

# In the Shadows? Informal Enterprise and the State in Jordan\*

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## Abstract

Though informal enterprise represents the vast majority of firms in the MENA region (Gatti et. al 2014), we know very little of whether and how informal firms interact with the state. Many assume informal firms hide from the state for fear of punishment. Yet given the importance of personalistic and communal ties in many developing economies, it is unclear whether and when informality actually strains small and medium-sized enterprises (MSE)'s relations to the state. Using new survey data from Jordan, we find little difference between formal and informal firms' reported access to state officials, frequency of bribe payments, business association membership and use of contracts. Far from avoiding the state, informal enterprises are in fact more likely to operate in districts with *higher* levels of public sector employment in defense, monitoring and regulation. We argue that connections matter. Informal entrepreneurs in districts with higher levels of public sector employment are more likely to have personal or communal ties to the state. They eschew the costs of formality while maintaining access to state officials and institutions. Reforming both aggregate levels and the geographic concentrations of public sector employment will be key to expanding the formal economy in many developing economies.

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The informal economy is vital to the Arab world. In a region burdened by high unemployment and stagnant growth, it employs roughly 65% of the Arab world’s labor force, and produces more than a quarter of its GDP (Gatti et.al 2014). Hernando De Soto’s Institute for Liberty and Democracy estimates that more than 200 million people in the Middle East and North Africa depend on income from running businesses or holding property in the informal economy<sup>1</sup> (De Soto 1989).

Though informal enterprise represents the vast majority of firms in the region - especially among micro and small enterprises (MSEs) (Gatti et. al 2014) - we still know very little of whether and how informal firms interact with the state. Many argue that informal actors hide from the state for fear of reprisal (Kamrava 2002). Yet given the importance of personalistic (Greenwood 2007; Heydemann 2004) and communal (Haddad 2011) ties in the region, it is unclear whether and how informality structures MSEs’ relations with the state. Identifying the salience of legal status in firms’ interactions with the state in a developing context can advance our understanding of the challenges and solutions to “formalizing informal economies” in the broader development agenda.

We examine whether formal and informal micro and small enterprises do in fact have different interactions with state officials and institutions. Much of the literature assumes the shadow economy stays in the shadows. We empirically test this. Using newly released USAID survey data of over 4,500 Jordanian MSEs, we compare formal and informal enterprise owners’ reported ease of meeting with local municipal council officials, frequency of bribe payments, business association membership and contract usage. We find little difference between formal and informal MSE owners in each of these domains.

This is puzzling. Why do some MSEs pay the costs of formality when legal status appears to have little difference on firm owners’ perceived access and interactions with the state? We posit that patterns in MSE formality and state-business engagement in Jordan are fundamentally linked to local levels of public sector employment. MSE owners are more likely to be personally or familially connected to state officials in districts with higher levels of public sector employment. They are also more likely to enjoy the privileges of accessing state officials and institutions, without bearing the costs of formality. Highly visible and dense state regulatory structures may actually disincentivize formality at the local level. The development community’s concerted focus on lowering the barriers to formality to unlock entrepreneurship and bolster fiscal revenues may be missing an important aspect of how MSEs view their environment. If informal and formal firms both view their relationship to the state similarly *and* informality is more prevalent in districts with a large state presence, restructuring public sector employment may be more critical to “formalizing informal economies” than any direct intervention that targets MSEs and their traditionally perceived barriers to formality.

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<sup>1</sup>Defined as the collection of firms, workers, and activities that operate outside the legal and regulatory framework.

## Informality and the State Considered

Informality is cast as a bane to economic development. Higher levels of informality are typically associated with inefficient levels of production, a “free-riding” of public goods and worker abuse. Informality undermines investment, innovation and tax collection.<sup>2</sup> Informal firms often lack access to formal credit (Babbit, Borwn and Mazaheri 2015). They also lose the institutional protections and predictabilities that come with legality. De Soto has suggested that high levels of informality in the MENA-or what he terms “extralegality”-erode social and economic cohesion. De Soto concludes that firms want to go formal. They simply lack the means to overcome the costs and red tape of doing so (De Soto 2002, pg. 246).

More recent work questions these assumptions. The taxes and regulations that come with formality may outweigh the benefits of a legally sanctioned market place (Neuwirth 2011). Many states lack the means to protect formal enterprise. Unable to supervise low level, “piranha” bureaucrats (Markus 2015), weak states cannot provide the classically cited benefits of formality. Entrepreneurs may in fact prefer weak institutional environments where all measures are negotiable and reversible (Hibou 2011, pg. 157).

It is also commonly assumed that states want to formalize their economies. Formality enables regulation that can protect consumers and employees. Formality can also help states enforce international standards, enabling formerly unregulated firms to tap into the international economy. Formality prevents unlicensed firms from free riding off of public utilities and space, like sidewalks. Most importantly, formality broadens the tax base.

However, the developing state’s commitment to formality has also been questioned. Rulers may allow bureaucrats to extort firms, regardless of their legal status, to help maintain the ruling coalition (Engval 2015; Van De Walle 2000). Others view informality as a mechanism for state control. Hibou proposes that Tunisia’s informal economy maintains “the logic of the policing state and the mechanisms that underlie the security pact” between ruler and the ruled (2011, pg. 240). Another line of argument posits that regimes use forbearance to depoliticize micro and small enterprise. These businesses’ personalistic dependence on state officials to avoid taxes and regulations muzzles their political voice (Greenwood 2007). The economic benefits of operating in perpetual “semi-formality” discourages firms from engaging in political action for fear of losing these unenforced privileges (Kamrava 2002, pg. 43). This literature predicts little difference between formal and informal firms’ engagement with state officials through formal venues or civil society. Both eschew the state out of fear or convenience.

