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# Registering for Growth: Tax and the Informal Sector in Developing Countries

Christopher Woodruff

## Summary points

- Low- and lower-middle-income countries typically have a large informal sector, very high self-employment rates and low levels of tax collection. A recent project in Sri Lanka to induce small firms in the informal sector to register did little to change the trajectory of most, but registration did help some firms generate rapid growth – an outcome with important policy implications.
- For governments in developing countries, getting firms to register should not be simply a cost-benefit calculation involving a trade-off between enforcement costs and tax collection. Registration can also improve the attitude of small business owners towards the state and, more importantly, help stimulate economic growth.
- The tendency of small firms to remain in the informal sector may have an even more pervasive detrimental impact on growth than one might expect. Their informal status usually allows them to avoid taxes by keeping costs and revenues off the books. However, the lack of information arising from production costs, and the basic accounting systems on which they rely, mean many costly errors in pricing can be made, resulting in considerable lost business.
- Focusing on avoiding taxes in the informal sector can often distract firms' attention away from important growth opportunities. Although taxes may discourage some economic activity, the problem in low-income countries is typically lack of capacity and under-enforcement, rather than over-taxation.

## Introduction

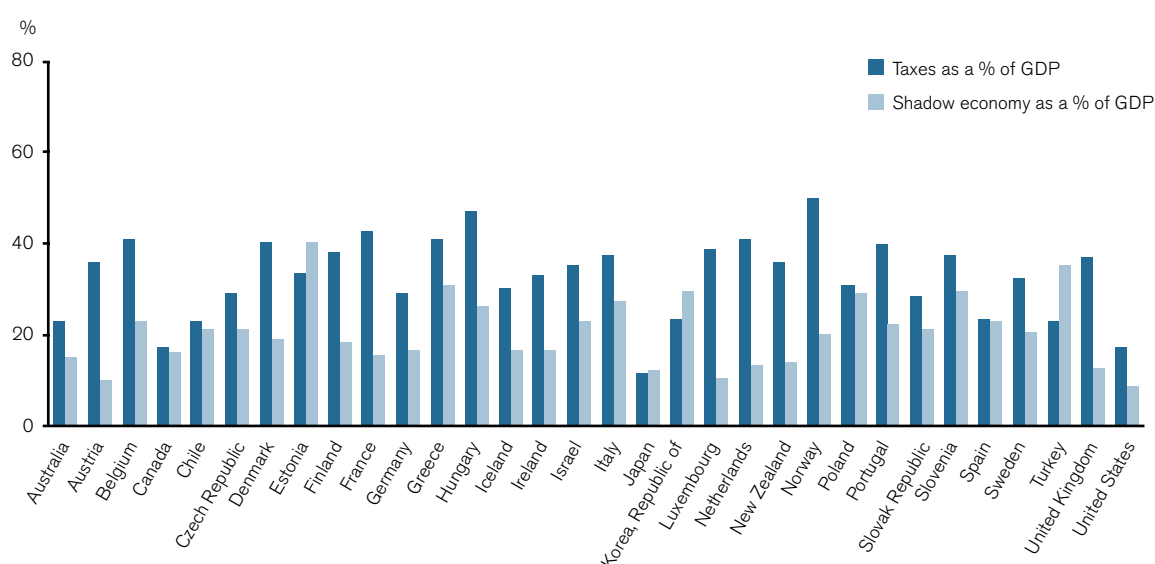
Roughly half of all non-agricultural workers in developing countries work in very small enterprises with fewer than five employees. Indeed, between one-quarter and one-third of the non-agricultural workforce in most low- and lower-middle-income countries is self-employed (Gollin 2002). Most of these micro-enterprises operate without registering as legal entities and, as a result, are a part of what is commonly referred to as the informal sector. Informal activity is estimated to comprise a much larger share of the economies of low-income countries – on average around 42% of GDP in a sample of 31 low- and lower-middle-income countries – than a comparable sample of 32 higher-income countries (22% of GDP) in the Organisation for Economic Co-operation and Development (OECD).<sup>1</sup>

Why is such a high proportion of the labour force in lower-income countries employed in the informal sector? De Soto (1989) famously proposed that governments – and Peru's specifically – push firms into the informal sector by raising the barriers and costs of formalization. By excluding firms from the formal sector, these barriers

stifle entrepreneurship and reduce the dynamism of the private sector. Others (Levy 2008) have claimed that the high levels of informality represent an escape by small firms. This 'exit' view leads to a vicious cycle: firms escape because the state does not make formal status appealing. For example, financial markets and courts may be dysfunctional, and public procurement processes may be corrupt. But by being in the informal sector, firms avoid paying taxes that would provide resources the state might use to improve the provision of these goods, or to force firms to become formal. In this view, informality may still stifle entrepreneurship, as firms sometimes remain small deliberately to avoid attracting the attention of regulators and tax collectors.

