The Social Network of Firms: Can Social Incentives and Taxpayer Recognition Improve Tax Compliance?

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Nasiruddin Ahmed
National Board of Revenue, Bangladesh

Raj Chetty
Harvard University

Mushfiq Mobarak
Yale University

Aminur Rahman
World Bank Group

Monica Singhal
Harvard University

I. Policy Motivation for Research

Improving tax revenue collection is an important priority for developing economies throughout the world (Figure 1). Developed countries predominantly use audit-based enforcement coupled with penalties to ensure compliance. However, enforcement through audits is difficult for developing countries to achieve for three principal reasons. First, audits are often very costly in practice. Second, for audits to be effective, officials must have incentives to put forth monitoring effort and behave honestly, but there are often failures on both fronts (e.g., Mookherjee 1997, Purohit 2007). Improving these incentives may be both costly and difficult (Olken and Pande, 2011). Finally, even if audits are implemented and carried out faithfully, many firms do not keep comprehensive sales records, complicating verification of firms true tax liability. A number of developing countries, including Bangladesh, have explored using social pressure to induce compliance, but this approach has yet to be rigorously evaluated. Social pressure has the advantange of being inexpensive and available even in environments without the regulatory and institutional frameworks to conduct an audit-based enforcement regime. Our project evaluates a peer recognition program for businesses in the urban environment of Dhaka, Bangladesh.

II. Policy Impact

This project will help sharpen the range of options available to tax authorities in developing countries by determining if social recognition is effective at increasing tax compliance. The recognition approach, which is best suited to small- and medium-size businesses that are difficult or costly to audit, offers the potential to diversify the tax base away from import/export taxes and taxes on the largest firms.

III. Audience

Most directly, this research will be of interest to government officials and tax administrators in developing countries seeking policy tools to raise tax compliance and tax revenues. More broadly, social recognition-based enforcement strategies could be considered by policymakers implementing other regulations for which direct enforcement is costly, but information on violations can publicized by the government. Possible applications include the enforcement of other business regulations like air quality or employee safety. At the individual level, publication of the names of litterers and drunk drivers could deter anti-social behavior.

IV. Policy Implications

As the intervention is currently underway, we focus here on results from our survey of all firms in our study area. We have matched this data to records from the Bangladesh National Bureau of Revenue (NBR). The resulting database provides us with an unprecedented insight into current patterns of tax compliance.

- **Tax compliance is very low.** In our study area, only 8.2% of permanent firms are paying *any* tax. By law, all firms should be paying some tax: firms below a certain revenue threshold pay a small lump sum (the "package" VAT) and the rest pay at the regular VAT rate. In our survey, respondents estimate that only 10.6% of all firms have low enough revenue to pay the package rate (Table 1). We find that 32.9% of current taxpayers are paying the package VAT. Thus, few businesses pay any taxes at all, and those that do are disproportionately paying the package VAT.
- **Firms think of paying taxes as a civic duty.** If firms know that evasion is widespread but do not consider paying taxes to be a social good, the social pressure-based intervention may not be effective. While it is important to keep in mind that these are self-reported survey results, we do find that 84% of firms strongly agree that paying tax is a civic duty, and 98% agree or strongly

agree (Table 2). This is true in spite of the fact that the majority of firms (70%) feel that the government does not use tax revenue appropriately.

- **Firm perceptions about their neighbors do have true informational content.** Social recognition interventions rely on the idea that firms have fairly good information on their neighbors' characteristics, in this case so that they can accurately assess how much these neighbors should be paying in taxes. We survey firms for information on up to five other firms with whom they have the most contact, and ask them to describe a number of their characteristics. When compared to those neighbors' own self reports, we find that firm perceptions of their neighbors' number of employees and turnover levels are remarkably accurate. However, firm perceptions of registration and tax payment of other firms in their area are not as accurate. Firms over-report their neighbors' tax compliance substantially relative to true compliance (Table 1). This may be partly driven by reporting (firms deliberately over-report compliance in their area, although they have no clear incentive to do so), but it also provides strong suggestive evidence that firms know a lot about the business activities of their neighbors but do not know as much about their taxpaying behavior. In this case, our intervention is likely to provide new and relevant information to firms and their neighbors.

V. Implementation

- **Find out which information is already public.** We find that firms have a considerable amount of information about neighboring firms' revenue and staff size. However, our data suggest that firms have relatively poor information about other firms' tax compliance. This was not necessarily intuitive, and we expect that programs that present previously unknown information will be the more successful ones.
- **Beware of perverse incentives.** Disclosure of formerly-private information can potentially have negative effects. In Bangladesh, many of our clusters of firms have either one or zero taxpayers. Spreading this information could potentially *decrease* the likelihood of compliance, by reducing firms' perception of the cost of nonpayment.
- **Provide varied and obtainable goals.** Tax regulations cover a diverse set of firms which vary greatly in size and sophistication, and to engage a maximum number of firms in the social recognition intervention, it is important to provide targets which are relevant and achievable to different groups. For example, in our taxpayer recognition program we offer different levels of awards. The bronze level, which recognizes merely registering with the tax bureau, may be achievable and valuable for firms in a "slum" area, while in a formal shopping center the bronze level would not carry much status, and firms may care about showing that they are gold level taxpayers.

VI. Dissemination

We would like to hold off on wide public dissemination until the second phase of the project – the field experiment – is completed. At that point, we would be very pleased to disseminate the findings to policymaking offices and tax authorities throughout developing countries.

