Labor Informality in Latin America: Poverty and Vulnerability

Roxana Maurizio

(Discussion by Áureo de Paula)

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Motivation

> *This paper aims at analyzing two important aspects to informality from a comparative point of view. the first one is the association between informality and labor precariousness and income segmentation. The second one is the relationship between informality and poverty.*

To that purpose, informal labor in four LatAm countries (Argentina, Brazil, Chile and Peru) is

1. extensively catalogued
2. and its relation to poverty rates is examined.

Motivation

The paper starts out by establishing evidence for the "segmentation hypothesis":

> *Theories of dualist development (Lewis (1954)) and of labor market segmentation (Piore (1979)) assert that in some countries the dualism hypothesis may lead to a better description of labor markets than perfect competition. Specifically, these authors argue that rewards in different economic sectors may differ for workers of equal potential productivity. Moreover, the entry of workers to the formal sector is rationed (see Cain (1976), Dickens and Lang (1985)). Apart from wage rigidity assumptions, this model may be related to different explanations of wage determination such as the efficiency wage theories (Akerlof and Yellen (1986)). [Magnac, 1991]*

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Motivation

If identical individuals are indeed rewarded differently in these two sectors, presumably with those in the informal sector being paid less, one may ask how the ensuing labor precariousness and informality are related with poverty incidence.

This is done by simulating the poverty rate were informal workers remunerated at the same levels as the formal workers.

Definitions of Informality

Two different perspectives:

- Productive: Employment by informal sector (EIS) firms, i.e. (1) family units comprised of own account workers (with incomplete university education) and family workers; (2) enterprises with less than five employees.

- Labor: informal employment (IE), i.e. occupations where labor regulations are not fulfilled.

For non-wage earners, both classifications coincide.

	Formal Employment	Informal Employment
Employment in the Formal Sector	- Formal wage earners (Registered wage earners) in the FS - Formal non-wage earners	- Informal wage earners (Non-registered wage earners) in the FS
Employment in the Informal Sector	- Formal wage earners (Registered wage earners) in the IS	- Informal wage earners (Non- registered wage earners) in the IS - Informal non-wage earners – Unpaid family workers

Table 1
Proportion of informality in the urban labor market (%)
2006/07

Categories	ARGENTINA	PERU	CHILE	BRAZIL
Formal non-wage earners	4.4	5.6	3.7	2.8
Informal non-wage earners	21.6	31.1	20.6	22.6
Formal wage earners in FS	38.4	24.8	51.8	36.2
Informal wage earners in FS	10.4	13.5	9.1	10.3
Formal wage earners in IS	3.8	2.2	4.0	5.6
Informal wage earners in IS	10.6	10.7	3.8	8.7
Formal domestic service	0.8	0.6	2.3	2.5
Informal domestic service	8.7	5.0	3.9	6.4
Unpaid familiar workers	1.3	6.4	0.9	4.9
Total Employment	**100**	**100**	**100**	**100**
Employment in the Informal Sector (includes domestic services)	**46.8**	**56.1**	**35.4**	**50.6**
Employment in the Informal Sector (excludes domestic services)	**37.3**	**50.5**	**29.3**	**41.8**
Informal Employment (includes informal domestic services)	**52.6**	**66.8**	**38.3**	**52.9**
% Informal wage-earners in the total wage earners	**40.8**	**51.5**	**22.4**	**36.5**

Source: Authors' elaboration based on data from Household Surveys

Table 3
Employment in the Informal sector and non-registered wage earners

	ARGENTINA			PERU		
	Registered	Non-regist.	Total	Registered	Non-regist.	Total
Formal Sector	78.7	21.3	100	58.3	41.7	100
	89.3	35.2	67.2	92.0	53.6	70.8
Informal Sector	19.4	80.6	100	12.3	87.7	100
	10.7	64.8	32.8	8.0	46.4	29.2
Total	100	100	100	100	100	100

