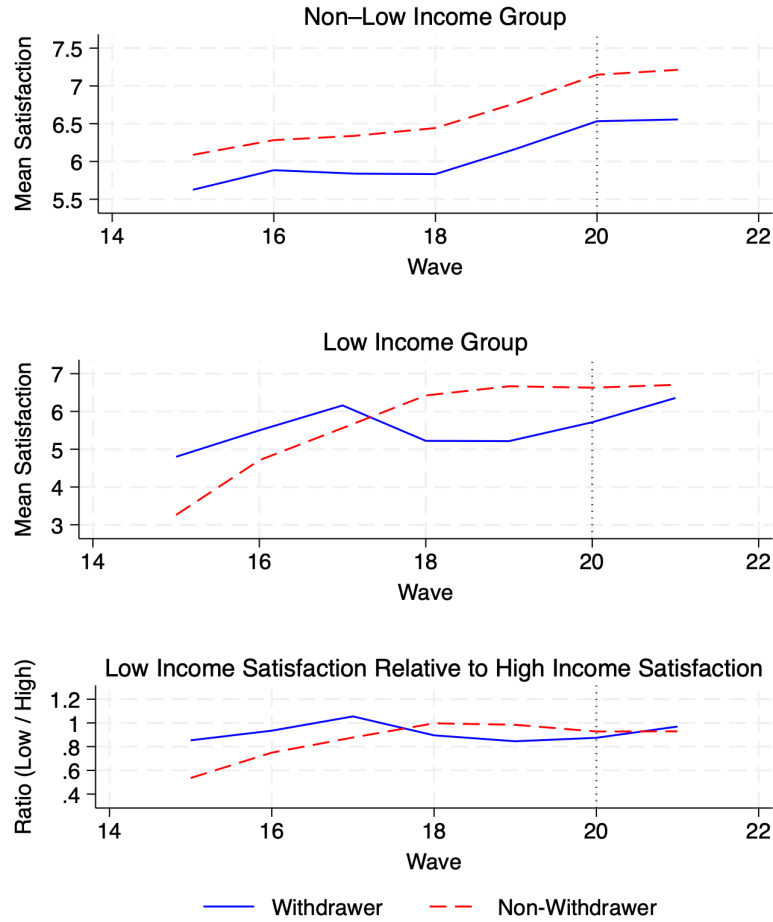
### 6.1.2 Raw Data Approach

In this paper, I also apply [Olden \(2018\)](#)'s approach for verifying the parallel trends assumption.

[Olden \(2018\)](#) and [Olden and Møen \(2022\)](#) assert that parallel trends for each "group" (i.e. low income and non-low income individuals, in the context of this paper) are *not* required. Instead, the *ratio* of these two groups' mean outcomes should follow parallel trends in the pre-treatment period. Graphical evidence can then be provided by plotting the raw data for this period in a similar manner to how parallel pre-trends were popularly demonstrated within the difference-in-difference literature in the previous decade ([Cunningham, 2021](#)).

Through this approach, I generate Figure 7. The top two plots show that parallel pre-trends appear to emerge between withdrawers and non-withdrawers in the non-low income group, but that this is not the case for the low-income group. In waves 18 and 19, parallel pre-trends appear to break for the low-income group. The bottom-most plot contains the variable of interest: the ratio between each group's mean outcome. They appear to be parallel during the pre-treatment waves except for wave 18, where the ratio-variable slightly decreases for the withdrawer group

but increases for the non-withdrawer group. As such, there still remains cause for concern regarding whether the parallel trends assumption is fulfilled here.



**Figure 7:** Parallel Trends of Ratio Variable

In light of the results in this section and Section 6.1.1, there is no strong evidence that the parallel trends assumption is fulfilled for the triple difference estimator. This suggests the presence of bias in triple difference estimates from my regression, and that any estimates suggesting that the ERS disproportionately benefitted low-income withdrawers could be overstated based on how most the pre-trend estimates in Figure 6 were well above zero (Olden and Møen, 2022).

## 7 Results and Discussion

Table 5 reports results from my regression using the model specification in (6). Standard errors were clustered on a household level and I use the matched sample discussed in Section 5.4.