If high rates of taxation push economic activity out of the formal economy, one would expect to see more informal activity in countries with higher tax collections. However, just the opposite is the case. Across countries, there is a strong negative correlation between state revenue and informal activity. Indeed, another characteristic of low-income countries is that tax collection by governments is very low. Government revenue

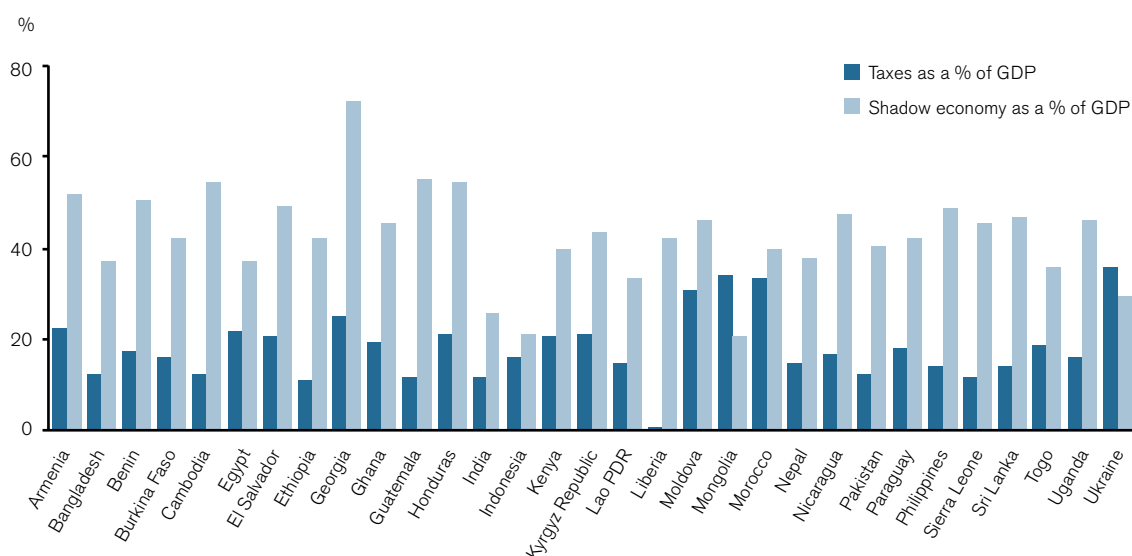
Figure 1: Taxes and informality, OECD countries



Source: World Bank (2013).

<sup>1</sup> Estimates from Schneider, Buehn and Montenegro (2010).

Figure 2: Taxes and informality, low-income countries



Source: World Bank (2013).

averages 18% of GDP in the sample of low- and lower-middle-income countries in the OECD, compared with 33% of GDP in the higher-income countries.<sup>2</sup> Figures 1 and 2 highlight the relationship between informality and tax collection for the sample of OECD and low-income countries, respectively. For the full sample, the correlation is around -0.52. In other words, informality is low where government revenues are high. This suggests that lower tax collections reflect a weaker capacity of the state to enforce rules or provide benefits that induce firms to join the formal sector.

### Informality: chicken or egg?

Why is there such a strong negative correlation between tax collection and the shadow economy? The causation undoubtedly works in both directions. The activity in the shadow economy is largely untaxed, and hence does not contribute to tax revenues. Countries with lax enforcement of the formal-sector registration requirements may also have poor implementation of tax laws regarding formal firms. Conversely, low revenues mean

the state lacks the resources necessary to build capacity to enforce rules, and the capacity to offer some of the benefits of being formal. If credit markets and legal systems do not function well, and public procurement processes are perceived as favouring insiders, it is not clear what small firms have to gain from being part of the formal sector.

