

Do Indirect Taxes Bite? How Hiding Taxes Erases Accountability Demands from Citizens *

Brandon de la Cuesta[†] Lucy Martin[‡]
Helen V. Milner[§] Daniel L. Nielson[¶]

May 12, 2021

Abstract

Taxation is fundamental to relations between governments and citizens. Seminal accounts attribute democratization to the rise of effective direct taxation, and more recent evidence shows that direct taxes increase citizens' accountability demands. However, today many citizens only pay indirect taxes, and there is no evidence whether they have similar effects. We argue that the visibility of taxes determines their accountability effects and that indirect taxes are less visible than direct once citizens have acclimated to higher prices. We combine survey experiments with lab-in-the-field experiments in a developing country to demonstrate that indirect taxes are less visible than direct and that less visible taxes provoke less willingness to punish leaders politically. Cross-national data demonstrate that direct and indirect taxes are associated with systematically different patterns of overall government accountability. The findings suggest that growing reliance on indirect taxes may limit taxation's accountability dividends and impair democratic representation.

Word Count: 10,821

*We thank Brendan Cooley, Thomas Cunningham, James Gilman, Dominic de Sapio and Elsa Voytas for their excellent research assistance and efforts in developing this protocol. Thank you also to the participants of APSA 2017, and the King Center at Stanford University.

[†]Postdoctoral Research Fellow, King Center on Global Development, Stanford University, Palo Alto, CA. Email: brandon.delacuesta@stanford.edu

[‡]Assistant Professor, University North Carolina, Chapel Hill, Email: lucy.martin@unc.edu

[§]Director, Niehaus Center for Globalization and Governance, Princeton University, Princeton NJ 08544. Phone: 609-258-6601, Email: hmilner@princeton.edu

[¶]Professor, Brigham Young University, Provo, Utah 84602, Email: dan.nielson@byu.edu

1 Introduction

“Perhaps...the money which [the taxpayer] is required to pay directly out of his pocket is the only taxation which he is quite sure that he pays at all. ... If all taxes were direct...there would be a security...for economy in the public expenditure.”

– Mill, 1848

A central claim in political science holds that how governments raise revenue has critical implications for democracy and accountability. Historically, taxation played a key role in the evolution of representative government (Tilly 1990; Bates and Lien 1985; Levi 1989; North and Weingast 1989). Today, greater government reliance on taxation—relative to non-tax sources like foreign aid or oil—correlates with lower corruption, higher levels of democracy, and higher public goods provision (Ross 2004; Timmons 2005; Baskaran and Bigsten 2013; Brollo et al. 2013; Gadenne 2017; Prichard 2015). Recent research indicates that taxation can improve government accountability and democracy because it increases citizens’ accountability demands and therefore has profound political effects. Taxation appears to make voters more willing to monitor government performance and to sanction leaders when dissatisfied (Paler 2013; Martin 2016; Weigel 2020), though perhaps not universally in lower-income countries (de la Cuesta et al. 2019).

The evidence that taxation improves governance through its effects on democratic politics is drawn largely from direct taxes. However, taxation has changed dramatically in the past forty years; this paper argues that these changes may significantly weaken the link between taxation and governance. As Panel A in Figure 1 shows, the majority of all tax revenues worldwide now come from indirect taxes. Moreover, since 1980, indirect taxes as a percent of global GDP have risen much more quickly than direct taxes have: from base rates around 7 to 9 percent, direct taxes have increased 0.6 percentage points compared to 3 full percentage points for indirect taxes. Panel B of Figure 1 shows that this increasing reliance on indirect taxes has been driven by the rise of the Value Added Tax (VAT), which the World Bank and other development organizations have heavily promoted as a way for

low-capacity states to expand their tax base and increase revenues, especially as trade taxes have declined (Seelkopf and Bastiaens 2020).

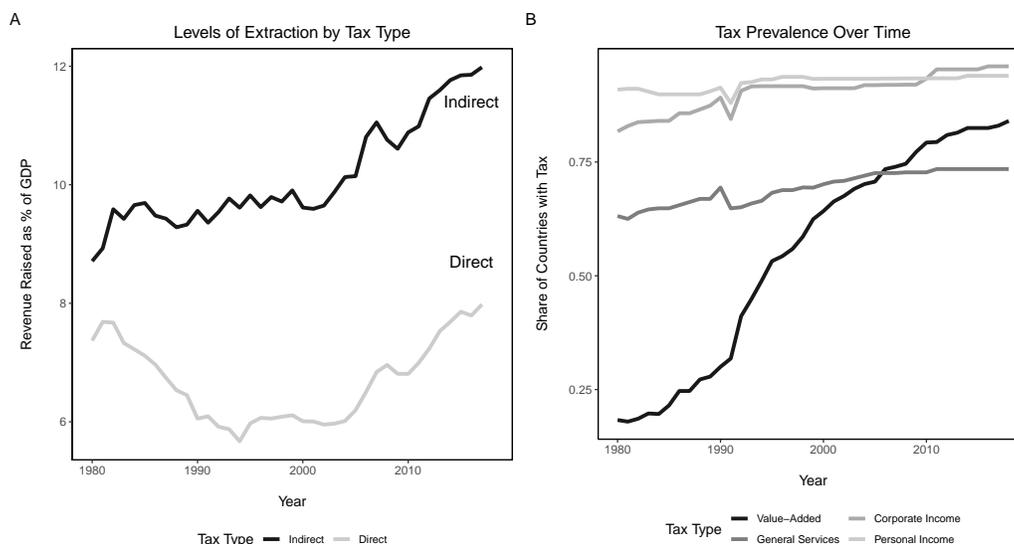


Figure 1: Taxation Over Time. Panel A plots revenue as a % of GDP over time for different tax types (ICTD 2019). Value-Added, General Services, Trade and Excise taxes comprise the indirect tax line. Direct taxes includes personal income, corporate and other forms of direct taxes. Panel B plots the share of countries with a given type of tax over time (Seelkopf and Genschel 2019).

Today, in both high- and low-income countries, indirect taxes may be the only taxes many citizens pay. Recent numbers suggest that 44% of Americans and 43.4% of British citizens pay no income tax at all (Stallworth and Berger 2019; Joyce, Pope and Roantree 2019). In our survey in Uganda reported below, only 7.5% of respondents reported paying income tax. In contrast, almost all citizens in most countries pay indirect taxes, which include excise taxes, sales taxes, trade taxes, and VAT. Understanding how citizens experience and respond to indirect taxation is thus critical in understanding when taxation will promote political accountability.

Some scholars have theorized that indirect taxes are less visible to citizens, potentially muting or eliminating taxation’s effect on citizens’ demands for accountability (Brautigam, Fjeldstad and Moore 2008). This has serious political implications. In developing countries, promoting indirect taxation may significantly limit the extent to which taxation can improve democratic accountability. In high-income countries, direct taxpayers

may have the most influence, skewing policy in favor of the political demands of the wealthier individuals who pay more direct taxes. Yet we have virtually no evidence on whether this is, in fact, the case, and little sense for how, theoretically, visibility affects taxation. Existing studies reporting that taxation increases citizens' political accountability demands are based on direct taxation (Paler 2013; Martin 2016; Weigel 2020), and most cross-national evidence combines all types of tax revenues (see e.g. Prichard 2015).¹

This article develops and tests a theory of how tax visibility varies and how it subsequently affects the taxation-accountability link. We argue that the proposed mechanisms through which taxation affects political accountability—including tax bargaining and theories in which taxation generates higher citizen engagement—will hold only when a tax is visible. Moving beyond previous theories, we argue that a tax's visibility can change over time. While indirect taxes are often visible when first introduced, over time citizens *acclimate* to the higher prices such taxes cause, much as consumers adjust to normal rates of inflation. This reduces tax visibility and therefore dampens indirect taxation's long-run effect on citizens' demands for political accountability. In contrast, direct taxes are highly visible both when introduced and years after their introduction. Individuals transfer their earned income directly to the government consciously and annually, maintaining the tax's salience.