As seen in the seventh row, the estimated triple difference coefficient of 0.130 is not statistically significant. Thus, there is insufficient evidence that the Early Release of Superannuation (ERS) disproportionately improved low-income withdrawers' financial satisfaction. Though there is a possibility that the ERS truly does not have such an effect, I believe the nature of the HILDA Survey could also contribute to this result, given its small scale relative to census-level datasets that can offer narrower standard errors and avoid sampling errors.

Another reason behind this outcome might be the empirical specification itself. Although my specification in equation (6) aligns with what has been conventionally done within the empirical triple-difference literature, a small strand of theoretical research has emerged very recently, challenging this convention and proposing various new estimators or adjustments to experimental designs ([Leventer, 2025](#); [Ortiz-Villavicencio and Sant'Anna, 2025](#); [Caron, 2025](#)). Granted, these papers are still pre-prints,<sup>11</sup> I believe this is worth addressing as it could be a potential avenue for future research, especially if other research supporting and employing their methodologies emerge later on.

Interestingly, the third row in Table 5 shows that the impact of withdrawing – regardless of one's income status – is associated with an improvement in financial satisfaction by 0.234 that is statistically significant at the 5% level. That is, withdrawers' financial satisfaction scores would improve by approximately 2.34% after the policy's implementation. This estimate is lower than what was reported in [Akyol and La Cava \(2025\)](#), the only other work (to the best of my knowledge) in the

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<sup>11</sup>At the time of writing

**Table 5:** Baseline Regression Results

	(1) Financial satisfaction
Post-Treatment Period=1	0.385*** (0.059)
Withdrawer=1	-0.599*** (0.090)
Post-Treatment Period=1 × Withdrawer=1	0.234** (0.095)
Low-Income=1	0.307 (0.389)
Post-Treatment Period=1 × Low-Income=1	-0.241 (0.496)
Withdrawer=1 × Low-Income=1	-0.869 (0.618)
Post-Treatment Period=1 × Withdrawer=1 × Low-Income=1	0.130 (0.733)
Age	-0.012*** (0.004)
Sex	-0.043 (0.080)
Long-term health condition/disability	0.447*** (0.096)
Single parent	-0.167 (0.157)
Couple with kids	0.028 (0.079)
Casual worker	-0.229*** (0.086)
Full-time worker	0.128 (0.093)
Undergraduate	-0.051 (0.110)
White-collar worker	0.038 (0.088)
Household disposable regular income	0.000*** (0.000)
Weekly gross wages and salary	0.000*** (0.000)

Standard errors in parentheses

Clustered on household level. Matched sample (via Nearest Neighbour Matching) used.

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

ERS literature that uses the HILDA Survey and examines the financial satisfaction variable. [Akyol and La Cava \(2025\)](#) refer to their coefficient plots when claiming that financial satisfaction "increases by about 3.5 per cent for ERS withdrawers".<sup>12</sup> I suspect this is due to my use of nearest neighbour matching in constructing my final sample, given I was able to retrieve [Akyol and La Cava \(2025\)](#)'s estimate by regressing model (6) using the general sample from Section 5.3 instead. Thus, there is a possibility that previous research has overstated the impact of the ERS on financial wellbeing.

Table 6 reports the results from this regression. Similar to the baseline regression, the triple difference estimate in the seventh row is statistically insignificant and consequently does not suggest the ERS disproportionately affected low-income earners' financial satisfaction. The estimate for the policy in general, however, continues to be positive and statistically significant (see third row). The coefficient estimate of 0.319 is significant at the 1% level can be interpreted as withdrawers experiencing a 3.2% improvement in financial satisfaction as a result of the policy. I believe my estimate is remarkably close to the broad, "about 3.5 per cent" estimate provided by [Akyol and La Cava \(2025\)](#).

Thus, the two regressions in this section provide supporting evidence that the ERS' impact on financial satisfaction is statistically significant. This corresponds with previous literature. Despite this, the policy's impact appears to be *economically* insignificant in light of its small magnitude<sup>13</sup> and how other COVID-era policies have had substantially larger impacts on financial satisfaction ([Akyol and La Cava, 2025](#)).

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<sup>12</sup>No regression table was provided in the paper, so their general description of their figure is the closest we have to their exact coefficients.

