A study on informality in Argentinean provinces

Valeria J. Blanco[1], A. Daniela Cristina[2], Iván Iturralde[3] and Alberto J. Figueras[4]

Abstract

Regional differences in Argentina are very important. In this paper we analyse the main determinants of labour informality in the regional labour markets of Argentina with a macro approach. From a theoretical viewpoint, one may find two main perspectives: (a) a structuralist; and (b) an institutionalist view. GMM estimations highlight the importance of both approaches, finding evidence that active/inactive rate, the proportion of small firms, the proportion of public employees per 1.000 inhabitants and a more qualified labour force exert a negative influence on the regional informality rate, whereas the unemployment rate has a direct relationship with informality.

Keywords*: Informality, labour, structuralist, institutionalist, Argentina*.

JEL Code: J01, J2, O17.

[1] **Valeria J. Blanco** (Universidad Nacional de Córdoba. Facultad de Ciencias Económicas, Instituto de Economía y Finanzas and Departamento de Economía y Finanzas. Córdoba, Argentina). E-mail: valeria.blanco@unc.edu.ar

[2] **A. Daniela Cristina** (Universidad Nacional de Córdoba. Facultad de Ciencias Económicas, Instituto de Economía y Finanzas and Departamento de Economía y Finanzas. Córdoba, Argentina. CICE, CIECS UNC-CONICET). E-mail: daniela.cristina@unc.edu.ar

[3] **Iván Iturralde** (Universidad Nacional de Córdoba. Facultad de Ciencias Económicas, Instituto de Economía y Finanzas and Departamento de Economía y Finanzas. Córdoba, Argentina). E-mail: ivan.iturralde@unc.edu.ar

[4] **Alberto J. Figueras** (Universidad Nacional de Córdoba. Facultad de Ciencias Económicas, Instituto de Economía y Finanzas. Córdoba, Argentina. CICE, CIECS UNC-CONICET). E-mail: alberto.jose.figueras@unc.edu.ar

I. Introduction

Domestic economies -and regional markets- began a process of accentuated disequilibrium with the great technological change at the end of the 20th century and the globalization, including all its costs and benefits. Labour markets have been deeply impacted by these changes (with lower levels of employment and sharp increases in unemployment rates). An adjustment mechanism has been the increase in the so-called “external flexibility” of workers. As a consequence, the "duality" of markets was accentuated, with rising levels of labour informality. As a reaction, governments increased regulations and controls; and this lead in turn to a paradox: more rules and surveillance resulted in a higher degree of evasion (or informality), particularly in the group of Small and Medium-Sized Enterprises (SMEs). The study of labour informality is therefore necessary, especially at the level of regional markets.

The study is organized as follows. The first two sections look at background information on the subject. The paper continues with a section with a descriptive look at the evolution of informality in Argentina. Later, the proposed methodological technique and the data are presented. The results are discussed below, and finally, the last section is intended to summarize the most relevant conclusions.

II. Background

Social reality perhaps responds more to Nassim Taleb's “black swans” effect. Despite this possibility, research continues while we seek to find regularities to explain (or predict) reality; - it must be said, though that if one would think of an area of study where randomness (black swans) would be present is regional economies: very often defined by casual events, as Krugman, 1992, Chapter 2, points out, when speaking of location: many times, "(...) the reasons (...) go back to some historically trivial accident". This may be identified with Richardson's (1978) "location constants", which trace the "path of dependency"; that is, the "subordination" to historical contingency.

Argentine history tells us that regional differences are not negligible, and day after day they seem to grow larger, at least in the perception of agents.

The issue of regional informality has been analysed recently from a microeconomic viewpoint (see Cristina, Figueras, Iturralde and Blanco, 2019). It remains on the research agenda to work on a dimension that can be called “macro”, looking at the informality rate as a dependent variable on a series of "conditioning factors".[5]

The problem of informality is closely linked to regional (and also to national) competitiveness; and therefore, conditions the economic progress of each region. In the first place, it conditions its location at a specific point of employment (that is, potentially laying on the

[5] A mixed approach although with imperfections in the model can be found in Figueras, Capello, García Oro, Cristina et alter (2017).

production possibilities curve if full employment is achieved), since informality can be considered, in a way, a form of underemployment. And, secondly, its presence conditions the possibilities for the future (the shift of that production possibilities curve, that is, the phenomenon of growth).

Rapid changes have led to a great transforming crisis in the labour market, as in the times of the Industrial Revolution (1760/1870). Quality jobs vanish. Those jobs with good remuneration, stability, and social benefits are already a rara avis. On the labour horizon, with few exceptions, the shadow of precariousness is present, even in good-sized companies (often under the figure of "tertiarization").

In Argentina, these complicated circumstances for the labour market are not new. In the sixties, with the beginning of the import substitution industrialization process, this situation began to be common in productive activity. The first studies of the so-called urban informal sector, were studies as early as Carlos Sánchez (1975/76), which is based on Lewis (1954), ILO (1972) and Hart (1970 and 1973) for the dual labour markets of Africa. Sánchez (1975/1976) points out that the urban informal sector arises in "dual economies" characterized by two well-differentiated labour sectors: (i) A formal sector with “modern” forms of production; (ii) An informal sector, with pre-modern forms of production, that arises from the inability of the formal sector to absorb the growing labour supply (which increases due to vegetative factors, rural migrations, and technological improvements in the formal sector that leads to expulsion by substitution of workers). In other words, we are talking about a double criterion for qualifying a sector. In an advanced economy, both criteria usually coincide, and a labour sector is formal both in terms of productivity and in terms of income. In "dual" economies, instead, it is common that these criteria do not to coincide, with activities with low productivity levels (v.gr. a plumber) but with acceptable income. In turn, it is common for a “third sector” to appear: a “disguised informal” sector that comprises excessive public employment. This public employment operates as a hidden subsidy for unemployment or a “preventive subsidy” for falling into the informal sector. Although five decades have passed, the situation in Argentina (and surely in Africa) has not changed much... and if it has, it has been worsening, at least in the field of labour informality.

In the fifties and sixties, the import substitutive industrialization contributed to promoting internal migration flows (which replaced the external migration of the first decades of the 20th century). This phenomenon took place with spatial jumps: from the rural area to first-order populated nuclei, from these to second-order nuclei (cities), and then to metropolises (big cities). These flows were reinforced by the mechanization of agriculture. Thus, the impoverished sectors of the provinces moved in that order of urban hierarchy, and over time they formed the agglomerations of the main historical axes: Buenos Aires, Rosario, and Córdoba (and then Mendoza and Tucumán). However, urban activities were not able to absorb these large internal migration flows, which have increased in recent decades with the arrival of migrants from neighbour countries (Bolivia and Paraguay). In addition, the change in cultural patterns has led women to join the labour market. This increase in participation enlarged the labour supply and impacted labour informality indicators.

Therefore, the labour market has been suffering from great supply pressures for more or less half a century, with the demand "not being able" to respond to those requirements and even less in a "formal" way. We have, then, the perfect framework for an "informal" response.

III. An outline of the state of the art

Half a century after those pioneering studies by Lewis, Hart, and Sánchez, one may find two main perspectives on labour market informality: (a) a structuralist, and (b) an institutionalist. The difference between the two approaches is basically what each one believes causes informality.

