

RESEARCH PAPER SERIES

ELLA Area: Economic Development

ELLA Theme: Informality



**ELLA**

Evidence and lessons  
from Latin America

**DESIGN AND METHODS PAPER**

# INFORMALITY AND INCLUSIVE GROWTH

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# INTRODUCTION

The ELLA Research Design and Methods Papers are working documents produced by the Latin American-African research pairing, as the first stage in the conduct of their joint research. Production of the papers was aimed at fostering a shared framework and approach to the research, owned by both partners in the research pairing. As the centres proceed to the research itself, the design will inevitably evolve to address issues arising. As such these Design and Methods papers should be seen as an approximation towards the intended research direction.

## 1. TOPIC

In the last decade a number of emerging markets have recorded relatively high growth rates, yet we see a limited impact on poverty and inequality suggesting that economic growth is not inclusive. In part, this is related to the fact that a large number of individuals are not participating in the formal economy and are informally employed or unemployed. Besides having lower household income, this group may also not achieve any of the non-income welfare benefits of a formalised welfare system yielding poor developmental outcomes. However, it is also true that for a large proportion of the population informal employment is a default option to unemployment, which has a positive impact on inclusive growth.

The purpose of this research is to explore this apparent contradiction, and understand the impact of informality on inclusive growth in different country environments. The analysis of labour markets in Colombia and South Africa provides an opportunity to create a framework broad enough to understand the complex paradox of informality. Having similar per capita incomes in both countries, South Africa stands out for having relatively high levels of unemployment and low levels of informal employment, whereas Colombia has a lower rate of unemployment, but with a persistent and high (through declining) level of informality.

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As a result, in pursuing the objective of achieving inclusive growth, South Africa views the informal sector as a means of reducing unemployment and consequently aims to promote entrepreneurship through self-employment. Colombia, on the other hand, views informality as a constraint on the growth of the formal sector, a drain on the fiscus and insufficient to provide adequate support for a better standard of living. With this apparent contradiction in mind, a provisional title for the research project could be "Informality and Inclusive Growth: the Cases of South Africa and Colombia". The project will explore how the transitions between unemployment, informality and formal employment might affect or promote inclusive growth at both individual and macroeconomic level, and to what extent these lessons can be applied to other countries in Africa and Latin America, understanding that this subject is very case-specific.

## 2. LITERATURE REVIEW

Some of the complexity in addressing the relationship between informality and inclusive growth is the result of: a lack of a common or standard definition for either of these concepts; the variety of channels that explain the impact of informality over inclusive growth; and the existence of several variables outside the labour markets that explain inclusive growth. In an attempt to examine these issues, the literature review is organised in the following way:

First we examine the literature related to the definitions of informality and inclusive growth and their relationship. Secondly, we attempt to understand the channels through which the relationship between inclusive growth and informality is governed. This includes both the informal sector promoting inclusive growth by acting as a buffer to unemployment, and informality constraining inclusive growth by detracting from formal sector growth. Finally, we review the policy options to tackle both situations.

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## Informality in Colombia and South Africa

The definition of informality varies, but for the purpose of this paper we understand it as employment by firms or firms that are not regulated and/or do not contribute to the state, as this covers the majority of definitions provided by the literature. Both firms and individuals are included in the definition, which means that informal workers can work either in the formal or the informal sector (see discussion on measurements in the research methods section).

The literature also identifies various elements of informality:

- 'Subsistence informality', which corresponds to a default option for those individuals or firms that are not able to reach a productivity large enough to become formal, even with reasonable barriers to formality;
- 'Induced informality' that relates to those firms or individuals that would migrate to the formal sector if the entry barriers to formality were removed;
- 'Voluntary informality' that results from the desire to escape or avoid administrative and/or financial burden of regulation
- 'Illegal informality', which is not going to be addressed here

In general, the idea of informality being of 'subsistence' understands the labour market as a segmented market (Lewis, 1954 and Harris and Todaro, 1970); the 'voluntary' concept of informality links more with the idea of integrated markets (Maloney, 2004); and the 'induced' (De Soto, 2000) lies in between. The recent literature that understands informality as a dynamic combination (in the sense that the combination can change with the economic cycle) of the last three types of informality suits best the purpose of this paper (Perry et al, 2007 and Ulyssea, 2013).

