

# Taxation and accountability in developing countries:

— Does taxation motivate citizens to hold government accountable?

If so, how is taxation increased and tax evasion decreased?



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# I. Overview

We often believe that citizens who pay taxes to the government should have a stronger desire to make sure that the government spends their money wisely. According to this idea of a “fiscal contract,” citizens who pay taxes expect accountable and democratic governments that deliver public goods.

In this evidence review, we seek to answer two questions. First, does such a fiscal contract exist between citizens and governments in developing countries? Second, assuming that such a fiscal contract exists or can be created, how can governments increase taxation and decrease tax evasion?

To answer these questions, we review and discuss recent evidence from empirical studies published between 2010 and 2016.

## Our main findings are as follows:

### **QUESTION 1: DO CITIZENS WHO PAY TAXES TO THE GOVERNMENT EXPECT AND TAKE ACTION TO PRESSURE THEIR GOVERNMENTS FOR MORE ACCOUNTABILITY, DEMOCRATIC REPRESENTATION, AND PUBLIC GOODS PROVISION?**

To answer this question, we would ideally look directly at individual-level data on citizen expectations and actions. We found only six studies with these data (Broms 2015a, Paler 2013, Bratton 2011, McGuirk 2013, Martin 2016, and de la Cuesta et al. 2015). In short, we need far more empirical studies before it is possible to draw any conclusions about whether taxation makes citizens in developing contexts or in

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particular kinds of countries more likely to expect better governmental performance and hold governments accountable.

Based on the six studies we found with these data, there is little evidence that taxation generally leads to differences in citizen attitudes or behavior towards government in a range of countries. Out of the four studies that assessed this question cross-nationally, three concluded that there was no relationship (Bratton 2011, McGuirk 2013, de la Cuesta et al. 2015). Two studies (Paler 2013, Martin 2016) examined the relationship between taxation and citizen attitudes and behavior within particular countries (Indonesia and Uganda, respectively). For these countries, taxation did seem to lead to higher citizen engagement and demands for accountability. So while there may be no global relationship, taxation may lead to citizen action in particular countries.

Other studies did not look specifically at the impact of taxation on citizen behavior but sought to detect the existence of a fiscal contract more indirectly. Several well-designed studies from Latin America suggested that local governments with more tax revenue have better public goods provision. More non-tax revenue, in contrast, was not associated with better public goods provision, suggesting that better public goods provision was not simply a result of more resources. Instead, local governments, for some reason, feel more compelled to provide public goods when their revenues are from taxes.

Finally, a third category of studies relying on cross-national analyses identify patterns that may be consistent with fiscal contract theory, but these findings are far more conjectural. Studies in this category typically found that countries with more tax revenue (as a share of GDP) were also more likely to score more highly on composite indices of governance, bureaucratic quality, and democracy. While potentially consistent with the existence of a fiscal contract, it remains uncertain whether taxation leads to better governance and more democracy – or whether countries with better governance and more democracy are better able to collect taxes from their citizens.



## QUESTION 2: ASSUMING THAT SUCH A FISCAL CONTRACT EXISTS OR CAN BE CREATED, HOW CAN GOVERNMENTS INCREASE TAXATION AND DECREASE TAX EVASION?

Recent empirical work focuses on five potential answers: (1) government provision of public goods (fiscal contract theory itself); (2) government audits and punishment (economic deterrence); (3) social norms; (4) comparative treatment; (5) political legitimacy.

Evidence is strongest as well as most plentiful for the first two answers – government provision of public goods and the threat of punishment. For the remaining possibilities, evidence is weaker.

The review is organized as follows. Section II outlines the protocol we used to identify recent research papers on these questions. Section III summarizes the findings of our evidence review. Section IV assesses the quality of this evidence, highlighting some important problems that future research should overcome.

## II. Search protocol

We conducted a comprehensive literature search and review of articles published between 2010 and 2016 with empirical evidence on (i) the relationship between taxation and government accountability and/or (ii) the causes of tax evasion, in low- and middle-income countries. Sources included the aggregator of academic journals Web of Science, the open knowledge website Social Science Research Network, and the search engines of several development organizations (the UK's Department for International Development, the World Bank, the Inter-American Development Bank, the African Development Bank, the Asian Development Bank, and the International Centre for Tax and Development). For each of the relevant papers found, we then searched among the papers cited in and cited by them and included any further relevant papers. The list of the research articles reviewed is included in Appendix A. Details about the search protocol used are in Appendix B.

# III. Findings from the evidence review

## Question 1: Is there evidence of a fiscal contract between citizens and government, whereby citizens agree to pay taxes in exchange for accountable governments that deliver public goods?

■ This hypothesis emerges primarily from the experience of Western Europe, where governments raised funds to finance war by developing inclusive institutions with checks and balances.

More recent studies, however, suggest that taxation may also put pressure on governments in the developing world today to implement democratic institutions. By tracing Somaliland's state building efforts after independence, Eubank (2012) shows that bargaining with actors outside the government linked the development of taxation and of inclusive institutions. In a historical study going back to the 7th and 8th centuries, Kuran (2012) argues that the removal of constraints on Islam's initial tax system contributed to blocking the political and economic development of Islamic countries. More rigorous evidence of a fiscal contract is provided by a study of Brazilian municipalities by Timmons and Garfias (2015). They show that credible reports of municipal corruption (resulting from randomized audits conducted by the federal government) lead to decreased revenue from municipal property tax (where there is significant evasion). Conversely, clean audits led to increased property tax revenue. They also find that municipalities where corruption is revealed are more likely to adopt an institution for fiscal accountability, namely participatory budgeting.