Instead of viewing informal enterprise as subservient to the state, another current of scholarship casts the two as allies under the strains of economic liberalization. Amidst fiscal reform, the informal economy provides jobs when employment is scarce and services are cut. Informality also weakens traditional opponents of liberalization. Boone and Diop argue that economic liberalization recalibrated ties between Senegal’s rulers and elite capitalists. Amidst pressures for economic reform, informal entrepreneurs, and their vociferous informal business association, became pillars of support for the Senegalese regime (1998). Roberts claims that informal labor completely undermined Latin American labor organizations’ ability to contest economic liberalization (2002). Scholars of Latin America have found that ruling parties and political entrepreneurs sometimes negotiate and accommodate street vendors in exchange for political support (Cross 1998; De Soto 2002 pg.70; Holland 2014). Likewise, in India Agarwala reveals a striking alliance between pro-business parties and informal labor organizations (2013). In all these accounts, liberalizing rulers tolerate if not work with the informal economy to advance their neoliberal agenda. Far from punishing, the state may encourage informal enterprise in these environments.

Finally, even though micro and small firms - formal or not - are generally labelled too dispersed (Piven and Cloward 1979, pg. 21), overworked (Shadlen 2002), mobile (Shafer 1994) or divided (Fukiyama 1995,

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<sup>2</sup>Oviedo, A. M., Thomas, M. R., Karakurum-zdemir, K. (2009). “Economic Informality: Causes, Costs and Policies-A Literature Review.” World Bank Working Paper, number 167, pg. 8.

pg. 100) to engage in collective action, predictions about informal firms' political agency remain ambiguous. If informality is the outcome of a tradeoff between forbearance and political acquiescence (Greenwood 2007; Kamrava 2002), then heads of informal enterprises should be less likely than heads of registered firms to organize and contest state policy. Heads of informal firms should be less willing to meet with state officials or belong to private sector advocacy groups. However, if state actors permit informality to coopt or reward political allies, than informal firm owners may be just as if not more likely to collectively organize and use state institutions to advance their interests (Boone and Diop 1998; Holland 2014).

## State “Capacity” and Informal Enterprise

The extant literature emphasizes that informal enterprises' engagement with state depends on economic, social and political context. Nevertheless, in most of these accounts the state's relationship to informal enterprise is assumed to be monolithic (either sanctioning, predatory or accommodative) and reflective of state elites' political strategies. Yet state capacity and ties to society can vary sub-nationally. This can lead to differing patterns of state relations with informal enterprise within states. We posit that the local size of the state, as measured by the district rate of public sector employment, is an important, and often overlooked, factor that shapes MSEs' engagement with the state *and* incentives to formalize. We argue that because public sector employment is the “crown jewel” of welfare provision in many developing economies (Baylouny 2008), MSE owners in districts' privileged with high levels of public sector employment are also more likely to be “privileged with informality”. When states use public sector employment as a reward and target it to specific districts, entrepreneurs in those district are more likely to have either personal or communal ties to the local state apparatus. These local level connections enable unencumbered, constructive relations to state officials without the fiscal burdens of formality. This produces two counter intuitive outcomes. First, it minimizes differences in formal and informal entrepreneurs' self-reported engagement with the state at the national level, giving the impression that legality does not matter. Second, *higher* levels of informality can correlate with *higher* levels of public sector employment. This burdens the developing state's fiscal capacity with both high informality *and* high public sector spending.

## MSEs and the State in Jordan

Jordan provides fertile ground to compare how formal and informal MSEs' interact with the state.

First, like many other Arab states, Jordan is home to a vast number of MSEs. Ninety five percent of registered Jordanian firms employ less than ten people (Jordan Department of Statistics). An estimated 60% percent of informal Jordanian firms employ fewer than 5 employees (Gatti et.al. 2014, pg 15). The IMF proposes that the informal sector composes 26% percent of the Jordanian economy, an average rate of informality relative to other Arab economies.<sup>3</sup>

Second, economic hardships from upheavals in Egypt, Iraq and Syria have placed the Hashemite Kingdom under increasing budgetary strain. It is hoped that expanding the fiscal net through formality will raise desperately needed revenue. Indeed, in its latest request for extending funding from the IMF, the Jordanian government pledged to lessen informality (IMF Country Report No. 16 / 295). In this environment, one would expect informal enterprise to avoid the state, and the state to clamp down on

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<sup>3</sup>Jordan Economic and Development Strategy Handbook 2015, Volume 1, pg. 149

informal enterprise.

Third, by focusing on Jordan we are able to draw on a new data source that is unprecedented both in scope and rigor. In 2014-2015, USAID Jordan’s Local Enterprise Support Projects (LENS) conducted a survey of over 4,500 Jordanian MSEs owners<sup>4</sup> to better understand and assess the barriers and opportunities for such firms.

The survey spans 35 districts across six governorates (Amman (excluding the Greater Amman Municipality), Zarqa, Irbid, Karak, Tafilah, and Aqaba (excluding the ASEZA special economic zone)). It covers general demographics, workforce trends, firm performance, access to finance, registration and business processes, and MSEs’ participation in various associations and networks. The survey employed a two-phase probability sampling strategy that was first conducted on the household level. A subsample list of MSEs was then drawn from the household level sample and surveyed at their location of business. For more information on the survey design, consult: <http://www.jordanlens.org/research>.

