Informal sector participation in contributory pension schemes

Renuka Sane

Pension Policy Workshop

February 2015

Motivation

- Low pension coverage in emerging economies
- The environment characterised by
  - *large informal sector* making it hard to mandate employer-based programs, or use tax-breaks
  - *inaccessibility of modern finance* making it hard to integrate fund management and small value contributions
- Coverage requires a combination of
  - Incentives
  - Infrastructure

Contributions and the poor

- Skepticism about contributory programs for the poor
  - Financial capability of putting money aside
  - Large transactions costs

Poor people and savings: Empirical evidence

- Households often do not have access to institutionalised saving mechanisms that involve explicit rules, incentives and subsidies (Beverly and Sherraden 1999)
- Studies show that poor people save using informal mechanisms such as ROSCAs, sometimes at a very high cost (Rutherford 2000)
- Devices which simply provide poor households with a safe place to keep money increase savings by substantial amounts (Dupas and Robinson 2012)
- Not much is known about households willingness to save in illiquid products such as pensions
- Sane and Thomas (2014) find that poor people are interested in a pension account. Their ability to persist in making contributions is limited, but improves over time.

Research question

- What is the experience of informal sector participation in the NPS-S in India?
- Does the availability of insurance affect participation and persistence of lower income households in pension products?

The NPS-Swavalamban scheme

- A matched defined contribution scheme for low-income workers in India, called the NPS-Swavalamban (NPS-S) launched in late 2010
- Government contributes Rs.1000, if the member contributes Rs.1000 ore more in one financial year.
- Matched co-contribution available for the first three years i.e. till March 2014. Was extended to March 2017.
- Amount locked till the age of 60
- Mandatory annuitisation of 40 percent
- 85 percent invested in debt instruments, 15 percent in equity
- The first twelve transactions are free.
- Rs.70 annual account servicing fee

Part I

Participation in the NPS-S

Enrollment
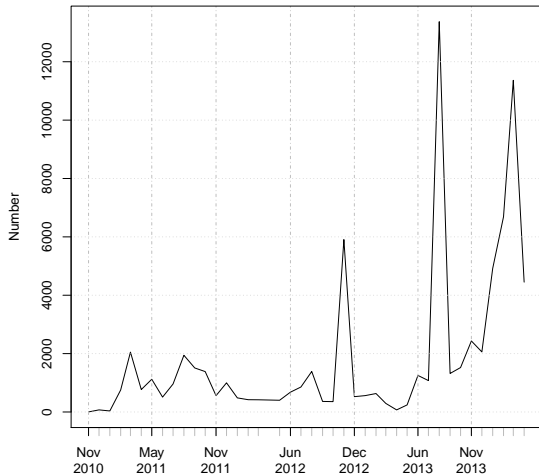
Contributions
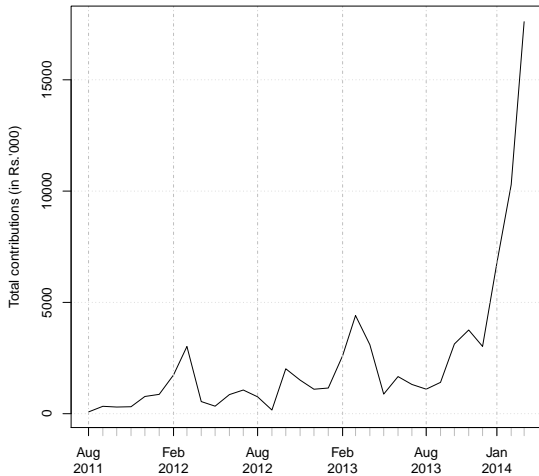
Total contributions per account
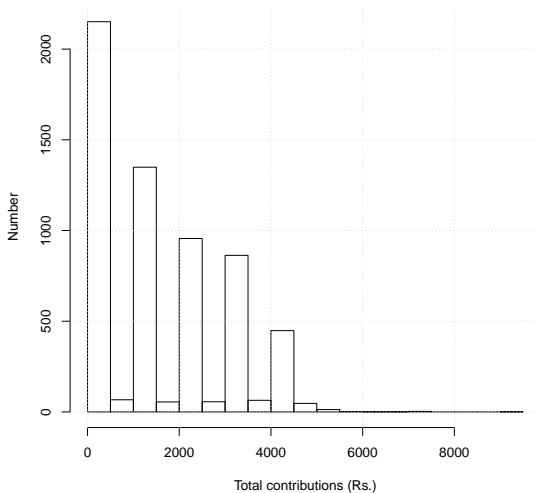
Rs.1000 plus over the years

This is the percentage of people who have contributed Rs.1000 or more in any year.

Enrolled in	N	Contributions over financial year			
		2010-11	2011-12	2012-13	2013-14
2011	6080.0	26.9	32.7	29.2	42.5
2012	16953.0		21.6	34.6	44.0
2013	12793.0			45.4	43.8
2014	35344.0				91.2

Rs.1000 or more in every year

This is the percentage of people who have contributed Rs.1000 or more in each year.

Enrolled in	N	Contributions over financial year 2010-11	2011-12	2012-13	2013-14
2011	6080	26.9	15.3	8.6	6.9
2012	16953		21.6	12.2	9.5
2013	12793			45.4	28.0
2014	35344				91.2

Rs.1000 in subsequent years

Percentage of people not able to contribute Rs.1000 in the enrollment year but contribute Rs.1000 or more in subsequent years

		Contributions over financial year		
Enrolled in	N	2011-12	2012-13	2013-14
2011	6080.0	23.8	23.6	37.5
2012	16953.0		28.6	38.4
2013	12793.0			15.3

Has anyone contributed more than Rs.1000?