Colombia exhibits high levels of labour market informality (54.5%, 2013 ILO), relatively high wage costs (minimum wage plus labour taxes), and low rates of work satisfaction between informal workers (between 2001 and 2012, the percentage of workers wanting to change their job was around 37% in the informal sector, and 20% for formal workers, according to Peña, 2013). These are some of the reasons that explain why the "voluntary" hypothesis shows less support in Colombia than in other countries of Latin America (Mondragón-Vélez 2010 and Perry et al., 2007). Maloney and Mendes (2004) affirm that the combination of a decrease in productivity and an increase in the minimum wage during the second part of the nineties created a perfect setting for segmented markets, and is responsible for the significant increase in informality. Another cause of informality in Colombia, that has not been addressed enough, is the displacement that resulted from a long history of violence.

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South Africa shows low levels of informality (32%, 2010 ILO), and particularly of persons employed in the informal sector (17.8% 2010 ILO). This low rate can partially be understood by: institutions such as unemployment insurance, extensive welfare benefits and a system of industry-specific minimum wages, all of which are related with low informality rates (Barnard, 2009); historical reasons such as the long-lasting effects of apartheid that repressed the informal activities of black South Africans (Kingdon and Knight, 2007 and Barnard, 2009); a lack of public policies promoting new informal businesses; and the stringent enforcement of labour market rules (Kingdon and Knight, 2007). In terms of the type of informality, Kingdon and Knight (2004) find some support for segmented markets, through Badaoui et al (2007) found evidence in the alternative.

In summary, in spite of the different levels of informality, there is some evidence that both countries have relatively large 'subsistence' informal economies, as is also the general case in Sub-Saharan African countries (De Vreyer et al, 2013). However, it is also true that there are big differences in rural informality that are not going to be addressed here.

## **Inclusive Growth and Informality**

As in the case of informality there is no standard definition of inclusive growth. However, the literature broadly understands it as growth accompanied by poverty reduction and equal opportunities for all segments of the population. There are a number of recent articles that discuss how to measure inclusive growth (for a complete discussion see the research methods section). In this research we will use as outcome variables: GDP per capita growth and distribution, employment-to-population ratio, quality of employment (including wages) and welfare improvements of vulnerable groups. Per capita GDP PPP was 12,506 US dollars in South Africa and 12,426 US dollars in Colombia (WDI 2013), and the Gini coefficients were 0,65 and 0,55 respectively (WDI 2011).

Heintz (2012) noted *"the relationship between the rate of growth, the nature of growth, and informality represents an area in which more research is needed (...going beyond simple correlations to questions as...) In what ways does informality itself affect inclusive growth, either positively or negatively?"* The purpose of this research is to address this gap.

The impact of informality on inclusive growth can also be measured, albeit less explicitly, through an analysis of welfare, which is very relevant for this analysis. Docquier et al, (2014) in a long run model, found that *"low-skilled workers may obtain a higher salary with the existence of an informal*

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*sector than in its absence, because there is an alternative sector where they can supply their working hours. However the existence of the informal sector also increases child labour and reduces the incentives to education. In the long run, the informal sector prevents the economy from developing as it would in the absence of informality.”* Nevertheless, he also found that a sudden elimination of informality would induce severe welfare losses for poor people. Batini et al (2011) in a general equilibrium model identify the cost of informality in terms of tax revenue and its fluctuations and its benefits in terms of wage flexibility.

Whilst many studies touch on the relationship between the concept of informality and inclusive growth, this has not been explicitly investigated for the two countries. We seek to contextualise this relationship in each context and investigate the outcomes of this relationship.

## **The Opportunities of Informal Employment**

*Informal employment provides opportunities for the unemployed, the vulnerable and marginalised members of society to participate in economic activity.*

In general, in countries that have subsistence informality, we find a positive relationship between informality and unemployment. In fact, under this hypothesis, informality is a substitute to unemployment, particularly in trying economic times (counter cyclicity) and for vulnerable groups. In fact, individuals might be better off under informality than in unemployment, particularly if unemployment benefits (or any other type of transfers that favour unemployment over informality) are low or non-existent. However, there is also some evidence that shows that some benefits received by the families might be favouring the decision of remaining unemployed.

Rogers and Swinnerton (2004) and Docquier et al (2014) support the idea of informality as a substitute for unemployment using structural and calibrated models. Maurizio (2015) also finds some evidence in this sense with a matching score methodology applied for Chile, Peru, Mexico and Argentina. Similarly, Goñi (2013) finds frequent transitions from unemployment to informality in the Andean countries and Knight et al (2004) support similar conclusions for South Africa.