A starting point is to assume that both governments and firms are making rational decisions with regard to the formal sector. There may simply be two equilibria. In the 'formal' equilibrium, governments collect taxes which are used to provide goods and services that draw firms into the formal sector, and use coercive powers to push firms in this direction by penalizing those operating informally. In the 'informal' equilibrium, states collect few taxes and lack the capacity either to provide services inducing firms to formalize their status or to force them to join the formal sector.

One can think about the rational level of informality from the perspective of either the government or of private firms. For the government, the most straightforward

<sup>2</sup> Revenue data come from the World Bank's online database (<http://data.worldbank.org/indicator/GC.REVXGRT.GD.ZS/countries>). The sample in Figures 1 and 2 include all the OECD countries and all the low-income and lower-middle-income countries for which data exist for each of these two measures. The low- and lower-middle-income countries are as defined by the World Bank (<http://data.worldbank.org/about/country-classifications/country-and-lending-groups>).

calculation involves the costs of inducing firms to register and the additional tax revenue it collects as a result of formalization. Governments can induce firms to register using either sticks or carrots. That is, they can seek out and fine firms that are in the informal sector, or they can increase the perceived benefits for firms of gaining formal status.

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Of course, spending scarce state resources to create agencies that raise the cost of registration seems counter-productive by any measure. Indeed, this was the central theme of de Soto's message, and that message was heard, albeit with considerable delay, by researchers at the World Bank. An initial project on *The Regulation of Entry*, led by Djankov et al. (2002), placed the spotlight firmly on the barriers to starting a new business, tallying both the time and the financial costs of starting a formal business in a sample of 85 countries. The work highlighted massive variances across countries. At one end, would-be entrepreneurs in Canada could register a business in two steps, taking only two days at a cost of 1.5% of per capita GDP. At the other extreme, entrepreneurs in the Dominican Republic had to complete 20 steps, taking 80 days and costing 463% of GDP per capita.

The high costs of entry are difficult to rationalize. But this analysis appears to have spurred substantial reforms, which lowered the costs of registering. For example, in Sri Lanka, registering a business took eight steps and an

average of 23 days in 1999 (Djankov et al. 2002, Table III), but in 2012 this improved to five steps taking seven days.<sup>3</sup> Of course, even with lower barriers to registration, firms may choose to remain informal in order to avoid the ongoing costs of regulation and taxes.

This original work on entry costs led to the World Bank's *Doing Business* project, a much broader programme measuring the business environment in a large number of countries. *Doing Business* provides similar rankings for a number of other indicators of business friendliness, including labour costs, access to electricity, etc., with evidence of improvements across time in many of the lagging countries.

### Is informality all about taxes?

Inducing firms to register so that they pay taxes is an important motivation for governments. But authorities need to take more than tax collection into account. First, the failure to enforce formal status among very small firms risks creating a norm of avoiding taxes even among those small firms that eventually become much larger. This can affect tax receipts over a longer period of time, and even among larger firms in the formal sector. Second, low enforcement among the smallest firms can actually encourage firms to remain small in order to continue operating under the radar of the authorities. This can stifle growth in what could be a very dynamic slice of the economy. Third, avoiding formalization may contribute to a more widespread culture of mistrust of government, and this can spill over into other aspects of economic, social and political life. Therefore, governments need to think beyond the short-term calculation of 'tax collection less costs of collection'.

Firms will of course carry out their own cost-benefit calculations. The benefits of being formally registered include avoiding fines for operating informally, access to public goods available only to legal entities (e.g. business courts) and the ability to bid on government contracts. The costs, on the other hand, include the initial registration fees (and time), and ongoing tax payments.

<sup>3</sup> See World Bank (2013), p. 195. The information is also available online at <http://www.doingbusiness.org/data/exploreeconomies/sri-lanka>.

However, it is worth noting that, especially in low-income countries, a formal enterprise is unlikely to pay all of the tax it owes. In most countries with a substantial informal sector, for example, a large proportion of the transactions is in cash, and is therefore often left under-reported or even unreported altogether even by formally registered firms.