We combine experimental and observational data to test our argument. First, we use lab-in-the-field experiments in Uganda to examine the effects of tax modality and visibility at the time a tax is introduced. We find that, when a simulated direct and indirect tax are equally visible, both taxes increase citizens' willingness to pay to punish leaders for low transfers back to citizens. However, making the indirect tax less visible reduces this effect significantly. Mechanism tests show that tax visibility affects two of the key proposed

¹The exception is Timmons (2005), who finds that direct and indirect taxes are each associated with the policies preferred by taxpayers.

mechanisms for taxation’s effect on citizen political behavior: ownership over government budgets and the desire to recover the income lost from paying taxes in the form of public goods (loss aversion). Next, we use survey experiments and observational data from Uganda to show that priming citizens on established indirect taxes affects citizens’ perceived utility from purchasing—something that should not occur if indirect taxes are visible. We also show that, in Uganda, uncertainty about tax burdens is much higher for indirect than for direct taxes. Finally, cross-national analysis, using a modified version of extreme bounds analysis, demonstrates country-level variation in how direct and indirect taxes correlate with measures of political accountability and corruption.

We address several possible questions about these results. Our experiments are designed to control for alternative mechanisms such as tax structure, type of taxed exchange, and taxation frequency. We also consider other causal pathways such as tax bargaining and state capacity and determine that they cannot explain our results. Together, the Uganda studies provide evidence that indirect taxation, by reason of its relatively low visibility, produces weaker pressures for political accountability than direct taxation, and we demonstrate that this is driven by mechanisms involving ownership and loss aversion.

These results have significant implications for the study of accountability and state development. Our theory provides a general framework for understanding when taxation will have political accountability dividends. More specifically, we show that any positive effect of indirect taxation on democratic accountability will be short-lived at best; in the long run, these benefits may not persist. Thus, governments may strategically rely more heavily on indirect taxation in order to reduce citizens’ demands for political accountability. If countries continue to increase indirect taxation, the positive relationship between taxation and accountability may weaken and democracy may suffer. Further, low-income citizens paying only indirect taxes may be less well represented politically than more wealthy direct taxpayers. Indirect taxes may disrupt the causal chain connecting taxation to pressures for political accountability by reducing citizen demands for better governance.

2 Theory

Previous work suggests that taxation promotes democracy (Bates and Lien 1985; North and Weingast 1989; Levi 1989; Ross 2004; Prichard 2015), lowers corruption (Baskaran and Bigsten 2013), and makes governments more likely to provide taxpayers' preferred policies (Timmons 2005). Alternative revenue sources, namely foreign aid and natural resource rents, can lead to worse governance outcomes and may also result in lower taxation (Ross 1999; Morrison 2009).

Existing literature suggests that taxation can impact accountability through four possible mechanisms. First, seminal work on tax bargaining argues citizens may agree to quasi-voluntary tax compliance if governments grant policy or institutional concessions in return (Bates and Lien 1985; Levi 1989; North and Weingast 1989). Such bargaining is most likely when citizens can credibly threaten non-compliance (Moore 2004; Prichard 2015), and when citizens can overcome collective-action problems in order to bargain effectively with the government. In these theories bargaining can result in democratization, or it can simply produce policies that are more favorable to taxpayers.

Recent research has focused on three additional mechanisms through which paying taxes can affect citizens' political behavior, particularly willingness to monitor government performance and take political action when dissatisfied (Paler 2013; Weigel 2020). The second mechanism thus focuses on the signal that effective taxation communicates to voters. Weigel (2020) argues that taxation conveys to citizens that the government has the capacity to fund public goods, thus increasing citizens' expectations. Weigel shows using a field experiment that taxation increases political engagement.

Taxation can also increase citizen engagement by increasing the psychological benefits citizens receive from punishing poor government performance politically.² These ben-

²Appendix A demonstrates that the respondents in our lab experiments do receive non-economic benefits when they punish low leader transfers.

efits arise from two related mechanisms: ownership and loss aversion. Thus, for the third mechanism, the theory of loss aversion posits that citizens expect to receive their earned income, and taxation forces a painful loss of earnings that citizens are eager to regain through government spending (Martin 2016; Sandbu 2006). Due to the shape of loss-averse utility functions, this makes citizens more sensitive to the economic utility lost due to any corruption or other non-optimal government policy. If a citizen's willingness to engage in political action is linked to the degree poor government performance hurts them personally, taxation will then increase citizens' willingness to demand accountability through taking political action. The fourth mechanism, ownership, complements the loss-aversion mechanism. Recent work demonstrates that citizens' sense of ownership over government budgets predicts willingness to punish leaders politically, and that direct taxation increases punishment in part by activating budget ownership (de la Cuesta et al. Forthcoming).

For these four mechanisms—bargaining, state capacity, loss aversion, and ownership—to operate, several preconditions must be met. First, and most importantly, citizens must be aware that they are paying a tax and see that money transferred to the government. If a tax is not visible, citizens are unlikely to come together to bargain with the government over compliance. Likewise, when a tax is invisible, citizens cannot use taxation to update their beliefs about state capacity. Further, the loss-aversion mechanism requires that citizens see and feel the loss from the tax payment, while the ownership mechanism necessitates that citizens are aware that their earned income has been transferred to the government. Thus, all else equal, less visible taxes should be unlikely to activate any of the four mechanisms.

Other necessary preconditions themselves require visibility. For example, for higher citizen political engagement to turn into improved governance, or for bargaining to succeed, citizens must typically overcome collective-action problems to put sufficient pressure on the government. While there is little existing evidence on how taxation affects collective action, highly visible taxes may be able to serve as rallying points for collective action, while less

visible ones are less likely to do so.³

This raises the question of which taxes are most visible and thus most likely to generate accountability dividends through citizen political action. Direct taxes are collected from the taxpayer by the government and are typically applied to a certain form of income or assets (i.e., wages or capital gains). Indirect taxes are levied on particular goods or services at the time of purchase, manufacture, or trade, and remitted to the government by the seller or producer (i.e., VAT and excise taxes). A common intuition is that indirect taxes are less visible, and “bite” less, than direct taxes (Moore 2004). For example, in describing interviews with American citizens about taxation, Williamson (2017) writes that those who do not pay income tax “are quick to downgrade their status to quasi-taxpayer, or deny being a taxpayer at all” (p. 51). Relatedly, the fiscal illusion literature argues that citizens fail to internalize the costs of indirect taxes, leading to higher than optimal government spending (Blumkin, Ruffle and Ganun 2012).

However, it is not clear that indirect taxes are invisible. Consumers are highly sensitive to the prices of critical goods like food and fuel and, historically, price increases have led to large-scale protests (Ballard-Rosa 2016). This implies that consumption taxes, especially for poorer consumers, may “bite” much as direct taxes do. Likewise, work in economics indicates that indirect taxes can be highly visible, especially when incorporated into a good’s shelf price (Chetty, Looney and Kroft 2009). More broadly, the introduction of VAT in several countries, including Ghana, has induced widespread protests and accountability demands from citizens (Prichard 2015). Prichard (2016) shows that competitive elections generate tax-depressing political budget cycles for both direct and indirect taxes, and Timmons (2005) finds that both direct and indirect taxes lead to policies favoring citizens hardest hit by the tax.

³Bargaining also requires the ability for citizens to evade a tax; this implies a conscious choice about tax payment and, thus, tax visibility.

We reconcile these apparently conflicting findings by introducing the idea of *acclimation*: tax visibility may change over time, and this may vary by tax modality. First, consider direct taxes. When a direct tax is introduced, or when rates increase, it is highly visible. Citizens' post-tax income goes down, activating the loss mechanism. Because direct taxes are paid straight to the government, this also activates the ownership mechanism. Bargaining may be spurred, and citizens can use information about the tax to update their beliefs about state capacity. Thus, we expect direct taxes to increase political accountability pressures at the time of introduction. This accords with existing evidence on direct taxes (Paler 2013; Martin 2016; Weigel 2020). Over time, we expect direct taxes to remain highly visible. Even when individuals pay an established income tax via withholding, annual income-tax returns ensure that tax burdens are clear. Likewise, the budget link remains apparent as taxes are remitted directly to the government. This should hold for income tax, and it should also apply to other direct taxes more common in developing countries (such as property or business taxes).

We posit that indirect taxes are also visible at the time of introduction. For example, introducing a VAT increases prices and noticeably decreases citizens' purchasing power, inducing a sense of loss. Media coverage may also make the link between higher prices and the budget clear, increasing ownership. In the short term, this can increase citizen political demands on government similar to direct taxes, and it can generate collective action around bargaining or other demands.