Although the time series are not long enough, Verdera (2015) found good evidence in favour of the hypothesis of counter cyclicity in Latin America, including Colombia. In South Africa, Bargain and Kwenda (2009) found that the wage gap between formal and informal employment is pro-cyclical. These results are in apparent contrast with the view that formal sector wages are less responsive to market forces because of labour market regulations like minimum wages, but

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correspond with the drop in informality seen after the recent crisis. It should also be mentioned here that the validity of the subsistence informality hypothesis also tends to be pro-cyclical (Perry et al, 2007 and Maloney, 2004).

Evidence regarding informal workers being better off than the unemployed is redundant in Colombia since they do not have access to unemployment benefits. In order to consider this further, we seek to understand the relationship between benefits and labour supply into the informal sector. The question posited is whether cash benefits encourage participation in informal employment. Teixeira (2010) found an inverse relationship between cash-transfers and labour supply in Brazil. This finding suggests that the cost-benefit analysis between unemployment and informal employment is being affected by additional sources of income. Bosch and Manacorda (2012) found the opposite result in Latin America, but we expect to go further into this subject.

Finally, with respect to the more vulnerable groups, Peña (2013) found that informality is higher amongst women, the unskilled, and either very old or very young workers who would usually have difficulty finding employment. We expect to be able to do a similar analysis for the displaced population in Colombia. In South Africa, Lund (1998), found that the informal sector in Durban was offering employment to unskilled women who would not easily find a job elsewhere. Dinkelman and Ranchod (2007) support the hypothesis of informality as the only option for vulnerable groups in South Africa.

## **Impact on Growth and Jobs in Formal Sector**

*Informality may constrain inclusive growth by impacting growth and jobs in the formal sector.*

Approaches that consider more integrated markets often emphasise the relationship between informality and inclusive growth, but often “recognise that informality is a better option than a fully formal but inflexible economy that cannot bypass the distortions and rigidities induced by a burdensome regulatory system” (Elbadawi and Loayza, 2008). Most of this literature understands the decision of being formal or informal as the result of a cost-benefit analysis, that not only has consequences at a worker/firm level but also at an aggregate or society level.

Benefits of being formal are associated with earning higher wages (controlling by observable characteristics), having access to welfare and health services (if they are not universal), work stability and access to credit. Costs are related with lower flexibility and worker contributions.

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From the firms' point of view, the associated benefits of formality include economies of scale (since firms do not need to remain small so as to avoid detection by authorities); less corruption (they do not need to bribe officials); easier access to credit (Caro et al 2010); and access to other business services provided by the state (including contract and law enforcement). These benefits allow a firm to operate more productively. However, formal firms have higher wage costs, less flexibility (Almeida and Carneiro, 2005) and may face unfair competition driven by informal firms who have lower costs (OECD, 2009).

Whilst informality has a lower cost attached to it, there are implications of a large informal sector on society (free rider dilemma). Informality, being as large as it is in some countries, generates a negative externality because informal activities use and congest public infrastructure without contributing tax revenue to replenish it. This results in lower quality or quantity of services provided, and/or higher taxes for the formal sector, reinforcing informality. Similarly, if the country has contributory pensions and health, a lower number of contributors might end up with a less resourced system. In addition, high levels of corruption that have been linked to the informal sector (Levy, 2008) reduce the incentives to become formal and pay taxes since the contributor sees no advantage in complying (Mohammad et al, 2012).

Regarding the individuals cost-benefit analysis, Goñi (2013) found higher wages and benefits (pensions) for formal sector workers in the Andean Region (however, a better exercise could be implemented, controlled more precisely by observed characteristics) whilst Kingdon and Knight (2007) and Bargain and Kwenda (2010) find similar results for South Africa. However, this cost-benefit analysis can also be affected by cash transfers received by informal workers and the unemployed, which might not be received by formal sector workers. As an example, De Brauw et al (2013) found that cash transfers in Brazil resulted in workers forgoing formal sector work for informal sector work that is less stable with fewer benefits and lower remunerations. We anticipate exploring this further.