The tendency of small firms to remain in the informal sector may have an even more pervasive detrimental impact on growth than immediately meets the eye. Small firms can undoubtedly avoid taxes by keeping costs and revenues off the books. However, these efforts may make it more difficult for them to understand the true costs of production. The accounting systems that are typically employed in this endeavour mean that many costly errors in pricing can be made. This results either in lost business, because products or services are priced too high, or in lost income, because they are priced too low. Focusing on avoiding taxes and remaining in the informal sector can often distract firms' attention away from important growth opportunities. Taxes, of course, may discourage some economic activity, but the problem in low-income countries is not over-taxation but under-enforcement.

### Do firms perceive large costs in formalization?

There is very little evidence regarding how firms think about the decision to formalize their status and whether they are acting rationally in avoiding the costs of belonging to the formal sector. A recent project, undertaken by the author together with Suresh de Mel and David McKenzie (2013), was designed to shed light on this question, particularly from a firm's perspective. This research sought to understand the importance of the perceived benefits of being in the formal sector in a firm's decision to gain formal status. Although the project focused on a modest-sized sample of firms in a single country (Sri Lanka), the findings address the broader set of issues described above.

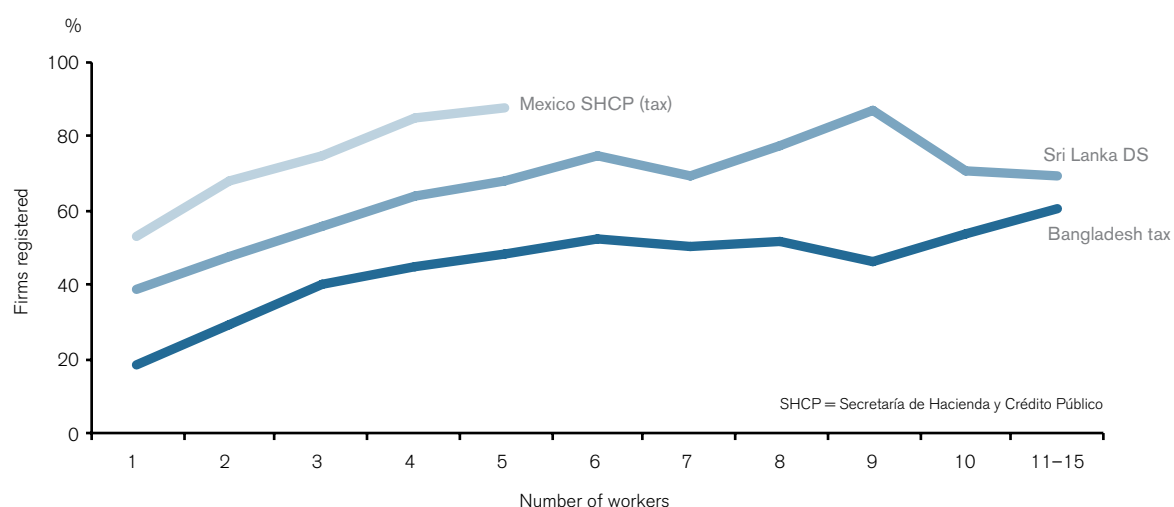
A number of small firms which were not currently registered with the Divisional Secretariat (DS Division) were selected in Colombo and Kandy, the two largest cities in Sri Lanka. This registration establishes the business as a legal entity which is liable for profits tax payments.<sup>4</sup> As in most countries, a large proportion of firms with fewer than five workers in Sri Lanka are not registered to pay taxes. Firms can be induced to gain formal status with carrots and sticks. This project chose to work with carrots, increasing the benefits of becoming formal in a very transparent manner. The point was to understand how responsive firms are to the increases in benefits of belonging to the formal sector – in effect to evaluate how strong their demand for informality actually is – and to assess whether and, to what extent, they change the manner in which they operate once they have achieved formal status.

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Figure 3 shows rates of registration for tax purposes in Sri Lanka, Mexico and Bangladesh for firms with a maximum of 15 paid workers. In all three countries, registration rates increase with firm size. The rates in Sri Lanka are above those in Bangladesh, but below those in Mexico. In Sri Lanka, around 40% of firms with one paid employee are registered for tax purposes, and this increases to around 70% for firms with eight or more employees. In Mexico, the 70% threshold is reached by firms with two employees, while in Bangladesh even firms with 11–15 workers have lower registration levels.

