

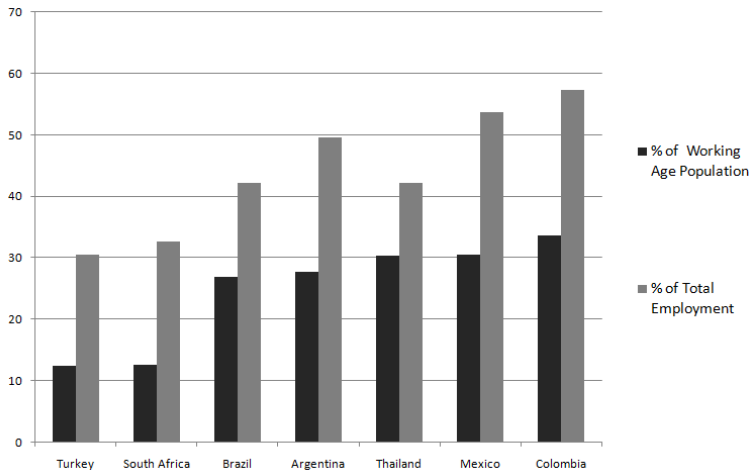
# Public Pensions and Elderly Informal Employment: Evidence from a Change in Retirement Age in South Africa

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**IBS Jobs Conference**

- ▶ Informality is a key trait of the labour market in developing countries, where the informal sector employs a significant portion of the population
- ▶ Yet, there is high heterogeneity in the size of informality across countries at the same level of development (i.e. GDP per capita) (Figure 1)
- ▶ My goal is to investigate the role of policy in explaining these differences  $\Rightarrow$  I take South Africa as a case study

Figure 1: Informality Levels in Selected Countries, 2010



Note: This graph plots average informality levels in 2009 or 2010 for countries with similar levels of GDP per capita in 2010. The darker bar provides the share of informal employment over working age population. The grey bar plots the share of informality over total non-agricultural employment. These shares are calculated by the ILO according to their guidelines on the measurement of informal employment.

Source: World Bank Database (<http://databank.worldbank.org/data/home.aspx>)

# South Africa's Old Age Pension

- ▶ Most expensive social program in South Africa
- ▶ Initially put in place in the 1920s for whites only. Blacks *de facto* excluded until early 1990s
  1. Non-contributory: irrespective of past employment
  2. Age-based: have to be older than a certain age
  3. Means-tested: income has to be lower than a certain threshold
- ▶ It is possible to receive the pension before the age threshold if there is a disability, in that case it is called *Disability Grant*

Table 1: Evolution of the OAP, 1993-2010

Date	Age threshold		Amount	Amount (R '10 )	Means-Test
	Men	Women			
1993	65	60	R 370	R 1008	
1994	65	60	R 390	R 977	R 4440
2000	65	60	R 540	R 902	
2003	65	60	R 700	R 955	R 16920
2007	65	60	R 870	R 1069	
2008(Q2)	<b>63</b>	60	R 940	R 1049	
2009(Q2)	<b>61</b>	60	R 1010	R 1051	R 27552
2010(Q2)	<b>60</b>	60	R 1080	R 1080	R 31296

Figure 2: Old Age and Disability Grant Take-up by Age, **Before and After** Pension Reform