Ydrovo (2010) and Hamman and Mejía (2011) found important differences in productivity between formal and informal firms in Colombia, controlling for observable characteristics such as size. This result is similar to the ones obtained on a more global level by Hsieh and Klenow (2009), Perry et al (2007), Levy (2008) and La Porta and Shleifer (2008). In South Africa, this has not been well researched, mainly because of the lack of relevant data.

The relationship between tax revenues and informality has been widely supported and explained in Levy (2008), Loayza (1997), Perry (2007) and Anton et al (2011). According to the classical model



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of Loayza (1997), higher tax rates generate higher tax revenues but also increase informality, and therefore there is an optimal tax rate for each economy. The high correlation between VAT evasion and informality, showed in most of the literature, supports this issue. Productivity of firms, linkages between the formal and informal sector, and a threshold of costs is indeed another research area that will be considered in this study.

### Policies Aimed at Reducing Informality

Whilst thus far in the literature review we've aimed to contextualise and conceptualise informality and inclusive growth in both regions and highlight where information was lacking, this section considers reviewing public sector policies that govern this relationship. The list of policies is long but can be more or less summarised as follows:

Public policies on the side of easing the transition from informality to formality include:

- Reducing labour taxes
- Reducing the minimum wage (Canelas, 2014)
- Reducing the regulatory burden of formality
- Enforcing formality
- Increasing the linkages between formality and informality (for example, India's famous informal laundry service - dhobi ghat - that is widely employed by formal business, or formal mobile money transfer systems used by informal institutions in East Africa)
- Allowing schemes of partial formalisation
- Improving the services provided to formal firms, among others.

Public policies on the side of addressing the relationship between unemployment, informality and inclusive growth include:

- Promoting entrepreneurship through self-employment
- Encouraging firms to formalise from the beginning (Caro et al, 2010)
- Reducing the barriers to transit from informality to formality
- Changing unemployment benefits and subsidies

The analysis of these tools is very country specific. Literature has found that, under the assumption of segmented markets, reductions in barriers to enter the formal sector have a small effect on the

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informal sector and policies oriented at regulating and taxing informality have a negative effect on unemployment and poverty (La Porta and Shleifer, 2014). Others assuming more integrated markets found that there are considerable welfare benefits from reducing income tax in spite of the reduced wage flexibility that firms face (see Batini et al 2011 for a structural model, Hamman and Mejía, 2011, for the case of Colombia, and Badaoui et al (2013), for the case of South Africa, but arguing an increase in inequality). Ulyssea (2013), employing a welfare analysis that includes the coexistence of segmented and integrated markets, shows that it is possible to reduce informality by reducing entry costs and payroll taxes. However, the first improves welfare and the second does not.

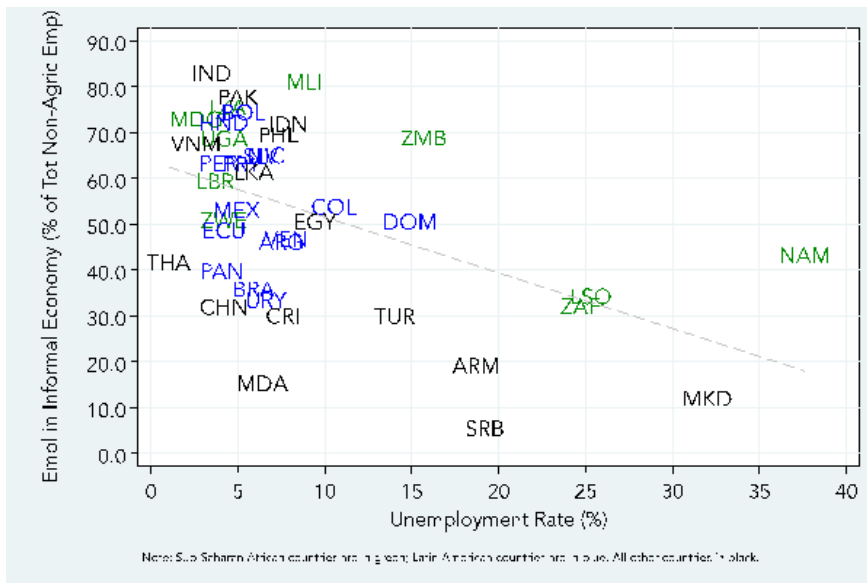
Given that the breadth of country specific policies is so wide, we will concentrate our efforts on the two policies that concern Colombia and South Africa the most: reducing the wage tax in Colombia and encouraging entrepreneurship in South Africa. This latter policy can also take advantage of several programmes of the type that have already been implemented in Colombia. However, our research will include a wide discussion on other informality-related policies.