In sum, while these studies suggest interesting mechanisms that may link taxation to the development of institutions for democratic accountability and participation, both the evidence and the theory on this topic are still nascent.

Recent work has increasingly focused on evaluating the existence of a fiscal contract between citizens and government with empirically rigorous data on the impact of taxation on individual-level citizen attitudes and behavior.

**While these studies suggest interesting mechanisms that may link taxation to the development of institutions for democratic accountability and participation, both the evidence and the theory on this topic are still nascent**

## DIRECT EVIDENCE ON THE IMPACT OF TAXATION ON CITIZEN ACCOUNTABILITY ATTITUDES AND BEHAVIOR

Based on the six studies we found with these data, there is little evidence that taxation generally leads to differences in citizen attitudes or behavior towards government in a range of countries. Out of the four studies that assessed this question cross-nationally for countries in sub-Saharan Africa, three concluded that there was no relationship (Bratton 2011, McGuirk 2013, de la Cuesta et al. 2015). Two studies (Paler 2013, Martin 2016) examined the relationship between taxation and citizen attitudes and behavior within particular countries (Indonesia and Uganda, respectively). For these countries, taxation did seem to lead to higher citizen engagement and demands for accountability. So while there may be no global relationship, these two studies suggest that taxation may lead to citizen action in particular countries.

We want to underscore, however, that we need far more empirical studies with data on citizen attitudes and actions before it is possible to draw any conclusions about whether taxation makes citizens in developing contexts or in particular kinds of countries more likely to expect better governmental performance and hold governments accountable.

**Some studies suggest that citizens who pay taxes in developing countries have different attitudes about politics than non-taxpayers.** If we think taxation makes citizens more likely to hold officials accountable for how their taxes are used, then we might expect citizens who pay taxes to be more likely to be interested in politics. Using Afrobarometer data from 20 sub-Saharan countries, Broms (2015a) shows that there is an association between reported paying taxes or fees to the government and being interested in politics. This relationship is robust to the inclusion of controls and country-level random effects and is strongest among states with higher levels of government effectiveness. These results, however, suffer from endogeneity problems and the potential for reverse causality between paying taxes and being interested in politics.

Paler (2013), however, provides more rigorous evidence of a causal impact of taxation on citizen behavior through a lab-in-the-field experiment conducted in Indonesia. In this study, subjects were randomly assigned to be taxpayers or non-taxpayers, as well as to either a high-information or a low-information condition about the government budget. Respondents who were taxed in the game were more likely to express a willingness to learn more about how the government was spending its money. Furthermore, among respondents in the low-information condition, those who were taxed were more likely to express a willingness to monitor the budget and to sanction the incumbent. The drawback of this study, however, is that we cannot be sure that these conclusions would hold in real life, outside of an artificial experiment.

**We need far more empirical studies on citizen attitudes and actions before it is possible to draw conclusions about whether taxation makes citizens in developing contexts more likely to hold governments accountable**

**Other studies, however, find that citizens who pay taxes do not have different attitudes about the government.** Bratton (2011) examines Afrobarometer data and finds that individuals who pay taxes do not hold significantly different attitudes about government responsiveness than non-taxpayers. On the other hand, he finds that respondents who reported paying bribes believe, on average, that government officials are more responsive than those respondents who did not report paying bribes. This is an intriguing finding that calls attention to our need to better understand the link between taxes and bribes in developing contexts. McGuirk (2013) shows that sub-Saharan African citizens in areas with high availability of natural resources and who are subsequently taxed at lower rates do not hold lower levels of demand for democratic accountability, measured by preferences for regular, open, and honest elections.

**Studies that compare citizen attitudes about government revenue from taxes to attitudes about revenue from non-tax sources (such as aid or natural resources) also have mixed findings.** There is limited micro-level evidence to substantiate the macro-level relationship between tax revenue (as opposed to windfall revenue) and accountability. Martin (2016) uses a conjoint experiment to show that Ugandans are 20 percentage points more likely to want to punish officials who stole tax funds than those who stole donor funds. On the other hand, de la Cuesta et al. (2015) present evidence from a survey experiment conducted in Ghana and Uganda showing that citizens are likely to take action to monitor the use of funds regardless of whether the revenue comes from oil, taxes, or aid money. They use a list experiment to show that citizens do not believe that the source of money matters for respondents' perceptions of the intention of government officials and the likelihood that they will misappropriate funds. In short, citizens sign petitions, send SMS messages to government officials, and donate to an NGO that will monitor government spending regardless of the source of revenue.

**Lab-in-the-field experimental evidence suggests that paying taxes does make citizens more likely to sanction politicians, at least for individuals with low levels of engagement with and/or information about politics.** Martin's (2016) lab experiment in Uganda suggests that taxpayers (within the setting of a game, subjects who have to contribute their allocated money to a common pot) are more likely to punish "incumbents" who do not redistribute enough money back to the group. She finds the taxation effect is greatest among those at lower levels of political engagement. In Paler's (2013) experiment in Indonesia, subjects who were assigned to the tax group were more likely to take action to sanction the government (through a postcard campaign) than those in the windfall condition, as long as they were provided little information about the government. In cases where participants were assigned to the high-information condition, being in the tax group made no significant difference in respondents' tendency to take action to sanction the incumbent.

