The Journal of the Economics of Ageing xxx (2016) xxx–xxx

Contents lists available at ScienceDirect

The Journal of the Economics of Ageing

journal homepage: www.elsevier.com/locate/jeoa

Full length article

Assessing the demand for micropensions among India's poor

Olivia S. Mitchell [a], Anita Mukherjee [b,*]

[a] The Wharton School of the University of Pennsylvania, 3620 Locust Walk, 3000 Steinberg Hall-Dietrich Hall, Philadelphia, PA 19104, United States
[b] Wisconsin School of Business, University of Wisconsin-Madison, 5273 Grainger Hall, 975 University Avenue, Madison, WI 53706, United States

ARTICLE INFO

Article history:
Available online xxxx

Keywords:
Pension
Saving
Commitment savings
Retirement

ABSTRACT

Using new data from a field experiment in India, we test hypotheses about micropension design in a poor population. We elicit demand for the basic micropension in addition to variants with different minimum withdrawal ages, government match rates, and options for lump sum withdrawal. A majority (80%) of respondents report interest in the micropension, and the amount they are willing to contribute would be enough to cover about 40% of expected old-age consumption. We find that prospective policyholders value the inability to access the assets until a particular age. We also find that they respond positively to the government match rate.

Introduction

Millions of unorganized and informal sector workers in the developing world are excluded from formal pension and social security systems (Rutherford, 2009; Bloom et al., 2010). Old-age economic security is a considerable problem for such populations, and providing adequate and secure income flows in the future is a formidable challenge (Bloom and Eggleston, 2014). The problem is aggravated by significant increases in life expectancy and changing social structures including the breakdown of the traditional extended family system, making today's workers vulnerable to unmitigated longevity risks, uncertain health costs, and poverty post-retirement. Further, with underdeveloped annuity markets and poor financial literacy, workers face considerable challenges in retirement planning and decision-making. These problems imply that more needs to be done to build the private old age savings. One such mechanism might be micropensions, which are defined contribution pension systems, most involving fixed voluntary contributions over a long period of time. The assets are then professionally invested and, at some predetermined age (typically 60), the funds are disbursed to the policyholder either as a lump sum or phased withdrawals.

India provides an ideal setting to study the market for micropensions because the country's new pension system is designed to reach informal sector workers. Asher (2009) noted that the need for micropensions for informal sector workers comprising more than 90 percent of the Indian economy is particularly important in view of rising life expectancy and massive changes in migration and family characteristics. Understanding how such long-term saving products might help solve the problem of old-age income security for informal sector workers is hampered by the lack of insight into the behavioral, economic, and institutional barriers to participation.

India's economy has grown rapidly over the last two decades, but the country still faces immense challenges with regard to poverty alleviation. According to the Government of India's Planning Commission (2014), nearly 30 percent of the country's 1.2 billion population lives below the poverty line. At the same time, according to the Population Research Bureau (Scommegna, 2012) the share of India's below-poverty-line population age 60 or older is expected to increase from 8 percent in 2010 to 19 percent in 2050. Many of these older persons work in the unorganized sector, and as such, lack the identification and proof of employment documents required for accessing basic financial services. Nevertheless, current research estimates that about 80 million of these workers are capable of saving for retirement and the untapped savings are in the order of US $2 billion (Shankar and Asher, 2011).

The present paper studies a micropension product recently offered by the National Pension System in India and provides new evidence regarding the features of micropensions that individuals value. The product's explicit goal was to provide a way for informal sector workers to save safely and routinely for old age (Sane and Thomas, 2015). The government had incentivized participation in the micropension product by offering a matching contribution scheme called Swavalamban, where it matched the first Rs. 1000 (about US $20) of annual contribution by 100 percent.

* Corresponding author.
E-mail addresses: mitchelo@wharton.upenn.edu (O.S. Mitchell), anita.mukherjee@wisc.edu (A. Mukherjee).

http://dx.doi.org/10.1016/j.jeoa.2016.05.004
2212-828X/

The government collected contributions from participating individuals through licensed institutions that operated at the community level, and the overall operation was regulated by the Pension Fund Regulatory and Development Authority. The product allowed individuals to save their money with the government, which in exchange promised to return at least the principal payments; the money was invested in the capital market (60 percent in bonds, 40 percent in stocks) in an effort to protect policyholders from inflation risk. Policyholders could contribute to the product until age 60 and could withdraw up to 20 percent if needed for an emergency prior to that age. On the policyholder's death, any remaining funds were offered to the next of kin.[1]

We show that the surveyed individuals express significant interest in the micropension product: about 80 percent express a desire to contribute an average of Rs. 1500 (US $30) annually. Back-of-the-envelope calculations from the survey responses suggest that this savings path would provide an old age monthly consumption replacement rate of about 40% for the policyholder. We also find that our survey respondents exhibit a demand for commitment: adoption and annual willingness to contribute (WTC) both decrease when the product has early eligibility and withdrawal features. Conversely, adoption and WTC also decrease for late eligibility and the lack of early withdrawal, suggesting that there is a sensitive balance between these features. Our survey respondents reacted positively to government matching on the intensive margin: increasing the match rate from 100 to 150 percent does not affect adoption, but annual contributions would grow by over 10 percent. We find no heterogeneity by gender, suggesting that the demand for commitment is likely not driven by frictions in intra-household bargaining (Asher and Shankar, 2007).