In the institutionalist view, informality is linked with evasion of legal norms, considering that the fiscal burden inefficiencies in the public sector act as a stimulus for not complying with institutional rules. Indeed, the institutionalist perspective refers centrally to a microeconomic approach (see e.g., Uribe and Ortiz, 2006), since informal activities would be a naturally functional response of the agents to face excessive government regulations and the presence of a “state inefficiency” in its functions. In other words, informality can be related to specific circumstances that influence the individual decision of each economic agent regarding the choice of a formal or an informal relationship (both for job seekers and employers). But these microeconomic decisions are framed in macroeconomic environments (as Porter, 2003, affirmed about the competitiveness of the company and the location).

The structuralist perspective links labour informality with poverty, marginality, low productivity, low level of qualifications, and restrictions on access to capital. In this case, the approach is based on the fact that certain factors of the economic, socio-political system, and more specifically of the labour market, have an impact on informality; being, therefore, this a view fundamentally from the macroeconomic point of view (Uribe and Ortiz, 2006). In this line, are the reflections of Sánchez (1975) as well as the works of Hart (1970 and 1973). Based on this, variables such as business density in the jurisdiction, unemployment rate in the region, and the ratio of assets to liabilities in the geographic area are usually included.

Uribe and Ortiz (2006) highlight the importance of complementing both visions to explain informality, given the limitations presented by each of these conceptualizations. The present study considers relevant variables in both visions.

In the case of the structuralist perspective, the general premise is linked to the fact that certain factors of the economic environment and the labour market have an impact on informality, being this a centrally macroeconomic approach. On the other hand, the institutionalist perspective refers to a microeconomic perspective since informal activities would be nothing more than a choice of each of the subjects in a context of state inefficiency and the presence of extended regulations and tax pressure.

The structuralist vision treats informality as a way to escape unemployment (or a residual sector, where the activities only provide income for survival). This line of thought began with the

work carried out by Lewis (1954), ILO (1972) and Hart (1970 and 1973) outlining the evidence for Africa. The works of Singer (1980), Tokman (1982) and PREALC (1981 and 1985) are also worth mentioning since they add the notions of low levels of productivity and low capacity for capital accumulation (both physical and human) as sources of informality.

The determinants of the informal labour market are different in these lines of thought. The institutionalist one considers as determinants factors such as the existence of legal barriers to the formation and operation of companies and the inefficiency of the state in the provision of services (both factors related to the institutional nature of a state). Once this is defined, the variables are a measure of the size of the public sector (tax collection, public expenditure, and/or employment in the sector), and a measure of restrictions on the labour market, such as employment inspections and/or the quality of government institutions.

On the other hand, the structuralists suggest that the informal sector arises from the limited possibility of the modern sector of absorbing the workforce so that labour informality is a way to avoid falling into unemployment. Therefore, the determinants of this approach are given by factors related to the economic structure that limits the market in its capacity to create jobs. The variables usually included in this definition are the level of unemployment, social structure, degree of technological development, and level of physical and human capital, among others.

The empirical evidence consistent with the structuralist perspective often relates informality with the size of the company and occupational position. This is linked to the International Labour Organization (ILO) definition that associates labour informality with SMEs, non-professional self-employed, and domestic and unpaid employees. On this basis, numerous empirical studies have been carried out, for example, Gasparini and Tornarolli (2007), Tornarolli and Conconi (2007), Henley et al. (2009). Some studies show a direct relationship between informality, unemployment, and the greater weight of the tertiary sector in job creation, for example, Fields (1975), Mazumdar (1976), William (2001), Boeri and Garibaldi (2006), Bosch and Maloney (2008).

Bourguignon (1979), Fields (1980), Uribe and Forero (1984), López (1987), and Magnac (1991) begin with the treatment of informality, influenced by the structuralist current, focusing on showing the segmentation of the labour market in Colombia and the countercyclical nature of informality. Another relevant analysis in Colombia is that of Núñez (2002), which seeks to establish the relationship between informality and tax evasion.

Mejía and Posada (2007) develop a model where they find an optimal degree of state imposition, which entails an optimal level of informality, treating enforcement as an endogenous variable. The work of García Cruz (2009) presents features of the two previously mentioned papers, using four determinants of informality from the two lines of thought. In addition, the paper shows that a higher public spending on enforcement of regulations and greater institutional presence have an inverse relationship with the size of the informal sector (García Cruz, 2009), and confirms the exogeneity of the enforcement variable.

Uribe and Ortiz (2006) state that the smaller the size of the cities, the greater the degree of informality in employment. To achieve a more complete or adequate explanation of informality, they combine the perspective of the structuralist current view with the institutionalist one and that potentially allows to overcome the limitations of each vision.

As we have already pointed out, the issue of regional informality has been worked on recently from the microeconomic point of view. This is the case of Cristina, Figueras, Iturralde, and Blanco (2019). In this essay, on the other hand, a dimension that can be called macro is worked on, looking at the informality rate as a dependent variable, and incorporating the structural factors of regional order, which condition the degree of formality of labour markets.

IV. Background of labour informality in Argentina

The problem of labour informality in Argentina is part of a set of structural imbalances in the labour market, which are more evident in adverse economic contexts. The main indicators of the labour market -the labour participation rate and the unemployment rate- denote a downward trend in the period.

This dynamic has been the subject of discussion in recent years regarding the presence of "hidden unemployment" (motivated by the lack of job opportunities that hinders labour participation).[6]

Figueras, García Oro and Capello (2018) and Figueras, Capello, García Oro, Cristina et alter (2017), present a detailed review of the bibliography and empirical works from the two perspectives, highlighting the work of Uribe and Ortiz (2006). These authors suggest combining the structuralist vision with the institutionalist one in order to achieve an explanation of informality that takes into account the strengths present in each view (and, at the same time, circumventing its limitations).

For the Argentine case in particular, Rofman (2007) shows that labour informality has grown steadily and persistently, in a process of exclusion of workers and their families from social protection programs. However, Garganta and Gasparini (2012) argue that the introduction of the Universal Child Allowance in 2009, aimed at achieving coverage of family allowances for those children in households with informal employment or who are directly unemployed, discourage formal employment. Alzúa (2008), working with an extension of the model of Shapiro and Stiglitz (1984), argues that the Argentine labour market shows clear signs of duality, with informality being part of this phenomenon.

Another significant contribution is Neffa and Barbetti (2016), which shows the significant productive transformations that have occurred from the 1970s onwards that have affected the

[6] There is also a discussion on the manipulation of data.

market conditions of work and the quality of employment in Latin American countries. Figueras, García Oro and Capello (2018) and Figueras, Capello, García Oro, Cristina et alter (2017), treat empirically the jurisdictional aspects of informality with certain methodological limitations.

An important aspect to consider is the definition of informality. It seems that the first reference to the concept in the labour market was in Hart (1973). There the term is applied to self-employment and not to salaried work. Subsequently, the ILO suggested other definitions, as the one in Sethuraman (1981).

The literature considers now two different definitions of labour informality. According to ILO (2002), informal employment occurs with a salaried employment relationship unregistered in the social security system. The second definition refers to the productive profile of employment. The perspective adds to the group considered in the first definition all those non-professional self-employed workers and employers of micro-enterprises whose labour remuneration is below the average of the economy (ILO, 2002) that may have sources of labour income with greater instability and precariousness (Tornarolli and Conconi, 2007).