## INDIRECT EVIDENCE OF THE FISCAL CONTRACT

■ **Studies of municipalities and states that look less directly at the impact of taxation on individual citizen engagement also support a fiscal contract theory.** Although Martinez (2016) does not compare individual taxpaying citizens to non-taxpaying citizens, he finds in his study of Colombia that increases in municipal government tax revenues lead to a higher probability of a protest about municipal public services in the municipality. Taxation may also change politicians' attitudes about their responsibilities to respond to citizen needs, either directly or through citizen pressure. Elmo (2012) finds that, in Nigerian states that have higher levels of taxation, state legislators are more likely to see themselves as representatives of citizen needs and to report dedicating more time to constituency service than legislators in states that rely more on oil revenue and federal transfers.

**Recent rigorous studies from Latin America suggest that there may be a causal relationship between more taxation and better public goods provision at the subnational level.** Exploiting plausibly exogenous variation in both tax- and non-tax revenue at the subnational level, these studies show that increases in tax revenue cause improvements in public goods provision, while increases in non-tax revenue do not. While these studies do not provide direct evidence that taxation led citizens to demand more public goods, and that governments responded to these demands, the fact that increases in non-tax revenue are not associated with better public goods provision suggests that local governments, for some reason, either feel more compelled to provide public goods or are more capable of doing so when their revenues are from taxes. Better public goods provision does not seem to result simply because local governments have more resources.

Gadenne (2016) examines the impact of a federal program for building tax capacity among Brazilian municipal administrations. She finds that the additional revenues resulting from the tax capacity program (the timing of which is plausibly exogenous) result in a 4 to 5% increase in the quantity of municipal education infrastructure (the largest budget item for Brazilian municipal governments) and an improvement of one tenth of a standard deviation in its quality. On the other hand, she finds that increases in non-tax revenues (namely, transfers from the federal government that increase discontinuously at given population thresholds) have no impact on any measure of municipal education infrastructure.

In a study of Colombian municipalities, Martinez (2016) finds that increases in municipal property tax revenue (a plausibly exogenous change resulting from updates of the cadaster by the national government) lead to significant increases in educational enrollment, a water quality index, and the coverage of health insurance among the poor. On the other hand, increases in non-tax revenue (namely royalties, which vary exogenously, according to the world price of oil) do not lead to

improvements in these indicators, even though royalties are earmarked and linked to targets in precisely those variables where tax revenues cause an improvement. In fact, he finds that increases in revenues from royalties lead to more corruption in the municipal government.

## CROSS-NATIONAL ASSOCIATIONS BETWEEN TAXATION AND GOVERNMENT INSTITUTIONS

Finally, a third category of studies relying on cross-national analyses suggest patterns that may be consistent with fiscal contract theory, but these findings are far more conjectural. Studies in this category typically found that countries with more tax revenue (as a share of GDP) were also more likely to score more highly on composite indices of governance, bureaucratic quality, and democracy. While potentially consistent with the existence of a fiscal contract, it remains uncertain whether taxation leads to better governance and more democracy – or whether countries with better governance and more democracy are better able to collect taxes from their citizens.

**Quantitative studies comparing large numbers of countries suggest that increased taxation is positively associated with composite indices of democracy, rule of law, and bureaucratic quality.** Half a dozen papers use cross-national (and in most cases time-series) data to show a positive association between the level of taxation and good governance. Taxation is in most cases measured as tax revenue as a share of GDP, although some authors use other measures such as tax revenue as a share of government revenue. Good governance is measured along a range of different dimensions, including indices of bureaucratic quality, rule of law, absence of corruption, democracy, and governance. Table 1 details the variables and observations used by each of those studies.

While this research often addresses concerns of endogeneity and spatial and serial correlation using sophisticated methods for panel data analysis and some instrumental variable strategies, the results cannot generally be taken as causal. Specifically, they do not allow us to conclude whether more taxation leads to more accountability, whether more accountability leads to more taxation, or whether omitted variables drive the relationship between the two. Nonetheless, these cross-national comparisons uncover robust correlations between taxation and accountability indicators and suggest possible drivers.

**This cross-national evidence also suggests that there is a negative association between non-tax revenue (stemming from natural resources or foreign aid) and accountability.** Revenue from natural resources and foreign aid often substitute for revenue generated from tax collection. A longstanding body

**Better public goods provision does not seem to result simply because local governments have more resources**

**Table 1.**

Positive association between taxation and accountability, with measures for both variables used by different papers (sources in brackets)