In summary, we find that informal employment in South Africa can be viewed through the segmented markets lens, whereas in Colombia, the problematic is more orientated towards reducing “induced” informality. Since we understand informality as a dynamic mixture of both theories we will try to fill the gaps for both countries but also, knowing that the reality is that one type of informality is predominant in one or the other country, we will concentrate our efforts in the most pertinent path for each country. The particular research gaps we aim to fill are to understand transitions between unemployment to informal employment and then to formal employment; the costs and benefits associated with these transitions; and the impact of specific policies related to the informal sector. We aim to use examples from both regions to conceptualise different aspects of the informality-inclusive growth relationship.

### 3. JUSTIFICATION

Informality is pervasive in emerging markets, and countries such as India, Tanzania, Pakistan and Bolivia have informality rates of more than 70% (International Labour Organisation, 2013). Latin America and Africa as a whole are not an exception in this regard. Informality is usually considered as a problem, because, independent of our preferences for big or small governments, there is always the need to have a pool of resources to pay for communal expenses. To have half of the population or the firms not contributing to these expenses (as it is the case in several countries) is a major problem. A big informal economy implies less productivity; more corruption; less stability and protection. However, informal employment also plays a key role in absorbing the unemployed. The inverse relationship between the size of informality and unemployment is exhibited in figure 1. In certain cases, protective labour legislation has increased the cost of hiring so far above marginal productivities that if we decide to enforce formality at any cost, economies would end up with an enormous mass of unemployed individuals, and governments unable to meet their basic needs.

Figure 1: Unemployment Rate and Informality (Informal Sector plus Informal Workers in Formal Sector). Data from ILO and World Bank statistics.



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Within this study, we have the opportunity of having two similar countries that have different informal employment outcomes and therefore two different approaches to the problem, seeing that informality is a big policy issue for both governments. Informality tends to be relatively low in South Africa and relatively high in Colombia. These circumstances might explain why the South African government is looking toward informal employment as a way to improve inclusive growth while the Colombian government views the prevalence of informal employment as a constraint on increasing formal employment and thereby improving inclusive growth outcomes. The purpose of this research is to understand the informality context in both countries, and the policies that the authorities have in mind to address this and increase inclusive growth. Adopting a broad approach would allow us to understand other specificities of the informal markets in other African and Latin American countries, and eventually to suggest case-specific recommendations.

## 4. CENTRAL RESEARCH QUESTION

Given the importance of promoting an inclusive growth path and the role that informal labour markets play in economies in both Africa and Latin America, we ask the question: “Do informal labour markets promote or constrain inclusive growth?” The central objective of this research question is twofold. Firstly, to understand how transitions into the informal labour market from a state of unemployment affect inclusive growth. Secondly, to understand how transitions from the informal labour to the formal labour market affect inclusive growth. This analysis will be undertaken for both Colombia and South Africa. By combining the analysis with relevant findings from other countries within the region, we hope to be able to draw robust conclusions that could be more broadly applicable. To perform this task we will use a cost-analysis methodology, limiting the outcome (inclusive growth) to the variables that are affected directly by informality (GDP per capita growth and distribution, employment-to-population ratio, quality of employment, including wages, and welfare improvements of vulnerable groups), and limiting the channels through which informality affects inclusive growth to those related to labour markets.

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## 5. HYPOTHESIS

According to our understanding of the relationship between informality and inclusive growth, there are three hypotheses that we will attempt to prove through this research.

**Hypothesis A: Informal employment promotes inclusive growth by acting as a buffer to unemployment and creating opportunities for a wide segment of the population and in particular, the vulnerable population.**

The channels in which the transition from unemployment to informality can improve inclusive growth include the following:

- i. Informal employment reduces unemployment
- ii. Informal employment is associated with a higher income than unemployment
- iii. Informal employment is associated with a higher income than unemployment, even in presence of unemployment benefits
- iv. Informal employment is the only available option for some vulnerable groups
- v. Informal employment can prove to be useful in economic downturns to prevent serious falls in living standards, but this would require the informal sector to be a countercyclical variable

**Hypothesis B: Informality may constrain inclusive growth by impacting growth and jobs in the formal sector.**

The channels in which informality constrains inclusive growth include the following

- i. Informal employment generates less income, benefits and stability than formal employment
- ii. Informal sector productivity is lower than formal sector productivity controlled by observable variables as size
- iii. Informality lowers tax benefits and/or the quantity or quality of services provided

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### **Hypothesis C: Facilitating transitions from unemployment to informal employment and from informality to formality promotes inclusive growth.**

As stated before, there are several ways to promote inclusive growth by influencing informality. However, although we will review them in detail we are going to concentrate our efforts on the following two channels:

- i. Reducing the wage tax promotes formalisation and inclusive growth
- ii. Promoting entrepreneurship reduces unemployment and promotes inclusive growth.