This paper is related to a large literature on saving by the poor in developing countries. A recent review appears in Karlan et al. (2014), and an older review that emphasizes the theoretical background is provided in Deaton (1989). McConnell (2013) has a useful overview of the relevance of insights from behavioral economics as they apply to decisions related to aging. Examples of related empirical work in the literature include Ashraf et al. (2006), which explains the impact of commitment devices; Karlan et al. (2016), which examines mental accounting; and Dupas and Robinson (2013), which studies the impact of access to saving technologies. Specific to the Indian context, recent work has also examined the marketplace for defined contribution retirement schemes targeting informal sector workers (Nelson, 2012; Shankar and Asher, 2011).

Experimental design

Our experiment tested interest in the basic micropension product along with six variants of this product using a sample of below-poverty-line respondents in India. Our project design is akin to that employed in Brown et al. (2013) who tested the effect of different social security frames on hypothetical choices about claiming ages in the US context. The 770 individuals in the present study were split about equally into two groups to test responses to an array of product variants without taxing or confusing the respondents. All respondents were first asked about the basic micropension product as it was then offered in India. Immediately afterward, they were asked about adoption and willingness to contribute decisions for three additional product variants. The order in which these additional variants were presented was randomized to avoid confounding order and product variant effects. Individuals were also informed that agents would be the primary means by which micropension deposits would be made, and by which distributions would be received.

A summary of the variants of the product covered in the experiment including the related survey questions is provided in Table 1. Group 1 was asked about variants 1B, 1C and 1D, and Group 2 was asked about variants 2B, 2C and 2D. The first variant (A) is the basic micropension product that was then on offer by the Indian government. The other variants included early withdrawal (1B), where the eligibility age was 55 instead of 60; a lower matching rate of 50 percent instead of 100 percent (1C); no early withdrawal (1D); delayed withdrawal, where the eligibility age was 65 instead of 60 (2B); a higher matching rate of 150 percent instead of 100 percent (2C); and option for full withdrawal at age 60 (2D). Since the baseline micropension product and its variants are complex financial products, they could be difficult for individuals to understand. Accordingly, the marketers were instructed to follow a tested script that clearly explained the products. On average, marketers spent about 10 minutes explaining the baseline product. The marketers also offered to re-explain this baseline product before each variant was presented.

The experiment was conducted in conjunction with a detailed survey that may have primed respondents to consider their financial needs (Zwane et al., 2011). To mitigate this potential problem, respondents randomly received the survey either before or after the module measuring micropension demand. The survey contained a module (detailed in Adhikari et al., 2016, and requested by India's Ministry of Finance) eliciting the respondent's level of interest in a hypothetical social security scheme combining the micropension, life insurance, and health insurance products.

Hypotheses and methods

Our empirical strategy leverages the randomized experiment and focuses on two responses regarding the micropension product: "adoption", i.e., whether the respondent was interested in participating in the product, and "WTC", i.e., the amount of annual contribution that the respondent expected to make to the product.[2] We group all respondents together in the analysis because all expressed preferences over the baseline product, which formed the reference category in every regression. This allows us to interpret the coefficients related to the different product variants as changes relative to the baseline product (as in Brown et al. (2013), which presented different social security frames to each respondent.)

The main models take the following form, which we estimate using ordinary least squares (OLS):

$$Y_i = \alpha_i + \sum_j \beta_j Variant_j + \delta X_i + \omega \lambda_i + \epsilon_i, \quad (1)$$

where Y_i is either adoption or WTC, j represents the six product variants offering different features of the micropension features ($Variant_j$ is an indicator variable), X is a vector of covariates, and λ is vector of experimental controls. Specifically, X includes the respondent's age, gender, occupation, number of children, amount of land owned, consumption, and several measures of human capital including education, numeracy and financial literacy. The λ vector consists of a control for whether the respondent received the survey before the micropension product presentations, along with controls for the order in which the product variants were presented. The baseline product, Variant A, is the reference category in every

[1] As of June 1, 2015, this Swavalamban scheme was replaced with Atal Pension Yojana (APY). The APY scheme, which combines both the defined contribution and defined benefit features of a pension, remains part of the National Pension System, and hence is regulated by the Pension Fund Regulatory and Development Authority.

[2] Both annual and monthly contribution amounts were elicited by the survey. We report the annual figures as they are likely to be more informative of retirement saving because individuals have intermittent income and are better able to estimate their incomes over a longer time horizon (Sherraden et al., 2003).