Measure of taxation that has an effect on accountability	Measure of accountability that is affected by taxation	Observations analyzed	Paper
Tax revenue as a share of GDP (International Monetary Fund)	Composite measure of governance; indices for bureaucratic quality, rule of law (International Country Risk Guide)	117 countries, 1984 - 2006	Altunbas & Thornton 2016
Tax revenue as a share of GDP (World Bank)	Political governance index; voice and accountability (World Bank)	53 African countries, 1996 – 2010	Asongu 2015
Tax revenue as a share of GDP (Organisation for Economic Co-operation and Development, World Bank)	Composite measure of governance; absence of corruption, democracy (International Country Risk Guide)	31 Sub-Saharan countries, 1990 – 2005	Baskaran & Bisten 2011
Tax revenue as a share of GDP (World Bank)	Voice and accountability index; composite index of governance (Kaufman)	87 countries	Devarajan et al. 2011
Non-resource-based taxation as a share of GDP (International Centre for Tax and Development)	Rule of law index (World Bank)	178 countries, 2000 – 2008	Broms 2015
Share of citizens who pay income taxes (Afrobarometer)	Average citizen perceptions of their government's delivery of public goods (Afrobarometer)	246 sub-Saharan regions in 20 countries	
Non-resource-based taxation as a share of GDP; total tax revenue as a share of government revenue (International Centre for Tax and Development)	Democracy Index (Polity)	188 countries, 1990 - 2010	Prichard et al. 2014

of research on rentier states has suggested that reliance on these non-tax revenue sources is bad for accountability. More recently, Prichard et al. (2014) show that countries that rely on non-tax revenue (mostly driven by natural resources) also have more negative scores on a democracy index. In a similar vein, Devarajan et al. (2011) show that oil rents have a negative effect on how countries score on an index of voice and accountability. With regards to the effect of foreign aid, Eubank (2012) uses a qualitative comparison of Somalia and Somaliland (which had no access to foreign aid due to international norms against secessionist states) to argue that the absence of aid was a necessary condition for Somaliland's leaders to engage in the revenue bargaining process that led to inclusive institutions. In support of this hypothesis, Asongu (2015) finds that taxation has a positive relationship with an index score on accountability when there is no aid, but that the presence of aid weakens this positive relationship.

**Some of these cross-national analyses attempt to figure out whether taxation is leading to better governance by looking specifically at whether governments that rely more heavily on taxes paid by individual citizens (rather than firms) score more highly on indices of good governance and accountability.** If so, we can be a little more confident that taxation might affect citizen actions to pressure the government for better performance. If governments that rely primarily on corporate taxation also perform better, then there is little evidence of a connection between taxation and citizens holding governments accountable.

**Cross-national evidence also suggests that there is a negative association between non-tax revenue (stemming from natural resources or foreign aid) and accountability**

Altunbas and Thornton (2011) find that the effect of taxation on accountability is driven by taxes directly paid by citizens (personal and sales taxes, as well as social security contributions), as opposed to those paid by firms (corporate and trade taxes). Similarly, Broms (2015b) shows that in sub-Saharan regions there is an association between the share of citizens who pay income tax and the average perception of the government's efforts to handle basic public goods. Relatedly, Broms argues that the relationship between taxation and governance is mediated by regime type and shows that taxation has a larger impact on governance in countries with medium to high levels of democracy. Prichard et al. (2014) present a similar finding. Broms argues that democracy strengthens the relationship between taxation and governance for two reasons. First, democracies enable bargaining between citizens and government, while dictatorships rely on coercion of citizens. Second, autocratic leaders depend on a smaller fraction of society than democratic leaders and are thus more likely to spend revenue on patronage and private goods, while democratic leaders tend to spend on public goods.

## Question 2: How do we get citizens to pay taxes? What are the causes of tax compliance and tax evasion?

Assuming that a fiscal contract between citizens and government exists or can be established, the next question is how to get citizens to comply with taxation?

Recent empirical work focuses on five potential answers: (1) government provision of public goods (fiscal contract theory itself); (2) government audits and punishment (economic deterrence); (3) social norms; (4) comparative treatment; (5) political legitimacy.

Evidence is strongest as well as most plentiful for the first two answers – government provision of public goods and the threat of punishment. For the remaining possibilities, evidence is far more mixed.

### ANSWER 1: PROVIDE PUBLIC GOODS AND SERVICES

**Consistent with fiscal contract theory, most recent studies suggest that individuals are more likely to comply with taxation when they know that their taxes lead to more government public goods provision.** D'Arcy (2011) finds that citizens in African countries who had access to government services were more likely to perceive that tax officials can elicit compliance. They note, however, that the effect is driven by differences in absolute levels of public goods, rather than in their quality. Flores-Macias (2016) provides experimental evidence from Mexico showing that respondents who were reminded that their tax money is spent on security (the most salient public good in the country) show the highest level of increase in tax compliance, when compared with respondents who received messages about high levels of oversight in taxation and a message that the tax would be repealed and re-legislated after three years. Ortega et al. (2016) also provide experimental evidence from Latin America that taxpayers who were given vignettes about high government performance providing public goods like school supplies were more compliant. Fjeldstad et al. (2012) present evidence from a survey in Tanzania that suggests that over time, as public goods provision improves; tax morale improves as well, although this effect may be confounded by improvements in other dimensions such as state capacity. Ali et al. (2014) find that in Tanzania, Uganda, Kenya, and South Africa, the level of public goods provision has a significant, positive relationship to tax compliance.

Recent studies suggest that individuals are more likely to comply with taxation when they know that their taxes lead to more government public goods provision

Conversely, Timmons and Garfias (2015) show that when citizens are informed that government audits of their municipal government detected corruption, property tax revenue falls. When citizens are informed of a clean audit, however, property tax revenue rises. This information about government corruption, moreover, not only affects tax compliance but also vote choice.