<sup>13</sup>e.g. an increase in an individual's reported financial satisfaction score by 0.23 would arguably not be enough to change their score, since individuals are supposed to respond with whole numbers for this question in the HILDA Survey ([Department of Social Services and Melbourne Institute of Applied Economic and Social Research, 2024](#)).

**Table 6:** Regression Results - General Sample

	(1) Financial satisfaction
Post-Treatment Period=1	0.286*** (0.019)
Withdrawer=1	-0.803*** (0.069)
Post-Treatment Period=1 × Withdrawer=1	0.319*** (0.074)
Low-Income=1	-0.133 (0.147)
Post-Treatment Period=1 × Low-Income=1	0.290 (0.179)
Withdrawer=1 × Low-Income=1	-0.359 (0.467)
Post-Treatment Period=1 × Withdrawer=1 × Low-Income=1	-0.725 (0.576)
Age	-0.003** (0.001)
Sex	0.038 (0.034)
Long-term health condition/disability	0.341*** (0.045)
Single parent	-0.461*** (0.111)
Couple with kids	-0.102*** (0.036)
Casual worker	-0.075* (0.044)
Full-time worker	0.020 (0.041)
Undergraduate	0.041 (0.039)
White-collar worker	0.094*** (0.033)
Household disposable regular income	0.000*** (0.000)
Weekly gross wages and salary	0.000*** (0.000)
Constant	5.929*** (0.131)

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## 8 Conclusion

This thesis investigated the Early Release of Superannuation (ERS) and if it had a heterogeneous impact on financial wellbeing across income groups. Using data from the HILDA Survey and a triple difference framework as per [Olden and Møen \(2022\)](#), my regression results provide no conclusive evidence that the ERS disproportionately improved low-income individuals' financial satisfaction compared to higher-income individuals'. However, my results provide evidence that the ERS improved individuals' financial satisfaction in general, with my baseline regression reporting an estimated 2.34% improvement in financial satisfaction for withdrawers. This estimate is notably smaller in magnitude than what has been previously reported in the literature, suggesting that prior research may have overestimated the impact of this policy by overlooking potential issues surrounding sample selection, and processes like nearest neighbour matching. My results should inform future policymakers on how they can improve the designs of policy responses to major crises, and incorporate treatment effect heterogeneity into their considerations.

Lastly, this thesis lays the path for future research related to the ERS and similar pandemic-era policies. Potential avenues for future research include addressing the triple difference parallel trends violation through the synthetic control method, or the incorporation of new methodological approaches emerging within the triple difference literature. Future researchers can consider working with census-level data and seeing if it generates similar results regarding the ERS' impact. Additionally, future researchers may investigate impact heterogeneity for the ERS across different societal subgroups, like women or culturally and racially marginalised groups.

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## A Early Release - Summary Statistics

**Table 7:** ERS Withdrawal Patterns

Withdrawal Pattern	Frequency	Percent (%)
Both Periods	1,838,679	8.71
First Period Only	139,861	0.66
Second Period Only	119,696	0.57
No Withdrawals	19,005,246	90.06

Weighted (responding person weights), using HILDA Survey data

**Table 8:** ERS Withdrawal Patterns

Withdrawal Pattern	Count
Both Periods	1604
First Period Only	123
Second Period Only	77
No Withdrawals	22416

Unweighted, using HILDA Survey data

**Table 9:** Weighted Summary Statistics - ERS Withdrawal Amounts

	mean	sd	min	p25	p50	p75	max
First Period	8550.79	2731.552	10	8000	10000	10000	10000
Second Period	8600.831	2651.443	10	8500	10000	10000	10000
Total	8575.37	2692.106	10	8000	10000	10000	10000

Weighted (responding person sample weight), using HILDA Survey

**Table 10:** Summary Statistics - ERS Withdrawal Amounts

	mean	sd	min	p25	p50	p75	max
First Period	8586.109	2697.118	10	8500	10000	10000	10000
Second Period	8499.747	2801.41	10	8000	10000	10000	10000
Total	8544.445	2747.744	10	8060	10000	10000	10000

Unweighted, using HILDA Survey

## B Wealth-Related Data Gaps

As stated in the main body of the paper, the HILDA dataset is limited in how it does not document any information regarding re-contributions of ERS withdrawals into super accounts. While the HILDA Survey usually records responding persons' personal super contributions within the 'wealth' special module, the relevant variable was omitted in wave 22, meaning there is no data regarding this for the post-treatment period.<sup>14</sup> Through personal correspondence, the HILDA Survey team confirmed with me that this 'personal contributions' variable was omitted and that there are ongoing discussions regarding the inclusion of post-tax super contributions in future waves of the survey.