We argue that, in contrast to direct taxes, indirect taxes become less visible over time for three reasons. First, individuals adapt to the higher consumer prices under indirect taxes and adjust their expected post-consumption utility accordingly. This is similar to price shocks like inflation; they create temporary dissatisfaction, but consumers ultimately adjust. Governments may even assist this process by phasing in VAT rates (Prichard 2015), and governments can also mandate tax-inclusive shelf prices that effectively obfuscate the tax. Second, indirect taxes are paid to a merchant instead of directly to the government;

this obscures the connection between tax payments and government spending. Third, unlike direct taxes, indirect taxes are paid as part of a contemporaneous exchange for a good or service, and this may diminish a tax’s salience.

If citizens do acclimate to indirect taxes, this will mute taxation’s effect on demands for political accountability. Such hidden indirect taxes will likely fail to activate the loss-aversion mechanism. Because citizens do not see the tax transmitted to the government, it is also less likely that indirect taxes will increase budget ownership. There is some evidence that visibility affects political outcomes. [Finkelstein \(2009\)](#) demonstrates that E-ZPASS electronic toll collection, which lowers toll visibility, made US state politicians more willing to raise toll rates in election years. Moreover, consumers appear to systematically underestimate indirect tax rates ([Sausgruber and Tyran 2005](#); [Blumkin, Ruffle and Ganun 2012](#)).

Examples of indirect taxes leading to citizen protests typically focus on the introductory period ([Prichard 2015](#)). In the long run, we argue that citizens begin to view tax-inclusive prices as the “real” price of a good. They may be aware on some level that these prices include taxes, but the tax loses its salience. Meanwhile, direct taxes remain highly visible. We expect this to cause a divergence in which citizens who pay direct taxes demand more from government, but those who only pay indirect taxes do not.

2.1 Discussion and Hypotheses

Indirect and direct taxes differ in ways other than visibility. For example, contrary to direct taxes, indirect taxes typically involve some kind of *exchange*, in which a good or service is received at the same time as the tax payment; direct taxes typically have no such reciprocity built in. Indirect taxes are also typically paid with a high *frequency* but in smaller *increments*. A consumer may pay indirect taxes multiple times a day, while direct taxes are paid annually or at the most with each paycheck. Exchange, frequency, and small increments could all impact visibility, again making indirect taxes less visible. Each may also have independent effects on the taxation-accountability relationship. While it is outside

the scope of this paper to test these, we argue that these features will tend to reinforce the differences between direct and indirect taxes. The exchange element of indirect taxes may mitigate the losses of tax payment, as something of value is received in return. Paying small amounts frequently may also tend to minimize the losses felt from taxation or obscure the true amount contributed to the budget.

Our theory therefore predicts that indirect taxes will be less visible than direct taxes and that this will reduce the political accountability dividends of indirect taxation. To test this, we consider three implications of our theory. First, we expect that visibility affects accountability demands:

Hypothesis 1: Greater visibility increases the degree to which paying a tax makes citizens more likely to demand political accountability from leaders.

This is predicted by all of the theoretical mechanisms linking taxation and accountability. We test two implications of H1. First, if we hold tax type constant and manipulate its visibility, then the same tax will have a smaller impact on citizens' willingness to punish poor leader performance when it is less visible. Second, when two different types of taxes are equally visible, they will impact citizens' accountability demands similarly.

Testing H1 necessitates finding or creating exogenous variation in tax visibility while holding constant other aspects of taxation and taxpayers. To do so, we use laboratory experiments conducted in Uganda. These experiments allow us to clearly separate tax modality from tax visibility, and they enable causal inferences regarding how visibility affects citizens' accountability demands. Due to the structure of the lab setting, we test H1 in the context of a simulated, newly introduced tax.

The lab experiments also allow us to test the causal mechanisms underlying the effect of visibility. While our theory predicts that visibility can affect all four mechanisms (bargaining, state capacity, loss, and ownership) we focus on those that are feasible to study in the lab setting: loss and ownership. We predict that visibility will affect the losses from paying a tax and the degree to which paying a tax increases individuals' ownership over a

budget. The discussion section considers whether the inability to test the state capacity and bargaining mechanisms in the lab is a threat to inference. Next, our acclimation hypothesis argues that established indirect taxes have low visibility:

Hypothesis 2: Established indirect taxes are not visible to citizens.

We test this using a survey experiment and observational data from a nationally representative survey of Ugandan citizens. Hypotheses 1 and 2 were pre-registered. Our final hypothesis was not pre-registered but follows closely from our theory. If visibility affects taxation’s accountability dividends, and indirect taxes are less visible, then we should expect the degree to which a government relies on direct or indirect taxes to predict aggregate levels of political accountability:

Hypothesis 3: A country’s reliance on direct taxation will be more positively correlated with accountability than its reliance on indirect taxation.

We test this final hypothesis using country-level panel data on taxation and accountability.

3 Effects of Tax Visibility in Lab Experiments

We argue that indirect taxes are less visible and that this reduces their effect on citizens’ willingness to hold politicians accountable. This, in turn, reduces politicians’ incentives to act in accordance with citizen demands. This section tests the first part of this link: that we expect visible taxes to induce higher accountability demands from citizens, while less visible taxes will not. Testing this theory requires not only finding exogenous variation in taxation, but it also necessitates isolating visibility from other characteristics of different taxes. As this is extremely difficult to manipulate in the real world, we use lab experiments, conducted in Uganda, to test how a tax’s visibility affects the extent to which tax payments increase citizens’ willingness to punish low transfers from leaders (H1) and the mechanisms underlying any effect of visibility. The lab allows us to isolate tax visibility from other potential differences between direct and indirect taxes, precisely measure how visibility affects the loss and ownership mechanisms, and document expressive benefits to

punishment.⁴ Experimental protocols and tests were pre-registered with EGAP prior to data collection.

Our experiments, based on those developed in Martin (2016), model a strategic interaction between a single Citizen and a Leader.⁵ In all treatments the Leader receives a “group fund” to allocate between herself and the Citizen. The Citizen simultaneously decides, for each feasible allocation decision, whether he would wish to pay a portion of his wages to punish the Leader with a fine (no one receives any money lost in punishment). We designed four treatments to vary both the source of the group fund and the visibility of any tax. Table 1 reports the stages of each experimental treatment. All treatments included a “purchasing” stage, described below, that allows us to simulate indirect taxation. Note that the three tax treatments are designed to model taxation at the time of introduction and do not test acclimation.

In the baseline “Windfall” condition, the Citizen earns an endowment of 1,000 Ugandan Shillings (UGX), then uses 500 UGX to buy a real consumer item of their choice. Respondents kept these goods at the end of the experiment.⁶ The Leader then received the 1,000 UGX group fund, which was described as a windfall.⁷ Decision-making then took place. If the Citizen chose to punish the leader politically, he paid 100 UGX, and the Leader

⁴We do not test here whether taxation, and tax visibility, also affect other preconditions of accountability such as collective action. We view this section as testing a necessary precondition for any increases in successful citizen action.

⁵Both roles are played by ordinary citizens.

⁶Available goods were rice, soap, cooking oil, candles, and maize meal. Piloting confirmed that most respondents knew that each good’s real-world shop price was 500 UGX.

⁷The Windfall condition combines three randomly-assigned treatments that describe the group fund as foreign aid, oil revenues, or unspecified. These are pooled for analysis; see Appendix A for more detail.

lost 400 UGX.

In the Direct Tax condition, the Citizen earned a 1,500 UGX endowment, then purchased a good for 500 UGX. He then paid a direct tax of 500 UGX: this was doubled and given to the Leader as the group fund. The tax was highly visible—respondents physically handed over coins representing the tax, and they saw it doubled and transferred to a tile representing the Leader. The rest of the game is identical to the Windfall condition.

In the “Visible VAT” condition, Citizens earned a 1,500 UGX endowment. They were told that the government has implemented a new tax, and the price of each good is now 1,000 UGX: 500 UGX for the good itself and a 500 UGX tax. The Citizen then paid 1,000 UGX for a good and saw the 500 UGX tax taken from the “shop,” doubled to 1,000 UGX, and given to the Leader. Decision-making then took place. By making the indirect tax highly visible, we can test whether, controlling for visibility, direct and indirect taxes produce different political accountability pressures from citizens; this is a key implication of Hypothesis 1.