Not surprisingly, there is variation in the public goods that citizens care about most. In Tanzania and Uganda, for example, health and education are salient, while in Kenya infrastructure is more salient. In South Africa, the bureaucratic efficiency with which these goods are provided is salient. Additionally, Daude et al. (2013) analyze data from international surveys and find that public good provision is significant in Africa and Latin America, but less significant for tax compliance in Asia.

**Relatedly, there is evidence that individuals who have access to public goods provided by non-state actors (such as vigilante groups or informal savings groups) have lower levels of tax morale.** Bodea and LaBas (2016) find that Nigerians who pay money towards informal savings groups and vigilante security forces have lower tax morale than those who do not. Similarly, Ali et al. (2014) provide survey evidence to suggest a correlation between payment to vigilante groups and lower compliant attitudes in East Africa. In the same vein, Andriani (2016) finds that, in Palestine, participating in voluntary associations is correlated with lower levels of tax morale, especially among those who have a negative perception of formal institutions. She argues that strong social institutions can diminish the incentive to contribute to a public good. This relationship between tax morale and substitutable public goods might be more salient in states marked by low trust in the government, low capacity, and stronger informal institutions.

**Some studies do not support fiscal contract or exchange theory.** Yessegat and Fjeldstad (2016) find no evidence for the fiscal exchange hypothesis among business-owners in Ethiopia, although measurement is poor, and the sample is business-owners for whom the fiscal exchange contract with the government may be different. Castro and Scartascini's (2015) field experiment in Argentina finds null effects on compliance when respondents are reminded about public goods provision, although they attribute this to a weak treatment and the difficulty of changing perceptions of goods provision with just one message. Finally, Daude and Melguizo (2010) focus on two hypotheses that, while not directly related to fiscal exchange, focus on attitudes toward upward mobility and meritocracy. They argue that, in Latin America, counter to their intuition, those who believe in their own upward mobility and those who believe their country is meritocratic are more inclined to pay taxes. The belief in upward mobility and meritocracy suggests that individuals believe they can be high wage earners in the future, and therefore will be able to provide for themselves, and be less reliant on the government. If the fiscal exchange hypothesis holds, we would expect these individuals to be more reluctant to pay taxes.

## ANSWER 2: GOVERNMENT AUDITS AND PUNISHMENT FOR NONCOMPLIANCE

Many studies find a positive association between the risk of being punished and higher levels of tax compliance by individual citizens

■ **The economic deterrence hypothesis stipulates that individuals, as rational actors, comply with being taxed because the cost of enforcement (stemming from the probability of being audited and the level of punishment if audited) outweighs the benefit of evading taxes.** Many studies find a positive association between the risk of being punished and higher levels of tax compliance or tax morale by individual citizens. Castro and Scartascini (2015) present experimental evidence that participants respond to deterrent messaging, but with significant variation between different channels of communications. For example, deterrence messages conveyed by inspectors were the most effective, followed by those conveyed through email, and then finally by those conveyed by letter. Cummings et al. (2015) show that there is variation in responses to deterrence through manipulating the risk of audit when compared with deterrence through manipulating the cost of an audit. For some, a low-probability, high-cost audit is a more effective deterrent to tax evasion than a high-probability, low-cost audit. Using a series of tax games, they also show that individuals update their prior beliefs about the risk of audit based on their past experiences with audits. There is additional survey evidence that suggests a correlation between deterrence and tax compliance (D'Arcy 2011; Ali et al. 2014; Yessegat and Fjeldstad 2016; Fjeldstad et al. 2012; Gobena et al. 2016). On the other hand, Del Carpio (2014) conducted a field experiment in Peru and found that taxpayers who received information on the level of enforcement were not more likely to comply than taxpayers who were simply reminded of their duty to comply. However, it is important to keep in mind that this varied evidence is based on self-reported attitudes, so the conclusions we can make from the data is limited.

## ANSWER 3: SOCIAL NORMS FOR COMPLIANCE

■ **The social norms hypothesis argues that individuals pay taxes because they feel peer pressure to do so, for instance through their belief that most people in their community comply or a social norm about the moral value of paying taxes.** There is mixed evidence in favor of this line of arguments. Ali et al. (2014) find that social norms toward compliance are relevant in Tanzania, but not in Uganda, Kenya, and South Africa. Benk et al. (2016) find that those with higher levels of religiosity are more likely to hold compliant attitudes, but that interpersonal religiosity (participating in religious events, etc.) does not have any relationship to either voluntary or enforced tax compliance. Andriani (2016) finds that, in Palestine, more pro-social respondents were less likely to justify tax evasion, even those who hold negative perceptions of formal institutions. Finally, Kettle et al.

(2016) found in an experiment in Guatemala that subjects who were told that 65% of fellow citizens had already paid their taxes significantly increased tax compliance. Interestingly, their experimental condition with the highest effect on tax compliance is reminding citizens that evading taxes is a deliberate decision of each individual. On the other hand, Yessegat and Fjeldstad (2016) find no support at all for the relationship between perceptions of others' tax behavior and one's own compliant attitudes among Ethiopian business-owners. Similarly, del Carpio's (2014) experiment in Peru found that informing taxpayers of the rates of compliance had a positive effect on compliance that was, however, not statistically different from that of a mere reminder that their taxes were due. Castro and Scartascini (2015) also found no experimental support for the social pressure hypothesis.