Overall, this research does not expect to get a simple answer to the question “Do informal labour markets promote or constrain inclusive growth?” but instead a list of circumstances in which some type of informality can promote inclusive growth, provided that there exists a channel to formality; and a list of circumstances in which limiting informality in favour of formal employment might actually deliver more inclusive growth. This does not necessarily imply that a country could be better off by restricting the transit from unemployment to informality, but implies that promoting this transition requires certain policies that ensure that informality does not become a long-term problem for the economy. Our approach when testing the most relevant policies in relation to the agenda of both countries should be understood in the same sense.

## **6. RESEARCH DESIGN**

One of the key challenges faced in this research will be settling on definitions of informality and inclusive growth that are consistently applicable across countries and contexts. Once these definitions have been chosen, the next challenge is measurement.

**Measuring Informality:** Given conceptual complexities in its definition, there are a number of approaches to identify and measure informality. From a microeconomic perspective, three of these approaches are as follows:

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- Following from the definition of the informal sector, informality can be identified as those workers that work in firms with no more than five employees; are unpaid family helpers or housekeepers; are self-employed (except for independent professionals and technicians); or are business owners of firms with no more than ten employees (ILO, 2013).
  - Following from the definition of informal employment, informality includes those workers that do not make social security contributions, or who do not have a written contract.
  - From the perspective of firms, non-compliance with standards and registration requirements—for example, accounting standards or registration with taxation and other authorities—can also be used to indicate informality.

The choice of the measure typically depends on the nature of the outcome variable and data availability. The data available in Colombia and South Africa to perform this analysis is the following:

Data sources available in Colombia:

- From the perspective of individuals the following data is available:
  - o Dane household surveys (GEIH, 2008-2014, Continuous National Survey 2000-2006 and ENH 1984 and 1996-1999) that were unified in one informality series (1996-2014) by Mondragón-Vélez et al (2010). This is not a longitudinal survey.
  - o Universidad de los Andes Longitudinal Survey 2010 and 2013, which we expect to become available during the first semester of 2015.
  - o Dane Longitudinal Survey 2013 (base results of a Longitudinal Survey)
  - o Fedesarrollo (Longitudinal Survey 2000-2010)
- From the perspective of firms the following data is available:
  - o Dane: Encuesta de Microestablecimientos (Microfirms survey - Firms with less than Ten Workers) 14 cities 2000-2007.
  - o A special section of the GEIH 2008-2014 that answers firm-type questions
  - o Encuesta Sobre la Formalización e Inclusión 2012 (Survey on Formalisation and Inclusion 2012). A survey performed on informal firms that includes interesting qualitative questions.

Data sources available in South Africa:

- From the perspective of individuals the following data is available:

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- o Quarterly Labour Force Survey (QLFS), which includes a panel component, and the Labour Market Dynamics Survey (LMDS), which is essentially a merged dataset of the four QLFSs conducted within a particular calendar year
  - o Survey of Employers and Self-Employed, which is an informal sector survey World Bank
  - o Diepsloot data, as well as various other local-level datasets

Data sources available at global/regional level:

- International Labour Organisation (ILO) statistics (40 countries 2008-2010)
- Socio-Economic Database for Latin America and the Caribbean (SEDLAC) collects the National Household Surveys from 23 countries in Latin America and the Caribbean. 1990-2012.

As is evident, the data needed to analyse the labour market deeply and compare results across countries is not always easily accessible. For example, household surveys are not always publicly available, designed in a comparable way, or available for the same years across countries. Comparing data availability, South Africa has the disadvantage of not having enterprise surveys, although this can be partially overcome using the firms' characteristics that are reported by workers in the household survey; while Colombia has the disadvantage of having few, and short or relatively new panel household surveys, although this can be partially overcome using questions related to previous years.