On a similar note, the HILDA dataset does not contain any information regarding when a certain asset was acquired, and only records the total value of groups of assets at the time of the interview. This is also the case for investments, and both of these subjects are infrequently surveyed as they fall under the quadrennial 'wealth' special module. Hence, the HILDA dataset is limited in its ability to show if and how ERS withdrawals are used to increase one's wealth.

<sup>14</sup>While data on salary-sacrifice agreements was collected in wave 22, this is not the same as a personal contribution. See: <https://www.ato.gov.au/individuals-and-families/super-for-individuals-and-families/super/growing-and-keeping-track-of-your-super/how-to-save-more-in-your-super/personal-super-contributions>

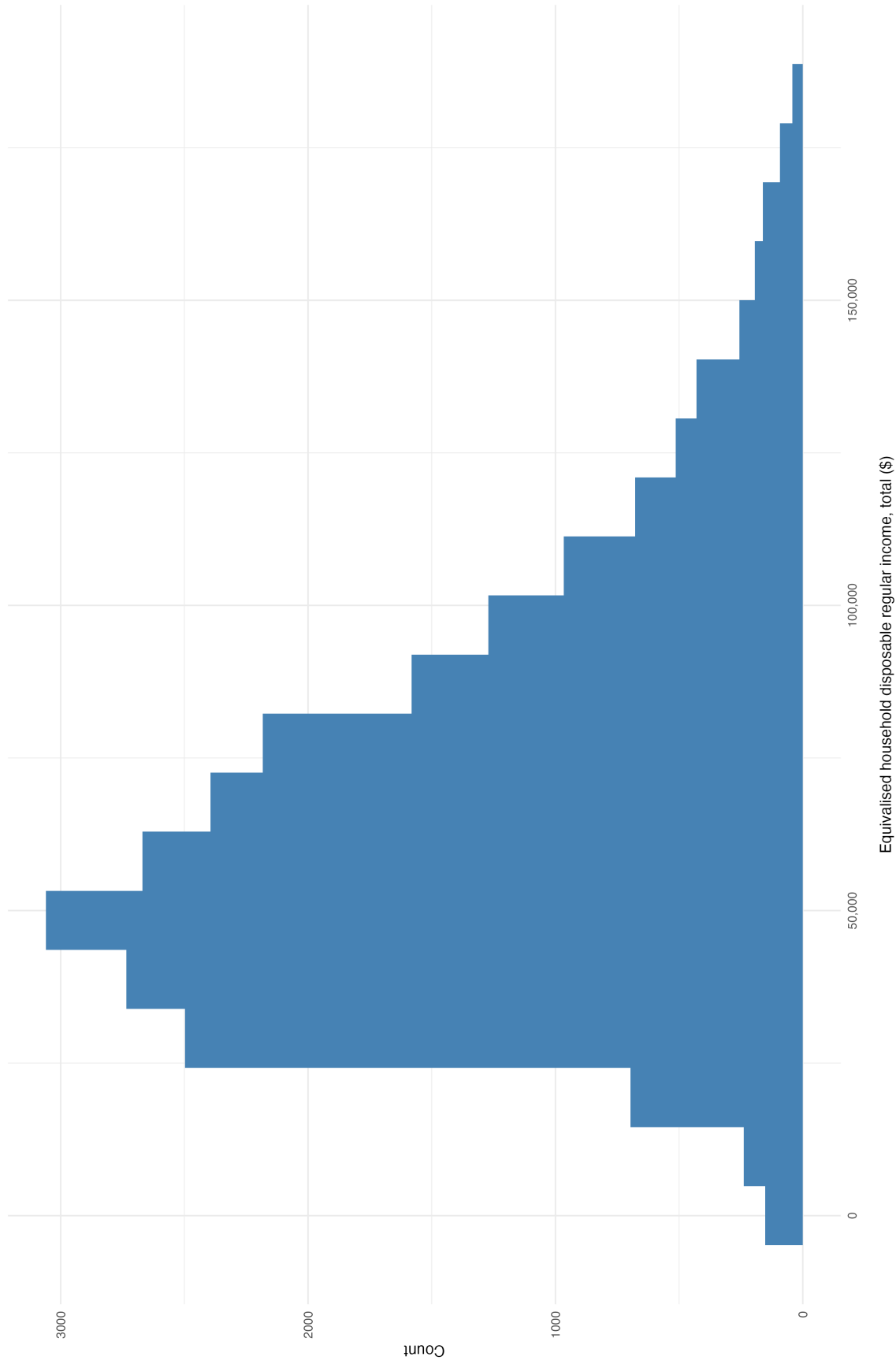
## C Equivalised Disposable Household Income Data

