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## Social capital as a substitute for formality: Evidence from Bolivia



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#### 1. Introduction

#### ABSTRACT

The paper studies the role of social capital in the urban informal sector in Bolivia. It shows that a formal firm has about 6.4 times the sales of an informal firm with no social capital, but informal firms use their social capital to compensate for the lack of formal productivity benefits. By being formal, firms obtain permanent visibility because they can operate a shop or a visible production location and they can produce in locations with better public infrastructure. Informal firms, in contrast, sell in one place – typically in street markets in front of formal shops – and produce in another – typically in the outskirts. Social capital increases accessibility of informal firms and provides them with security benefits at their production location.

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This paper studies the role of social capital in the urban informal sector in developing countries using micro-survey data on formal and informal garment producers in Bolivia. Formal firms are defined as firms that are registered with the tax authorities.<sup>1</sup> We show that the typical formal and informal firm are surprisingly similar: They use a similar production technology, they are of similar size, they sell at similar locations, and firm owners have similar background characteristics. This yields a puzzling insight: Firms serving similar markets and making similar input and output choices differ in the extent to which they choose to comply with tax regulations.

An explanation that may resolve this puzzle is that being formal has no real net advantage so that both types of firms end up making similar input and output choices. The fact that state capacity in Bolivia is low – as it is typical for a developing country – supports this explanation.<sup>2</sup> For example, the survey reveals that in Bolivia virtually all respondents consider the threat to go to court as a way to resolve conflicts useless. Firms neither use courts nor threaten to use them. It is important to emphasize that this is true for both formal and informal firms. Clearly, without an effective 'shadow of the courts,' an important formal productivity benefit is absent. However, against this explanation speaks the fact that formal firms incur an administrative cost. Formal firms

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<sup>&</sup>lt;sup>1</sup> Formality is defined in legal terms, and on the tax dimension only. Note that when applying the definition of formality used by the International Labor Office (ILO, 2002), all firms in the sample are informal because all firms are small.

<sup>&</sup>lt;sup>2</sup> One indicator of the state capacity of governments in developing countries can be seen by their ability to raise taxes (Besley and Persson, 2009). This ability is substantially lower in developing countries than in developed countries. For example, the Heritage Foundation assesses the "Fiscal Freedom" in 2001 at 56% for OECD countries, while this measure equals 72% for non-OECD countries, a statistically significant difference. In Bolivia, for example, "Fiscal Freedom" equals a striking 88%.

are required to process receipts and interact with tax authorities on an ongoing basis. Most plausibly, firms will incur that cost only when doing so offers some benefits. However, if so, then such productivity benefits should show up in higher average sales for formal firms as compared to informal ones.

This argument leads to a second explanation, namely that formal status produces some productive benefits that affect production choices, but informal firms use some informal substitute to compensate for the lack of formal productivity benefits so that both types of firms on average end up making similar input and output choices. The evidence described in this paper supports this explanation. The paper finds that social capital – here broadly defined as being linked to other individuals – serves as this substitute. When analyzing sales for the two types of firms by controlling for social capital for informal firms, stark differences appear: By regressing sales on a dummy variable for 'informal status' and an interaction-term between social capital and 'informal status' we find that the average formal firm has almost 6.4 times the sales of an informal firm with *no* social capital. Furthermore, an informal firm with about 26 links has roughly the same sales as the average formal firm. About 17% of the informal firms in the sample indicate to have at least 26 social links. The estimate on the interaction term is positive and large, and statistically highly significant. Social capital is correlated with sales for informal but not for formal firms. Thus, social capital seems to work as a substitute for formal status.