Also, although the respective methodologies have been in place for some years, there remains considerable variation in country definitions of the informal sector, often related to differing contexts. As a result, cross-country comparisons may be significantly biased. For example, certain professions may be explicitly excluded from local informal sector definitions: in Colombia, professionals are automatically excluded from the informal sector, while this is true of domestic workers in South Africa. These types of differences pose an even a greater challenge for cross-country analysis at a global or regional level. Therefore we need to find a common definition to perform the comparative analysis.

## Measuring Inclusive Growth

Attempts to measure inclusive growth are relatively new and not yet standardised. The Asian Development Bank's inclusiveness index, for example, is a combination of 37 indicators that



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includes vulnerable employment as a proxy for informality (McKinley 2010). However this index has not been applied to Colombia or South Africa. Ali and Son (2007) developed a methodology for analysing improvement in inclusive growth that is related to a welfare analysis. However, this framework has only rarely been applied to job opportunities (see Suleman et al 2011) for the case of Pakistan). The OECD inclusiveness index (Ramos et al 2013) includes three dimensions: poverty, equality and employment. When this index is applied to Colombia and South Africa for 2006, Colombia ranks medium-low and South Africa low. Anand et al (2013, IMF) propose an index that combines per capita GDP and equity, showing that from 1992 to 2010 inclusive growth behaved very similarly in Colombia and South Africa not only in the aggregate – the countries respectively rank 81 and 82 out of 101 countries in this index – but also in the shares of per capita GDP and equity.

As has been outlined, given the complex nature of the relationship between informality and inclusiveness, this research will not use as an outcome a complex and oversimplified index, but rather a set of variables that might in other applications inform such indices. These include GDP per capita growth and distribution; the employment-to-population ratio; quality of employment (including wages); and welfare improvements of vulnerable groups. Informality can also affect inclusive growth indirectly through a number of indicators, including poverty; government expenditure on social programmes; gender issues; social protection, safety nets and labour rating; and control of corruption. Other indicators included in inclusive growth indices, but not really addressed here, are: key infrastructure endowments; access to education and health; access to basic infrastructure utilities and services; and good governance and institutions.

## **Identifying the Relationship between Informality and Inclusive Growth**

The main goal of our research is to reconcile two different perspectives in a common framework. One way to do this is through a welfare analysis or similar methodology. However, this necessarily implies an oversimplification of our findings, which may compromise their generalisability across contexts. Instead, we will use more rigorous data-based evidence methodologies to review each of the channels through which informality may affect inclusive growth and, in the case of Colombia, the effect of the labour tax reduction. Rather than generating a “one-size-fits-all” recommendation, this type of approach recognises the country contexts – economic, social, spatial or temporal, amongst others – that may impact on the various channels. Thus, we would anticipate our research finding that, under a given context, the relationship between informality and inclusive growth operates in a particular way through a given channel.

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Finally, we are confident that although informality and its public policies are very case-specific we will be able to draw conclusions and ideas that can be applied to other specific circumstances. For example, the Colombian experience with long-lasting informality might allow South Africa to take into account what conditions should be resolved in the formal sector before allowing an increase in informality; the institutional setting in South Africa that may have contributed to keep low levels of informality might be used as an example for institutional reforms in Colombia; Colombia's experience in lowering the wage tax could be of interest to other African countries that share with Colombia the coexistence of subsistence and voluntary informality and show relatively high levels of informality.

## 7. RESEARCH METHODS

In order to test the above-mentioned hypotheses, we will use the following methods. In each case, we indicate in parentheses the hypothesis (A/B/C) and the channel (i-v) that the method aims to test

### Statistical analysis of household and enterprise surveys

- **Characterisation of individuals in unemployment, the formal sector and the informal sector**, taking into account such characteristics as education, age and gender. This analysis is fundamental to find out if informal (or informal sector) workers more closely resemble, in their observable characteristics, the unemployed or formal (or formal sector) workers (A, B).
- **Transition matrices**<sup>1</sup> for the whole working-age population would allow us to identify differences in mobility between unemployment and informal (sector) employment, or between informal and formal (sector) employment (A.i). Transition matrices for vulnerable groups would allow us to confirm if informality is in fact the only option to vulnerable groups (A.iv). Transition matrices for non-household heads, and for groups that receive benefits

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<sup>1</sup>In the case of Colombia, it will only be possible to construct transition matrices at a disaggregated level if ELCA's second year of panel data becomes available. If this data is not available, we can construct similar transition matrices using information related to individuals' work histories. For South Africa, we propose investigating differences in transitions before and after/during the recession.