<sup>4</sup> Registration for VAT payments happens through a separate agency. Given their turnover, most of the firms in this sample would not have been expected to be registered for VAT payments.

Figure 3: Registration against firm size in different countries



Sources: Author's calculations based on data from de Mel et al. (2013), McKenzie (2010) and INEGI (2000).

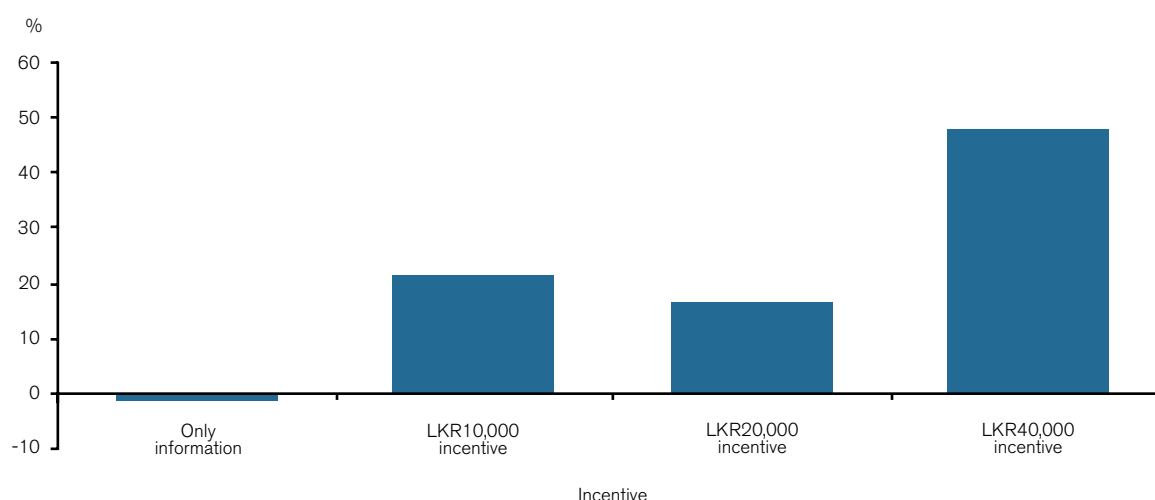
The project used a sample of about 500 firms with between two and nine paid employees. When these firms were first contacted they were not registered as a legal entity with the DS Division office. Working with the local Chamber of Commerce, a brochure was developed describing the advantages of formal registration and the procedures for achieving formal status. Among the advantages listed in the brochure were the ability to sell goods to larger firms and governments requiring a formal receipt, the ability to open a bank account and apply for credit in the business name, and establishing a better reputation with customers. The brochure also noted that firms with profits below LKR300,000 (about £1,500) were not liable for any profits taxes. Around half the firms in the sample reported profits below this level.

It is noteworthy that while some informal firms are truly hidden, most are quite visible. They may lower their profile – indeed, that is one of the things the project looked for – but given that many operate in the retail trade sector, they cannot remain completely hidden. Hence the sample was identified by canvassing neighbourhoods and talking with all the business owners. No doubt some claimed they were registered when in fact they were not, but past experience suggests owners in Sri Lanka are usually quite

open about the lack of registration. On the surface, there is little social stigma and minimal fear that the surveyors in such a project are actually working undercover to enforce legislation. Indeed, it turned out that many of the owners who initially said they were unregistered actually were registered, though at a different address or under a relative's name.

A sample of 500 firms was randomly split into five equal groups. One served as a control group, and there was no interaction with it other than for surveys. In visits with 20% of the firms, the brochure and its contents were discussed, and owners were given the option of being reimbursed for the direct costs of registering if they completed the procedure within the following month. It is worth pointing out that the direct costs of registration are very modest in Sri Lanka, notably less than £10 if firms are registered immediately after beginning operations, and an additional fine of around 15p is imposed for each month the firm has been operating in an unregistered manner. In Colombo, the firms have the option of paying just over £5 (LKR1,000) to complete the registration in a single day. However, it turned out that solely providing information about these costs did not induce any firms to register – indeed, one more firm in the control group registered.