We do not have sufficient evidence to conclude on the effects of citizen peer pressure to pay taxes, or on the effects of beliefs that an equitable or legitimate government is more deserving of tax compliance

#### ANSWER 4: BELIEF IN EQUITABLE TREATMENT FROM GOVERNMENT

**The equitable treatment hypothesis argues that individuals who believe their identity group is treated worse than other identity groups by the government are less likely to comply with taxes.** Evidence for this hypothesis is mixed. In this framework, it is not the absolute quality of goods provision, enforcement, or overall governance that matters, but it is one's benefit from governance—both inclusion in the political system and goods provision—relative to other groups that matters. D'Arcy (2011) finds that individuals who believe their ethnic group is treated unfairly are less likely to believe that tax officials should have the power to make them pay taxes. Ali et al. (2014) find similar patterns in Tanzania and South Africa, but not in Kenya and Uganda. Although this has not been tested empirically, it is plausible that this hypothesis would only be relevant in contexts marked by high in-group/out-group divisions along salient lines. Nonetheless, Bodea and LaBas (2016) do not find that comparative treatment along political lines is a predictor of tax compliance attitudes.

#### ANSWER 5: BELIEF IN GOVERNMENT LEGITIMACY

**The government legitimacy hypothesis holds that individuals' perceptions of the government's legitimacy determine tax compliance attitudes and behaviors. Evidence for this hypothesis is uncertain.** There is mixed evidence for the link between perceptions of legitimacy and attitudes toward tax compliance, although almost all of the research in this vein suffers from measurement issues. Gangl et al. (2015) argue that increases in the perceived service orientation of tax authorities is linked to a higher likelihood of filing as a taxpayer. However, this is not a direct effect, but is rather because more positive interactions with tax authorities increases the tax education of citizens, which subsequently increases compliance.

Daude, Gutierrez, and Melguizo (2015) find weak support for positive attitudes toward government and negative attitudes toward corruption and compliance. Gobena et al. (2016) find that procedural justice is linked to voluntary tax compliance and argue that this effect is driven by a higher perception of legitimate power. Togler et al. (2016) find that trust in the justice system and high-quality governance has a positive association with tax morale. Overall, it is unclear whether political legitimacy has an independent effect on tax morale or it is just a mediator in the relationship between government accountability and tax evasion.

## IV. Reflections on the quality of the evidence

**Existing research on the relationship between taxation and accountability, and especially on the determinants of tax compliance in developing countries often suffers from poorly designed empirical strategies and untested assumptions.** Many recent studies lack an identification strategy, namely a research design that allows us to be reasonably confident that the effect under scrutiny is a causal one. More generally, recent research often places insufficient attention to the issues of endogeneity, especially in the study of tax evasion, for instance by regressing a measure of tax compliance on a few variables of interest and including few or no controls. Furthermore, it seems many of the surveys done to study the determinants of tax compliance in the developing world use small and/or un-representative samples, which limits the findings' internal validity (how reliable the results are for the population under study) and the external one (how representative the findings are of the wider population). There are a number of interesting and well-executed field experiments and quasi-experimental studies that uncover causal effects (as explained above), but, unfortunately, they are mostly from one single region – Latin America.

**Survey items asking respondents directly about their level of or attitudes towards tax compliance, which are often used in recent research, are likely to lead to social desirability bias.** Asking survey respondents about their likelihood of paying their taxes on time or under-reporting income is likely to elicit biased responses. In general, individuals systematically over-report behaviors that are believed to be ethically or morally superior, and under-report those that have negative connotations. The problem is particularly serious since social desirability bias is unlikely to be homogeneously distributed across the population – certain respondents (perhaps those with higher moral standards, or of a certain socio-economic background) may be systematically more likely to provide a biased report of

## Asking survey respondents about their likelihood of paying their taxes on time or under-reporting income is likely to elicit biased responses

their tax compliance. This introduces systematic measurement error in survey-based research of tax compliance, particularly in the frequent case where researchers ask directly. While some authors suggest that social desirability bias for tax compliance may be lower in developing countries than is usually assumed because of weaker norms (e.g. Ali et al. 2014), it is an important measurement issue that can and should be addressed.

**Social desirability bias can be addressed through smart survey items and through the use of administrative and other behavioral measures of tax compliance.** There are effective strategies for reducing social desirability bias in survey research. First, researchers can ask about respondents' levels of and attitudes towards tax compliance in an indirect manner, which decreases bias. For example, Ali et al. (2014) use an indirect question, "where respondents are asked to state whether they think that it is wrong for people not to pay taxes that they owe on their income," with available options being "not wrong at all," "wrong, but understandable," or "wrong and punishable." Similarly, Yeseget, and Fjeldstad (2016) ask respondents how often they think taxpayers evade taxes. By removing or hiding the respondent's actions from the focus of the question, these types of survey items are more likely to obtain honest responses.<sup>1</sup> More sophisticated methods to obtain honest answers when the topic at hand is subject to social desirability bias are available. Two popular methods are the randomized response method<sup>2</sup> (where respondents are asked to answer truthfully only if some randomizing device, such as a coin, shows a certain outcome that is known to the respondent only) and the list experiment<sup>3</sup> (where respondents are asked how many of a list of items they consider wrong or upsetting, with a random subsample of respondents being offered the same list as the rest plus an additional item describing the sensitive behavior one wants to measure). Important gains could be reaped from the use of the randomized response or the list experiment methodology in future research on taxation and tax evasion (as exemplified by the list experiment done by De la Cuesta et al. 2015). Finally, in cases where the tax authority has data on tax compliance, getting access to such administrative data allows for direct and highly reliable measurements (as exemplified by the work of Kettle et al. 2016).