In this paper, we adopt the first concept of informality. In other words, we define as informal that individual who does not have a retirement discount nor contributes by himself to any retirement system.

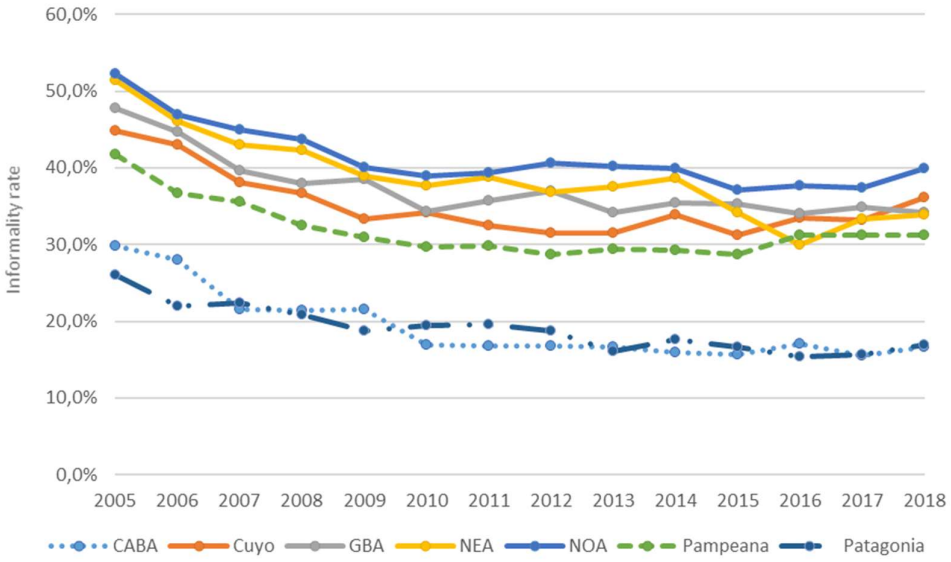
In addition to these discussions, it is clear that - beyond the context of economic recovery that occurred after the deep crisis at the end of 2001- the labour market in Argentina has not been able to go through a growth path that would amplify job opportunities.

In this paper we aim to capture the local differences in labour informality. We use a panel data set to build a model that we estimate with GMM considering the 24 jurisdictions of the country (33 urban centres) including the determinants of labour informality from the structuralist and institutionalist perspectives.

V. Brief descriptive presentation

In this section we present some descriptive statistics on the evolution of the informality rate between 2005 and 2018. Firstly, we analyse it by regions and then by jurisdictions. Regionally, informality has declined since 2005 until 2010, then it stabilizes with some oscillations. It is lower in CABA and Patagonia, around 17%, meanwhile the other five regions are delimited by Pampeana (31%) and NOA regions (41%) (see Appendix I for a detailed regional map).

Figure 1. Informality rate by region (2005-2018)



Source: Own elaboration based on EPH INDEC (Third quarter wave).

Table 1. Informality rate by region (%)

Region	2005	2009	2013	2018
CABA	29,8%	21,5%	16,6%	16,6%
Cuyo	44,9%	33,3%	31,5%	36,1%
GBA	47,8%	38,5%	34,1%	34,1%
NEA	51,4%	38,9%	37,5%	33,9%
NOA	52,3%	40,1%	40,2%	39,9%
Pampeana	41,7%	30,9%	29,4%	31,2%
Patagonia	26,1%	18,8%	16,0%	16,9%

Source: Own elaboration based on EPH INDEC (Third quarter wave).

In order to analyse informality rate changes in the period under study, we classify the provinces into four groups (six elements each one) according to intra-referenced relative informality rates: Very high, High, Medium and Low Informality Rate. For each jurisdiction we report (Table 2) two values in parentheses: the first one is the informality rate for year 2005 and the second one corresponds to year 2018 (e.g., CABA registered 29% in 2005 and 16% in 2018; while La Rioja had 43% and 30%, respectively). We find that mobility between groups is low: almost all jurisdictions lay on the main diagonal (that is, after ten years, they are still in the same group); and only seven change group. Thus, Córdoba is originally in the Medium group and ends up in the Very High Informality group (despite the drop in its rate), while Formosa and Jujuy, initially located in the Very High Informality Group, fall to the Medium Informality group.

Indeed, if the provinces are ordered by informality rate in the two extreme periods, (the initial year 2005 and year 2018 as the end point) the rank correlation coefficient is 0.7852. This value reveals a strong relationship.

Table 2. Provincial informality rate (%) – selected years

Province	2005	2009	2013	2018
BUENOS AIRES	46,5 %	37,0 %	33,0 %	33,5 %
CAPITAL FEDERAL	29,8 %	21,5 %	16,6 %	16,6 %
CATAMARCA	47,1 %	35,0 %	32,6 %	33,7 %
CHACO	51,3 %	36,9 %	38,4 %	34,1 %
CHUBUT	31,5 %	19,4 %	21,4 %	19,1 %
CORDOBA	45,6 %	31,0 %	30,9 %	37,0 %
CORRIENTES	53,0 %	43,1 %	38,4 %	36,2 %
ENTRE RIOS	42,8 %	29,3 %	27,8 %	26,6 %
FORMOSA	54,1 %	35,8 %	39,1 %	26,7 %
JUJUY	55,8 %	42,7 %	29,3 %	30,9 %
LA PAMPA	42,3 %	18,7 %	15,8 %	30,4 %
LA RIOJA	43,7 %	40,8 %	32,3 %	30,2 %
MENDOZA	37,9 %	30,1 %	26,8 %	32,8 %
MISIONES	48,1 %	38,6 %	34,6 %	36,0 %
NEUQUEN	30,3 %	21,1 %	15,1 %	19,0 %
RIO NEGRO		25,1 %	21,8 %	17,3 %
SALTA	51,2 %	39,9 %	43,8 %	44,1 %
SAN JUAN	51,1 %	37,3 %	40,9 %	39,7 %
SAN LUIS	59,1 %	38,9 %	33,2 %	43,4 %
SANTA CRUZ	16,3 %	14,8 %	10,6 %	15,0 %
SANTA FE	41,0 %	34,3 %	32,5 %	27,6 %
SANTIAGO DEL ESTERO	51,5 %	44,0 %	43,9 %	44,1 %
TIERRA DEL FUEGO	18,3 %	13,3 %	7,8 %	8,9 %
TUCUMAN	55,2 %	38,8 %	43,6 %	43,0 %

Source: Own elaboration based on EPH INDEC (Third quarter wave).