(a) Men

(b) Women

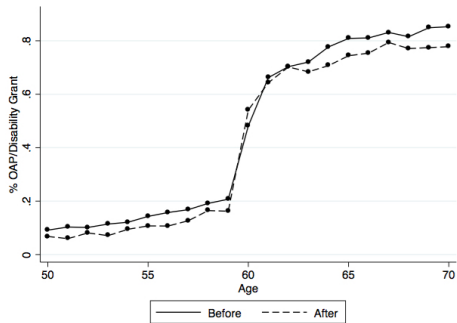
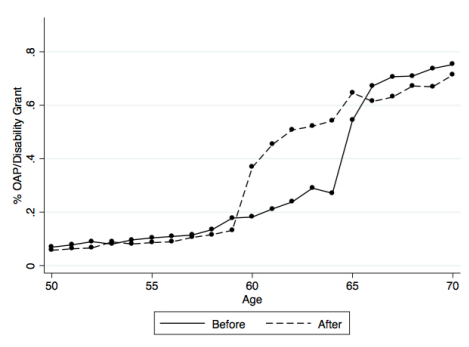
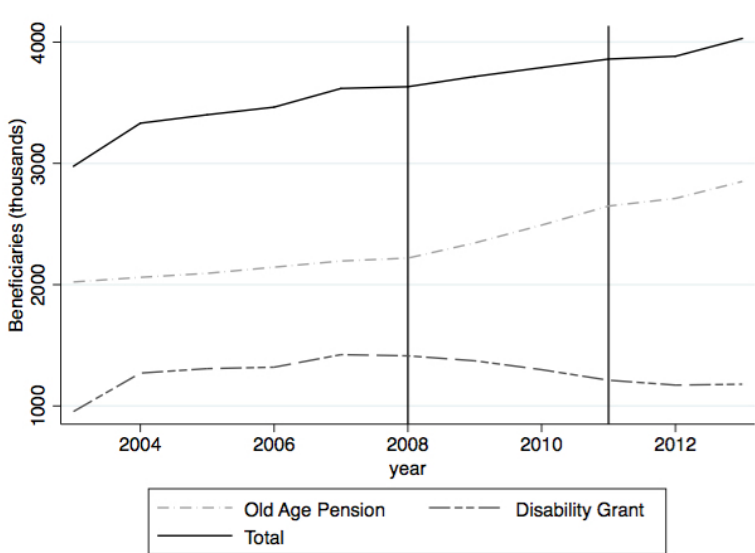


Figure 4: Number of OAP and Disability Grant Beneficiaries, 2003-2013



Two-main directions in the literature about the Old-Age Pension:

- ▶ Intra-household transfers:
  - ▶ Duflo(2000, 2003): uses extension of OAP to Black population to find that it improves health of children sharing an household with pension recipients (but only girls and only through grandma)
  - ▶ Ambler(2016): Explores this further to find that OAP increases female bargaining power within the household because of increase in income share (not for men due to drop out of labour force)
  - ▶ Jensen(2003): finds that OAP receipt occurs with drop in remittances  $\Rightarrow$  crowd out of private transfers



- ▶ Labor market outcomes:
  - ▶ Direct Recipients: the elderly. Ranchood (2006) finds strong disincentive effects to reach the age threshold (simple RDD)
  - ▶ Indirect Recipients: other household members. Bertrand et al. (2003) negative employment effects (cross-sectional) ⇒ Ardington et al. (2009) positive employment effects (longitudinal, one province) ⇒ Abel (2013) negative employment effects (longitudinal, national).
  - ▶ Why is it “difficult” to expand on this literature? Household composition is endogenous to OAP receipt (Hamoudi and Thomas, 2014) ⇒ any analysis needs to take this into account

# What do we do here?

- ▶ We only focus on direct recipients (the elderly) to avoid any problem of selection
- ▶ Use the latest reforms to have clean identification of labour market effects of the OAP, improvement on previous work
- ▶ Decompose effect by the informal vs. formal, and formal with and without a private pension scheme

**Table 2: Composition of Formal and Informal Employment, Men 50 to 59 years old, 2010**

	Informal	Formal	
		Without Private Pension	With Private Pension
<i>Demographic Characteristics</i>			
Black	80.5	65.8	51.3
Rural	34.2	23.3	14.9
Education (yrs)	6.5	7.7	10.5
Married	73.1	81.6	89.5
<i>Job Characteristics</i>			
Firm Size (<5)	75.5	11.8	9.1
Tenure (yrs)	7.4	8.2	17.4
Part Time (<30hrs)	23.3	4.2	4.3
Monthly Salary	R 1700	R 2816	R 6500
% below 2010 Means-Test	65.7	48.3	19.1