The “Hidden VAT” condition differs only in the visibility of the tax. In the Visible VAT and Direct Tax conditions the tax and its amount are explicitly discussed in a group training prior to enumeration. During gameplay the group fund is explicitly labeled as taxes, and citizens see their tax transferred to the Leader. In Hidden VAT, the Citizen is told in the group training that “the Government has decided to introduce a tax on goods, similar to VAT, so now the goods cost 1,000.” During Hidden VAT gameplay, Citizens pay the taxed price for goods, but they are not reminded of the tax. Likewise, they are not explicitly reminded that the group fund comes from the tax; it is simply referred to as the “group fund.” As the Hidden VAT condition reduces tax visibility, we can compare citizen behavior in the Visible and Hidden VAT conditions to test whether visibility affects political punishment, controlling for the type of tax.

The four treatments differ only in the framing effect induced by each treatment. At the time that the Citizen and Leader make their strategic decisions, the Citizen always

Direct Tax	VAT (Hidden and Visible)	Windfall
Citizen gets wage of 1,500 UGX.	Citizen gets wage of 1,500 UGX.	Citizen gets wage of 1,000 UGX.
Citizen pays 500 UGX for a small item.	Citizen pays 1,000 UGX for a small item.	Citizen pays 500 UGX for a small item.
Citizen pays 500 UGX direct tax, which is doubled and given to Leader as group fund.	Of the 1,000 paid for the good, 500 UGX in tax is taken, doubled, and given to the Leader as group fund.	Leader gets group fund of 1,000 UGX.
Leader decides how to allocate the 1,000 UGX group fund.		
Citizen decides whether to pay 100 UGX to fine the Leader 400 UGX.		

Table 1: Timing of Lab Experiments

has 500 UGX plus the purchased item, and the Leader has the 1,000 UGX group fund. The game was implemented as five single-shot rounds: absent expressive benefits for political punishment, the unique subgame-perfect Nash equilibrium is for the Leader to offer 0 UGX to the Citizen, who never punishes. This allows us to test how visibility and tax type affect expressive benefits of punishment.

The lab setting allows us to control for the alternative mechanisms discussed in the theory section that could differentiate direct and indirect taxation. To control for tax structure, in all tax conditions the tax is 33% of the Citizen’s endowment, is paid exactly once, and is mandatory.⁸ This rules out the possibility that treatment effects are caused by differing frequency of taxes, or by the size of the tax payment. Second, the Visible and Hidden VAT treatments hold constant whether a good is received in return at the time of the tax payment. If citizen punishment differs across these conditions, it cannot therefore be due to a difference in the exchange mechanism.

3.1 Lab Experiment Implementation

We chose to run the lab experiments in Uganda, as it is well-suited to comparing the differential political effects of indirect and direct taxation. Its per-capita GDP and other development indicators are at or near the mean for the continent (World Bank, 2016). Almost all citizens pay value-added and excise taxes, and direct taxation has played a key role in several recent elections (Persson and Rothstein 2015). We conducted 72 sessions of 16 respondents each in Kampala, Uganda using local volunteers.⁹ Each session was randomly assigned to a treatment. After a group training, respondents met individually with enumerators to answer questions, were told whether they were a Citizen or Leader, then played

⁸This is comparable to average taxes paid in the OECD, including personal income tax and social security contributions (OECD 2020).

⁹See Appendix A for additional sampling information.

five rounds of the treatment, changing pairings between rounds to maintain the single-shot nature of the experiment.¹⁰ All pairings were anonymous, and the single-shot nature of each round was stressed between rounds.¹¹

Source treatments were repeatedly reinforced in the enumerator scripts and on game boards used during enumeration (with the exception of the Hidden VAT condition, as described above).¹² To increase realism, enumeration used real 100 UGX coins, and respondents earned each round’s endowment through an effort task. The protocols also stressed the political nature of the game by linking each game component to the desired practical concept. The money the Leader keeps was described as “her own personal salary,” while the Citizen transfer was described as “money that politicians send to a community for development or other services that benefit the people living there.”¹³ Punishment was described as similar to protesting or voting—it imposes political costs on a leader but is also costly for citizens. Subjects understood the mapping of the game to practical politics and quickly made connections between the experiment’s dynamics and the on-the-ground political reality in their communities as demonstrated in their common remarks to enumerators.

Pre-specified manipulation tests provide evidence that our treatments affected tax visibility in the desired manner. Post-treatment, 68.6% of respondents could correctly iden-

¹⁰Each session had 12 Citizens and 4 Leaders. Respondents were only told that roles and pairings were randomly assigned, and that in each round they played with a different person than the previous round. To avoid deception, each Leader played with 3 citizens in each round. All punishment decisions were communicated to the Leader. One pairing was randomly chosen for the Leader’s payout, making all pairings payoff-relevant in expectation.

¹¹84.8% respondents reported believing they never played with the same leader twice.

¹²See Appendix A for sample materials. Full protocols available on request.

¹³This framing succeeded: on a debrief question, 85% of subjects answered that it went “to cover the leader’s living expenses.”

tify the source of the group fund in the Visible VAT condition compared to 29.8% in the Hidden VAT condition. While it may seem strange to view such low pass rates as evidence that a treatment worked, we argue that “failing the manipulation check” is what happens fundamentally to real-world taxpayers when a tax is not visible.¹⁴

3.2 Lab Experiment Measurement

To test Hypothesis 1, our dependent variable is a Citizen’s punishment threshold in each round, defined as the smallest transfer made by the Leader at which the Citizen does not punish. For example, if a Citizen would punish the Leader for transfers of 0-300 UGX, but not 400 UGX, the punishment threshold is 400 UGX.¹⁵ Thus, a higher punishment threshold indicates that a Citizen is demanding more from a Leader. Hypothesis 1 predicts higher punishment thresholds for more visible taxes.

Our experiments also included instruments to measure two of our proposed mechanisms: that tax visibility should affect the degree of perceived losses from a tax payment and the degree of ownership citizens feel over the budget. To measure ownership, following the final round we asked respondents how strongly, on a zero-to-ten scale, they agreed with the statement “I feel strong ownership over the group fund.” We expect to find lower group-fund ownership for less visible taxes, and higher ownership for more visible taxes. *de la Cuesta et al. (Forthcoming)* shows that ownership is causally related to punishment and political action.

To measure loss, during each round, Citizens were shown a ladder with 21 rungs, where 0 represented someone “not at all happy/well off” and 20 represented someone “very happy/well off.” At the start of each round, Citizens were anchored at rung 10. We then asked Citizens to update their position on the ladder following the purchasing decision but

¹⁴In the Direct tax condition 99% of subjects correctly identified the source of the group fund.

¹⁵As Leaders do not punish, their behavior is not analyzed.

before the group fund has been created, any direct taxes paid, or any indirect taxes transferred to the leader.¹⁶ This allows us to isolate how each treatment affects subjective utility from purchasing. Ladder values above 10 indicate utility increased from purchasing, whereas values below 10 indicate a loss from purchasing. We expect to see utility losses in the two VAT conditions, where prices exceed the market price, and either no effect or a gain in the Windfall and Direct Tax conditions. Hypothesis 1 predicts smaller losses in the Hidden VAT condition relative to the Visible VAT condition.

3.3 Lab Results: Visibility affects punishment

This section tests two implications of Hypothesis 1. First, if visibility drives taxation’s accountability dividends, we should see higher punishment thresholds in the Visible VAT, compared to Hidden VAT, condition. Second, if visibility is the primary driver of accountability pressures, then two taxes that are both highly visible will have similar impacts on citizens’ punishment behavior. Thus, we expect the Direct Tax and Visible VAT treatments to have similar and positive effects on citizens’ punishment thresholds, relative to the Windfall conditions. If this is not the case, then factors other than visibility may be driving any differences between direct and indirect taxes.

Table 2 shows the results of the lab experiments.¹⁷ Column 1 of Table 2 shows the results of OLS models that include subject covariates, the Leader transfer from the previous round, and fixed effects for each enumerator, each round and the item purchased that round; standard errors are clustered by subject.¹⁸

¹⁶See Appendix A for more details.

¹⁷Appendix Figure A.3 reflects the delineated by-treatment means/average ladder utility values and 95% confidence intervals for these experiments

¹⁸Specification was pre-registered. Results robust to alternative specifications (see Appendix A). Covariates are gender, age, education, poverty, and an index of local public goods.