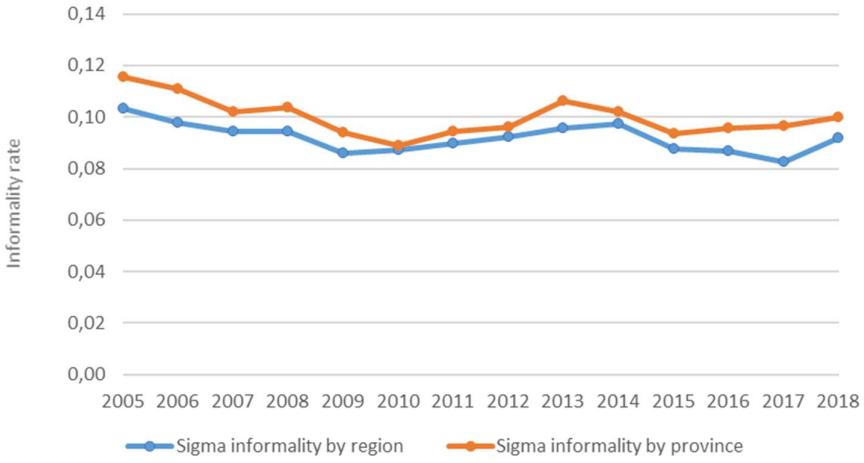
Table 3: Classification of provinces into categories according to the level of informality rate (%) (2005 files; 2018 columns)

2005 : 2018=>	Very High	High	Medium	Low
Very High	San Luis (59%; 43%) Santiago del Estero (51%; 44%) Tucumán (55%; 43%)	Corrientes (53%; 36%)	Formosa (54%; 26%) Jujuy (55%; 30%)	
High	Salta (51%; 44%) San Juan (51%; 39%)	Buenos Aires (46%; 33%) Catamarca (47%; 33%) Chaco (51%; 34%) Misiones (48%; 36%)		
Medium	Córdoba (45%; 37%)	Mendoza (37%; 32%)	Entre Ríos (42%; 26%) La Pampa (42%; 30%) La Rioja (43%; 30%) Santa Fe (41%; 27%)	
Low				CABA (29%; 16%) Chubut (31%; 19%) Neuquén (30%; 19%) Santa Cruz (16%; 15%) Tierra del Fuego (18%; 8%)

Source: Own elaboration based on EPH INDEC (Third quarter wave).

Finally, and despite the existing differences, according to the available data a phenomenon of sigma convergence in the informality rate seems to be taking place. It is both in terms of provincial rates and in terms of regional rates (grouped by INDEC regions, see Appendix I) as we observe in Figure 2.

Figure 2. Sigma convergence on informality rate - Informality SD (By province and by region; 2005-2019)



Source: Own elaboration based on EPH INDEC (Third quarter wave).

VI. Labour informality determinants

The analysis of the aspects that influence labour informality will allow a better understanding of the dynamics of provincial labour markets and the factors that account for their similarities and differences.

Data and variables

We use a panel dataset covering the 24 jurisdictions over the period 2005-2018. We draw our dataset based on information collected by the Permanent Household Survey (EPH – INDEC).

Our variable of interest is labour informality rate, the dependent variable in our model. Then, we base the selection of control variables on the structuralist and institutional views discussed on previous sections.[7]

Dependent variable: Labour informality rate. In the literature, two alternative definitions of labour informality are considered (ILO, 2002). According to the first one, informal employment occurs in the absence of a salaried employment relationship registered in the social security

[7] Selection of variables is constrained by information availability.

system. The second definition refers to the productive profile of employment. In this sense, this perspective adds to the group considered in the first definition all those non-professional self-employed workers and employers of micro-enterprises whose labour remuneration is below the general average of the economy and may represent sources of labour income of greater instability and precariousness.

We adopt, as discussed earlier, the first one. In other words, the individual who does not have the retirement discount and who does not contribute by himself to any social security system, is considered informal.

Explanatory variable*s:* On the one hand, for proxies of structuralist variables we use:

- *Population with Tertiary and University education in relation to the employed population between 25-65 years old:* Human Theory (Becker, 1975) considers that workers' skills (human capital) results from the accumulation of previous investments in education, job training, health, and other factors that increase productivity while the Signaling Theory (Spence, 1973) regarding education suggests that it affects people's job outcomes, not because it affects their productivity, but because it classifies and labels them, thus determining their labour market insertion (education acts as a "signal"). In any of these aspects, it seems reasonable to think that workers with more education could be the most likely to work formally. A critical mass of more educated workers should have a positive impact on the labour market, reducing labour informality at the aggregate level.
- *Provincial unemployment rate:* A direct relationship is expected, since higher unemployment reflects the inability to generate jobs. It is considered endogenous.
- *Proportion of employment in sectors with higher labour market informality:* There are structural factors inherent to the labour market that facilitate a higher incidence of labour informality in some sectors of economic activity. Among these, the activities of Construction, Domestic Service, and Agriculture and Livestock stand out.
- *Proportion of companies with less than nine employees:*[8] Microenterprises make up the core of informal employment in Argentina, since half of unregistered wage earners (excluding Domestic Service) work in microenterprises. This may be related to the existence of greater difficulty in copying with the costs of labour registration, uncertainty, or the social perception that labour informality is an alternative mode of production (see Colina and Giordano, 2007).
- *Active/inactive rate.* A negative relationship is expected, taking into account individuals who are inactive go most likely to the informal salaried or self-

[8] Although companies with less than five employees is usually the reference for micro-enterprises, due to information availability problems we use as a proxy companies with less than nine employees.

employed sectors. The intensity of the transition from inactivity to formal wage employment is relatively low (Tornarolli, 2008).

- *Dummy 1 that identifies jurisdictions and their integration into world markets*: We assume that the provinces that are more open to international trade have a productive structure that is more prone to formality.
- *Dummy 2 that identifies the effects of migrations from neighbour countries:* it identifies the Northern border provinces, recipients of migrants from Bolivia and Paraguay.[9] This is expected to contribute to higher levels of informality.

On the other hand, concerning the institutionalist vision, the following variables are used:

- *Public employees per 1.000 inhabitants*: a priori we can expect that more public employment would be related to lower informality, since they are generally formal jobs. However, the opposite is plausible because state employment may function as an "undercover insurance" for a labour market with problems (precisely the provinces with more public employers are the ones with the higher informality rate). This relationship leads to consider the variable as endogenous.
- *Labour lawsuits per 1.000 inhabitants:* we can expect that the provinces with a higher level of litigation are those more prone to labour informality.

Table 4. Variable sources and definitions

The following variables are computed to each jurisdiction, each year. In the case of variables elaborated based on EPH, the estimates arise from the urban centres belonging to the jurisdiction, the third wave of each year for the period 2005 – 2018	
Informality rate	It measures the proportion of employed individuals who do not have a pension discount or who do not contribute themselves to any social security system in relation to the total of employed. Source: Own elaboration based on EPH.
Active / Inactive rate	It measures the relationship between active and inactive population older than 10 years. Source: Own elaboration based on EPH.
Proportion of companies with less than nine employees	It measures the proportion of companies with at least nine employees with respect to the total number of companies in the jurisdiction. Source: Own elaboration based on the Business Bulletin by branch and province, Employment and Business Dynamics Observatory, MTESS (2018).
Tertiary and University education	It measures the proportion of employed population between 25-65 years old that has tertiary or university education level. Source: Own elaboration based on EPH.

[9] It is known that the Welfare State present in Argentina is superior to that existing in Bolivia and Paraguay. This means a lot for the lower deciles workers. This, added to a greater job possibility, particularly with higher wages in Argentina for low qualified workers, generates an important "pull effect". That is to say, there is an undoubted attraction for border dwellers, who emigrate to neighboring provinces, habitually inserting themselves in the urban informal sector (at least as a stopover prior to an eventual transfer to the great gravitational center that is the area of Greater Buenos Aires).