**Table 11:** Summary Statistics - Equivalised Household Disposable Income

Wave	P3	P20	P40	P50	P60	P80	P98
15	19772.09	36785.43	51502.84	58956.33	67336.37	91165.30	174171.1
16	19656.69	37099.48	51694.47	59028.62	67510.61	91292.64	178775.2
17	19391.54	36624.72	51190.78	58687.68	67386.37	90928.65	178983.9
18	19322.93	37077.75	51704.20	59629.37	67944.11	92266.38	179058.9
19	19925.72	37750.67	52906.51	61358.66	70513.30	94458.11	182017.0
20	21916.43	40529.03	55730.89	63886.89	73199.94	97019.98	182278.0
21	20639.07	40433.16	56637.26	64724.06	74222.76	99601.26	186974.8

Unweighted. Expressed in 2024-25 dollars, using HILDA Survey and ATO information on consumer price index (CPI) rates.

Distribution of Equivalised Household Disposable Income at Wave 19



Unweighted and expressed in 2024-25 dollars, using HILDA Survey and ATO information on consumer price index (CPI) rates. Individuals (n=51) with equivalised household disposable regular income in the 98th percentile and above (i.e. >\$184,130) are excluded. Negative values are set to 0.

## D Financial Satisfaction Data

**Table 12:** Summary Statistics - Satisfaction with Finances

	Mean	SE	Min	P10	P25	P50	P75	P90	Max
Wave 19	6.725	0.028	0	4	5	7	8	9	10
Wave 20	7.087	0.031	0	5	6	7	8	9	10
Wave 21	7.223	0.029	0	5	6	8	8	10	10

Weighted (responding person weights), using HILDA Survey information and non-missing values.

**Table 13:** Summary Statistics - Satisfaction with Finances

Wave	Min	P10	P25	P50	P75	P90	Max
19	0	4	6	7	8	9	10
20	0	5	6	8	8	9	10
21	0	5	6	8	9	10	10

Unweighted, using HILDA Survey and nonmissing values

**Table 14:** Summary Statistics by Income Status - Satisfaction with finances

Wave	Group	Mean	SE	Min	P10	P25	P50	P75	P90	Max
19	Higher-Income	6.809	0.029	0	4	6	7	8	9	10
19	Low-Income	6.023	0.081	0	3	5	6	8	9	10
20	Higher-Income	7.143	0.033	0	5	6	7	8	9	10
20	Low-Income	6.588	0.065	0	4	5	7	8	9	10
21	Higher-Income	7.313	0.030	0	5	6	8	9	10	10
21	Low-Income	6.731	0.075	0	4	5	7	8	9	10

Weighted (responding person weights), using HILDA Survey information and non-missing values.

## E Sample Selection

**Table 15:** General Sample Selection

	Dropped		Remaining	
	Observations	Individuals	Observations	Individuals
Full sample			162186	30099
Balanced for waves 19 to 21	60264	15105	101922	14994
Exclude missing ERS	181	26	101741	14968
Exclude missing financial satisfaction	288	42	101453	14926
Total	60733	15173		

Unweighted, using HILDA Survey Restricted Release 23. 'Full sample' and subsequent steps only contains waves 15 to 21. 'Exclude missing ERS' refers to the variable 'oifcvs' which asks individuals if they withdrew from their super via the ERS.