	<i>Dependent Variable</i>		
	Threshold	Ownership	Ladder Position
Visible VAT - Hidden VAT	27.46** (10.70)	0.34* (0.19)	-0.44* (0.23)
Visible VAT - Direct Tax	12.44 (11.11)	0.03 (0.19)	
Hidden VAT - Windfall	28.18** (10.90)		
Round FE	✓	N/A	✓
Item FE	✓	N/A	✓
Covariates	✓	✓	✓
N	4150	829	4150

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 2: Treatment Effects on Punishment, Ownership, and Ladder Position. Greater indirect tax visibility increases subjects’ punishment thresholds, sense of budget ownership, and feelings of loss from purchasing (Row 1). Equally visible indirect and direct taxes generate equivalent accountability pressures (Row 2). Columns 1 and 3 use subject-round data with subject-clustered (CR2) standard errors; Column 2 uses subject-level data with robust (HC3) standard errors. Total sample size includes all treatment conditions. Appendix B reports additional comparisons.

As predicted by H1, punishment thresholds are higher in the Visible VAT condition than the Hidden VAT condition. Making the VAT more visible led to a roughly 27.5 UGX average increase in the amount citizens demanded from the leader ($p = 0.011$): increasing visibility increases citizens’ willingness to punish low transfers. In contrast, the two visible tax conditions—Direct Tax and Visible VAT—have similar average punishment thresholds. This supports H1’s second implication: that equally visible taxes should produce similar accountability pressures. As expected, the Windfall conditions produce the lowest average thresholds; even low-visibility taxes produce higher willingness to punish than windfall revenues do. Together, these results support our prediction that a tax’s visibility will drive the extent to which it increases citizens’ willingness to punish leaders.¹⁹

¹⁹All three tax conditions have significantly higher punishment thresholds than the Windfall group. See Appendix A.

3.4 Lab Results: Tax Visibility Affects Ownership and Loss

Our theory predicted that tax visibility would affect political punishment by affecting the ownership and loss mechanisms. If citizens do not see the tax or its transfer to the government, it may limit the extent to which taxation increases budget ownership. Citizens may also not fully feel a loss from paying a less-visible tax. We test these implications for the two measures described above. We expect higher group-fund ownership for more visible taxes. We expect purchasing to induce utility losses in both VAT conditions, but larger losses when the tax is more visible.

Column 2 of Table 2, using a similar OLS model to Column 1, shows that group-fund ownership is 0.343 points higher in the Visible VAT condition compared to the Hidden VAT condition ($p = 0.07$).²⁰ However, when we compare the equally visible Direct Tax and Visible VAT conditions, the coefficient is close to zero: equally visible taxes produce similar ownership levels.²¹ Together, these results suggest that reducing a tax's visibility mutes its impact on citizens' budget ownership, reducing willingness to punish low transfers.

In both VAT treatments, utility decreased after purchasing the taxed good, relative to the pre-purchase anchor of 10.²² Column 3 of Table 2 shows that, as predicted, these losses are 0.44 points larger in the Visible VAT condition ($p = 0.064$), a striking 14% increase in loss from making the same tax more visible. The ladder results imply that citizens interpret the exact same monetary loss differently depending on whether the higher price is visibly caused by a tax. Additional ladder measurements (Appendix Table A.4) provide evidence

²⁰The difference is significant at the 5% level if we use the pooled Visible VAT and Direct Tax conditions as a reference category.

²¹Appendix A shows that ownership in the Visible VAT and Direct Tax conditions is significantly higher than in the Windfall condition, while ownership in Hidden VAT is not.

²²The Direct Tax and Windfall conditions are omitted because respondents bought an untaxed good and thus ladder values are not comparable. See Appendix A.

that larger losses subsequently lead to larger expressive utility gains from punishment.

4 Survey Data: Indirect Taxes Are Less Visible

The lab experiments show that tax visibility affects citizens' willingness to punish and that visibility affects the loss and ownership mechanisms. However, these results are best interpreted as modeling a new tax at the time of introduction. Our acclimation theory predicts that, over time, indirect taxes become less visible as citizens adapt to tax-inclusive prices (H2). This section tests two implications of H2. First, H2 implies that citizens should not feel a loss from paying a long-established indirect tax. However, reminding them how indirect taxation affects purchasing power should induce a sense of loss, lowering utility gains from a purchase. If indirect taxes are indeed visible, reminding citizens of such taxes should not affect utility from purchasing. Second, H2 implies citizens will have better information about direct, relative to indirect, tax burdens, as direct taxes are more visible.

To test whether paying established indirect taxes induces losses, we use a survey experiment embedded in a 2018 national survey of Ugandan citizens.²³ Respondents first completed a brief effort task to earn 2,600 UGX, then chose to purchase either a bar of soap or an airtime voucher for the actual market price for the good in that locale, typically 500-700 UGX.²⁴ Respondents were randomly assigned to one of three possible treatment conditions: Control, Hidden Tax, or Visible Tax. All groups were told “This is [ITEM] that costs [FINAL PRICE] Sh.” The Hidden Tax group was reminded that the price included taxes, but not told the amount of the tax. The Visible Tax group was told that “If there were no taxes on [ITEM], it would cost [BASE PRICE]—you could buy it and have [REMAINDER] Sh left over. But, because there is [TAX] the total cost of the [ITEM] is [FINAL PRICE] Sh.” This made the tax highly visible. For each item, we used the actual taxes levied on that good in

²³See Appendices B and D for full survey details.

²⁴51.7% paid 500 UGX and 48.2% paid 600 UGX.

Uganda: 18% VAT for both goods, plus a 12% excise tax for airtime.

Our outcome measure is a 21-rung utility ladder like that used in the lab experiments. Respondents were anchored at rung 10 prior to purchasing, then updated their ladder position post-purchasing. As soap and airtime are valued goods, we expect the control group to gain utility from purchasing, reflected by ladder values greater than 10. If indirect taxes are visible, neither treatment should affect post-consumption utility. If indirect taxes are not visible, we expect the reminder in the Hidden VAT and Visible VAT conditions to lower average post-purchase utility; this effect should be significantly larger in the Visible VAT condition.

Figure 2 plots the average ladder values and confidence intervals in each condition, pooled and by item purchased. The vertical line indicates the pre-purchase anchor. Control-group respondents have average ladder values of 10.8, slightly in the realm of gains. In the Hidden Tax condition this drops to 9.76 on average; simply reminding respondents of taxes wipes out *all* gains from purchasing. Average ladder values in Visible Tax drop to 7.58; reminding respondents of the specific taxes they pay puts them in the realm of losses. This loss is more pronounced in the airtime condition, where taxes are higher than in the soap condition. These results support H2, showing that a simple reminder increases the losses from tax payments.

The second implication of H2 is that citizens should have better information about the direct taxes they pay, relative to indirect. To test this our survey included a module that measured respondents' perceived tax burdens. Respondents were asked how much of their household income they thought they paid in taxes, then asked to list which taxes that encompassed. Finally, respondents were asked how much they thought they paid for each tax listed, and (on a 10-point scale) how certain they were about that amount (See Appendix C for additional details.) Our main outcome is the perceived certainty regarding tax burdens; we expect more uncertainty surrounding indirect taxation.

Panel A of Figure 3 shows that few citizens report paying direct taxes, while a

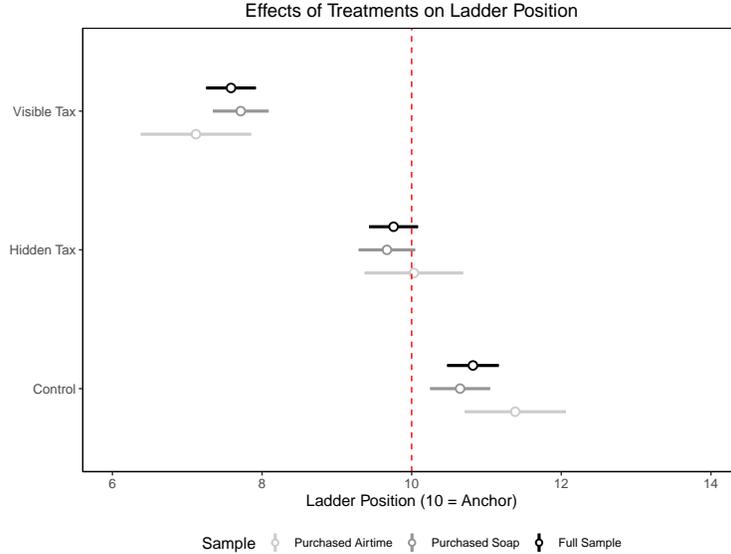


Figure 2: Effect of Visibility on Subject Utility. Dots show post-purchase utility ladder values by treatment group. Reminding subjects that prices include tax moderately decreases utility (Hidden Tax), while giving subjects the exact tax amount has a larger effect (Visible Tax). The results hold for both soap and airtime.

majority report paying at least one indirect tax. However, as almost all citizens pay both VAT and excise taxes, this means that indirect taxes are heavily under-reported. Panel B reports the results of the certainty module. If direct taxes are more visible than indirect taxes, we should expect that respondents will be more certain about the amount of direct taxes they pay. This is indeed what we find: average certainty is far lower for VAT and excise taxes than the three direct taxes. Appendix B shows that the results are similar if we limit the sample to only those who reported paying at least one direct tax; lower certainty is not being driven by different samples paying direct and indirect taxes. Thus, both observational and experimental data demonstrate that direct taxes are more visible to Ugandans than indirect taxes.