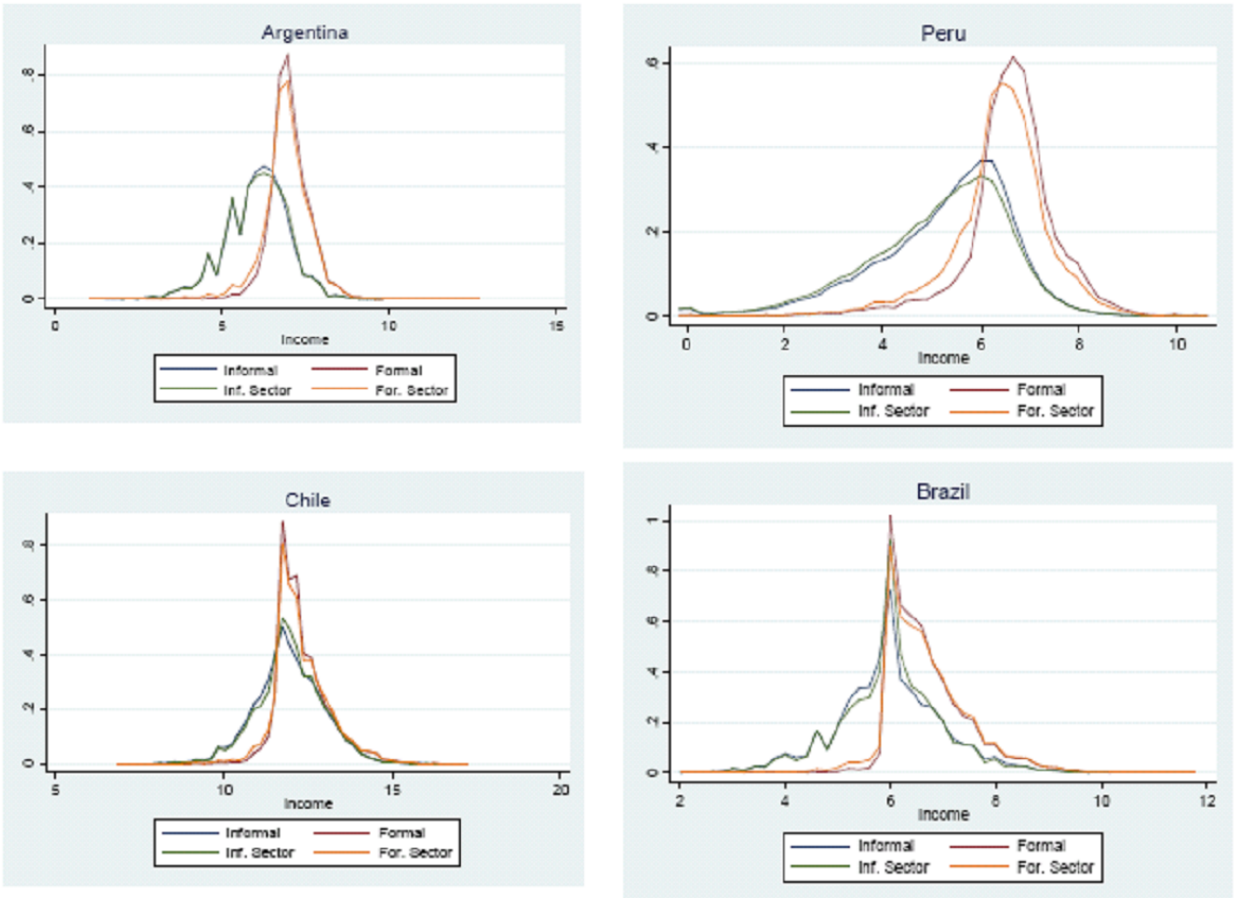
	BRAZIL			CHILE		
	Registered	Non-regist.	Total	Registered	Non-regist.	Total
Formal Sector	85.1	14.9	100	84.4	15.6	100
	82.6	31.9	66.8	88.4	54.4	80.5
Informal Sector	36.0	64.0	100	45.9	54.1	100
	17.4	68.1	33.2	11.7	45.6	19.5
Total	100	100	100	100	100	100

Source: Authors' elaboration based on data from Household Surveys

Data

- Argentina. Encuesta Permanente de Hogares (EPH). Second semester, 2006.
- Brazil. Pesquisa Nacional por Amostra de Domicilios (PNAD). 2006.
- Chile. Encuesta de Caracterizacion Socioeconomica Nacional (CASEN). 2006.
- Peru. Encuesta Nacional de Hogares sobre Condiciones de Vida y Pobreza (ENAHO). 2007.