Crucially, unlike the World Bank’s MENA enterprise surveys (World Bank et al 2016), the LENS survey represents formal and informal firms. Other regional enterprise surveys that focus on informality (see the Economic Research Forum’s MSE surveys in Lebanon (2004) and Morocco (2003)) are significantly smaller (3000 and 1000 respondents respectively). The LENS survey thus offers a rare comparative view of formal and informal entrepreneurs’ access to and use of state institutions and civil society organizations, as well as their attitudes towards registration and legality.

## Empirical Analysis

We use USAID Jordan’s LENS survey data to gauge how MSEs’ legal status (formal or informal) correlates with their perceived relations to the state. We limit our analysis to entrepreneurs who own fixed stores. We focus on fixed store owners because this is the population of entrepreneurs that should be *most* visible to the state, and thus *most* likely to register. Fixed store owners are also most likely to know that they *should* be registered. We further subset our population to respondents who self-identify as Jordanian nationals. This excludes from our analysis cases where citizenship status might taint an entrepreneur’s engagement with the state. Finally, we only examine firms with 10 or less full time employees<sup>5</sup> This produces a sample of 3,847 MSEs, one fifth of whom report being informal.

We operationalize formality as whether or not a firm reports being registered with the Jordanian Ministry of Industry and Trade (MIT) (Q108). While formality is more complex than a binary categorization (registered firms can also participate in unregulated activities), a firm that undergoes the bureaucratic hurdles of registration is undoubtedly more formalized than a firm that resides outside of the state’s purview. Jordanian law requires all firms to register at the MIT at a cost of 1 Jordanian Dinar (1.51 USD).<sup>6</sup> The 836 (out of the 3,847) fixed stores owners who responded that their firms are not registered are operating illegally.<sup>7</sup> While we are mindful of social desirability bias, the anonymous nature of the survey and the high levels of reported informality suggest that many firm owners responded to the survey honestly.

We use firms’ registration *and* licensing status as a robustness check. Unlike registration, which is a one-time procedure, licenses are renewed annually. Licensing procedures can require numerous ministries’ approval depending on one’s economic sector.<sup>8</sup> Seven hundred of the sampled entrepreneurs acknowledged being unlicensed. This variation in mediums of formality (registration vs. licensing vs. registration

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<sup>4</sup>While the survey targets MSE owners, in 126 instances when firm owners were not present, managers were interviewed.

<sup>5</sup>99 percent of firms in LENS sample reported having 10 or less full time employees.

<sup>6</sup>USAID.pdf citation required

<sup>7</sup>67 firm owners did not answer the survey’s formality question. We coded these NAs as 0s.

<sup>8</sup>Correspondence with USAID official

and licensing) is not unique to Jordan. At least half of MSEs in Lebanon and Morocco were registered with one of three required regulatory agencies. Fewer than twenty percent were unregistered in all three agencies (Gatti et. al, 2014, pg. 128).

We conceptualize firm owners' perceived engagement with the state with four LENS survey questions:

- Can you get a meeting with the Mayor or municipal council for your business? (1 = Yes) (Q607)
- Have you ever been asked to pay a bribe to facilitate your business? (1 = At least once) (Q608)
- Do you belong to a formal trade, business or professional association? (1 = Yes) (Q6061)
- Do you sign contracts or formal agreements with clients or suppliers? (1 = At least once) (Q201)

Each of these questions represents a different channel of state - business engagement. Meeting a mayor or civil servant to discuss one's business is direct and formal engagement with the state. Belief in such direct access to policy enforcers is an asset to business activity. It displays a trust and willingness to "step out of the shadows" and engage with state officials if need be. Bribe payments are an illicit channel of state - business engagement. Unlike meeting with municipal officials, bribe payments are an informal and sub-optimal form of state-business relations. Entrepreneurs would rather not have to pay a bribe to facilitate business activity. Belonging to a trade, business or professional association is a third channel of state-business engagement, albeit one that runs through civil society organizations. Joining a voluntary private sector advocacy group indicates that firm owners are willing to participate in public efforts to reform state policy. Contract usage is yet another facet of state - business engagement. Signing contracts reflects a certain faith that state institutions will enforce an agreement if it is broken. This implies that contract signees are unafraid to call on the state, or threaten to on call the state, if they believe they have been cheated in a business transaction. These four questions cover diverse but complementary facets of state-business engagement.

Table 1 provides estimated rates of formal and informal MSEs' participation in the aforementioned channels of state engagement. These figures are design-based and weighted by the LENS survey. Remarkably, close to half of informal and formal firm owners reported having access to their local mayor or municipal council. Clearly many in the "shadow economy" do not fear meeting with state officials. There is also little difference in formal and informal MSEs' reported bribe payments. One would expect informal entrepreneurs, already operating illicitly, to have a higher reported bribery rate. Yet only 11 percent of this population is estimated to report having paid a bribe "at least once." This is two percentage points less than the population of formal entrepreneurs with fixed stores. Business association membership rates are equally low for both groups (7 percent), and the mean difference in contract usage is slight (4 percentage points). These aggregate level mean estimates suggest little difference in formal and informal firms' engagement with the state.

## Model Specification and Controls

To delve further into the relationship between formality and state-business engagement in Jordan, we use logistical hierarchical models over a range of controls from the LENS survey. Because our outcome variables are all binaries, we employ mixed effects logit regressions to assess any statistically significant relationship between firms' legal status (Formal = 1) and their engagement with the state through these

Table 1: Mean Rates of Saying Yes

	Formal	Informal
Access to Mayor	50	49
Ever Paid Bribe	13	11
Business Association Membership	7	7
Contract Usage	13	9

four channels of engagement. Our models incorporate random effects at the governorate, district and bloc levels to account for the stratification levels of the LENS survey’s sampling design. To help interpret the log odds ratios for the coefficients of these regressions, we plot the marginal effect of formality (vs. informality) for our outcomes of interest while setting all of the control variables at their means.

