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A Conceptual Framework for Tax Compliance Burden in Small and Medium Enterprises

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ABSTRACT

The cost of tax compliance, the time, money, and mental energy a firm devotes to meeting its tax liabilities, varies considerably among small and medium enterprises. This paper suggests a conceptual framework of tax compliance burden as the interaction of four distinct layers: statutory complexity, administrative interface, enterprise capacity, and enforcement environment. The compliance cost is seen as a function of such interactions rather than firm size. The framework builds on the compliance cost literature and tax evasion theory, and provides the list of observables for empirical research. Because the layers operate through different mechanisms, policy tools such as simplification, pre-filled return, or tiered registration thresholds should produce a different result depending on the binding layer. The paper demonstrates how the framework can be employed in a stylized case study of two enterprises, and formulates the conditions of measurement in the cross-national setting.

Keywords: *tax compliance; compliance costs; small and medium enterprises; tax administration; conceptual framework*

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1. INTRODUCTION

Compliance costs are an important issue in tax policy because they represent taxpayer burden on top of taxation and do not go to government revenues. A company that devotes a week to correcting its value added tax returns, a manager attending a course on the new withholding system, and an owner who delays an investment due to uncertainties concerning the assessment of taxes represent real costs that do not get reflected in government budget. At the economy-wide scale, these costs could be significant. At the scale of the small business, these costs are decisive, because the fixed part of tax compliance does not shrink along with turnover.

Such empirical evidence exists for quite some time now. In particular, Slemrod and Blumenthal (1996) estimated the cost of compliance with income taxes for the case of large firms operating in the US and considered the compliance cost as a proper object of tax design and not as a side-effect of taxation per se. Compliance costs have been estimated for a variety of environments since then, and a common feature of these estimations is that compliance costs tend to be more pronounced for small firms relative to their size. Eyetsemitan *et al.* (2021) studied how tax and regulatory requirements can be translated into compliance processes for the case of small and medium-sized enterprises in the area of corporate income tax (IAS 12), value added tax, pay-as-you-earn and withholding tax.

However, there is another issue related to compliance costs which is the issue of explanation rather than description. Empirical literature treats compliance cost as a single measure, typically measured using survey self-reports about time or money, and tries to relate this measure to the firm size, sector and/or form of ownership. Such approach can help to document the problem, but is limited in terms of explaining why the firms of similar size and the same sector can have very different burden. The burden of the firm whose owner has accounting skills, uses accounting software which is integrated with electronic submission of returns to the tax authority and works under a simple revenue structure can be smaller than the burden of a bigger firm working in several tax jurisdictions and using manually maintained accounting book. This would be difficult to detect in a regression on firm size, but can be identified with a framework of different sources of compliance burden.

In this paper I propose such a framework. I consider compliance cost as a composition of four interacting layers. The first layer is the statutory complexity; it refers to the amount of work which needs to be done according to the rules. The second layer is the administrative interface; it refers to the way in which the tax authority delivers the rules to the firm. The third layer is the firm capability; it refers to the resources the firm can bring to bear. The fourth layer is the enforcement climate; it refers to the perceived risk and consequences of audit and penalty. Each of these layers answers different question, can be represented by the observable variables and acted upon by the different category of policies.

I introduce this framework conceptually and not via any estimation. Its value is in the precision of its categories and in the relationships between them implied by the framework. It should not be interpreted as a claim that the four layers are the only determinants of the compliance burden and/or they are independent of each other. Rather, it should be understood as a framework that would enable researchers to identify attribution error that might happen due to inability to separate the layers. These arguments will be developed further in the following sections. In Section 1 I explain the motivation of the paper and the literature review. In Section 2 I describe

the four layers, their internal logic and the measurement requirements. In Section 3 I illustrate the framework using a stylized example. In Section 4 I discuss policy implications and the limitation of the framework. Section 5 provides conclusions.