Graph 1
Kernel Density of monthly labor income



Source: Authors' elaboration based on data from Household Surveys

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Wage Gap

Different methodologies are used to tell whether “rewards in different economic sectors may differ for workers of equal potential productivity”:

- OLS estimates of wage regressions (correcting for selection into each sector);
- Quantile estimates of wage regressions (correcting for selection into each sector);
- Oaxaca-Blinder decomposition between formal and informal workers into three effects: “endowment effects” (due to differences in the characteristics of the two groups), “coefficient effects”, which are differences in returns to those characteristics, and an “interaction effect”;

Wage Gap

- Individual gap calculations: for each individual the difference between projected income (via OLS) in the formal and informal sector (corrects for selection into each sector?);

- Propensity score-matching estimator (nonparametric estimator for effect of informality on wages).

Table 4
Wage Gaps. Mincer Equations by OLS

	Argentina	Peru	Brazil	Chile
IE/FE				
Monthly wages	**-0.655*****	**-0.324*****	**-0.245*****	**-0.0673*****
	[0.00733]	[0.0181]	[0.00374]	[0.00589]
Hourly wages	**-0.517*****	**-0.258*****	**-0.200*****	**0.0359*****
	[0.00676]	[0.0177]	[0.00382]	[0.00590]
EIS/EFS				
Monthly wages	**-0.486*****	**-0.390*****	**-0.179*****	**-0.0109****
	[0.00798]	[0.0175]	[0.00405]	[0.00479]
Hourly wages	**-0.387*****	**-0.298*****	**-0.135*****	**0.0724*****
	[0.00725]	[0.0171]	[0.00413]	[0.00480]

Standard errors in brackets

*** p<0.01, ** p<0.05, * p<0.1

Source: Authors' elaboration based on data from Household Surveys

Table 5
Oaxaca-Blinder Decomposition
Monthly income

	Argentina		Peru		Brazil		Chile	
	IE/FE	EIS/EFS	IE/FE	EIS/EFS	IE/FE	EIS/EFS	IE/FE	EIS/EFS
Difference	-1.019***	-0.848***	-0.900***	-0.855***	-0.476***	-0.678***	-0.350***	-0.262***
	[0.00765]	[0.00829]	[0.0151]	[0.0151]	[0.00440]	[0.00451]	[0.00562]	[0.00542]
Endowments	-0.335***	-0.322***	-0.417***	-0.480***	-0.207***	-0.367***	-0.229***	-0.214***
	[0.00683]	[0.0335]	[0.0186]	[0.0377]	[0.00344]	[0.00405]	[0.00324]	[0.00352]
Coefficients	**-0.544*** **	**-0.296*** **	**-0.279*** **	**-0.313**	**-0.162*** **	**-0.160*** **	**-0.100*** **	**-0.0643*** **
	[0.0125]	[0.0516]	[0.0222]	[0.306]	[0.00411]	[0.0351]	[0.00611]	[0.00575]
Interaction	-0.140***	-0.230***	-0.204***	-0.0627	-0.106***	-0.151***	-0.0207***	0.0163***
	[0.0123]	[0.0610]	[0.0253]	[0.308]	[0.00375]	[0.0351]	[0.00467]	[0.00435]

Standard errors in brackets

*** p<0.01, ** p<0.05, * p<0.1

Source: Authors' elaboration based on data from Household Surveys

Table 6
Average of individual wage gaps
Monthly income

	Argentina	Peru	Brazil	Chile
FE/IE	0.7044*	0.6355*	0.2884*	0.1092*
EFS/EIS	0.3551*	1.0035*	0.2911*	0.0395*

*** p<0.01, ** p<0.05, * p<0.1

Source: Authors' elaboration based on data from Household Surveys

Table 7
Matching Estimator Method
Monthly income

	Argentina	Peru	Brazil	Chile
Informal Employment	**-0.759*****	**-0.666*****	**-0.416*****	**-0.147*****
	[0.00819]	[0.00968]	[0.000713]	[0.00326]
Informal Sector	**-0.287*****	**-0.560*****	**-0.301*****	**-0.0296*****
	[0.0414]	[0.00809]	[0.00225]	[0.000947]

Standard errors in brackets

*** p<0.01, ** p<0.05, * p<0.1

Source: Authors' elaboration based on data from Household Surveys

Informality and Poverty Incidence

To analyze the relation between labor informality and poverty incidence, microsimulation exercises are performed to produce poverty rates that would result if monthly remuneration of informal workers were the same as that of formal workers.