Unemployment rate	It measures the provincial unemployment rate, calculated as the average of unemployed individuals in the jurisdiction with respect to the active population. Source: Own elaboration based on EPH.
Public employees per 1.000 inhabitants	It measures the number of public employees per 1000 inhabitants. Source: Own elaboration based on MECON (DNCFP).
Construction share	It measures the proportion of employed persons in sector F (Construction) over the total number of employed persons in the jurisdiction. Source: Own elaboration based on EPH.
Agriculture and Livestock share	It measures the proportion of employed persons in sector A (Agriculture, livestock, hunting and forestry) over the total number of employed persons in the jurisdiction. Source: Own elaboration based on EPH.
Domestic service share	It measures the proportion of employed persons in sector T (Activities of Households as Employers of Domestic Personnel) over the total number of employed persons in the jurisdiction. Source: Own elaboration based on EPH.
*Dom_Const_Agro_*share	It measures the proportion of employed persons in sectors T (Activities of Households as Employers of Domestic Personnel), sector F (Construction) and sector A (agriculture, livestock, hunting and forestry) over the total of employed. Source: Source: Own elaboration based on EPH.
Labour lawsuits per 1.000 inhabitants	It measures the number of labour lawsuits (according to the province of filing of the judicial action and date of notification by labour insurance firms) registered by the Superintendence of Occupational Risks (SRT), per thousand inhabitants. Source: Own elaboration based on Historical Litigation Series (SRT) and INDEC.
Dummy 1	1: CABA, Buenos Aires, Córdoba, Santa Fe y Mendoza. 0: rest of the provinces.
Dummy 2	1: Salta, Jujuy, Formosa, Chaco, Corrientes y Misiones. 0: rest of the provinces.

VII. Methodology

In the econometric analysis we used the technique of estimators of the Generalized Method of Moments (GMM), introduced in the literature by Arellano and Bond (1991) and Arellano and Bover (1995). This decision is based on the recognized superiority of GMM estimates over other fixed- or random-effect estimates for panel data to address problems of endogeneity, simultaneity, and unobserved heterogeneity.

The equation to be estimated can be written as follows:

$$y_{it} = \beta' X_{it} \ + \eta_i + \varepsilon_{it},$$

where y is the rate of informality, X represents the set of explanatory variables considered from the structuralist and institutionalist visions presented in the previous section, η_i is a specific effect per unit *i* of analysis, ε is the error term, and *t* denotes the time variable.

Arellano and Bond (1991) propose to take the equation into differences, thus eliminating the specific effect to the *i-th* unit of analysis:

$$(y_{it} - y_{it-1}) = \beta'(X_{it} - X_{it-1}) \ + (\varepsilon_{it} - \varepsilon_{it-1}).$$

This change introduces a construction bias: the new error term $(\varepsilon_{it} - \varepsilon_{it-1})$ is correlated with $(y_{it} - y_{it-1})$.

The estimation method is based on assumptions that (a) the error term is not serially correlated, and (b) it is assumed that the explanatory variables are not correlated with future realizations of the error term. The moment conditions are:

$$E[y_{it-s}(\varepsilon_{it} - \varepsilon_{it-1})] = 0 \text{ for } s \geq 2; \text{ t=3,..., T}$$

$$E[X_{it-s}(\varepsilon_{it} - \varepsilon_{it-1})] = 0 \text{ for } s \geq 2; \text{ t=3,...,T.}$$

According to Arellano and Bond (1991), in the first step, the error term is assumed to be independent and homoscedastic across provinces (*i-th* level of analysis) and over time. In the second step, the residuals obtained in the first step are used to construct a consistent estimator of the variance-covariance matrix, thus relaxing the assumptions of independence and homoscedasticity. Thus, the two-stage estimator is asymptotically more efficient compared to the estimator estimated in the first instance.

The regression equations of Arellano and Bond (1991) are expressed in terms of first-order differences and the explanatory endogenous variables are instrumented with lags its past levels.

If the lagged levels have a low correlation with the differences of the explanatory variables, they result in weak instruments for the variables in the first difference and estimator of the first stage, which can cause a bias (*finite simple bias*).

Both Arellano and Bover (1995) and Blundell and Bond (1998) employ an estimator that combines, in one system, regression in differences with regression in levels. In this estimator, the regression equations are in levels, and the additional instruments are expressed in lagged differences. These instruments are appropriate if the additional assumption is met that in case of correlation between the levels of the variables on the right side of the equation and the specific effects for the *i-th* level of analysis (in our case the provinces of Argentina), this does not imply the existence of correlation between the differences between these variables and the specific effect (*i-th* effect).

Since lagged levels are used as instruments in regression in differences, only the most recent difference is used as an instrument in regression in levels. Arellano and Bover (1995) point

out that using additional lagged differences would result in redundant current conditions and therefore propose additional moment conditions.

GMM estimation is adequate to deal with potential endogeneity problems, since if instrumental variables are lagged the estimators remain consistent even if some of the variables are endogenous. Another advantage of dynamic GMM estimation is that the non-temporal (non-variable over time) measurement error is absorbed into country-specific effects. This allows the dynamic GMM panel to remain consistent even when there is a specific measurement error for each province-year specific unit as long as it is not serially correlated.

The consistency of GMM estimators depends on the lagged values of the explanatory variables as valid instruments in the regression. Therefore, our analysis proposes a series of specification tests. First, a test of the null hypothesis that the error term is not serially correlated. Then, a test for the existence of second-order correlation of the error in differences. Additionally, the Hansen test of over-identification restrictions, which tests the overall validity of the instruments by analysing the sample analogue of the moment conditions used in the estimation process. The non-rejection of the hypothesis supports the model.

VIII. Econometric results

This section contains the results arising from the implementation of the econometric model described in the Methodological section. Tables 5 and 6 show the results of the estimations of the macroeconomic determinants of the informality rate using the Generalised Method of Moments (GMM) to address possible endogeneity issues in the variables measuring the unemployment rate and public employment. These estimates correspond to a panel of Argentinean jurisdictions observed over the period 2005-2018.

The effect of macroeconomic variables on the incidence of informality in each jurisdiction is analysed from the structuralist vision including the following variables: *Tertiary and University education*, *Provincial unemployment rate*, *Proportion of employment in sectors more prone to informality*, *Proportion of companies with less than 9 employees*, *Active/inactive rate*, *Dummy 1* and *Dummy 2*. And from the institutionalist viewpoint, the following variables were considered: *Public employees per 1.000 inhabitants* and *Labour lawsuits per 1.000 inhabitants*.

As it was already mentioned, the consistency of the GMM estimators depends on whether the lagged values of the explanatory variables are valid instruments in the regression. For this purpose, different specification tests are considered. Using the ar1 test, identified in the results tables, we reject the null hypothesis that the error term is not serially correlated (ar1 p-value less than 0.01 in all cases). In addition, the ar2 test checks whether the error in differences is second order correlated, the H_0 is not rejected in any of the models. Finally, the Hansen test of over-identification restrictions tests the overall validity of the instruments by analysing the sample analogue of the moment conditions used in the estimation process. The non-rejection of the hypothesis supports the models presented. In addition, the p-value associated with the Wald test

of global significance, in all models, rejects the null hypothesis that the coefficients are equal to zero.

Although there are different specifications, the model that is considered most appropriate for measuring the structural and institutional determinants of informality is Model 2.

The *Active/inactive rate* has a negative and significant relationship with informality. This may be due to what Tornarolli (2008) points out: "*the sectors most likely to receive individuals who were inactive in the previous period are the informal salaried and self-employed sectors, in that order. The intensity of the transition from inactivity to formal wage employment is relatively low*".