# Empirical Strategy

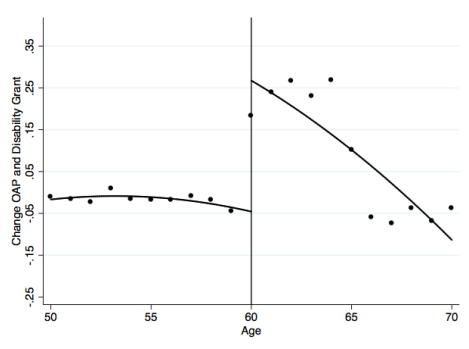
We perform a mixed strategy between RDD + Diff-in-Diff, by including time variation into the RDD framework

$$Y_i = \delta_t + \gamma_r + f(\text{age}_i) + f(\text{age}_i) \times \text{Age}_{(60+)} + f(\text{age}_i) \times \text{Post} + f(\text{age}_i) \times \text{Age}_{(60+)} \times \text{Post} + \beta_1 \text{Post} \times \text{Age}_{(60+)} + \epsilon_i \quad (1)$$

- ▶ *Assumption of classic RDD*: there would have been no discontinuity at age 60 in the absence of the OAP (strong)
- ▶ *Assumption of classic DiD*: common trend between unaffected and affected age groups in the absence of the reform ( 55-59 vs. 60-65) (strong)
- ▶  $\Rightarrow$  *Assumption of RDD-DiD*: discontinuity at age 60 would have stayed the same in the absence of the reform (weak)

Figure 5: Change in OAP Take-Up Rates by Age and Gender, GHS

(a) Men



(b) Women

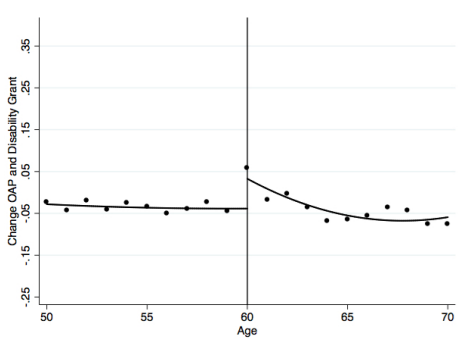


Table 3: Old Age Pension and Employment, GHS Results

	OAP	
Age Window	Linear	Quadratic
<b>a. Men</b>		
$Post \times Age_{(60+)}$	0.3093*** (0.0396)	0.2997*** (0.0518)
Mean Y at Age 59	0.13	
Observations	65,670	65,670
R-squared	0.3183	0.3191
<b>b. Women</b>		
$Post \times Age_{(60+)}$	0.0643 (0.0503)	0.0927 (0.0695)
Mean Y at Age 59	0.16	
Observations	90,132	90,132
R-squared	0.4669	0.4695

Table 4: Old Age Pension and Employment, PALMS Results

	Employed	Informal	Formal	
	(1)	(2)	Without Private Pension (3)	With Private Pension (4)
<b>a. Men</b>				
<i>Post</i> × <i>Age</i> <sub>(60+)</sub>	-0.0624** (0.0240)	-0.0499*** (0.0181)	-0.0009 (0.0139)	-0.0116 (0.0279)
Mean <i>Y</i> at Age 59	0.54	0.14	0.08	0.32
Observations	189,824	189,824	189,824	189,824
R-squared	0.1785	0.0295	0.0163	0.1395
<b>b. Women</b>				
<i>Post</i> × <i>Age</i> <sub>(60+)</sub>	0.0043 (0.0207)	-0.0065 (0.0191)	-0.0004 (0.0137)	0.0112 (0.0198)
Mean <i>Y</i> at Age 59	0.35	0.13	0.08	0.14
Observations	260,792	260,792	260,792	260,792
R-squared	0.1423	0.0523	0.0276	0.0866