## F Demographic and Control Variable Definitions

"Age" is a continuous variable measured in years. "Sex" is an indicator variable that equals 1 when the individual is female. "Long-term health condition/disability" documents individual's responses to the question, "do you have any long-term health condition, impairment or disability [such as these examples] that restricts you in your everyday activities, and has lasted or is likely to last, for 6 months or more?" The examples provided are based on the activities used to define disability in the ABS Survey of Training and Education ([Summerfield et al., 2024](#)). The "long term health condition/disability" indicator variable = 1 when individuals respond with "yes."

These variables are derived from the individual's household type:

- "Single parent" is an indicator variable that = 1 if they are a lone parent with children under 15 years old, regardless of if they live with or without other people.
- "Couple with children" is an indicator variable that = 1 if they are a "couple family with children [who are under] 15 [years old]" [Department of Social](#)

Services and Melbourne Institute of Applied Economic and Social Research (2024), regardless of if the individual lives with or without other people.

- "Couple without children" is an indicator variable that = 1 if they are a "couple family [without] children or others," or a "couple family [without] children" that lives with other people in their household.

"Other people" in this context can be related or unrelated to the individual.

In line with the ABS' definition, the HILDA Survey defines "casual worker" as an employed individual who has no paid holiday leave nor sick leave (Department of Social Services and Melbourne Institute of Applied Economic and Social Research, 2024). "Current labour force status" also uses the ABS' definition, i.e. unemployed individuals are able to work and are actively looking for employment, and the labour force consists of employed and unemployed individuals. "Full-time worker" is based on the HILDA Survey's own definition wherein an individual works "35 hours or more per week, based on usual hours" (Department of Social Services and Melbourne Institute of Applied Economic and Social Research, 2024).

The real value of all income and wealth variables are calculated using the CPI rates publicly available on the Australian Taxation Office (ATO) website<sup>15</sup> and are expressed in 2024-25 dollars. I use versions of the income and wealth variables which contain imputations made by the HILDA Survey team. Summerfield et al. (2024) contains further details regarding this process, and how most imputations used the Little and Su method with nearest neighbour regressions used for the remainder.

The "white-collar" indicator variable is derived from the 2-digit code for the individual's occupation in the 2006 edition of the Australian and New Zealand Standard Classification of Occupations (ANZSCO). "White-collar" = 1 for the occupations listed in Table 16 below.

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<sup>15</sup>See <https://www.ato.gov.au/tax-rates-and-codes/consumer-price-index>

**Table 16: White-Collar Occupations**

<b>ANZSCO Code</b>	<b>Sub-Major Group</b>
10	Manager
11	Chief Executives, General Managers, and Legislators
20	Professionals
21	Arts and Media Professionals
22	Business, Human Resource and Marketing Professionals
23	Design, Engineering, Science and Transport Professionals
24	Education Professionals
25	Health Professionals
26	ICT Professionals
27	Legal, Social and Welfare Professionals
50	Clerical and Administrative Workers
51	Office Managers and Program Administrators
52	Personal Assistants and Secretaries
53	General Clerical Workers
54	Inquiry Clerks and Receptionists
55	Numerical Clerks
56	Clerical and Office Support Workers
59	Other Clerical and Administrative Workers

"Undergraduate" is an indicator variable that equals 1 if the individual has an undergraduate-level education at the very least. That is, their highest level of education can be: a postgraduate degree, a graduate diploma or certificate, or a bachelor's or honours degree.

## G Demographics - Other Summary Statistics

Like Table 2, continuous variables in Table 17 are reported as: mean (standard deviation). Factor variables are reported as: count (%).  $p$ -values are from  $t$ -tests and Pearson's  $\chi^2$  test. Table 17 uses the same variables in Table 2 and differs in how the statistics are calculated using the HILDA Survey's cross-sectional responding person weight.