**We know little about how survey-based measurements of taxation and tax compliance relate to administrative and other behavioral data, and about how attitudes relate to actual behavior.** Obtaining administrative data on tax compliance is often hard (either because of limited access to governments' individually-identified datasets, or because the government does not have a reliable measure of taxation and/or tax evasion at the individual level), particularly in developing countries. In that sense, survey-based measurements of taxation and compliance are unavoidable. Unfortunately, however, we do not have evidence of how well different survey techniques fare in measuring actual taxation and compliance. It is therefore worth investing in cross-validation exercises that measure taxation and tax compliance in the same context using several survey techniques

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3. Blair, G. and Imai, K. (2012). Statistical analysis of list experiments. *Political Analysis*, 20(1), 47-77.

**The link between taxation and accountability is likely to differ across contexts, yet much of the high-quality evidence stems mostly from middle-income countries in a single region (Latin America).**

and analyzing how they fare vis-à-vis administrative data. This would give us some sense of the degree of uncertainty surrounding survey-based estimates. Such exercises could also help elucidate how survey-based measures of attitudes (e.g. items asking respondents how they feel about tax evasion) relate to survey-based measures of behavior (e.g. items asking them directly or indirectly whether they pay taxes and whether they engage in tax evasion).

**We need a better understanding of how the link between taxation and accountability varies across context and across types of taxes.** The link between taxation and accountability is likely to differ across contexts, yet much of the high-quality evidence stems mostly from middle-income countries in a single region (Latin America). There is not sufficient research for us to be able to conclude how this link varies across contexts, or across types of taxes. Exploring how different taxes lead to different responses in government accountability would help understanding the mechanisms at play and would provide valuable guidance for policy. The saliency of the tax, the distribution of the tax burden across the population, how and when the tax is paid, and the prevalence of tax evasion are factors that may make some taxes more effective at fostering accountability than others. Understanding how tax evasion and demands for accountability interact would be particularly important, given that non-compliance is a form of individual exit strategy that may undermine the exercise of voice and collective action. While it is difficult to find sources of plausibly exogenous variation in different taxes in a single setting, doing so would greatly enhance a rigorous understanding of the link between taxation and accountability.

**With regards to tax evasion, we know relatively little about how tax compliant behaviors relate to attitudes towards tax compliance in developing countries.** A large share of the research is focused on attitudes towards tax compliance (so-called tax morale), as opposed to behaviors (be they self-reported or measured using tax authorities' administrative data). To the extent that we understand what the key drivers of positive attitudes towards tax compliance are, what can we say about how those relate to actual tax compliance? Is changing attitudes a viable strategy for changing behavior?

# Appendix A. Papers reviewed

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## Appendix B: Protocol for systematic literature search for collecting evidence on specific interventions and/or research questions

1. The purpose of this literature search is both substantive and operational. In our literature review process, we conducted a comprehensive and systematic overview of articles published between 2010 and 2016 on taxation, tax evasion, and accountability. At the same time, our goal was to establish a protocol for conducting similar evidence reviews on a diverse set of questions. Given the limited resources available for conducting evidence reviews, and the decentralized nature of search databases, how can a practitioner most effectively locate existing research on similar topics and interventions? How can such a search be systematized such that it yields transparency outcomes and others can replicate it in the future?
2. Of the numerous databases that exist for conducting social science research, we limited our search to databases that would either return high-quality academic research or focus on specialized, development-oriented research. These databases, along with a brief description of their search functions, universe of articles, and merits and drawbacks, are highlighted in Table 2 at the end of this Appendix. The last 3 databases listed in Table 2, namely MIT Libraries, Google Scholar, and IssueLab, were not included in the final list of databases to be searched systematically because they are not user-friendly (MIT Libraries), or include too few or no relevant studies that were not uncovered in other databases (Google Scholar and IssueLab). Within each database, we ran a standardized search using Boolean terms (specified below), and then filtered all articles that were not relevant because they did not: address the research question of interest; did not include any empirical work; focused on developed countries only; and/or were published before 2010.
3. We divided the literature search in two exercises: one looking at the relationship between taxation and accountability, and another one looking at the issue of tax compliance. For the first, we used a Boolean string of search terms that combined the explanatory variable of interest (“taxation” OR “taxes” OR “tax”) and the dependent variable (“accountability” OR “government responsiveness” OR “social contract” OR “governance”

OR "fiscal contract" OR "quality of government" OR "political interest"). For the second one, we searched for a Boolean string containing terms related to tax compliance, tax morale, and tax education ("taxpayer education" OR "taxpayer awareness" OR "taxpayer knowledge" OR "taxpayer literacy" OR "taxpayer culture" OR "taxpayer socialization" OR "tax education" OR "tax awareness" OR "tax knowledge" OR "tax culture" OR "tax literacy" OR "tax socialization" OR "tax norms" OR "tax experiments" OR "taxpayer attitudes" OR "tax attitudes" OR "tax compliance" OR "tax morale"). Once we filtered for relevant papers, we also reviewed the papers that were cited by them and the papers that cited them and incorporated to the literature review any relevant pieces among those citations.