We control for firm owners’ gender<sup>9</sup>, education-level<sup>10</sup>, and whether he or she is their household’s primary earner<sup>11</sup>. At the firm level, we control for the firm’s sector (tourism, transportation, food processing, ICT or other), years of operation and number of full time employees.

Table 2 in the Appendix provides weighted summary statistics of the subsetted population. These figures are design-based and weighted by the LENS survey. Formal and informal firm owners are remarkably similar in terms of gender, age and sector of employment. Formal firm owners tend to be slightly more educated. Their firms are generally older. Among formal firms, a higher percentage is located in the capital Amman (45 vs. 31 percent). A higher percentage of informal firms are in the Irbid governorate (34 vs. 26 percent).

Finally, we use use Multivariate Imputation by Chained Equations (Buuren 2011) to address missing data - though few variables have more than five percent of their observations missing. MICE uses predictive mean matching to estimate values for missing observations based on other variables in the dataset (excluding our key dependent variables).

<sup>9</sup>Female = 1 if the respondent is Female.

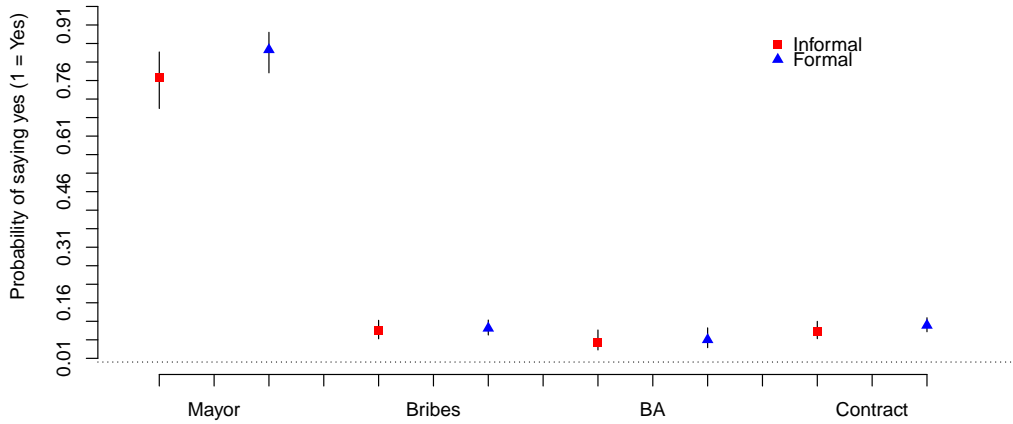
<sup>10</sup>Coded on a 0 - 6 scale where 0 = Illiterate, 1 = Elementary, 2 = Middle school, 3 = Secondary school, 4 = Diploma / Associate degree, 5 = Bachelor degree, 6 = Graduate degree.

<sup>11</sup>Primary Earner = 1 if owner is her or her household’s primary earner.

## Results

With the exception of access to municipal councils, there are no statistically significant differences in formal and informal MSEs' reported frequency of bribe payments, business association membership or contract usage (Table 3). While we recognize the possible reverse causality for the bribe payment outcome (entrepreneurs might pay bribes to become informal), the positive coefficient for Formality, and the low levels of reported bribe payment in absolute terms, mitigate these concerns. Figure 1 graphs the predicted probability of informal and formal firms using each channel of state - business engagement while holding all control variables at their means. The vertical lines across the points are 95 percent confidence intervals. The estimated differences for all four types of MSE-state engagement are trivial. Indeed, *patterns* of state engagement are remarkably similar, regardless of a firm's legality. Both informal and formal firms are much more likely to engage with the state directly at their local municipal council (Mayor: 77 vs. 84 percent likelihood), than illicitly through bribes (Bribes: 8 vs 9 percent likelihood), indirectly with civil society organizations (BA: 5 vs 6 percent), or through legal avenues (Contract: 8 vs. 10 percent).

Figure 1: Informality and State - Business Engagement





## The Missing Piece: Informality and the State

These similarities in formal and informal MSEs' reported engagement with the state lead to a second question: If self-reported relations with the state are independent of legal status, then why do some entrepreneurs pay the costs of formality?

Answering this question requires disaggregating the Jordanian state. The state's presence, and by possible extension, capacity, varies across Jordan. State officials in districts with a larger state apparatus may be more accessible to firm owners, but also more attuned to firms' legal status (for better or worse) than districts where the state is absent or weak. On the other hand, large bureaucracies might also allow personal or familial ties between state and entrepreneur to blur the salience of formality in state - business relations. The local *size* of the state might therefore influence entrepreneurs' recourse to channels of state - business engagement, as well as their incentives to formalize. We thus examine how district levels of public sector employment vary with MSEs' perceived relations with the state and rates of informality.

We measure the size or presence of the public sector with weighted district level estimates of employment in "public administration and defense, compulsory community service" (ISIC Rev.4 code 84) from the 2010 Jordan Labor Panel Survey (ERF JLPS 2010). This two digit economic classification represents public sector employees in public order, safety and defense (Rev.4 code 842) as well as those involved in regulating business and public administrative activities (Rev.4 code 841). Together, this classification captures both bureaucrats in charge of regulating firms and law enforcement officials. While there are limitations with this operationalization - JLPS is a household survey, so there may be public sector officials who reside in one district but work in another - we believe it is the best proxy for the presence of the state.