**Table 17:** Summary statistics for pre-treatment demographics

	Non-Withdrawer	Withdrawer	p-value
N	15,460,984 (90.3%)	1,653,346 (9.7%)	
Age (years)	46.214 (19.066)	38.897 (11.547)	<0.001
Sex			
[1] Male	7,357,253 (47.6%)	901,341 (54.5%)	<0.001
[2] Female	8,103,732 (52.4%)	752,005 (45.5%)	
Single parent?			
No	15,030,264 (97.2%)	1,523,104 (92.1%)	<0.001
Yes	430,720 (2.8%)	130,242 (7.9%)	
Couple with children?			
No	11,636,960 (75.3%)	1,063,885 (64.3%)	<0.001
Yes	3,824,025 (24.7%)	589,461 (35.7%)	
Couple without children?			
No	11,353,474 (73.4%)	1,375,404 (83.2%)	<0.001
Yes	4,107,510 (26.6%)	277,942 (16.8%)	
Long term health condition/disability?			
[1] Yes	4,428,104 (28.6%)	387,083 (23.4%)	0.003
[2] No	11,032,881 (71.4%)	1,266,263 (76.6%)	
Current labour force status			
[1] Employed	9,733,322 (63.0%)	1,386,030 (83.8%)	<0.001
[2] Unemployed	466,198 (3.0%)	56,491 (3.4%)	
[3] Not in the labour force	5,261,465 (34.0%)	210,825 (12.8%)	
Highest education level achieved			
[1] Postgrad - masters or doctorate	1,107,138 (7.2%)	83,401 (5.0%)	<0.001
[2] Grad diploma, grad certificate	975,297 (6.3%)	71,451 (4.3%)	
[3] Bachelor or honours	2,703,105 (17.5%)	192,951 (11.7%)	
[4] Adv diploma, diploma	1,516,255 (9.8%)	192,774 (11.7%)	
[5] Cert III or IV	3,152,181 (20.4%)	523,910 (31.7%)	
[8] Year 12	2,429,058 (15.7%)	280,076 (16.9%)	
[9] Year 11 and below	3,526,419 (22.8%)	308,271 (18.6%)	
[10] Undetermined	51,531 (0.3%)	511 (0.0%)	
Casual worker?			
No	6,466,624 (76.8%)	830,409 (69.2%)	<0.001
Yes	1,949,159 (23.2%)	368,915 (30.8%)	
Full-time worker?			
No	9,087,506 (58.8%)	656,935 (39.7%)	<0.001
Yes	6,373,479 (41.2%)	996,411 (60.3%)	
Household annual disposable regular income (\$, real)	143,864.605 (111,934.429)	127,737.407 (82,493.574)	<0.001
Weekly gross wages and salary (\$, real)	978.949 (1,346.897)	1,144.616 (1,049.497)	<0.001
White-collar worker?			
No	5,678,728 (58.3%)	1,049,543 (75.8%)	<0.001
Yes	4,054,145 (41.7%)	335,692 (24.2%)	
Household debt (\$, real)	315,361.141 (616,714.632)	270,584.938 (517,523.180)	0.035
Total superannuation (\$, real)	371,756.695 (668,091.875)	173,890.317 (254,222.132)	<0.001
Total household net worth (\$, real)	1,441,880.923 (2,037,932.045)	638,060.580 (1,135,834.011)	<0.001

**Table 18:** Pre-Treatment Demographics - Matched Sample

Characteristic	Non-Withdrawer N = 881	Withdrawer N = 957	p-value
Age (years)	34 (12)	34 (12)	0.8
Sex			0.7
Female	422 (48%)	449 (47%)	
Male	459 (52%)	508 (53%)	
Single parent	60 (6.8%)	62 (6.5%)	0.8
Couple with children	308 (35%)	338 (35%)	>0.9
Couple without children	187 (21%)	199 (21%)	0.9
Long term health condition/disability	174 (20%)	199 (21%)	0.6
Current labour force status			
Employed	881 (100%)	957 (100%)	
Not in the labour force	0 (0%)	0 (0%)	
Unemployed	0 (0%)	0 (0%)	
Highest education level achieved			0.002
Postgrad - masters or doctorate	38 (4.3%)	32 (3.3%)	
Grad diploma, grad certificate	28 (3.2%)	37 (3.9%)	
Bachelor or honours	103 (12%)	101 (11%)	
Adv diploma, diploma	99 (11%)	113 (12%)	
Cert III or IV	287 (33%)	325 (34%)	
Year 12	194 (22%)	149 (16%)	
Year 11 and below	132 (15%)	199 (21%)	
Undetermined	0 (0%)	1 (0.1%)	
Casual worker	244 (28%)	261 (27%)	0.9
Full-time worker	620 (70%)	678 (71%)	0.9
Household annual disposable regular income (\$, real)	122,543 (57,476)	121,054 (58,075)	0.6
Weekly gross wages and salary (\$, real)	1,431 (877)	1,450 (904)	0.7
White-collar worker	217 (25%)	229 (24%)	0.8
Household debt (\$, real)	257,672 (361,317)	231,130 (397,575)	0.14
Total superannuation (\$, real)	219,763 (337,868)	166,748 (217,578)	<0.001
Total household net worth (\$, real)	729,697 (1,129,507)	502,998 (936,736)	<0.001