There are two distinct literatures on tax compliance costs, which have been developed independently for quite some time. The first literature is descriptive in nature; it is interested in estimating the amount the firms have to pay in order to comply with tax laws and the distribution of such payments. The second literature is behavioral and theoretical in nature; it focuses on how taxpayers behave in response to the tax system, including the evasion, avoidance and the allocation of effort between legitimate compliance and risk mitigation. A framework explaining compliance cost should draw on both literature and should acknowledge that the two approaches deal with different parts of the same problem. Andreoni *et al.* (1998) review the compliance literature and include both of the mentioned approaches.

1.1 The Descriptive Tradition

The descriptive tradition received an early empirical grounding in studies on compliance costs paid by business taxpayers in the USA. Slemrod and Blumenthal (1996) estimated compliance costs of large businesses in terms of surveys and demonstrated that such costs are considerable in comparison with tax revenue raised by the tax. The innovation of Slemrod and Blumenthal was to establish that the compliance costs represent an important element of business tax burden which should be studied seriously and equally with respect to the tax. Such approach has been applied to large and mid-size businesses and the difference between direct cost of tax preparation and indirect cost related to the recording, planning, and understanding of the law has been introduced. This distinction remains relevant, as the four layers suggested in the paper map the different elements of the total cost: statutory complexity impacts mostly the indirect cost of understanding the law; administrative interface influences directly the cost of preparing returns; firm capability – both; and enforcement climate – the cost of defensive recording and consulting. Slemrod (2007) provides a survey of the economics of evasion and similar problems appear for compliance costs.

Reviews of literature on compliance costs identify the two major issues – the size of the cost burden and the structure of the cost. The review draws attention to the methodological problem addressed by the framework. Estimation of the compliance cost is heavily influenced by how the cost is defined and measured. Some papers cover only the hours spent by the firm's own employees, some include also payments to external consultants and the value of the owner's time. Some include the cost of holding records during the statutory period, some do not. Without the definition, comparisons across the studies are difficult and the attribution of the cost to particular factors is vague. The framework resolves the issue by defining the layers according to the sources of the cost burden rather than its form, thus making it possible to relate any cost to the corresponding layer irrespective of its accountancy form.

The descriptive tradition studied also the institutions of tax compliance costs. The report of the OECD (2014) on tax compliance by design suggests that the compliance burden of small and medium enterprises could be decreased by regarding the tax system as an integrated whole where attention should be given to the design of the rules, delivery process, and firm's tools. It also stresses that the improvement of one aspect alone might be ineffective if the rest remained untouched. Such system approach is in accordance with the interaction logic discussed in Section 2.5 of the paper and makes the decision to split the layers rather than to treat the compliance

burden as a composite reasonable. Later OECD reports discuss these issues in other countries (OECD, 2020, 2021a, 2023, 2024, 2025).

Eyetsemitan *et al.* (2021) advanced the descriptive tradition by adding operational details. The framework provided in the paper addresses the transformation of the requirements of the corporate income tax, value added tax, pay as you earn, and withholding tax into the workflows an SME could follow. The paper distinguishes the process of transformation of legal requirements into steps to be done by an SME as a separate task, which is the interface between the statutory layer and the firm. The framework adds to this approach by considering the transformation process as a source of burden and by distinguishing the cost caused by the complexity of the law from the cost caused by its delivery.

1.2 The Behavioral and Theoretical Tradition

The behavioural tradition starts from the economic theory of tax evasion. Allingham and Sandmo (1972) proposed the model where the taxpayer chooses the amount of income to declare under uncertainty regarding the detection and penalty. In this model, higher probability of audit or higher penalty rate leads to greater declared income and depends on the taxpayer's attitude to risks. Surveys of the wider evidence on compliance including Andreoni *et al.* (1998) and Alm (2019) place this model into a broader set of behavioural factors. The model is usually considered as a model of evasion, but the implications for compliance costs are evident: the taxpayer expecting to be audited could invest in records, documentation, and professional advice to reduce the probability of unfavourable outcome for the audit. This investment is a real cost and is created by the enforcement environment rather than the statute. The framework consequently places the perceived and real risks of the audit in a separate layer and treats the defensive compliance as a separate burden element. Alm (2012) presents a review on tax evasion measurement and explanation via the theory, experiments, and field study, while Cowell (1990) provides an early book length treatment of the economics of evasion.