Counterfactual total family income is computed by multiplying the actual monthly remuneration of informal workers times the value of the ratio between the estimated income of a formal worker and that of an informal worker with equal attributes. Estimated incomes are those obtained by OLS.

Table 9
Simulation of reduction of poverty associated to *formalization* of workers
(Poverty incidence in individuals)

	Argentina	Peru	Brazil	Chile
Inicial poverty rate	26.85	34.68	29.96	13.7
Initial poverty gap	0.4171	0.3792	0.4249	0.3179
Contrafactual				
FE/IE	17.81	24.44	26.35	13.12
EFS/EIS	22.59	20.69	26.32	13.61
Reduction				
FE/IE	-34%	-30%	-12%	-4%
EFS/EIS	-16%	-40%	-12%	-1%

Source: Authors' elaboration based on data from Household Surveys

Informality and Poverty Incidence

- Different reductions are related in part to the different magnitudes of the income gap between formals and informals: where this gap is wider (Argentina and Peru), the reduction is also larger.

- Given that these countries the initial incidence of poverty is very high, even if all workers were formal the percentage of poor people would remain high.

Conclusions

In all cases informality proved to be an independent source of lower incomes, even if controlling by an extended set of personal and job characteristics. This suggests the presence of income segmentation in the labor markets of these countries. Additionally, the descriptive analyses and the microsimulation exercise suggest a positive relationship between informality and poverty. Nevertheless, it has also been shown that the elimination of informality does not seem to eliminate poverty.

The author then speculates about other policies (minimum wage, unemployment benefits) and their effect on poverty incidence.

Comments

How much can wage differentials based on observable characteristics be taken as evidence of segmentation?

> *[I]t can be shown that if wages in different sectors are explained through a linear characteristic approach implicit prices of productive characteristics are generally different across sectors either because skills are bundled (Heckman and Scheinkman (1987)) or because each agent has specific skills in each sector (Rosen (1978)). Even if the market is competitive as a whole, comparative advantages remain for almost all workers. Empirical work does not reject this conclusion (Heckman and Sedlacek (1985)). (. . .)*

Comments

(. . .) So, neither observable wage differences nor potential wage differences should be taken as evidence against the hypothesis that the labor market is competitive. (. . .) [In discussing the extended Roy model] we posit neither that all individuals are identical as in the standard macroeconomic model, nor that individual effects are identical across sectors. (Magnac, 1991)

Comments

As a matter of fact, the author recognizes that

> *these results might be affected by variables that are not observable and, thus not included in the regressions. For example, other non-monetary advantages that compensate the lower wages of informality might exist, which make these jobs more attractive to certain individuals. But given that there seems to exist a tight link between informality and poverty (. . .) the argumentations suggesting that informality is a voluntary choice of workers is not likely to apply to all workers in the region. On the contrary, the high levels of unemployment and labor precariousness experienced by these countries suggest that the insertion in informality could be the only choice of an important group of people.*

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Comments

Why does it matter? Because of the strong causal flavor that segmentation lends to the exercise:

> *[I]t is possible to identify a relationship between informality and poverty incidence that may or may not be mediated by segmentation. In the former case, as long as segmentation implies that certain workers are not capable of obtaining enough remuneration to meet the needs of the households they belong to, informality will constitute an important independent factor related to the households' poverty situation.*

Comments

- Hourly Wages *vs.* Monthly Income: conflate the choice as to how much to work among informal workers?
- General equilibrium effects of complete formalization may reduce the effect of informality elimination on poverty even further.
- It would be interesting to discuss more the differences in wage gap results due to the different methodologies.
- (Yet another) decomposition for the distribution of wages: DiNardo, Fortin and Lemieux.