## H Nearest Neighbour Matching Details

**Table 19:** Covariate Balance Summary

	Raw s.d.	Weighted s.d.	Raw ratio	Weighted ratio
Age	-.1814006	-.0056752	.641145	.9579454
Female	-.1320454	-.0019037	.9983966	.9997171
Disability	-.1393502	-.004624	1.251628	1.006452
Single parent	.2017225	0	2.507287	1
Couple without kids	-.1757802	0	.799709	1
Couple with kids	.0877543	.0019782	1.062398	1.00116
Casual worker	.1563274	0	1.192585	1
Full-time worker	.1011441	.0020957	.9213785	.9980412
Undergraduate	-.4927695	-.0025412	.5910065	.9954854
White-collar	-.4423226	.0022578	.7214718	1.002913
Household income	-.4712635	-.0134486	.3473818	1.131826
Weekly wages	-.2118457	.0158213	.520837	1.154751
Low-income Status	.0382799	0	1.261789	1

s.d. = standardised differences. Ratio = variance ratio.

# I Event Study Regression

Table 20: Event Study Regression

	(1)
	Financial satisfaction
Age	-0.011*** (0.003)
Sex	-0.081 (0.070)
Long-term health condition/disability	0.492*** (0.075)
Single parent	-0.343*** (0.123)
Couple with kids	-0.049 (0.062)
Casual worker	-0.272*** (0.061)
Full-time worker	0.049 (0.068)
Undergraduate	0.058 (0.094)
White-collar worker	0.026 (0.066)
Household disposable regular income	0.000*** (0.000)
Weekly gross wages and salary	0.000*** (0.000)
Wave=16	0.035 (0.071)
Wave=17	0.106 (0.075)
Wave=18	0.063 (0.079)
Wave=19	0.238*** (0.078)
Wave=20	0.617*** (0.078)
Wave=21	0.681*** (0.085)
Withdrawer=1	-0.509*** (0.106)
Wave=16 × Withdrawer=1	0.022 (0.108)
Wave=17 × Withdrawer=1	-0.003 (0.112)
Wave=18 × Withdrawer=1	-0.031 (0.115)

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Wave=19 × Withdrawer=1	-0.090 (0.115)
Wave=20 × Withdrawer=1	0.150 (0.117)
Wave=21 × Withdrawer=1	0.020 (0.122)
Low-Income=1	0.349 (0.497)
Wave=16 × Low-Income=1	0.134 (0.445)
Wave=17 × Low-Income=1	0.036 (0.427)
Wave=18 × Low-Income=1	0.758** (0.356)
Wave=19 × Low-Income=1	-0.010 (0.527)
Wave=20 × Low-Income=1	-0.286 (0.538)
Wave=21 × Low-Income=1	-0.242 (0.504)
Withdrawer=1 × Low-Income=1	-0.230 (0.697)
Wave=16 × Withdrawer=1 × Low-Income=1	-0.233 (0.672)
Wave=17 × Withdrawer=1 × Low-Income=1	0.318 (0.684)
Wave=18 × Withdrawer=1 × Low-Income=1	-1.009 (0.632)
Wave=19 × Withdrawer=1 × Low-Income=1	-0.635 (0.781)
Wave=20 × Withdrawer=1 × Low-Income=1	-0.530 (0.842)
Wave=21 × Withdrawer=1 × Low-Income=1	0.148 (0.927)

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Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$