Figure 4: Percentage of firms registering according to incentives, relative to control group



Source: de Mel, McKenzie and Woodruff (2013).

For another 20% of the firms, in addition to receiving the information from the brochure and the option of being reimbursed for the direct costs of registering, owners were offered a bonus of LKR10,000 if they completed the registration process in the following month. Two other comparably sized groups received similar offers, but with bonus payments of LKR20,000 and LKR40,000 respectively.

The idea behind the bonus payments was to simulate the additional benefits of achieving formal status. Governments cannot be expected to make direct payments of this sort to induce firms to register, and indeed, such a policy would not necessarily be desirable, but firms' responses to the possibility of direct payments does reveal how registration rates would be affected when businesses perceive a discrete increase in the benefits of being in the formal sector. This is a key policy consideration in the calculation of the costs and benefits of formal status from the government's perspective.

As Figure 4 shows, the payments had a substantial effect on registration. Among those offered incentive payments of LKR10,000 or LKR20,000, representing roughly 2–4 weeks of profit for the median enterprise, about 20% took up the offer. Among those offered LKR40,000, almost half registered within the month. Moreover, when those in the

latter group who chose not to register were asked why they had not done so, around half of them said they had wanted to, but were unable to do so because they did not have a formal agreement to operate on the land where their business was located. Often, the land in question turned out to be government-owned, notably land along river banks or sidewalks. Sometimes it was leased from someone who, in turn, was leasing from the owner, and who lacked the formal right to sublet the land. Therefore, the owners taking up the offer (20–50%) represented much higher percentages of the smaller set of those who believed registration of their business was possible.

These data suggest that, in Sri Lanka at least, firms do not perceive switching to the formal sector as a big cost. Indeed, a modest increase in the benefits of achieving formal status led to a rise in the rates of formalization.

### Does formalization change firms' behaviour?

The second key question is whether registration causes firms to behave differently. If formalization leads to rapid growth, this suggests either that owners deliberately keep their firms small to remain under the radar, or that they do not appreciate all the benefits of gaining formal status. The



results of this exercise are described in some detail below, but the bottom line is this: for many firms, formalization does not lead to significant changes, but for some the transformation can be dramatic. Indeed, the changes among a few firms are dramatic enough to affect the overall average profit level for the full sample. Furthermore, the owners who were encouraged to register, on average, altered their previously held attitudes towards the government.

A year after giving firms the incentive to make the transition to the formal sector, their owners were asked what they believed to be the main advantages of having registered. Just over one-third said they did not see any advantages, but among the remainder, the most common responses were that registration 'improved the image of the business' and 'lowered risk'. These answers suggest that, while owners talk quite openly about being part of the informal sector, they nevertheless worry about their informal status. The benefits that are typically mentioned among advocates of joining the formal sector – credit, government contracts and access to legal institutions – were collectively mentioned by only about a quarter of respondents.

Almost two years after being offered incentives to achieve formal status, owners were asked a more detailed set of questions about their recent activity, namely whether they had applied for loans, bid on government contracts, issued formal receipts, etc. Their responses confirmed that they had engaged in very little such activity. Owners who had been offered incentives to register were more likely to say they had a receipt book – formal receipts include the Business Registration Certificate number – or that they had advertised in the past six months, but they were no more likely to have obtained a loan, made sales to the government, paid taxes or participated in government programmes supporting small-scale enterprises.

Despite finding no formal channels, the results of the fieldwork did find that firms reported, on average, higher profits 8–22 months after registering. Sales and other measures of size were also larger, although only the effects

on reported profits were statistically significant. However, when the data are examined more closely, it is clear that that all these effects come from around 10% of the firms in the sample. In other words, joining the formal sector appears to have unleashed rapid growth in a small number of firms while leaving the majority unaffected.