Percentage of people who have contributed more than Rs.1000 in any year.

Enrolled in	N	Contributions over financial year			
		2010-11	2011-12	2012-13	2013-14
2011	6080	26.8	11.2	3.8	1.7
2012	16953		21.0	7.2	2.7
2013	12793			34.0	8.9
2014	35344				60.6

Participation profile by year

| | Enrollment year | | | |
	2010-11	2011-12	2012-13	2013-14
Male	24.1	15.9	18.6	12.6
Own land	33.8	38.0	35.8	42.8
Own home	82.3	88.5	84.4	90.2
Have electricity	85.9	89.0	83.6	87.8
Private toilet	21.5	17.7	20.8	21.9
Cooking medium: Gas	14.5	12.6	16.5	17.2
Caste: Non OBC/SC/ST	87.2	91.9	86.4	88.9
Median household income (Rs.)	24000.0	24000.0	25000.0	32500.0
Number of children	2.0	2.0	2.0	2.0

Key takeaways

- The number of people contributing Rs.1000 gradually increasing.
- However, the *same* people are not able to contribute year after year. Thus the ability to contribute Rs.1000 every year is limited.
- Non-contribution in enrollment year does not mean subsequent non-contribution.
- Limited contributions over the Rs.1000 threshold
- Remarkable jump in first year persistence in 2014
- Entrants in 2014 have higher household incomes

Policy questions

- How to deal with persistence over time?
- How to encourage contributions over the Rs.1000 threshold?
- Whether to continue discouraging sign-up of people who cannot contribute Rs.1000 upfront?
- Will contributions continue without the matched contribution?

Part II

Participation in insurance and NPS-S

Products

- Personal accident insurance (PAI)
- Term life insurance (TLI)
- Insured: either PAI or TLI
- NPS Swavalamban (NPS-S)

The ideal experiment

- Households are *randomly* allocated an insurance policy.
- The pensions participation between the insurance and no-insurance households is measured.
- If households with insurance participate and contribute to the pension scheme relative to the no-insurance households, then the insurance purchase can be said to have had a causal impact on pension participation.

Observational data

- We have observational data on purchase of insurance and pensions.
- Households that *choose* to purchase insurance may be different from households that do not buy insurance.

Propensity score matching: Timing of purchase

- Insurance policies were sold since 2007
- The NPS-S was introduced in November 2010
- We use a propensity score model to estimate the insurance purchase decision prior to 2010. This gives us a set of treated and control households who are similar in all observables except for insurance purchase.
- We estimate the NPSS participation and contributions of the two groups. This gives us the average treatment effect of insurance purchase on pension participation.

The PSM model

- Model probability of insurance purchase
- Use information on all available observables
- Match on the propensity score in two groups: those with and without JLG loans outstanding
- Use calipers of 0.05, 0.01, and 0.001

Sample

N	28521.000
Only PAI (%)	70.492
Only TLI (%)	0.319
Either insurance (%)	72.010
Both insurance (%)	1.199
JLG (%)	35.072
NPSS (%)	30.518
Either insurance and JLG (%)	33.014
Either insurance and NPSS (%)	27.787

By insurance purchase I

	No insurance	Either insurance
N	7983.0	20538.0
NPSS (%)	9.8	38.6
Contributions to NPS-S (mean, Rs.)	1786.5	2013.3
Age (mean)	40.6	39.3
Annual income (mean, Rs.)	123621.7	143288.1
Gender: Female (%)	36.2	65.7
Caste: OBC/SC/ST (%)	80.7	88.4
Education: Illiterate (%)	27.0	28.1
Education: Class 12 (%)	67.8	69.1
Occupation: Agriculture (%)	28.3	19.3
Occupation: Business (%)	8.9	10.8
Occupation: House-wife (%)	3.4	6.9
Occupation: Labour (%)	47.7	56.3
Have electricity (%)	92.6	93.5
Have gas connection (%)	15.7	15.0
Have private toilet (%)	27.9	22.5
Have mobile phone (%)	12.3	15.3
Have television (%)	17.0	16.1
Have computer (%)	8.1	6.8
Have taken JLG loan (%)	7.4	45.8

PSM: Pension participation

	Caliper		
	0.05	0.01	0.0001
Estimate	0.17***	0.18***	0.18***
SE	(0.01)	(0.01)	(0.02)
Original number of treated obs	6699	6699	6699
Matched number of treated obs	6416	5698	523

NPS-S enrollment by JLG participation

	JLG	No JLG
Estimate	0.03	0.23***
SE	(0.05)	(0.01)
Original number of treated obs	2660	4039
Matched number of treated obs	2660	4039
Caliper: 0.05		

PSM: Pension contributions

| | Caliper | | |
	0.05	0.01	0.0001
Estimate	-326.0***	-295.1***	-701.8**
SE	(47.64)	(63.51)	(327.1)
Original number of treated obs	2855	2855	2855
Matched number of treated obs	2515	1446	36

Overview of the results and challenges

- Insurance purchase does impact ability to make pension contributions
- The *reason* insurance purchase affects pensions purchase is not clear from this
- Most likely linked to trust in provider or familiarity with finance