Econ 281 Class Project
1st Submission

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Abstract

I will estimate the wealth effects on labor supply decisions using a Regression Discontinuity design, exploiting the implementation of the Universal Guaranteed Pension (PGU) in Chile.

1 Introduction

Theoretical object of study This project investigates wealth effects—that is, changes in labor supply in response to shifts in permanent income or consumption. A common strategy to study this dimension of labor supply is to examine worker's responses to exogenous increases in wealth or income.

Experiment To identify an exogenous variation in wealth, I exploit a natural experiment generated by the implementation of Chile's Universal Guaranteed Pension (PGU) in 2022. Eligibility for the PGU is determined by reaching the age of 65. I will implement a Regression Discontinuity (RD) design using age in days as the running variable, with the eligibility threshold at exactly 65 years.

Data I will use data from the 2022 wave of the Encuesta de Caracterización Socioeconómica Nacional (CASEN), a nationally representative household survey in Chile. CASEN 2022 includes detailed information on individual employment status, hours worked, and labor income, which allows for the estimation of both extensive and intensive margin responses in labor supply.

2 Identification Strategy

PGU PGU was implemented in Chile in February 2022. This benefit replaced the Solidarity Pillar and expanded coverage to include 90% of the population aged 65 and over, excluding only the top 10% of the income distribution. The former Solidarity Pillar only covered 60% of the population. The PGU provides a monthly cash transfer that complements self-funded pensions, with the maximum amount adjusted annually according to the Consumer Price Index (CPI).

Importantly, being employed or not yet retired does not disqualify individuals from receiving the PGU. The benefit is intended to supplement income for older adults regardless of labor market status, thereby avoiding disincentives for continued workforce participation.

Under the previous system—the Solidarity Pillar, which included the Pensión Básica Solidaria (PBS) and the Aporte Previsional Solidario (APS)—eligibility was also not formally tied to retirement. However, the criteria were more restrictive, possibly creating incentives to avoid formal income in order to qualify. Specifically, the PBS required that individuals not receive any other pension, and the APS required a self-financed pension (from individual savings) below a certain threshold.[1]

The transition to the PGU in 2022 simplified and broadened eligibility. Individuals aged 65 or older could now receive the benefit regardless of employment or pension status, provided they met the residency and income criteria. The impact of this reform is evident in the data: the number of recipients increased substantially from around 1.66 million under the Solidarity Pillar (591,000 receiving PBS and 1,066,000 receiving APS) to approximately 2.4 million beneficiaries as of early 2025.

By November 2023, there were already 1.97 million PGU recipients. Of these, roughly 1,488,547 received the PGU alongside their self-financed pensions, while 482,109 individuals without self-financed pensions received the full benefit.

[1] The threshold was the Maximum Pension with Solidarity Contribution (PMAS), set at CLP 255,000 as of July 2011 and indexed to inflation.

Empirical Design In order to estimate the causal effect on hours worked and employment status (perhaps also wages) of PGU eligibility, I would run a standard sharp Regression Discontinuity equation.

$$Y_i = \alpha + \tau \cdot \mathbb{1}(age_i \geq 65) + f(age_i - 65) + X_i'\gamma + \varepsilon_i \tag{1}$$

Where

- Y_i: Outcome variable of interest for individual i (e.g., hours worked, employment status, or labor income).
- $\mathbb{1}(age_i \geq 65)$: Indicator function equal to 1 if individual i is eligible for PGU (i.e., age 65 or older), and 0 otherwise. Note that while I write the age threshold in years for simplicity, the actual estimation will use age measured in days to precisely capture eligibility discontinuity.
- τ: The coefficient of interest — it captures the causal effect of PGU eligibility on the outcome variable.
- $f(age_i - 65)$: A smooth function of age centered at the cutoff. This controls flexibly for the relationship between age and the outcome. Typically specified as a linear or quadratic polynomial and estimated separately on each side of the cutoff.
- X_i: A vector of additional control variables (e.g., gender, education level, region) that may improve the precision of the estimates. If I was interest at how labor income interacted with the effect of PGU on hours worked I could either include labor income here, or as an interaction term with the treatment.
- γ: Coefficients associated with the control variables.
- α: Intercept term.
- ε_i: Error term capturing unobserved determinants of the outcome.

3 Data Description

I will use data from the 2022 wave of CASEN, a nationally representative household survey conducted by Chile's Ministry of Social Development. CASEN collects detailed information on demographic characteristics, labor market outcomes, income, education, and participation in social programs. I will use this survey because it allows me to observe employment status, hours worked, and labor income for all individuals, including those aged 65 and over. The fieldwork for CASEN 2022 was carried out between November 1, 2022 and February 2, 2023, capturing the period shortly after the implementation of the PGU in early 2022.

To evaluate how PGU changed labor supply incentives relative to the previous non-contributory pension system (the Solidarity Pillar), I will consider applying the same regression discontinuity strategy to an earlier wave of CASEN. The immediately preceding wave, CASEN 2020, was conducted before the implementation of PGU. However, due to the COVID-19 pandemic, its fieldwork was carried out primarily via telephone interviews using a reduced questionnaire, which may limit comparability. For a more robust comparison, I will therefore consider using CASEN 2017, which was collected through traditional in-person interviews and offers a more consistent pre-reform baseline. This would allow me to compare labor supply responses around the age 65 threshold under the Solidarity Pillar regime.