The fact that the average education of individuals affects labour informality (*Tertiary and University education*) is explained by Human Capital Theory (Becker, 1975) and the Signaling Theory (Spence, 1973). This reaffirms the importance of a more skilled labour force for more formal labour markets.

On the other hand, contrary to what it was expected, the results suggest that the variable *Proportion of companies with less than 9 employees* has a negative relationship with informality.[10] This may be due to the fact that the period under analysis was linked to greater formalisation, especially through the expansion of the simplified tax system (*monotributo*), which may have had a greater impact on small firms than on large ones. In general, the proportion of small firms remained more or less constant in the period under analysis (except in specific cases), while there was a downward trend in the rate of labour informality.

The proportion of *Public employees per 1.000 inhabitants* is also inversely related to the informality rate, which is in line with what one would expect, since it can be thought that public employment functions as a kind of "insurance" for a labour market with problems (precisely in the provinces with more public employment are those with more labour informality). It is because of this relationship that this variable is considered endogenous.

Finally, a higher *Unemployment rate* is related to a higher informality rate as expected from a structuralist point of view. This variable denotes the importance of the situation of the labour market, reflecting the inability of the labour market to generate job vacancies at times when the labour supply is high. It is included in the model as an endogenous variable.

[10] One can think of three reasons for the expected sign of this variable to be positive: (1) because small firms have lower productivity; and therefore cannot cope with social security contributions and tax pressure; (2) they are less likely to be tax inspected; (3) they sell proportionally more in cash; and therefore have proportionally more cash available to pay in informality.

Model 1 corresponds to the estimation including the first lag of the informality rate. In Model 3 we try to test the influence of the institutional variable L*abour lawsuits per 1000 inhabitants,* without finding a statistically significant relationship. Main results are unchanged, in Model 1 unemployment rate is no longer significant but its sign remains positive.

Models 4 and 5 include structuralist dummies variables. The first one, *Dummy_1* (1 for CABA, Province of Buenos Aires, Córdoba, Santa Fe and Mendoza) is included with the objective of testing whether provinces that are "more integrated with world markets" (by history or specialisation) have a productive structure that is more favourable to formality. And the second one, *Dummy_2* (1 for the provinces of the North: Salta, Jujuy, Formosa, Chaco, Corrientes and Misiones) attempts to measure whether migration mainly from Bolivia and Paraguay leads to a higher degree of informality in these provinces. In our sample we find no evidence that they have a significant influence on the informality rate.

Table 5. GMM Estimation of the Macroeconomic Determinants of Labour Informality (Part I)

Informality Rate	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 5**
Active / inactive rate	-0.164***	-0.258***	-0.199**	-0.274***	-0.255***
	(0.0398)	(0.0690)	(0.0855)	(0.0727)	(0.0681)
Proportion of companies with less than 9 employees	-1.201*	-1.998**	-2.003	-1.920**	-1.954**
	(0.632)	(0.847)	(1.323)	(0.824)	(0.896)
Tertiary and University education	-0.231*	-0.424***	-0.343*	-0.436**	-0.411**
	(0.139)	(0.162)	(0.197)	(0.173)	(0.168)
L. Unemployment rate	0.339	0.699*	0.982*	0.826*	0.629
	(0.324)	(0.384)	(0.573)	(0.425)	(0.422)
L. Public employees per 1000 inh.	-0.00084*	-0.00119*	-0.00157	-0.00094	-0.00123*
	(0.0004)	(0.0006)	(0.0013)	(0.0006)	(0.0006)
Labour lawsuits per 1000 inhabitants.			-0.0133		
			(0.0109)		
Dummy_1				0.0506	
				(0.0310)	
Dummy_2					0.0121
					(0.0203)
L.Informality Rate	0.357***				
	(0.122)				
Time dummies	yes	yes	yes	yes	yes
Observations	264	264	192	264	264
Number of id	24	24	24	24	24
ar1	-3.479	-2.786	-2.850	-2.869	-3.268
ar1 p- value	0.0005	0.0053	0.0043	0.0041	0.0010
ar2	-0.330	-0.514	0.378	-0.709	-0.623
ar2 p-value	0.742	0.608	0.705	0.478	0.533
Hansen	9.920	9.782	10.14	5.120	9.897
hansen p-value	0.980	0.988	0.518	1.000	0.980
Wald test p-value	0.000	0.000	0.000	0.000	0.000

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Instruments: Standard:_Iao_2009 _Iao_2010 _Iao_2014. GMM-type: lags of unemployment rate, public employees per 1000 inhabitants, university tertiary education and informality rate.

In certain areas of economic activity there are factors that condition (or facilitate) labour informality. The instability of the employment relationship, the nature of the jobs, as well as cultural patterns, are factors that favour labour informality in certain sectors (see *Banco Mundial - Ministerio de Trabajo, Empleo y Seguridad Social*, 2008). Table 6 shows the estimates resulting from including variables linked to these sectors: *Construction, Household labour*, and *Agriculture and livestock* shares. The signs of the associated coefficients are as expected, positive, but not statistically different from zero.

Table 6. GMM Estimation of the Macroeconomic Determinants of Labour Informality (Part II)

Informality Rate	**Model 1**	**Model 2**	**Model 5**	**Model 6**	**Model 7**	**Model 8**
Active / Inactive rate	-0.164***	-0.258***	-0.221**	-0.262***	-0.221**	-0.202**
	(0.0398)	(0.0690)	(0.0883)	(0.0706)	(0.0917)	(0.0904)
Proportion of companies with less than 9 employees	-1.201*	-1.998**	-1.725*	-2.164***	-1.843**	-1.754*
	(0.632)	(0.847)	(0.933)	(0.825)	(0.912)	(0.912)
Tertiary and University education	-0.231*	-0.424***	-0.266	-0.409**	-0.254	-0.152
	(0.139)	(0.162)	(0.211)	(0.172)	(0.234)	(0.274)
L. Unemployment rate	0.339	0.699*	0.676*	0.680	0.636	0.623
	(0.324)	(0.384)	(0.368)	(0.421)	(0.431)	(0.391)
L. Public employees per 1000 inh.	-0.00084*	-0.00119*	-0.00118**	-0.00118*	-0.00096	-0.00103*
	(0.0004)	(0.0006)	(0.0005)	(0.0006)	(0.0006)	(0.0005)
L. Informality Rate	0.357***					
	(0.122)					
Construction share			0.480			
			(0.519)			
Agriculture and Livestock share				0.650		
				(2.868)		
Domestic service share					0.791	
					(0.873)	
Domestic_Constr_Agri_share						0.479
						(0.433)
Time dummies	yes	yes	yes	yes	yes	yes
Observations	264	264	264	264	264	264
Number of id	24	24	24	24	24	24
ar1	-3.479	-2.786	-2.925	-2.710	-2.766	-2.992
ar1 p- value	0.0005	0.0053	0.0034	0.0067	0.0056	0.0027
ar2	-0.330	-0.514	-0.0641	-0.432	-0.464	0.00131
ar2 p-value	0.742	0.608	0.949	0.666	0.643	0.999
Hansen	9.920	9.782	9.584	9.288	3.016	7.646
hansen p-value	0.980	0.988	0.984	0.987	1.000	0.996
Wald test p-value	0.000	0.000	0.000	0.000	0.000	0.000

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

IX. Conclusions and final considerations

The paper examines labour informality from a macroeconomic perspective. Following ILO (2002), we define as informal an individual who does not have a retirement discount nor contributes by himself to any retirement system.

