

# **Social Assistance and Informality: Examining the Link in Colombia**

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# Motivation

**Fact #1** Being a beneficiary of social programs that provides guarantee income may create perverse incentives in labor decisions (Urdinola et al., 2009; Gasparini et al., 2006; and Barros, 2006)

**Fact #2** CCT are large-scale social programs that has increased the number of beneficiaries in the last 20 years *By 2011 they were implemented in 18 LAC countries, reaching as many as 135 million beneficiaries (Stampini and Tornarolli, 2012).*

# Motivation

**Fact #3** There is mixed evidence regarding the effects of CCT's on labor supply decisions and specifically in informality

Evidence shows mostly negative but small and non-significant effects of the programs on the employment of adults (Alzúa & Guillermo Cruces & Laura Ripani, 2010)

# This paper...

## **Question:**

Does a CCT program “*Familias en Acción*”, one of the largest scale social program in Colombia, affects labor supply decisions of beneficiaries towards informality?

## **Results:**

Worker’s informality condition is affected by receiving CCT income and by the structure of the Colombian health system, mainly in the medium/long run

# Familias en Acción

- FA is a mean-tested program in Colombia that belongs to the Social Safety Net since 2001. In the present, FA benefits 2.5 million households in average every year (23% of hh in Colombia)
- FA supports families with children under the age of 18 who require financial support for health and education. Monetary subsidy is equivalent to 26% of 2018 minimum wage (38% during evaluation period)

# Hypothesis

- Eligible families must be recognized as victims of displacement, indigenous community, Red Unidos recipient, or have the **Sisben score required by the program.**
- FA doesn't rule out people working in the formal sector, BUT having a job in the formal sector reduces the probability of being eligible of the program, mainly bc formal jobs are constraint by the legal minimum wage.

Social protection programs make individuals likely to maintain the features that make them eligible for social benefits

# Social Assistance and Informality: Evidence

## Seguro Popular (Mexico): Public health insurance

- 0.7 pp reduction of the probability of being formally employed (Aterido, Hallward-Driemeir and Pages, 2011)
- 3.8 pp and 4.3 pp reduction in formal jobs in small and medium-sized firms (Bosch and Campos-Vazquez, 2010)
- 0.9 pp increase in informality for less educated workers (Azuara and Marinescu, 2013)

# Social Assistance and Informality: Evidence

## Social Protection Programs (Colombia):

- 4 pp increase in informality, employees between 12 and 65 years old who do not contribute to health insurance through employment, once the health reform was imposed (Camacho et al., 2013)
- 1.74 pp increase in informality over independent workers and 2.5 pp increase of small firms (2-5 employees) as a consequence of the unification of health and pension systems (Calderon-Mejia and Marinescu, 2011)
- labor force participation effects of the FA increased the probability of formal employment with health insurance among women of 3.2 pp. (Barrientos and Villa, 2015)



# Social Assistance and Informality: Theory

## Model

*Social Protection as a determinant of informality (Levy's, 2008)*

- Workers in the formal sector are aware of the benefits that are prepaid by the hiring firm
- Social security functions like a tax on salaried labor
- Non-salaried workers are excluded from social security
- Social protection functions like a subsidy to non-salaried labor
- Workers make a decision based on a cost-benefit analysis.

# Social Assistance and Informality: Theory

Informality is worker's choice instead of an imposition  
(exit perspective)

The utility a worker obtains from working in the informal sector ( $U$ ) is the sum of his/her wage (Informal\_Wage) plus the value he/she gives to social protection

$$U = \text{Informal Wage} + \beta_i C_i$$

We denote  $C_i$  as the cost per worker of social protection programs, and  $\beta_i$  as the worker's valuation of social protection programs.