VII. Further Readings

Mookherjee, Dilip. *Incentive reforms in developing country bureaucracies: lessons from tax administration*. World Bank, 1997.

Olken, Benjamin A., and Rohini Pande. *Corruption in developing countries*. No. w17398. National Bureau of Economic Research, 2011.

Purohit, Mahesh C. "Corruption in tax administration." *Performance accountability and combating corruption. Washington, DC: World Bank* (2007).

Figure 1

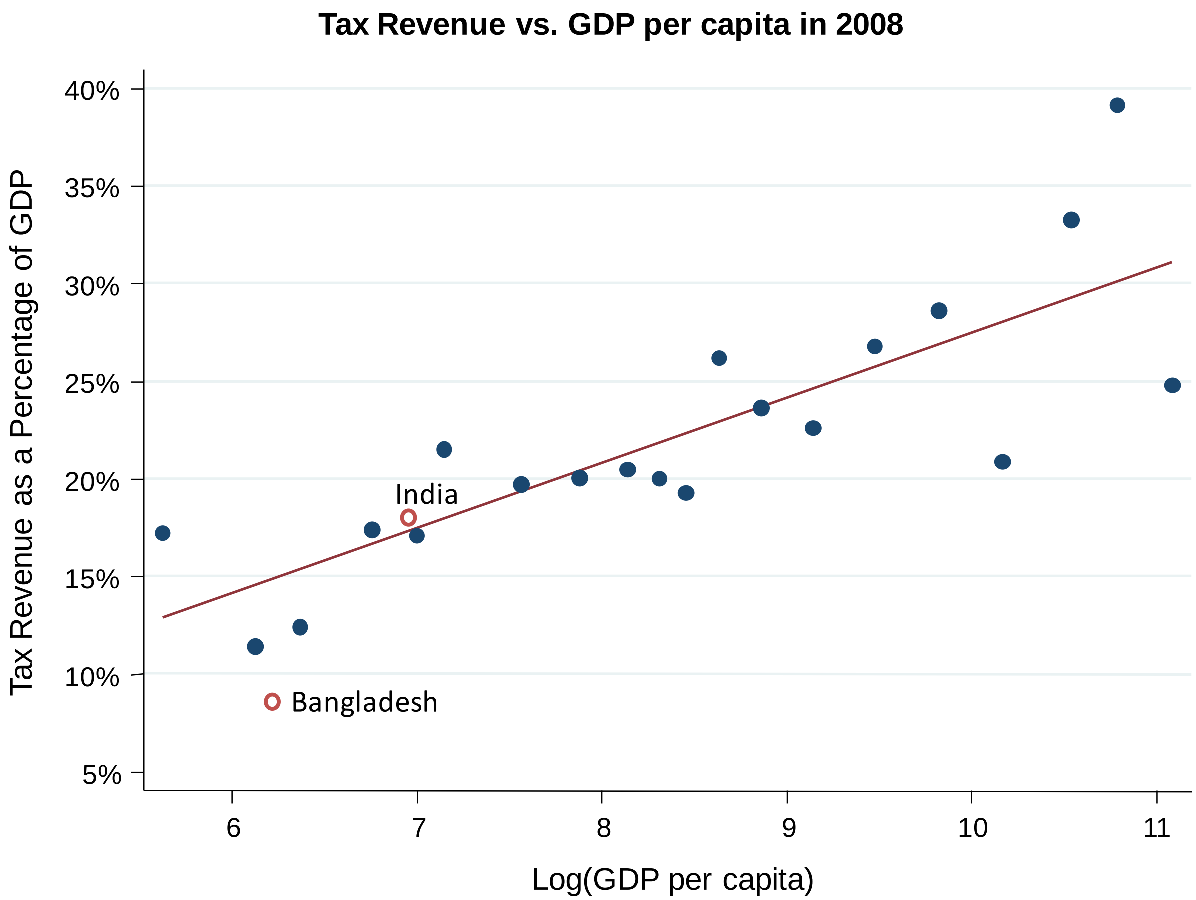
Tax Revenue vs. GDP per capita in 2008
Tax Revenue as a Percentage of GDP
40%
35%
30%
25%
20%
15%
10%
5%
India
Bangladesh
6
7
8
9
10
11
Log(GDP per capita)

Table 1: Firm Reported Perceptions of Compliance in Their Area

	Mean	Median	SD	N
% of firms under sales tax	49.47	50	27.14	17659
% of firms registered	70.24	80	29.20	18789
% of firms with low turnover	10.57	5	17.51	19625
% of firms meeting their tax related duties	45.31	40	28.92	18364
Total Observations				20002

Table 2: Firm Attitudes

	% Agree
Most firms know their own turnover	43.7
Most firms know what is exempt	38.4
Most firms truthful about taxes	24.3
Government interferes too much	37.8
Paying tax is a duty	97.6
Tax revenue is used for good	29.6

Table 3: Relationship between perceptions and actual number of employees and turnover

	(1) Employees	(2) Employees	(3) Turnover	(4) Turnover
Actual employees	0.703***	0.805***		
	(0.00396)	(0.00517)		
Actual employees, squared		-0.00479***		
		(0.000164)		
Actual turnover			0.807***	1.439***
			(0.00627)	(0.0132)
Actual turnover, squared				-0.0121***
				(0.000228)
Observations	10326	10326	10326	10326

Notes: * p<0.10 ** p<0.05 *** p<0.01. Standard errors reported in parentheses. Turnover measured in lakh. Sample restricted to all firms that reported both turnover and employees and had at least one other firm estimate their turnover and employees.