Visits were organized to each of the firms experiencing rapid growth in order to discuss how registration had affected their trajectory. Two of the businesses were involved in automobile or auto-rickshaw (three-wheeler) repair work. For these firms, joining the formal sector allowed them to advertise more extensively and to become formal distributors of parts, which led to new lines of business, selling spare parts. Another firm was a grocery store and snack shop. The owner had independently gone to the health department and asked to be inspected. He knew this was required in order to open a bakery, which was a step he said he had always wanted to take. This case was the clearest example of someone whose plans had been stifled by the multiple steps required to realize them. Once he had been persuaded to register his business formally, the goal of completing the steps required to start a bakery seemed more feasible to him. Although the evidence on how formalization can stifle entrepreneurs is limited to just a few cases, it does suggest that being registered can significantly benefit certain firms, even in an environment where registration costs are relatively modest.<sup>5</sup>

Another key question is whether achieving formal status affects owners' attitudes towards the government and their own responsibilities as heads of a business. The findings in this regard were striking. In particular, those owners offered incentives to register expressed much higher levels of trust in local and provincial governments (the two levels they would have dealt with in making the transition to the formal sector) but no more likely to trust national government, the police or the courts. They were also more likely to agree that 'being a good citizen means paying taxes', and that the 'government charges businesses too much tax'.<sup>6</sup> It is worth

<sup>5</sup> According to the World Bank's *Doing Business* rankings, Sri Lanka was ranked highly (41st out of 183) in terms of the ease of starting a business in 2009, the year in which the firms were registered.

<sup>6</sup> On a scale of 1 to 4, ranging from no trust at all to a great deal of trust, the average level of trust in local and regional government was 0.6 points higher among those offered incentives to register; on a five-point scale, those offered incentives expressed more agreement, by about 0.5 points, with the two questions related to taxes.



pointing out that these shifts in attitudes towards taxes occurred even though there was no change in the likelihood that a business would actually pay any taxes. These findings highlighting a shift in attitude towards government are consistent with changes in beliefs registered previously by homeowners in Argentina who received formal land titles in areas surrounding Buenos Aires (Di Tella et al. 2007).

## What does demand for formal-sector status look like?

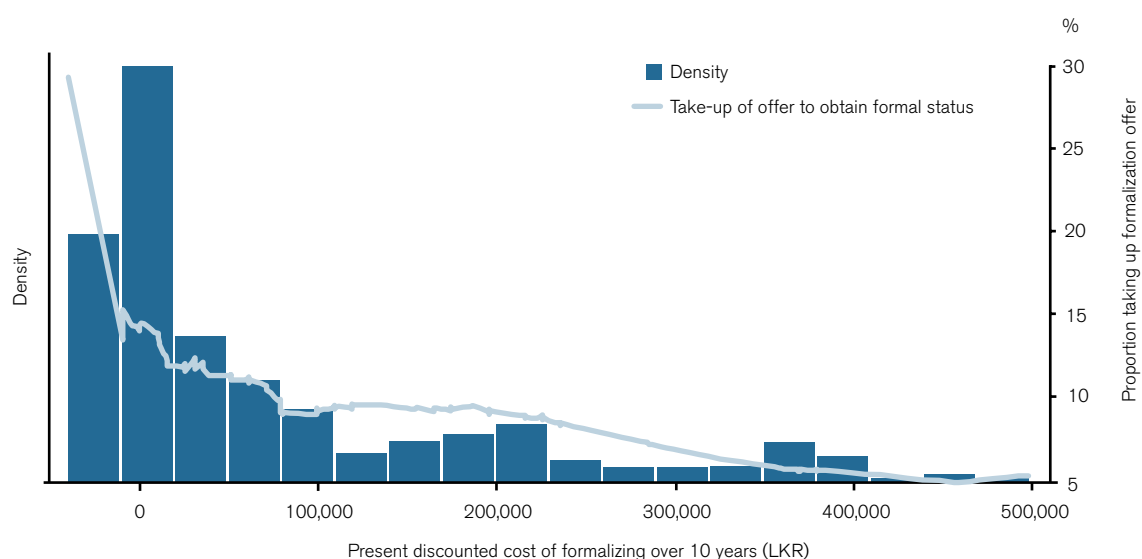
The picture that emerges from the offer of incentives to register suggests that owners remain in the informal sector largely because the perceived benefits of making the transition are not sufficient to outweigh the modest costs. This calculation can be made more precise by using the reported profit data and the tax schedules in Sri Lanka to estimate the taxes that would be paid for each firm, notably by taking the cost of registration as LKR1,000, plus the discounted value of the taxes that would be paid over a ten-year period. The taxes from the profits reported in the research are estimated and it is assumed these will increase by 10% per year. Future payments are then discounted back to the present at a 5% rate, to make them comparable to the incentive that is provided for

registering. Given the very low marginal tax rates at low profit rates, it turns out that one-third of the firms (35%) would pay taxes of less than LKR10,000 over the ten-year period and 48% would pay less than the LKR40,000 maximum incentive. From this net present value of cost is subtracted the bonus that each firm was offered if it registered.