Figure 7: Change in Informal Employment Rates by Age and Gender, PALMS

(a) Men

(b) Women

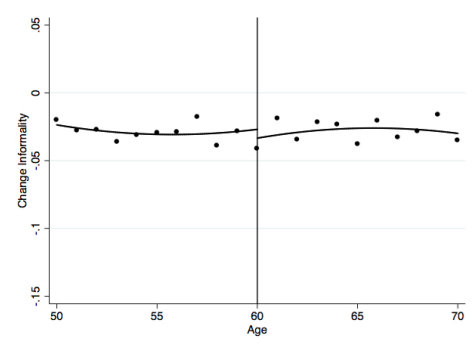
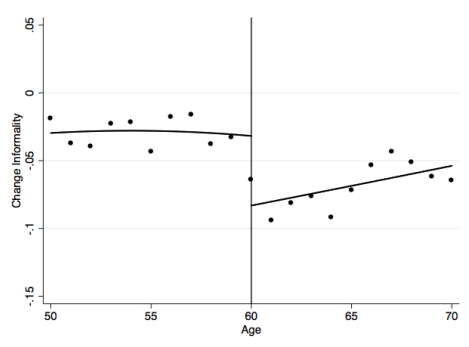
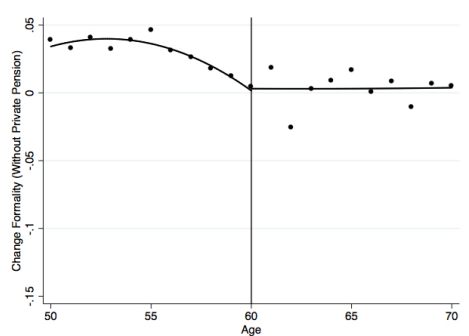




Figure 9: Change in Formal Employment Rates **without** Private Pension by Age and Gender, PALMS

(a) Men



(b) Women

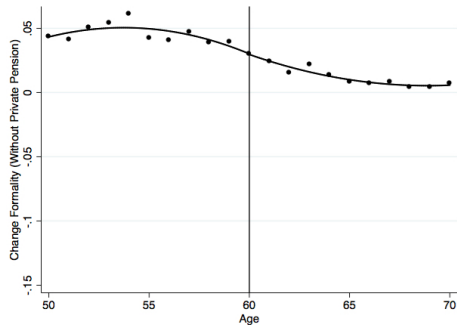
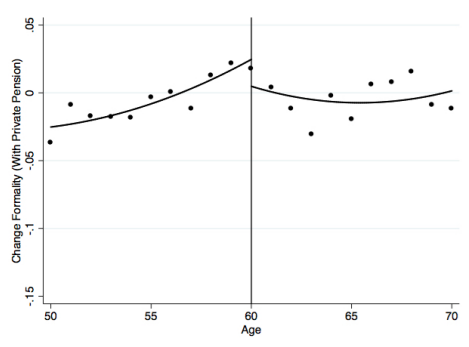
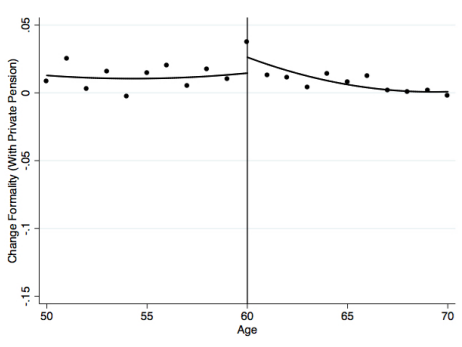


Figure 11: Change in Formal Employment Rates **with** Private Pension by Age and Gender, PALMS

(a) Men



(b) Women



# How big is this effect?

- ▶ Not clear we can interpret these results as second stage, because of means-test take-up and employment are joint decisions (rather than sequential)
- ▶ However, informal earnings, by definition, should not enter the means-test  $\Rightarrow$  ATT: 16 pp.
- ▶ How much less informality does this explain at the country level?
  - ▶ This depends on what assumptions we make about whether the effect is the same on women and of the Disability Grant
  - ▶ This program alone can explain around 1pp. less informal employment at the country level, almost 10% less given average over the period

# Conclusion

- ▶ Non-contributory, old age pension has strong disincentive effects on the elderly
- ▶ However, these are concentrated exclusively on informal employment; formal workers, even if without private pension, are not affected
- ▶ The program all together can explain a significant chunk less of informal employment at the country level (but not enough to explain the large gap between South African and countries with similar GDPpc)