In Kleven *et* al.'s (2011) empirical examination of the effects of a tax audit experiment in Denmark, it was found that there is a strong difference in levels of compliance depending on the nature of information reporting. In cases when the payment is subject to third party information reporting, there is a higher likelihood of accurate reporting compared to those cases where third party reporting is absent. As far as compliance burden is concerned, this study is crucial in demonstrating how the administrative interface can influence the amount of reconciliation that a firm has to go through. In case of availability of third party information to the tax authority and its pre-filling into returns, the firm may find itself doing verification of the return that has been constructed, instead of constructing it from scratch. According to the framework, this process is expected to reduce the costs associated with preparation while potentially increasing the costs associated with verification in case the third party information is incorrect. In his research, Pomeranz (2015) demonstrates that the invoice trail of value added tax helps to prevent evasion, and this mechanism works through third party information as well. Evidence obtained cross-country also points in the same direction. Richardson (2006) shows that the determinants of evasion are country-specific, and Alm and Torgler (2006) show that tax morale differs in the US and in Europe. Torgler (2007), Frey and Torgler (2007), Luttmer and Singhal (2014), and Wenzel (2004) elaborate on the role of tax morale and social norms, which is left out of the framework (Section 4.4). Torgler (2002) provides a review of experimental evidence on tax

morale and tax compliance. Kleven (2014) considers the issue of high taxation levels in Scandinavian countries, and this research relates to the issue of trust.

The behavioral approach also highlights the importance of the difference between required compliance and compliance that takes place for the purpose of risk management. According to the Allingham-Sandmo's model, a part of the efforts made by the firm in order to deal with taxes is a response to the enforcement environment, and without the latter it would not be done. It is important to mention that a growth in the compliance time after a growth in audit frequency is not necessarily the result of poor legislation. This is the case when a firm responds rationally to a higher expected cost of unfavorable audit outcome. Therefore, the framework regards the enforcement climate as a source of burden that is partly voluntary, and the clear rulings and predictable audit selection can help to reduce defensive effort without modifying the statute. Kirchler *et al.* (2008) consider the case of enforced compliance that leads to the weakening of voluntary compliance through the slippery slope framework. Erard and Feinstein (1994) analyze how moral sentiments and perception of audits are related to the decision making concerning compliance, and Kirchler (2007) elaborates on the psychology behind this behavior in detail. Dwenger *et al.* (2016) conduct a field experiment in Germany in order to distinguish extrinsic and intrinsic motivations to tax compliance. Alm and Torgler (2011) consider how ethics are linked to tax compliance. Kogler *et al.* (2013) test the slippery slope framework using trust and power across four countries.

1.3 Gaps the Framework Addresses

There are three major gaps in the literature that give a reason to build a framework. The first gap is the lack of an integrated explanation of the reasons behind the differences in burden levels among firms of similar size. Descriptive literature shows that small firms have higher burdens compared to their turnover, and behavioral literature, including Allingham and Sandmo (1972), explains the reaction of taxpayers to enforcement, but none of these studies offers an integrated approach to the relations between rules, delivery mechanism, resources of the firm and enforcement environment. The framework offers this approach. In their study, Slemrod and Yitzhaki (2002) regard tax avoidance, evasion and administration as one phenomenon, and therefore it is relevant for the decision to consider the layers together. In their review, Joshi *et al.* (2014) discuss what is known about integrating informal and small enterprises in tax system in developing countries, which is the context described by these gaps.

The second gap concerns policy evaluation. Tax compliance reforms are usually introduced as packages of changes in tax rules, electronic filing and taxpayer support. In case the outcome of a reform is measured as total compliance cost, it is hard to evaluate the contribution of each part. A framework that assigns each part to a layer allows designing evaluation research that separates the effects of different components, and also allows policymakers to anticipate what types of firms benefit from different parts of the package.

The third gap concerns firm capability. In the literature, firm size is often used as a measure of firm capability, but these are different constructs. A small firm with a trained bookkeeper can have less burden compared to a large firm that lacks one. Considering firm capability as a separate layer makes it possible to investigate whether the observed size effects work through the resources that the firm can use or through other channels.

