Extensive and Intensive Margins of Informal Workers' Public Pension Demand: Evidence from a Mongolian Pension Reform

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Although developing countries are facing rapidly aging populations, the coverage of working-age people remains low. The large gap in the coverage of recipients and contributors negatively affects the financial sustainability of public pension systems. The participation of informal workers in public pension systems is, therefore, an important challenge facing developing countries in the next few decades (Banerjee et al. 2022).

In contrast to massive studies in developed countries, few studies have investigated the demand for pension products in developing countries. Although Song (2019) and Tanaka et al. (2019) have studied non-price factors of pension demand, it is still unclear the relationship between the price and demand of pension products in developing countries. This paper contributes to three kind of literature: universal coverage of social insurance in developing countries (Bloom and McKinnon 2013, Banerjee et al. 2022), the retirement saving (Choi 2015, Karlan and Zinman 2018), and the annuity puzzle (Benartzi et al. 2011).

Exploiting large-scale policy and administrative data on the Mongolian public pension, I provide precise estimates of the price elasticity of pension demand by regression kink design (RKD) approach. The policy allows specific populations to have their contributions redeemed between 1990 and 2000. The maximum redemption period is exogenously determined by the time of reaching retirement age: before, during, or after this period. In other words, this redemption policy had different maximal intensities depending on the year and month of birth. I can divide individuals into three groups: a full-intensity group, a proportional-intensity group, and a non-intensity group. Using the thresholds between those groups, I estimate the policy impact on pension demand by the RKD approach. I focus on herders, representative informal workers in Mongolia. The anonymized administrative data includes participation date information and contribution records every year of all herder participants. The number of observations including non-participants is 257,090, which is enough to provide precise estimates. I estimate the policy impact on unconditional contribution amount (the main effect), participation (the extensive margin), and contribution amount conditional on participation (the intensive margin).

I find small price discounts for young individuals work effectively, whereas large price discounts crowd out specific populations' contributions. I analyze two distinct samples: young herders with small redemption benefits and middle-aged herders with large redemption benefits. I call them the bottom and top kink samples, respectively. The main result shows a positive impact on participation for both samples. Nevertheless, the impact on contribution is mixed: there is a positive impact for the bottom kink sample, but an insignificant impact for the top kink sample. Dividing the top kink sample reveals an insignificant positive effect on new participants and a significant negative effect on existing ones, aligning with known substitution and income effects in retirement savings research (Choi 2015).

In addition, I find a gender-heterogeneous impact. The policy impact for females is generally larger than for males. This result shows a strong connection between pension coverage and the pension system design, indicating that the gender gap in coverage is driven or shrunk depending on the design of the pension system.

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