Table 4 presents estimated rates of public sector employment (ERF JLPS 2010) and firm informality (LENS 2014) across the districts sampled in the LENS survey. The number of primary schools (ERF JLPS 2010) and estimated number of firms per district proxy for district levels of urbanization and socio-economic development respectively.

District levels of public sector employment as a share of the labor force range from 3 to 75 percent. The median rate is 29 percent. These rates corroborate common portrayals of Jordan's expansive public sector.<sup>12</sup> They also depict significant within governorate variation in public sector employment.

Finally, informality is not an exclusively rural phenomenon. Though the Ramtha district in the Irbid governorate has an estimated 670 more firms than neighboring Aghwar Shamaliyah, both have similar estimated rates of informality among MSEs with fixed stores. Likewise, rates of public sector employment may not be an exclusively rural phenomenon either. Ramtha has close to 8 times as many MSEs as neighboring Taybeh, but its estimated share of the labor force in public administration and defense is thirteen percentage points higher. This variation in rates of informality and public sector employment within rural and urban governorates can help account for other district level conditions, like population density, that might also influence MSEs' engagement with the state.

We add district rates of public sector employment (ISIC Rev.4 Code 84) to our logit hierarchical models. Entrepreneurs operating in districts with higher levels of public sector employment in defense and administration, should be *more* likely to encounter state officials in their day-to-day affairs. A priori, it is unclear how a larger state presence would contribute to MSE - state relations. A larger bureaucracy might make it easier for MSE owners to meet with state officials; it might also lead to greater instances of bribery and predatory behavior.

Table 5 finds mixed evidence of higher levels of public sector employment correlating with enhanced

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<sup>12</sup>Indeed, the Jordanian government Economic and Social Council's 2015 Competitiveness Report concluded that size of the Kingdom's public sector is the largest in the world given its ratio to the population. Khetam, The Jordan Times, Nov. 11, 2016.

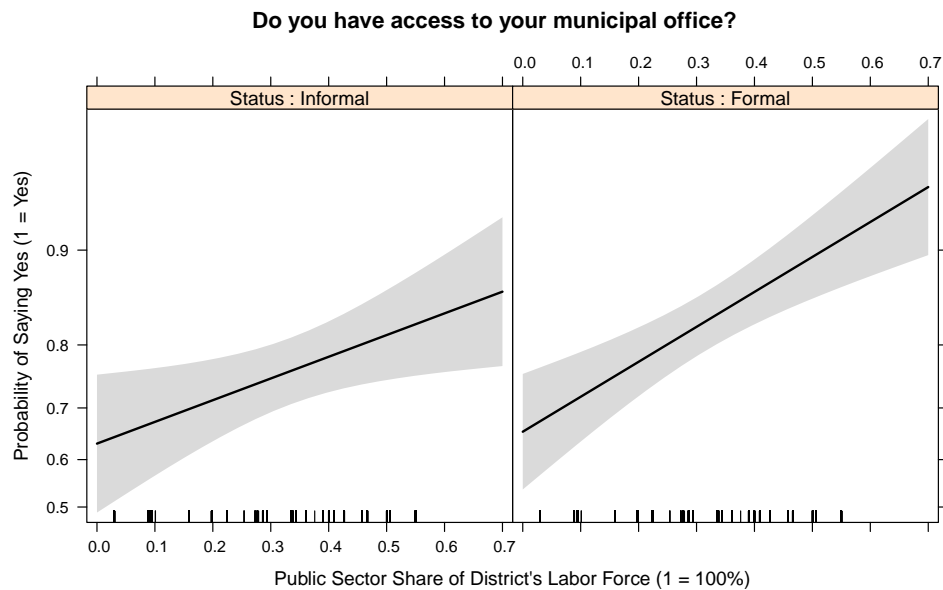
state - business engagement. While MSE owners in districts with higher rates of public sector employment are more likely to report being able to meet with members of their municipal council and to belong to a business association, public sector employment has no statistically significant correlation with reported history of bribe payments or contract use. The statistical significance and direction of the Formality coefficient remains unchanged from Table 3.

Setting all controls at their means, the plots below depict how district levels of public sector employment correlate with informal and formal MSE owners' likelihood of reported participation in the four channels of state-business engagement. The gray coloring represents 95 percent confidence intervals.

## Access to Municipal Councils

Though formal firms in districts with high levels of public sector employment have the highest likelihood of reporting access to their municipal office, an informal firm in a district with rates of public sector employment at 50 percent has an 80 percent likelihood of responding that he or she could set up a meeting in their local municipality, a twenty percentage point higher probability than a formal firm in a district with a public sector employment rate of less than 10 percent.