5 Direct and Indirect Taxation Have Different Country-level Accountability Effects

Thus far we have shown that established indirect taxes are not typically visible and that less-visible taxes produce lower accountability demands from citizens. Hypothesis 3 predicts that, if direct and indirect taxes have different effects on citizens' accountability

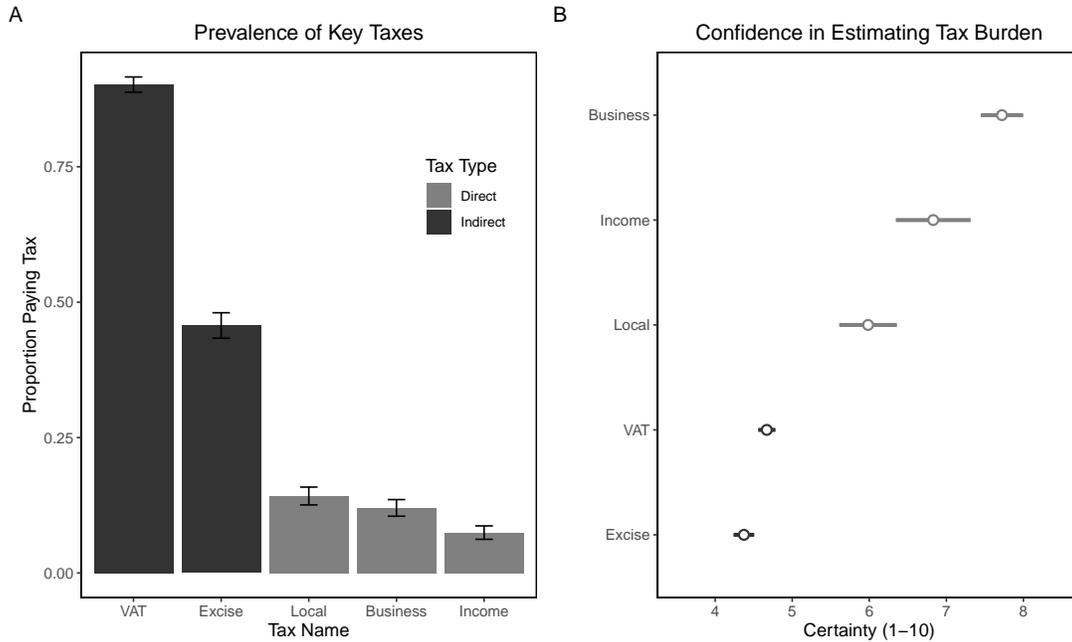


Figure 3: Tax Prevalence and Certainty for Most Common Taxes. Panel A shows the proportion of the sample that reports paying common direct (gray) and indirect (black) taxes. Panel B shows how confident respondents were in reporting the amount paid for each tax. As expected, the two indirect taxes are least visible.

demands, then this should be reflected in the degree to which overall levels of direct and indirect taxation in a country are correlated with measures of accountability. This section tests this prediction using a panel dataset of 194 countries from 1980 to 2018 in an effort to address the external validity of our analysis.

This hypothesis is challenging to test. First, it is not clear what the temporal sequencing of any effect should be. In the simplest model, an increase in direct taxation leads to a subsequent increase in accountability. However, governments may also pre-emptively make institutional or policy changes in order to win citizen assent for a tax change; in this case accountability will change before and not after taxation changes. Second, our theory predicts that changes in tax rates on the mass population should drive changes in accountability pressures. Because such a measure does not exist for a reasonable panel of countries, we instead rely on a proxy measure: direct or indirect taxes as a percent of GDP. While changes in this measure could reflect changes in mass taxation, direct taxes could

be affected by changes on the tax burden of a small group of elites, and indirect taxes by excise taxes on luxury goods which few citizens pay. In these cases we would expect few accountability dividends when tax/GDP ratios change.

On average, these challenges will make it more difficult to detect any effect of taxation on accountability. For this reason we focus on a simpler implication of H3: to the extent that changes to direct and indirect taxation affect citizens in general, the effect of changes in direct taxation should be more positive (less negative) than changes to indirect taxation. That is, we should not see that direct and indirect taxes have the same effects. Further, because variation in the types of taxes a country relies on is not exogenous, we do not treat this analysis as causal, instead using it to provide suggestive evidence on whether direct and indirect taxes have systematically different correlations with measures of accountability.

Our main independent variables are the tax-to-GDP ratios for direct or indirect taxes in each country-year (on a 0-to-100 scale), taken from the ICTD's Government Revenue Dataset (GRD). To measure accountability, we considered 10 measures in the Varieties of Democracy (VDEM) database that had good geographic coverage for at least 25 years. We then selected two that were 1) good proxies for accountability and 2) plausibly responsive to changes in citizens' demands. First, we use the Varieties of Democracy (VDEM) vertical accountability index, which "captures the extent to which citizens have the power to hold the government accountable." It includes "formal political participation on part of the citizens — such as being able to freely organize in political parties — and participate in free and fair elections, including for the chief executive."²⁵

To complement the accountability index, we use VDEM's corruption severity index. This index includes executive, judicial, and legislative corruption and was rescaled to run from 0 (most corrupt) to 100 (least corrupt). While corruption levels do not directly mea-

²⁵We deliberately avoided direct measures of citizen punishment, as they will not pick up cases where government preemptively improves its behavior in order to avoid punishment.

sure demands for accountability, they do measure whether government is meeting citizens’ demands for good governance. Corruption directly inhibits governments’ ability to implement citizens’ preferred policies, and it is a critical election issue in many countries. If direct and indirect taxes have different effects on accountability demands, this may lead to lower corruption levels among countries who rely on direct taxes, while indirect tax reliance will have little effect. Appendix C discusses all measures in more detail, including the alternative independent variables considered.

As this analysis was not pre-registered, and as there are many plausible specifications, we avoid picking a single regression model for each dependent variable. Instead, we run a modified version of the extreme bounds analysis used by [Sala-i Martin \(1997\)](#). We first specified a baseline model of the effect of taxation on our outcomes that included our independent variables—the tax/GDP ratios for direct and indirect taxes—as well as 11 “core” control covariates whose absence would clearly bias a model of taxation and accountability.²⁶ We then randomly draw between 1 and 5 additional covariates from a set of 15 plausible auxiliary variables.²⁷ This process yields 4,943 possible specifications for each dependent variable. The use of a set of core controls removes many specifications that would omit obvious confounders, improving internal validity. Each model is of the following form:

$$\text{Accountability}_{i,t+1} = \alpha_i + \delta_t + \beta \text{RelianceIndirect}_{it} + \gamma \text{RelianceDirect}_{it} + \boldsymbol{\eta} \mathbf{X}_{it} + \epsilon_t$$

²⁶Total revenue raised as a % of GDP, non-tax revenues as a % of GDP, an indicator for civil war, GDP growth, inflation, an indicator for legislative or constituent assembly elections, log GNI per capita, log population, an indicator for presidential elections, and a three-category regime type measure (autocracy, anocracy or democracy) based on Polity IV. See Appendix C for additional details and aggregation of estimates.

²⁷Drawing more than 5 additional variables resulted in unacceptably high levels of missingness.

where RelianceIndirect and RelianceDirect are country i 's indirect and direct taxes in time t as a proportion of GDP. The subscripts on α and δ denote country and year fixed-effects. Finally, \mathbf{X}_{it} is comprised of a set of core covariates and the basket of theoretically plausible auxiliary covariates discussed above. The model's identifying variation comes from over-time, within-country variation in accountability and corruption that is unrelated to temporal shocks or the included time-varying covariates. Standard errors are clustered by year to account for changes in model fit that could occur due to dynamic changes in the underlying data-generating process.