In this paper we use a panel data set to build a model that we estimate with GMM considering the 24 jurisdictions of the country (33 urban centres) surveyed in the Permanent Household Survey (*Encuesta Permanente de Hogares- EPH)* during the period 2005-2018.

The theoretical models proposed for the study of the problem of labour informality correspond to two visions: institutionalist and structuralist. These visions differ mainly in the causes associated with informality. In the institutionalist view, informality is associated with the evasion of legal norms, considering that tax burdens and inefficiencies in the public sector act as a stimulus to non-compliance with institutional rules. The structuralist view argues that the informal sector arises from the limited possibility of the modern sector to absorb the entire labour force, so that informality is a way to avoid falling into unemployment. Therefore, the determinants of this approach are determined by factors related to the economic structure, which limits the capacity of the market to create jobs.

This work, essentially empirical, uses variables to test both hypotheses. We work with proxies of structuralist variables: *Active/inactive rate*, *Tertiary and University education*, *Proportion of companies with less than 9 employees*, *Provincial unemployment rate*, *Proportion of employment in sectors more prone to informality* and *dummies* that identify jurisdictions in relation to their integration to world markets and the effects of migration from neighbour countries. In relation to the institutionalist vision, the following variables are used: *public employees per 1.000 inhabitants* and *Labour lawsuits per 1.000 inhabitants*.

The *Active/Inactive rate* has a negative and significant relation with informality. This may be due to what Tornarolli (2008) points out: "*the sectors most likely to receive individuals who were inactive in the previous period are the informal salaried and self-employed sectors, in that order. The intensity of the transition from inactivity to formal wage employment is relatively low*".

The fact that the education of individuals has a negative (and significant) impact on labour informality is explained by Human Capital Theory and Signaling Theory. This reaffirms the importance of a more skilled labour force for more formal labour markets.

Contrary to what was expected, the results show that the *Proportion of companies with less than 9 employees* is negatively related to informality. This may be due to the fact that the analysed period was linked to greater labour formalisation through the expansion of a simplified tax system (*monotributo*), which may have had a greater impact on small firms than on larger ones. In general, the proportion of small firms remained more or less constant in the period (except in specific cases), while there was a downward trend in the rate of labour informality. This particular result invites us to investigate the issue further.

The proportion of *Public employees per 1.000 inhabitants* is also inversely related to the informality rate. This result is in line with what is expected, as it can be thought that public employment works as a kind of "insurance" for a labour market with problems. Precisely in the provinces with more public employment are those with more labour informality.

Finally, a higher unemployment rate implies a higher informality rate, as expected from a structuralist viewpoint. This variable denotes the importance of the labour market conditions, reflecting the inability of the labour market to generate jobs when labour supply is high.

The analysis also includes variables with the aim of testing whether provinces that are "more integrated with world markets" (by history or specialisation) have a productive structure more favourable to labour formality, as well as if migration mainly from Bolivia and Paraguay leads to a higher degree of informality in these provinces. In the sample there is no evidence that these variables have a significant influence on the informality rate.

On the other hand, there is no evidence that the institutional variable *Labour lawsuits per 1.000 inhabitants* is statistically significant, at least in the sample analysed. We also found no evidence that the variables associated with specific sectors of economic activity are significant. In the case of the Agricultural sector, this may be due to problems of under-representation of the sample, but in the case of Construction and Domestic employment - given the high incidence of informality in these activities - there is no a priori explanation. However, the influence of these factors on labour informality cannot be minimised, and requires further study.

To summarize, based on our estimations, and with the limitations arising from the sample on which we worked, informality depends "significantly" on:

- the level of education,
- the weight of public employees.
- the unemployment rate,
- the rate of active to inactive workers,
- the proportion of small firms in the economic structure. The opposite sign to that expected is perhaps explained, among other causes, by the low degree of variability in the period under investigation or by the effects of formalization via the simplified tax system (*monotributo*).

There seems to be no connection either with the level of insertion of the provincial jurisdiction in world markets (this would reflect the presence of a greater weight of tradable goods), or with the location of the area.

It is often said that all fruitful scientific enquiry begins with an attitude of surprise from the scientist. In this case, it also ends with a surprise, in the signs of some variables and the "*non-significance*" of others.

X. References

Alzúa, M.L. (2008). “Are Informal Workers Secondary Workers?, Evidence for Argentina”, Documento de Trabajo N° 73, Centro de Estudios Distributivos, Laborales y Sociales (CEDLAS).

Banco Mundial- Ministerio de Trabajo, Empleo y Seguridad Social (2008). “Aportes a una nueva visión de la informalidad laboral en la Argentina”. 1st Ed. Buenos Aires.

Becker, G. S. (1975). “Human Capital: A Theoretical and Empirical Analysis, With Special Reference to Education”. New York, National Bureau of Economic Research.

Boeri, T. and Garibaldi, P. (2006) "Shadow sorting". CEPR Discussion Paper, No. 5487.

Bosch, M., Goni, E. and Maloney, W. (2007). "The determinants of rising informality in Brazil: evidence from Gross Worker Flows". Policy Research Working Paper, No. 4375, pp.1-56, The World Bank.

Bourguignon, F. (1979). "Pobreza y Dualismo en el Sector Urbano de las Economías en Desarrollo: El Caso de Colombia". *Desarrollo y Sociedad*, No. 1, pp.39-72. Bogotá: Universidad de los Andes.

Cristina, D., Figueras, A. Iturralde, I. and Blanco, V., (2019), “Informalidad en los Mercados Laborales Regionales: Análisis desde Microdatos”, Asociación Argentina de Economía Política: Working Papers 4128.

Colina J. and Giordano O. (2007). La excesiva carga burocrática genera informalidad laboral. Serie Informes de la Economía Real, Empleo y Desarrollo Social. 2(8). Pontificia Universidad Católica Argentina.

Fields, G. (1975). "Rural-Urban Migration, Urban Unemployment and Underemployment, and Job Search Activity in LDC's", en Journal of Development Economics, No.2, 165-187.

Figueras, A., Capello, M., García Oro, G., Cristina, D., Blanco, V., Iturralde. I. and Caullo, M., (2017). “Informalidad laboral en Argentina: el rol de aspectos jurisdiccionales sobre la persistencia de la problemática”; LII Reunión Anual de la AAEP, Bariloche.

Figueras, A., García Oro, G. and Capello, M., (2018). “La informalidad en el mercado laboral: su heterogeneidad regional como limitación al crecimiento sostenido”, 22 Congreso Nacional de Profesionales en Ciencias Económicas, San Juan.

Garganta & Gasparini (2012). "El Impacto de un Programa Social sobre la Informalidad Laboral: El Caso de la AUH en Argentina," CEDLAS, Working Papers 0133, CEDLAS, Universidad Nacional de La Plata.

Gasparini, L. and Tornarolli, L., (2007). “Labour Informality in Latin America and the Caribbean: Patterns and Trends from Household Survey Microdata”, Documento de Trabajo 46. CEDLAS, UNLP, Argentina.

García Cruz, G. (2009). "Evolución de la informalidad laboral en Colombia: determinantes macro y efectos locales," Archivos de Economía 006449, Documento 360, Departamento Nacional de Planeación.