4. Overall, the exercise showed that (i) defining the correct search terms was a complex, iterative process; (ii) different databases tend to return different kinds of literature; and (iii) there is a tradeoff between the quantity of papers covered and their quality. The process of finding the correct search terms was quite difficult in this case. It ultimately required an iterative process of testing and refining different sets of Boolean search terms. With regards to databases, Web of Science and DFID R4D were the most useful databases for this literature review. However, the World Bank eLibrary and regional bank databases would most likely be quite useful for questions for which there is more empirical evidence. The World Bank's Open Knowledge Repository and the Inter-American Development Bank databases also proved useful, particularly for finding evidence on very recent interventions. It is possible that we are missing articles by only relying on Web of Science for our search of peer-reviewed articles. A more exhaustive search would yield more articles, but the overall quality of the papers is likely to be lower. For example, while MIT Libraries and Google Scholar return more results than Web of Science, their quality tends to be lower and we thus would not want to base conclusions or funding decisions off those pieces.

**Table 2.**

Comparison of research databases

Database	Available Articles	Search Function	Merits	Drawbacks
Web of Science	Contains over 3,000 journals, with inclusion being based on citation analyses and impact favors	Multiple Boolean searches at once; refinement based on document type, publication year, subject, language, geography	Higher quality of articles than MIT Libraries; Can search by topic or geography (through “exclude” function only)	No full-text search option; Relatively few results, but high relevance and quality
Social Science Research Network (SSRN)	Working papers	Search based on Boolean terms, for the Title, Abstract, Keywords and Full Text; Can refine by date	Can search the full text; has papers that are the most recent	High variance in quality
DFID Research for Development (R4D)	Research funded by DFID	3 Boolean phrases in title, keywords, overview, author-specific headings, etc.	Contains working papers of DFID projects	Have to search journal articles and working papers separately; Can’t search by year; high variance in paper quality
World Bank eLibrary	All World Bank publications and research since the 1990s	7 Boolean phrases anywhere, can refine based on journal articles, working papers; can refine by year	Contains World Bank research that covers interventions that might not have been written up in journals	Refinement for journal articles and working papers does not work
World Bank Open Knowledge Repository	World Bank’s official open access website for its research outputs and knowledge products	Multiple Boolean searches at one; refinement based on document type, country, region, topic, year	Includes pieces of recent research that has been published by the World Bank only, as well as policy reports	
Inter-American Development Bank (IADB) Publications	Contains all IADB publications	Multiple Boolean searches at once; refinement based on document type, country, topic	Includes recent pieces of research that has been published by IADB only, as well as policy reports	Does not allow to refine search results by year

**Table 2.**

Comparison of research databases

Database	Available Articles	Search Function	Merits	Drawbacks
African Development Bank (AfDB)	General search engine for their website (does not have a specific search engine for knowledge products)	Multiple Boolean searches at once; refinement based on document type, country, topic	Focuses on the African context, which is under-represented in research and policy publications	Did not return relevant pieces for this search
Asian Development Bank (ADB)	Search engine for ADB publications	Does not allow for a string of Booleans, each search term must be entered separately	Focuses on the Asian context	Did not return relevant pieces for this search
International Centre for Tax and Development (ICTD)	Working papers specifically on taxation	No advanced search function	Has good working papers and literature reviews	Does not allow to refine search based on document type
MIT Libraries	All articles for which EBSCO Host has copyright access; many of these are indexed from discipline-specific databases; contains over 10,000 periodicals	Multiple Boolean searches at once; refinement based on document type, publication year, subject, language, geography	Search algorithm and refinement is possible; searches many articles and databases	Refinement process eliminates relevant results; database is very buggy and inconsistent; outputs too many low-quality articles; without refinement, too many hits to process manually
Google Scholar	Powered by bots who crawl the web	One Boolean string; can refine by year published and exclude citations or patents	Have access to many articles, returns more hits than other databases	No way to refine beyond year; a lot of irrelevant or low-quality results (i.e. Master's theses, etc.); ranked by citations and relevance, but not in any clear way
IssueLab	Policy memos and white papers	Does not accept Boolean strings; Can refine by document type, issue area, geography, language, and year	Policy briefings and working papers	Did not return relevant pieces for this search

**MIT Governance Lab (MIT GOV/LAB)** is a group of political scientists focusing on innovation in citizen engagement and government responsiveness. MIT GOV/LAB collaborates with civil society, funders, and governments on research that builds and tests theories about how innovative programs and interventions affect political behavior and make governments more accountable to citizens.

**Transparency and Accountability Initiative** is a collaborative of leading funders of transparency, accountability and participation worldwide. It envisions a world where citizens are informed and empowered; governments are open and responsive; and collective action advances the public good. Toward this end, TAI aims to increase the collective impact of transparency and accountability interventions by strengthening grantmaking practice, learning and collaboration among its members. TAI focuses on the following thematic areas: data use for accountability, strengthening civic space, taxation and tax governance, learning for improved grantmaking.

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