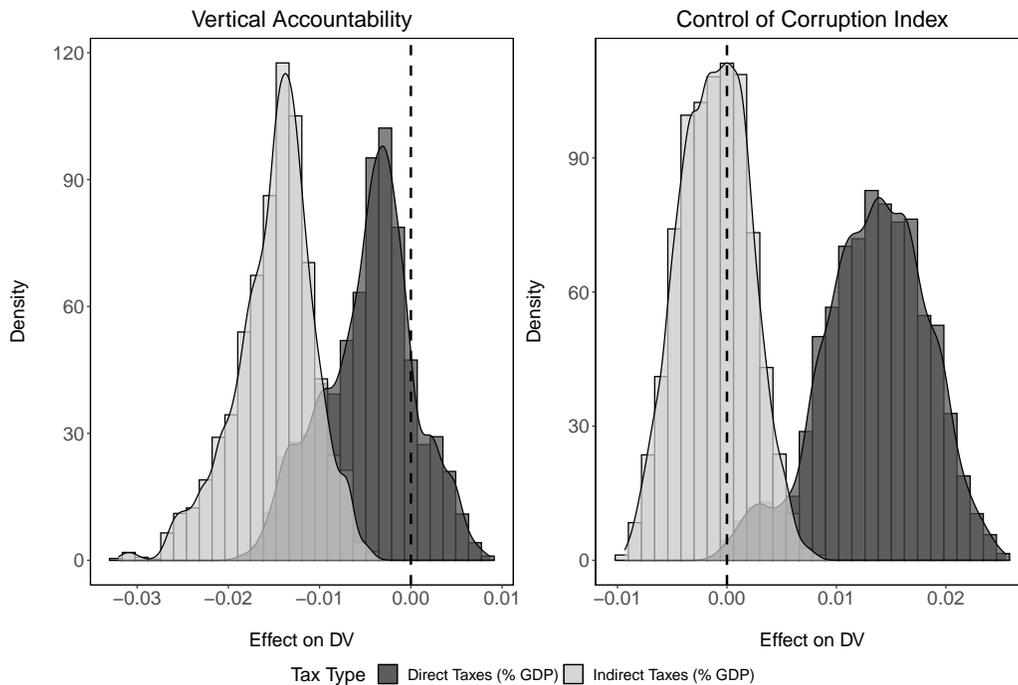


Figure 4: Coefficient Distribution for Direct and Indirect Taxes on Vertical Accountability and Corruption. Each histogram plots the coefficient estimates of direct and indirect taxation from 4,943 models. In both graphs, the distributions of coefficients are clearly distinct, with direct taxation having a more positive effect on accountability than indirect taxation.

The quantity of interest is the distribution of beta coefficients for RelianceIndirect and RelianceDirect . H3 proposes that the effect of RelianceDirect on the accountability and corruption measures should be consistently “better” than the effect of RelianceIndirect , although as discussed above we do not necessarily expect direct taxation to have a strictly positive effect. Figure 4 plots the kernel-smoothed densities of these coefficient distributions

for each dependent variable. As expected, the distributions are visibly different in both cases. For the Accountability measure, an increase in direct taxation is associated with no change in accountability, while indirect taxation is associated with lower accountability. For the corruption measure, direct taxation is associated with lower corruption in almost all models, while the effects of indirect taxation are mostly null and centered close to zero. Critically, in both graphs the distribution of coefficients for each tax type is significantly different, with direct tax reliance predicting higher values of accountability than indirect taxes. A Kolmogorov-Smirnov test rejects the null hypothesis that the two distributions in each panel are the same ($p \approx 0$). Additionally, all models pass the modified Durbin-Watson test for AR(1) autocorrelation in unbalanced panels proposed by Baltagi and Wu (1999).

Appendix C reports four sets of robustness tests. First, our results hold for three different configurations of fixed effects and time trends. Second, we find similar effects for alternative dependent variables, including VDEM's measures of patrimonial behavior by elected officials, horizontal accountability, diagonal accountability, and a general accountability index. Third, in line with the discussion above regarding the uncertain sequencing of changes in the independent and dependent variables, we ran specifications using a 5-year moving average for the independent and dependent variables and find very similar results. Finally, our results are robust to a more sophisticated approach in which we weight coefficients by the product of their models' R^2 and the proportion of non-missing data after listwise deletion. Combined, our findings indicate significant differences in the political effects of indirect and direct taxes, consistent with our theory.

6 Discussion

The lab, survey, and cross-national results provide support for all three of our main hypotheses. In support of H1, the laboratory results show that taxation's effect on citizens' willingness to punish political leaders is contingent on a tax's visibility: two equally visible taxes induce citizens to demand similarly high transfers compared to untaxed citizens, while

a less visible tax has a significantly smaller effect. We also find evidence that visibility affects two of the key mechanisms linking taxation and accountability. Making an indirect tax less visible muted ownership over the group fund and generated smaller utility losses from paying the higher price. In a survey experiment we also demonstrate, consistent with H2, that long-established taxes are not visible to Ugandan citizens, and that making the tax more visible increases subjective utility losses from tax payments. Citizens also have better knowledge of the direct taxes they pay, relative to indirect taxes. Finally, in support of H3 our cross-national analysis shows that direct and indirect taxes have consistently different effects on country-level measures of political accountability and corruption. This section examines possible challenges to our results.

One potential concern is that direct and indirect taxes differ in many ways other than visibility, and some of these differences could account for differential accountability pressures by tax modality. In the theory section, we discussed three possible alternatives: the degree to which paying a tax involves receiving something in return at the time of payment (exchange), the frequency with which the tax is paid, and the size of the tax increment. Our lab experiments are able to separate the visibility and exchange mechanisms by comparing punishment in the Hidden and Visible VAT conditions, which both involve an exchange and only vary visibility. The lab experiments also hold the frequency of payment, and the size of the tax increment, constant across all three tax conditions, and thus our treatment effects cannot be due to these mechanisms.

An additional potential difference is the degree to which paying a tax is voluntary. Direct taxes are involuntary in that anyone who is part of the targeted income or tax base must pay it. Indirect taxes are technically voluntary in that an individual can choose to not pay a tax by avoiding taxed purchases. While avoiding all taxed consumer goods would be difficult, individuals may still feel that they have more choice about the amount of indirect tax they pay. This could decrease accountability pressures if it decreases the losses citizens feel from paying taxes. Yet there is little evidence that citizens feel that indirect taxes are

voluntary in any meaningful sense. Indirect taxes are often levied on staple goods, such as household items and food, that all but the wealthiest consumers simply cannot avoid. Anecdotally, voluntariness does not seem sufficient to reduce demands: Uganda’s recent taxes on mobile money transfers and social media use are both “voluntary” but their introduction (consistent with our acclimation theory) generated significant citizen discontent.

Another concern is that our lab experiments can only test the ownership and loss mechanisms, not the tax bargaining and state capacity mechanisms. If bargaining is more likely for indirect taxes, or indirect taxes send a signal of higher state capacity, this could undermine our results. We expect the opposite: that both mechanisms will strengthen the effects of visibility. Tax bargaining typically relies on citizens’ ability to withhold tax payments, forcing tax-reliant leaders to grant policy or institutional concessions in return for quasi-voluntary tax compliance (Bates and Lien 1985; Levi 1989; North and Weingast 1989). As tax evasion implies that a tax is sufficiently visible that citizens can non-comply, we expect less visible, indirect taxes to be less subject to tax bargaining. Similarly, for a tax to send a signal about state capacity (Weigel 2020), it must be visible. Indirect taxes also typically require lower state capacity than many direct taxes, limiting whether they can signal high-capacity states.

7 Conclusion

Over the past forty years, indirect taxes have expanded relative to direct, especially as taxes on trade have declined (Bastiaens and Rudra 2018). We argue that this has significant implications for whether taxation will continue to generate accountability dividends and promote democracy as it has in the past. In particular, existing work suggesting that taxation increases citizen engagement has focused on direct taxes. This paper presented a theory linking tax visibility to the extent to which taxation will increase citizens’ demands for accountability. Lab experiments in Uganda showed that lowering a tax’s visibility limits the extent to which it can activate loss aversion and budget ownership, and lower visibility

also reduces the effect of taxation on citizens' willingness to politically punish low transfers from leaders. Survey data from Uganda shows that citizens have a high degree of uncertainty about the indirect taxes they pay, relative to direct taxes, and that priming citizens on indirect taxation decreases utility from purchasing. More generally, direct and indirect taxes appear to have different effects on country-level measures of accountability.