García Cruz, G. (2011). "Determinantes macro y efectos locales de la informalidad laboral en Colombia," Revista Sociedad y Economía - CIDSE, Universidad del Valle - CIDSE, Dic.

Hart, K. (1970). “Small-Scale Entrepreneurs in Ghana and Development Planning”, *The Journal of Development Studies,* 6:104-120.

Hart, K., (1973). “Informal Income Opportunities and Urban Unemployment in Ghana”, *Journal of Modern African Studies*, 11(1): 61-89.

Henley, A.; Arabsheibani, R. and Carneiro, F. (2009). "On defining and measuring the informal sector: evidence from Brazil". *World Development*, 37(5): 992-1003.

Klein, E. and Tokman V. (1988). "Sector informal: una forma de utilizar el trabajo como consecuencia de la manera de producir y no viceversa. A propósito del artículo de Portes y Benton". *Estudios Sociológicos*, n. 16, El Colegio de México.

Krugman, P., (1992). *Geografía y Comercio*, Antoni Bosch editor, Barcelona.

Lewis, A., (1954). “Economic Development with Unlimited Supplies of Labor”. *The Manchester School*, 22: 139-191.

López H., Sierra, O. and Henao, M. (1987). "Sector Informal: entronque económico y desconexión jurídico-política con la sociedad moderna", en, *El Problema Laboral Colombiano*, Tomo II. Bogotá: DNP, SENA, Contraloría General de la República.

Magnac, T. (1991). "Segmented or competitive labour market", en *Econometrica*, 59: 165-187.

Mazumdar, D. (1976). "The urban informal sector". *World Development*, 8(4), 655-679.

Mejía, D. and Posada, C. (2007). "Informalidad: Teoría e implicaciones de política". *Borradores de Economía*, No. 455, pp. 1-32. Bogotá: Banco de la República.

Neffa J.C., and Barbetti P., (2016). "Trabajo y sociedad en América Latina: Introducción. De Prácticas y discursos", *De Prácticas y discursos*, Universidad Nacional del Nordeste/Centro de Estudios Sociales. año 5, n. 6, (Enero-Julio).

Núñez, J. (2002). "Empleo informal y evasión fiscal en Colombia", *Archivos de Economía*, Documento No. 210, Octubre, pp. 1-51. Bogotá: DNP.

OIT (2002). Panorama laboral 2002: América Latina y el Caribe. Lima: Oficina Regional para América Latina y el Caribe.

OIT (2002). Decent work and the informal economy. International Labour Conference 90th Session, Report VI, Ginebra.

OIT (1972). "Employment, Incomes and Equality. A Strategy for Increasing Productive Employment in Kenya", Ginebra.

Ortiz, C. and Uribe, J. (2006). "Apertura, estructura económica e informalidad: un modelo teórico". *Cuadernos de Economía*, 25(4): 143-175.

Porter, M.E. (2003). "The economic performance of regions''. *Regional Studies*, vol. 37(6 and 7), pp. 549–578.

PREALC (1981). "Dinámica del Subempleo en América Latina". Santiago de Chile: Organización Internacional del Trabajo.

PREALC (1985). "Más allá de la crisis". Santiago de Chile: Organización Internacional del Trabajo.

Richardson, H. (1977). *Teoría del Crecimiento Regional,* Ed. Pirámide, Madrid.

Rofman R., (2007). "La informalidad laboral y su rol en la determinación de la condiciones de vida de los trabajadores. Algunas observaciones en base a datos del Gran Buenos Aires". IX Jornadas Argentinas de Población (Huerta Grande, Córdoba).

Sánchez, C. (1976). "Empleo, crecimiento y sector informal urbano". *Revista de Economía Banco de Córdoba*. Nº 25.

Sethuraman, S. V., (1981). *The urban informal sector in developing countries*, Ginebra, OIT.

Shapiro C. and Stilgitz, J. (1984). "Equilibrium Unemploymentas a Worker Discipline Device", *American Economic Review*, 74: 433-444.

Singer, P. (1980). *Economía Política del Trabajo*. Siglo Veintiuno Editores, México D.F.

Spence, M. (1973). "Job Market Signaling ". *The Quarterly Journal of Economics*,87(3): 355-374.

Tokman, V. (1982). "Unequal Development and the Absorption of Labor: Latin America 1950-1980", *Revista de la CEPAL* No 35. Santiago de Chile, pag. 5.

Tornarolli, L. (2008). La situación argentina en el período 1998-2006. Tesis. Universidad Nacional de La Plata. Available in: http://www.depeco.econo.unlp.edu.ar/wp/wp-content/uploads/2017/08/058-tesis-tornarolli.pdf.

Tornarolli, L. and Conconi, A. (2007). "Informalidad y Movilidad Laboral: Un Análisis Empírico para Argentina" Documento de Trabajo No 59. CEDLAS, UNLP, Argentina.

Uribe, F. and Forero E. (1984). El sector informal en las ciudades intermedias. Bogotá: CIDER-UNIANDES.

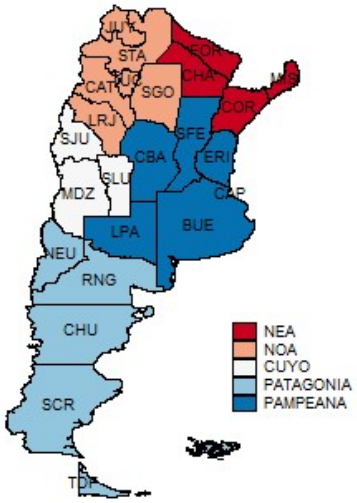
Uribe, J. and Ortiz, C., (2006). *Informalidad Laboral en Colombia 1988-2000: Evolución, Teorías y Modelos*. Programa Editorial Universidad del Valle, Cali.

Uribe, J., Ortiz, C. and García. G. (2008). “Informalidad y subempleo en Colombia: dos caras de la misma moneda”. *Revista Cuadernos de Administración*, 37: 211-241.

William, C. (2001). "Tackling the participation of the unemployed in paid informal work: a critical evaluation of the deterrence approach". *Environment and Planning C: Government and Policy*, 19: 729-749.

Appendix I

Map 1: Description of the Territorial Organisation
Main regions (by group of provinces)



Source: own elaboration based on Census 2010 (INDEC).

Codes used in the maps

Province	Code	INDEC REGION
Buenos Aires	BUE	PAMPEANA
Catamarca	CAT	NOA
Chaco	CHA	NEA
Chubut	CHU	PATAGONIA
Corrientes	CTE	NEA
Córdoba	CBA	PAMPEANA
Entre Ríos	ERI	PAMPEANA
Formosa	FOR	NEA
Jujuy	JUY	NOA
La Pampa	LPA	PAMPEANA
La Rioja	LRJ	NOA
Mendoza	MZA	CUYO

Province	Code	INDEC REGION
Misiones	MIS	NEA
Neuquén	NQN	PATAGONIA
Río Negro	RNG	PATAGONIA
Salta	SAL	NOA
San Juan	SJU	CUYO
San Luis	SLU	CUYO
Santa Cruz	SCR	PATAGONIA
Santa Fe	SFE	PAMPEANA
Santiago del Estero	SGO	NOA
Tierra del Fuego	TDF	PATAGONIA
Tucumán	TUC	NOA
Ciudad Autónoma de Buenos Aires (CABA)	CAP	PAMPEANA