# Data

As other CCT programs, the implementation of program was accompanied by a rigorous evaluation that proved its impact in terms of poverty reduction and increased demand for schooling and health services

Baseline 2002	First Follow-up	Second Follow-up
Year	2003	2006
Number of HH	15,110	11,850
Treatment HH	5,918	6,180
Control HH	9,192	5,670
Evaluation Scope	Short run Effects	Medium run Effects

# Informality: Empirical Strategy

Informal workers are those who are not enrolled in the social security system

Informality type 1	Informality type 2	Informality type 3
<i>Firm-size perspective</i>	<i>Productivity perspective</i>	<i>Regulatory perspective</i>
Workers in firms with fewer than five employees	Non-salaried workers who had not completed high school	Enrolled in the Subsidized Health System
Gasparini and Tornarolli's (2007)		Levy's (2008)

# Identification Strategy: DiD Matching

1. Propensity Score Matching (PSM): worker's propensity to be informal and then matching treatment/control workers with similar propensities. The average treatment effect on the treated (ATT) is:

$$E[Y(1) - Y(0)|T = 1] = E[Y(1)|T = 1] - E[Y(0)|T = 1]$$

2. Difference-in-Differences (DiD): compares a before-after estimation of treated individuals with a before-after estimation of non-treated individuals

$$Y_{it} = \beta_1 + \beta_2 T_i + \beta_3 P_t + \beta_4 (T * P)_{it} + \varepsilon$$

# Results

**Table 2.** Estimation Results

	Informality 1 - Social Protection		Informality 2 - Productivity		Informality 3 - Subsidized Health	
	Short Run	Medium/ Long Run	Short Run	Medium/ Long Run	Short Run	Medium/ Long Run
<b>Propensity Score Matching</b>						
ATT - Difference	0.0130* (0.0079)	0.0154* (0.0082)	-0.0230*** (0.0087)	0.02184** (0.0099)	-0.0442*** (0.0107)	0.0193* (0.0113)
<b>Difference - in - Differences</b>						
(T)*(P)	-0.0373*** (0.0096)	-0.0124 (0.0103)	0.0276*** (0.0095)	0.0524*** (0.0108)	-0.0051 (0.0117)	0.07132*** (0.0129)

*Note:* Robust standard errors in parentheses. Statistically significant: \*10%; \*\* 5%; \*\*\* 1%.

# Results: DiD Evidence

Our estimations show a positive results from the ATT estimations for two of our informality perspectives

There is a 2.76 pp increase in the short run and 5.24 pp increase in the medium/long run of being informal for non-salaried unskilled workers.

Unskilled workers benefits more by working in informal labor markets rather than looking for a formal job. However, it is not possible to know if this is due to expulsion from the formal labor market.

# Results: DiD Evidence

Our estimations show a positive results from the ATT estimations for two of our informality perspectives

Non-significant effects in the short run on the probability of being enrolled in the subsidized health system, but a positive and large effect of 7.13 pp in the medium run.

Workers realize that, by keeping their *Sisben* status, they can have access to a subsidized health system and also to *Familias en Accion* benefits.



# Results: DiD Evidence

Our estimations show no clear evidence for one of our informality perspectives

Small firm workers: 3.73 pp reduction in the short run and an insignificant effect in the medium/long run. This could be interpreted as a fading of the negative impact of FA over workers not enrolled in social security (working in small firms) along time.

# Results: Robustness

- Nearest Neighbor brings the best balance among covariates over Kernel, Radius y Nnmatch
- Results are not seriously affected despite different calipers
- Common support is over 98% in all our estimations
- There is some evidence of heterogeneity in our estimations, by geographic location and individual characteristics

# Conclusions

- Social protection programs, such as CCT, are known to have a positive impact in poverty related variables, however they may have also significant side effects.
- Due to CCTs eligibility criteria (low income) and the benefits of social protection programs, such as subsidized health insurance, individuals value more the benefits from social programs than those provided by being a formal worker.
- CCT provides safety net as it provides a guarantee income to households, but reduces the social protection because it creates incentives towards informal labor market

**Thank You**