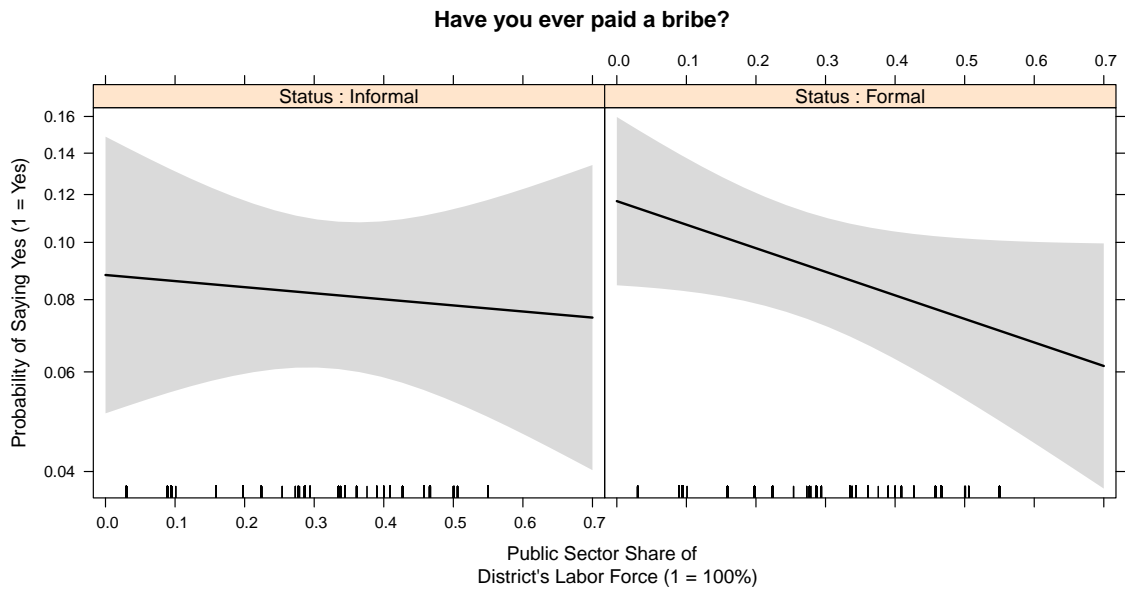
Figure 2



## Bribe Payments

Public sector employment bears little correlation with formal and informal firm owners' reported histories of bribe payment. This challenges prevailing depictions of predatory bureaucrats, and that informal firms are more susceptible to illicit endeavors with state officials.

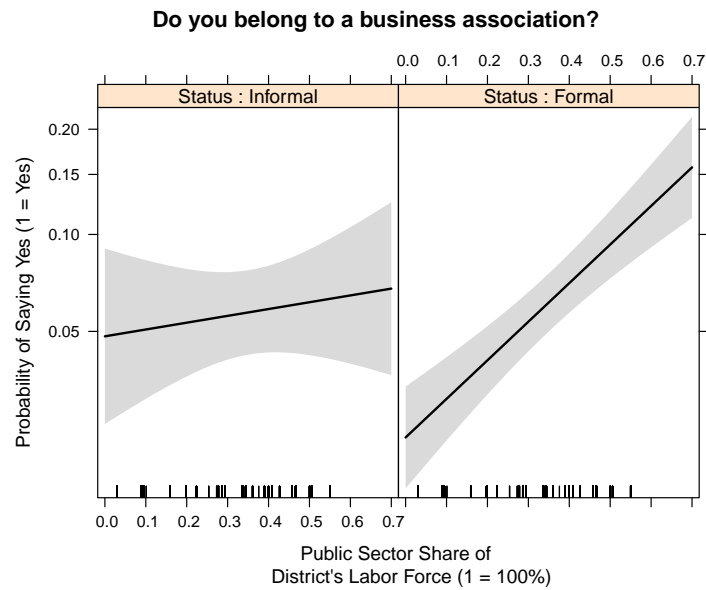
Figure 3



## Business Association Membership

As with access to local municipal councils, formal firms in districts with high levels of public sector employment in defense and administration are the most likely to report belonging to a voluntary business association (close to 15 percent). However, informal firms in these same districts still have a higher likelihood of belonging to these civil society organizations than formal firms in districts with lower levels of public sector employment. Legal status appears to have little systematic barring on entrepreneurs' willingness to join business associations.

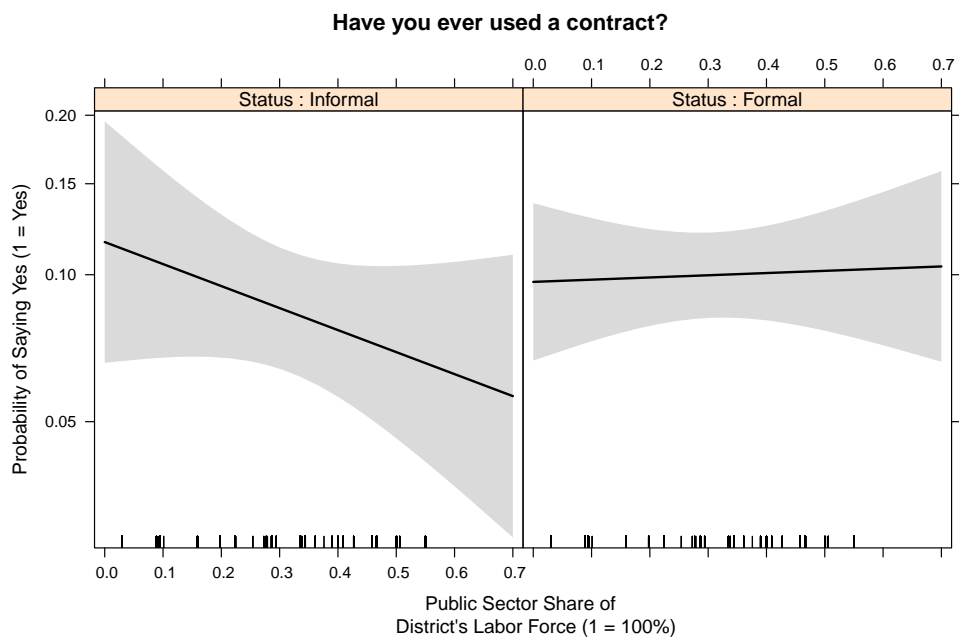
Figure 4



## Contract Usage

Lastly, reported contract usage is independent of levels of public sector employment for both informal and formal entrepreneurs.