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would allow us to identify if extra benefits received by the family unit impact on individuals' labour market outcomes. Key to this analysis is the ability to control for selection bias in government programs (A.iii).

- **Impact of additional household resources on individuals' entry into the informal sector.** In the case of South Africa, we would exploit the receipt of the state old-age pension at age 60 to explore this issue by comparing the probabilities of informal and formal sector employment for working-age adults in households with near pension-aged adults, say 58 to 59 years, to those of working-age adults in households with members who just qualify for (and receive) the pension, say 60 to 61 years of age. Since household formation is endogenous – there is evidence that households form around old age pensioners – we need to ensure that we use an age range around the age of pension eligibility that is as narrow as possible. We would also need to control for the fact that the means test may disqualify age-eligible individuals from receiving the old-age pension and one way to do this may be to restrict the sample to African individuals only. This is because the old-age pension is received almost universally by African pension-aged individuals (A.iii; South Africa only).

## Time series analysis

- **Business cycle analysis of informality time series:** Data dependent, we will perform a time-series econometric analysis, although the series may not be sufficiently long, in which case alternative analyses will be pursued. For the case of Latin America, we can build a pool of data that will partially solve the problem, as in Verdera (2015) (A.v; Colombia only).

## Cross-country analysis at a global/ regional level

- **Econometric cross-country analysis of the informality-unemployment relationship:** Using ILO information we will calculate the correlation between informality and unemployment controlled by per capita income using a simple OLS logarithmic model. This model will allow us to analyse if informality is a substitute to unemployment (A.i).
- **Econometric cross-country analysis of the link between informality and tax revenue:** Using ILO information we will calculate the correlation between informality versus VAT evasion. This model will allow us to analyse if informality reduces government revenues, although cross causality might be present (B.iii).

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## Growth incidence curve analysis

- **Differences in incomes between formal and informal workers.** For South Africa, we propose to compare the inclusiveness of growth through the use of growth incidence curve (GIC) analysis. Here, we will compare formal and informal sector workers' wages over a given period (some period between 2009 and 2015, depending on data availability). In terms of the GIC analysis, comparisons will be made over the income distribution and with mean growth rates over the period. This analysis will help us to assess the extent to which the gap in incomes between informal and formal sector workers may have widened or narrowed over the period (that is, the extent to which informal sector workers have been included in the growth process) (A.v; B.i; South Africa only).

## Mincer equation/matching score methods

Either the Mincer equation or the matching score methods need to follow a number of steps, which in turn will help us to verify if a channel is effectively being used:

- **Probabilities of being unemployed, formal and informal.** Using a Probit (or similar model) we will calculate the probabilities of being unemployed, formal and informal, for the aggregate and by selected groups as women, young age, elderly, race (in South Africa) and displaced (in Colombia). This will allow us to find out whether vulnerable groups have a significant probability of getting a job. A similar exercise can be performed over firms (A.ii).
- **Matching score methods (or similar) applied to household surveys.** We will use the propensity score matching (and/or the Mincer equation with the Heckman correction) to obtain the wage differentials between formal and informal workers not explained by observed variables in Colombia and South Africa, as Maurizio (2015) did for Chile, Peru, Brazil and Mexico. In Colombia, we will replicate this exercise using the Micro-Enterprise Survey, obtaining results in terms of productivity, assets per worker and so on, as in Cárdenas and Mejía (2007) (B.ii).
- **Comparison of matching score models before and after the reform.** For Colombia, using the results of the propensity score-matching model (or the Mincer equation), we will attempt to estimate the changes that happened in Colombia's labour market before and after the reduction in labour taxes (C.i; Colombia only).

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## Use of additional surveys for qualitative indicators

- **Comparisons of quality of work conditions between formal and informal (sector) workers.**  
Using the Colombian Ministry of Finance informality survey (not used until now), we will compare some indicators between informality and formality: work stability, benefits, work hours and credit access. This analysis will be replicated in South Africa based on existing household survey data (B.i).

## Evidence-based literature review

To analyse the effect of promoting entrepreneurship we will review the literature, including not only evaluations of different programmes but also the existing evidence on the path followed by successful firms (as in Caro et al 2010) (C.ii).

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