Figure 5 shows how registration rates vary with the net cost of registering. The bars show percentage registration rates in various cost ranges. When a smoothed line is drawn through these data, a very sharp downward-sloping demand curve emerges, with registration rates of around 30% among firms with zero or negative net costs, falling to around 5% for the most profitable firms that would pay in excess of LKR300,000 over the ten years.

Figure 5 reveals that, on average, firms facing the lowest tax burden from gaining formal status, relative to the incentive that was offered, were the ones most likely to register. However, even among those for which the incentive exceeded projected tax payments, a mere 30% took up the offer and registered. Why is it that not all of those with future tax burdens that were less than the payment chose to register? There are at least three reasons. First, an estimated 10% growth rate for all of these firms was projected, but some firms may have expected

Figure 5: Demand curve for formal status



Source: de Mel, McKenzie and Woodruff (2013).

Note: Density refers to the number of firms in each of the ranges. Hence, there are many more firms with very low net costs than ones with higher net costs.

to grow much more rapidly than that, and thus expected to be liable for a higher tax bill. Second, these calculations did not take into account the cost in time of registering. There is evidence that the time-consuming nature of this process mattered, in that firms were much more likely to take up the offer in Colombo, which had a one-day registration process, than in Kandy, where the average time to register was much longer. Third, the land issue, discussed previously, was the decisive factor for some firms.

Nevertheless, the picture displayed in Figure 5 indicates that firms in the study behaved quite rationally, weighing the costs and benefits of joining the formal sector. Those facing a lower future tax burden were much more likely to respond to the offer of incentives by registering. Most importantly, the data indicate that a relatively modest increase in the benefits of gaining formal status was sufficient to make formalization the optimal strategy for as many as half of the firms in the study.

## Conclusion

Raising awareness of the perceived benefits of registration with owners of small firms can often be a policy challenge. But governments could certainly make the transition from the informal to the formal sector much easier for firms by lowering the costs of completing the registration process. This would help to alter the cost-benefit calculation facing small firms.

Increasing the formalization rates of small firms is unlikely to offer governments a substantial new source of revenue in the short run. However, immediate tax revenues should not be the only factor that governments take into account when deciding on enforcement levels. The results from the fieldwork in Sri Lanka suggest that the tendency of many firms to remain in the informal sector can hamper their expansion, while achieving formal-sector status appears to generate a more favourable attitude towards government among owners. Given the size of the informal sector in developing countries, these findings could have significant policy implications for future economic growth.

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**Christopher Woodruff** is Professor of Economics at the University of Warwick, a Research Associate at the National Bureau of Economic Research (NBER), a Research Fellow at the Centre for Economic Policy Research (CEPR), a Senior Fellow of the Bureau of Research on Economic Analysis and Development (BREAD), a Research Fellow at the Centre for Competitive Advantage and the Global Economy (CAGE) and a Research Fellow at the Institute for the Study of Labour (IZA). He directs the Firm Capabilities group at the International Growth Centre and is the Scientific Coordinator for the DFID–CEPR joint research venture on Private Enterprise Development in Low Income Countries (PEDL). Prior to joining the University of Warwick, he was Professor of Economics at University of California, San Diego, where he also served as Director of the Center for US–Mexican Studies from 2003 to 2008.

Professor Woodruff is a leading expert on enterprises in developing countries and a pioneer in the use of field experiments in understanding enterprise dynamics. His recent work includes measuring rates of return to capital investments in micro-enterprises, the effect of formal registration on enterprise performance, the use of business plan competitions to identify small enterprises with potential for rapid growth and the use of temporary wage subsidies to understand the willingness of micro-enterprises to expand employment. His previous work examined the ability of informal contracting and private institutions, such as trade associations to govern trading relations in the absence of functioning state institutions. Geographically, his research spans a broad area of the developing world, including Mexico, Vietnam, Sri Lanka, Ghana and Eastern Europe.



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