Figure 5

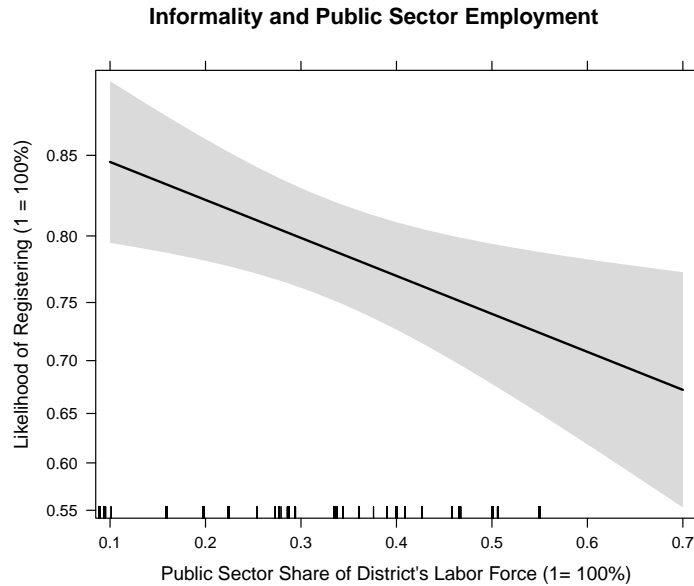


## Motivations for Informality

These plots suggest that location, in terms of district levels of public sector employment, may be a better determinant of the quality of state - business engagement than legal status. At the very least, public sector level employment does not appear to impede informal firms' engagement with the state. Given their already high perceived access to municipal councils and low reported bribe payments, MSE owners in high public sector districts may be less willing to enter the state's fiscal net and formalize. This might promote informality in high public sector districts.

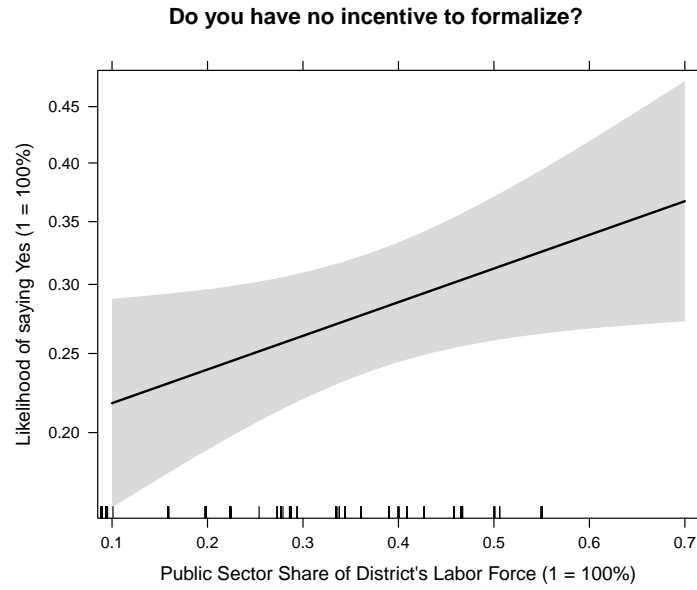
Table 6 presents a negative relationship between district levels of public sector employment and rates of MSE formality. This negative relationship holds whether formality defined simply as registering (Model 1), or registering and having an annual license (Model 2). Figure 7 graphs this relationship. While MSEs in districts with less than a 10 percent level of public sector employment have an 85 percent likelihood of being registered, this likelihood of registration drops almost 10 percentage points in districts with public sector level employment rates of 50 percent or greater.

Figure 6



In fact, informal firms are more likely to respond that they have no incentive to formalize<sup>13</sup> in districts with *higher* levels of public sector employment (Table 7). This negative relationship is statistically significant at the 5 percent level.

Figure 7



A large state presence does not guarantee, or seemingly incentivize, greater formality among MSEs.

<sup>13</sup>Q1091: Lack of Incentive to Register (1 = Yes), among unregistered firms in the LENS survey

## **Conclusion: Moving to a Better Understanding of Mechanisms**

Given the aforementioned limitations of the study and our desire to better understand the mechanisms linking levels of public sector employment and the prevalence of formality, we intended to bolster our finding with further qualitative work. This spring we plan to undertake semi-structure interviews with Jordanian SME owners, civil servants and development practitioners involved in private sector development to complement our statistical analysis. To structure this qualitative work, we have plan to conduct interviews in two districts in the Karak Governorate, Mazar Janoobee and al-Karak. Whereas both districts have similar levels of firm density and development (measured in terms of the number of schools) Mazar Janoobee has significantly higher levels of informality *and* public sector employment than does al-Karak. By comparing respondents' insights from both districts, we hope to refine our argument by emphasizing the precise mechanisms and relationships at work.



# Appendix

Table 2: Descriptive Statistics

	Formal	Informal
Population	53,599	12,110
Female (Percent)	7	8
Age (Mean)	42	41
Education*	3	2.6
Primary Earner (Percent)	82	77
Full Time Employees	0.84	0.41
Age of Firm (Mean)	9.5	5.32
Sectors (Percent)		
ICT	3	1.9
Tourism	8.6	8.8
Transport	13.6	10.8
Food Process	13.6	16.2
Other	61	62
Governorates (Percent)		
Amman	45	31
Zarqa	20	22
Irbid	26	34
Karak	7	7
Tafilah	2	4
Aqaba	.5	2