Together, our evidence suggests that the political accountability dividends of taxation may be limited for indirect taxes. When a VAT or other indirect tax is first introduced, it is highly visible and may lead to protests or citizen demands. This is consistent with the case studies in Prichard (2015), and it accords with recent events in Uganda: the introduction of taxes on mobile money and social media initially induced citizen uproar. However, in the long run citizens acclimate to the new tax. Indirect taxes become less visible, and while citizens may be aware those taxes exist, they are not salient in day-to-day life.

These findings are especially important given recent trends in taxation. Direct tax rates have remained relatively constant, while indirect taxes have increased significantly. In part this may be because, especially in low-capacity states, indirect taxes are often easier to collect. However, our paper suggests that governments who wish to avoid accountability pressures may also have strategic reasons for focusing on indirect taxes. This threatens to weaken the long-standing link between taxation and good governance, raising questions about whether international actors should continue to promote the use of indirect taxes; their negative political effects on democracy may outweigh their economic benefits (Seelkopf and Bastiaens 2020).

These results suggest several avenues for future research. While we focus on the general differences in visibility between direct and indirect taxes, some direct taxes may be relatively less visible, especially those paid via paycheck withholding, while some indirect taxes may be much more visible. Second, while we show that visibility is an important aspect of taxation, taxes differ in other ways discussed above, including frequency of payment and the type of exchange. More work is needed to examine how these other potential mechanisms

affect the taxation-accountability relationship.

Few matters in public life are more central to politics and accountability than how governments extract money from their citizens to pay for public goods and services. Historically, the particulars of tax policy have driven the evolution of democracy and the accountability mechanisms enabling citizens to demand responsiveness from leaders. The changing forms of taxation in the modern world—and the especially the increasing dominance of indirect taxes over direct taxation—may necessarily alter this fundamental citizen-government connection. The research reported here suggests the need for much more attention to how the mode of taxation drives political accountability demands and thus affects democracy.

References

- Ballard-Rosa, Cameron. 2016. “Hungry for change: Urban bias and autocratic sovereign default.” *International Organization* 70(2):313–346.
- Baltagi, Badi and Ping Wu. 1999. “Unequally Spaced Panel Data Regressions with AR(1) Disturbances.” *Econometric Theory* 15(6):814–823.
- Baskaran, Thushyanthan and Arne Bigsten. 2013. “Fiscal capacity and the quality of government in sub-Saharan Africa.” *World Development* 45:92–107.
- Bastiaens, Ida and Nita Rudra. 2018. *Democracies in Peril: Taxation and Redistribution in Globalizing Economies*. Cambridge: Cambridge University Press.
- Bates, Robert and Da-hsiang Donald Lien. 1985. “Taxation , Development , Representative Government.” *Politics and Society* 14(1):53–70.
- Blumkin, Tomer, Bradley J Ruffle and Yosef Ganun. 2012. “Are income and consumption taxes ever really equivalent? Evidence from a real-effort experiment with real goods.” *European Economic Review* 56(6):1200–1219.

- Brautigam, Deborah, Odd-Helge Fjeldstad and Mick Moore. 2008. *Taxation and state-building in developing countries*. Cambridge University Press.
- Brollo, Fernanda, Tommaso Nannicini, Roberto Perotti and Guido Tabellini. 2013. “The Political Resource Curse.” *American Economic Review* 103(5):1759–96.
- Chetty, Raj, Adam Looney and Kory Kroft. 2009. “Salience and taxation: Theory and evidence.” *American Economic Review* 99(4):1145–77.
- de la Cuesta, Brandon, Helen Milner, Lucy Martin and Daniel L. Nielson. Forthcoming. “Owning It: Accountability and Citizens’ Ownership over Oil, Aid, and Taxes.” *The Journal of Politics* .
- de la Cuesta, Brandon, Helen V. Milner, Daniel L. Nielson and Stephen F. Knack. 2019. “Oil and Aid Revenue Produce Equal Demands for Accountability as Taxes in Ghana and Uganda.” *Proceedings of the National Academy of Sciences* 116(36):17717–17722.
- Finkelstein, Amy. 2009. “E-ztax: Tax salience and tax rates.” *The Quarterly Journal of Economics* 124(3):969–1010.
- Gadenne, Lucie. 2017. “Tax Me, but Spend Wisely? Sources of Public Finance and Government Accountability.” *American Economic Journal: Applied Economics* 9(1):274–314.
- ICTD. 2019. “Government Revenue Dataset.”
- Joyce, Robert, Thomas Pope and Barra Roantree. 2019. The characteristics and incomes of the top 1%. Institute for Fiscal Studies Report. doi: 10.1920/bn.ifs.2019.bn0254.
- Levi, Margaret. 1989. *Of Rule and Revenue*. University of California Press.
- Martin, Lucy. 2016. Taxation , Loss Aversion , and Accountability: Theory and Experimental Evidence for Taxation’s Effect on Citizen Behavior. Working paper. Available from https://www.poverty-action.org/sites/default/files/publications/Martin_LossAv.pdf.

- Moore, Mick. 2004. "Revenues, state formation, and the quality of governance in developing countries." *International Political Science Review* 25(3):297–319.
- Morrison, Kevin M. 2009. "Oil, Nontax Revenue, and the Redistributive Foundations of Regime Stability." *International Organization* 63(01):107.
- North, Douglas and Barry Weingast. 1989. "Constitutions and Commitment: The Evolution of Institutions Governing Public Choice in Seventeenth-Century England." *The Journal of Economic History* 49(04):803–832.
- OECD. 2020. *Taxing Wages 2020*. Organisation for Economic Co-Operation and Development (OECD).
- Paler, Laura. 2013. "Keeping the Public Purse: An Experiment in Windfalls, Taxes, and the Incentives to Restrain Government." *American Political Science Review* 107(04):706–725.
- Persson, Anna and Bo Rothstein. 2015. "It's my money: why big government may be good government." *Comparative Politics* 47(2):231–249.
- Prichard, Wilson. 2015. *Taxation, Responsiveness and Accountability in Sub-Saharan Africa: The Dynamics of Tax Bargaining*. Cambridge University Press.
- Prichard, Wilson. 2016. "Electoral competitiveness, tax bargaining and political incentives in developing countries: Evidence from political budget cycles affecting taxation." *British Journal of Political Science* 48(2):427–457.
- Ross, Michael. 1999. "The Political Economy of the Resource Curse." *World Politics* 51(2):297–322.
- Ross, Michael. 2004. "How Do Natural Resources Influence Civil War? Evidence from 13 Cases." *International Organization* 58(1):35–67.
- Sala-i Martin, Xavier. 1997. "I Just Ran Two Million Regressions." *The American Economic Review* 87(2):178–183.

- Sandbu, Martin. 2006. "Natural Wealth Accounts: A Proposal for Alleviating the Natural Resource Curse." *World Development* 34(7):1153–1170.
- Sausgruber, Rupert and Jean-Robert Tyran. 2005. "Testing the Mill hypothesis of fiscal illusion." *Public choice* 122(1-2):39–68.
- Seelkopf, Laura and Ida Bastiaens. 2020. "Achieving Sustainable Development Goal 17? An Empirical Investigation of the Effectiveness of Aid Given to Boost Developing Countries' Tax Revenue and Capacity." *International Studies Quarterly* pp. 1–14.
- Seelkopf, Laura and Philipp Genschel. 2019. "Tax Introduction Database (TID)". European University Institute. Florence. Available from <http://hdl.handle.net/1814/65326>.
- Stallworth, Philip and Daniel Berger. 2019. The TCJA Is Increasing The Share Of Households Paying No Federal Income Tax. Taxvox: Federal budget and economy report. Tax Policy Center. Available from <https://www.taxpolicycenter.org/taxvox/tcja-increasing-share-households-paying-no-federal-income-tax>.
- Tilly, Charles. 1990. *Coercion, Capital, and European States, AD 990-1990*. Cambridge, MA: Basil Blackwell.
- Timmons, Jeffrey. 2005. "The Fiscal Contract: States, Taxes, and Public Services." *World Politics* 57(4):530–67.
- Weigel, Jonathan L. 2020. "The participation dividend of taxation: How citizens in Congo engage more with the state when it tries to tax them." *The Quarterly Journal of Economics* 135(4):1849–1903.
- Williamson, Vanessa. 2017. *Read my lips: Why Americans are proud to pay taxes*. Princeton University Press.