This result, however, raises an econometric concern: The formal status of a firm is not assigned randomly. Unobserved factors such as productivity, ability, wealth, influence, etc. may bias the OLS estimates as – for example – more productive firms are more likely to choose to be formal. Unfortunately, there are no valid instruments to address the issue. Instead, this paper takes a different approach to help with the interpretation of the OLS results. Section 3 develops a theoretical model that models the firm's choice of becoming formal by including a firm specific (potentially unobserved) productivity parameter. The model shows that even though OLS estimates may be upward biased without proper controls for productivity, such a bias needs a *channel* through which it can manifest itself. More precisely, the model shows that a potential productivity bias shows up in opposite directions depending on whether social capital and the formal status of a firm are in a substitutive or complementary relationship. The theoretical analysis, thus, suggests that although we cannot identify the exact magnitudes of how social capital and formal status affect sales, we can nevertheless identify the channel through which social capital and formal status interact with each other. The finding of a large positive interaction-term between informal status and social capital supports the hypothesis that social capital and formal status are substitutes.

There are plausible explanations as to why social capital and formal status are substitutes. Despite the large number of similarities between the two types of firms, there is a key difference. Formal firms tend to be visible at their production location, for example, by operating a shop. As a result, most firms located closer to the city center are formal and operate a shop. Registration is crucial for shop owners since tax enforcement targets shops and production locations that are made visible by using signs and posters, particularly the ones that operate in the city center. It is not uncommon to see shops closed down because of a violation of tax rules. However, informal firms also sell in the city center. They sell in the streets in front of the formal shops. But informal firms produce elsewhere, mostly in the outskirts of El Alto and La Paz. Although the sales location is identical, the sales presence differs. Street vending is limited to certain times of the day and/or certain days of the week. For example, many informal producers sell on the street "Tumusla" – a street clustered by formal and informal garment vendors – on early mornings between 5 am and 11 am only, while shops are open throughout the day. This difference between formal and informal firms has two implications: First, formal firms are more accessible than informal firms. The role of social capital may then be to make informal firms more accessible. Easy accessibility, for example, is important as a commitment device for contract compliance and quality assurance. An accessible firm has stronger incentives to comply with an agreement because if a firm fails to comply, an unsatisfied party will simply return with the problem. If a firm is more difficult to access, a failed party may not bother to return. This implies that a less accessible firm has lower incentives to comply with agreements and quality standards than a more accessible firm.<sup>3</sup> Second, formal firms produce in a location with better public infrastructure as locations closer to the city center tend to have better policing, more street lights, paved streets, etc. Social capital then may provide firms located in the outskirts with security benefits. The fact of having family around and being connected in the neighborhood will plausibly reduce security threats thereby positively affecting the firm's investment incentives. For both of these explanations, there is no need for formal firms to rely on social capital as they achieve both accessibility and security benefits by being formal.

This paper relates to a large literature that looks into the relationship between formal and informal institutions and economic performance (among others see North, 1990; Eggertsson, 1990; Greif, 2006). For example, North (1990, p. 53) points out that by only looking at formal institutions with an insufficient understanding of how they interplay with informal ones ... "gives us an inadequate and frequently misleading notion about the relationship between formal constraints and performance." Whether informal and formal institutions are in a complementary or substitutive relationship will clearly affect the way changes in formal rules affect economic performance.

This paper also relates to the extensive literature on social capital.<sup>4</sup> A key property already emphasized in the early literature on social capital is how inclusive or exclusive different forms of social capital are (see Annen, 2001, 2003). For example, in his seminal work Granovetter (1973) distinguishes between 'strong' and 'weak' ties, Putnam (2000) between 'bonding' and 'bridging' social capital, and Fukuyama (1995) talks about 'spontaneous sociability' as the ability to form new associations easily. The most extreme form of 'inclusive' social capital is presumably anonymous trust or social trust, that is, trust among strangers. Note that the level of anonymous trust among the small firms in Bolivia studied here is quite low: For example, the survey reveals that the

<sup>&</sup>lt;sup>3</sup> See Kessler and Lülfesmann (2004) for an analysis of different 'return policies' on contract compliance and quality assurance.

<sup>&</sup>lt;sup>4</sup> For an overview of the literature and a discussion of conceptual issues see Durlauf and Fafchamps (2005).

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