*Note: \* Education level (0 - 6)  
0 = Illiterate; 6 = Post College*

Table 3

	<i>DV: 1 = Yes</i>			
	Mayor	Bribery	BA	Contract
Formal	0.476*** (0.114)	0.084 (0.145)	0.125 (0.159)	0.187 (0.146)
Female	-0.406** (0.198)	-0.858*** (0.312)	0.795*** (0.222)	-0.093 (0.237)
Education	0.105*** (0.037)	0.104** (0.045)	0.586*** (0.048)	0.334*** (0.042)
Primary Earner	0.192 (0.128)	0.127 (0.159)	0.296* (0.173)	0.372** (0.157)
Number of Employees	0.096** (0.040)	0.070 (0.043)	0.190*** (0.041)	0.269*** (0.036)
Sector	✓	✓	✓	✓
Constant	0.671** (0.265)	-2.785*** (0.254)	-4.896*** (0.356)	-3.658*** (0.255)
Observations	3,078	3,540	3,822	3,697
Log Likelihood	-1,584.178	-1,311.730	-1,020.465	-1,348.241
Akaike Inf. Crit.	3,194.356	2,649.460	2,066.930	2,722.483
Bayesian Inf. Crit.	3,272.772	2,729.694	2,148.160	2,803.281

*Note:*

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

Table 4

District	Governorate	Informality (Percent of MSEs)	Public Sector (2010 Percent of Labor Force)	Population of MSes	Primary Schools (Number)
Al-Jami'ah	Amman	41	10	218	305
Jizah	Amman	41	25	89	93
Quaismeh	Amman	13	3	6677	242
Muaqqar	Amman	50	28	120	56
Sahab	Amman	13	29	1012	59
Amman Qasabah	Amman	11	9	131	466
Marka	Amman	14	9	10213	375
Na'oor	Amman	25	16	356	81
Quairah	Aqaba	45	55	348	31
Aqaba Qasabah	Aqaba	29	29	169	77
Aghwar Shamaliyah	Irbid	32	28	975	100
Ramtha	Irbid	32	40	1645	116
Taybeh	Irbid	76	27	274	31
Koorah	Irbid	18	43	1866	144
Mazar Shamali	Irbid	12	51	652	61
Wastiyyah	Irbid	17	38	60	28
Bani Obeid	Irbid	33	34	2172	107
Bani Kenanah	Irbid	33	34	400	118
Irbid Qasabah	Irbid	18	22	9806	372
Aghwar Janoobiyah	Karak	26	41	399	41
Qasr	Karak	12	36	454	46
Qatraneh	Karak	19	50	69	12
Mazar Janoobee	Karak	27	47	1424	108
Ayy Qasabah	Karak	16	50	48	16
Faqo'e	Karak	41	47	106	10
Al Karak Qasabah	Karak	12	34	1901	98
Bsaira	Tafiela	27	75	327	36
Tafiela Qasabah	Tafiela	28	46	1214	83
Hasa	Tafiela	44	39	109	17
Russeifa	Zarqa	26	10	4981	191
Hashemiyah	Zarqa	36	29	760	46
Zarqa Qasabah	Zarqa	14	20	7924	403

Table 5

	<i>DV: 1 = Yes</i>			
	Mayor	Bribery	BA	Contract
Formal	0.475*** (0.114)	0.073 (0.146)	0.119 (0.165)	0.185 (0.146)
<b>Public Sector Employment*</b>	2.637*** (0.681)	-0.820 (0.516)	2.513*** (0.433)	-0.104 (0.544)
Female	-0.407** (0.199)	-0.861*** (0.312)	0.814*** (0.230)	-0.095 (0.237)
Education	0.105*** (0.037)	0.103** (0.045)	0.590*** (0.050)	0.335*** (0.042)
Primary Earner	0.196 (0.128)	0.124 (0.160)	0.307* (0.180)	0.372** (0.157)
Number of Employees	0.098** (0.040)	0.067 (0.043)	0.194*** (0.043)	0.268*** (0.036)
Sector	✓	✓	✓	✓
Constant	-0.256 (0.304)	-2.547*** (0.289)	-5.793*** (0.346)	-3.625*** (0.309)
Observations	3,078	3,540	3,822	3,697
Log Likelihood	-1,579.791	-1,310.637	-1,015.150	-1,348.222
Akaike Inf. Crit.	3,187.582	2,649.275	2,058.300	2,724.445
Bayesian Inf. Crit.	3,272.030	2,735.681	2,145.780	2,811.459

*Note:*

*Note:\** Public Sector Share of  
District's Labor Force

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

Table 6

	<i>DV: Is your firm (1 = Yes)?</i>	
	Registered	Licensed and Registered
<b>Public Sector Employment*</b>	-1.641*** (0.629)	-1.774*** (0.592)
Female	-0.468** (0.184)	-0.340* (0.178)
Education	0.225*** (0.036)	0.212*** (0.034)
Primary Earner	0.478*** (0.118)	0.403*** (0.112)
Number of Employees	0.398*** (0.054)	0.354*** (0.048)
Sector	✓	✓
Constant	0.593** (0.273)	0.536** (0.257)
Observations	3,843	3,843

*Note:*

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

*Note: Random effects at the governorate, district and block level.*

*Note:\* Public Sector Share of District's Labor Force*

Table 7

<i>DV: Do you have no incentive to register? (1 = Yes)</i>	
<b>Public Sector Employment*</b>	1.225** (0.590)
Female	0.544* (0.321)
Education	-0.161** (0.070)
Primary Earner	0.089 (0.234)
Number of Employees	0.141 (0.104)
Sector	✓
Constant	-1.390*** (0.365)
Observations	761
<i>Note: Random effects at the governorate, district and block level.</i>	
<i>Note: Only informal firms asked.</i>	
<i>Note:* Public Sector Share of District's Labor Force</i>	
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01
<i>Note:* Public Sector Share of District's Labor Force</i>	

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