These three gaps determine the substantive contribution of the paper.

2. METHODS

This paper uses a four-layer framework. The framework is based on the following: the question answered; the observable variables representing each layer; the category of the policy instrument acting on each layer. Layers are not additive. Compliance burden of the firm is an outcome of the interaction between layers. This interaction is crucial as well as levels of any layer. Before describing layers, it is necessary to describe the basic structure, connecting the layers. Slemrod & Blumenthal (1996) motivated the need to measure these contributions to compliance cost and the four layers were derived from the distinctions in the descriptive and behavioral literature.

Let B stand for compliance burden of a firm in a certain tax period. It can be measured as total resources devoted by the firm to compliance, including time spent by firm's employees and owner, fees for external advisers, costs of software and records. Framework does not assume a particular functional form for B, although it does not rule out the possibility of one. Rather, framework assumes that the burden can be conceptually decomposed into a function of four inputs: statutory workload S; interface quality I; firm's capability K; enforcement climate E. Workload means the volume of work the rules require prior to any consideration of the delivery mechanism. Interface quality measures the volume of work absorbed or simplified by the tax authority. Firm's capability measures firm's efficiency in performing residual work. Enforcement climate reflects firm's defensive efforts in order to respond to the risk of audit and penalty.

The decomposition is not additive. Residual work performed by the firm after work has been done by the interface depends on S and I. Efficiency of the residual work performed by the firm depends on K. The defensive effort depends on E and on the volume of ambiguous part of the workload as well. Conveniently, this decomposition can be expressed as follows: the burden related to the statute is reduced by the interface and scaled by the firm's capability, while the enforcement component is added to this product, being conditional on the complexity and ambiguity of the residual obligations. The paper does not estimate this function, but this structure explains what layers can replace other layers and what layers have to be handled simultaneously.

2.1 Statutory Complexity

First layer relates to the statute itself. Complexity of statute means the number of tax types a firm should deal with, number of distinct rate schedules and thresholds applied to its activities, frequency of filing and density of exceptions, exemptions and special regimes. Firm, handling several kinds of VAT, corporate income tax, payroll taxes and withholding obligation with regard to payments to its suppliers faces more complicated structural burden than a firm dealing with one kind of tax once per year. The difference is not only in the number of returns: the more regimes a firm should manage, the more definitions it needs to learn, the more thresholds and exceptions it should consider. Slemrod (2019) provides overview of the evidence on impact of the design of the law on the compliance burden. Chetty *et al.* (2009) prove that the salience of tax affects consumer response to it. Slemrod & Gillitzer (2013) provide a detailed discussion on impact of tax system design on compliance.

There are three dimensions of statutory complexity that the framework separates analytically. The first is breadth, or the number of obligations. The second is depth, or the number of conditional rules tied to each obligation such as thresholds, phase-ins, and different rates for certain types of goods/services. The third is the frequency of change of the rules. Broad and deep statutory regulations increase the minimum effort that any firm needs to apply. The effort results

from the necessity to understand what is required of it. Frequent changes increase the effort needed to keep abreast with new rules and may also increase the value of professional advice as firms will need to hire someone if they are unable to monitor changes on their own. Therefore, a system with relatively few obligations that changes frequently can impose a greater burden on a small firm than a system with more obligations changing rarely.

The cost estimates depend on how obligations are counted and defined – one of the reasons why the framework uses a common coding of statutory complexity (Section 2.6). Statutory complexity is the layer most commonly addressed by tax reforms. Simplification may involve consolidation of filings, reduction in the number of rate schedules, removal of exceptions yielding low revenues, or substitution of cliff-like thresholds with gradual phase-ins. As the layer determines the work that must be performed, the reforms there should reduce the minimum effort required from every firm. The benefits should be the greatest for firms facing many obligations. The statement is self-explanatory but it has one implication for the evaluation of reforms. The simplification of statutory regulations will affect firms that used to operate under complicated rules the most as those that were not subjected to them will have to report no changes. Therefore, the pooled evaluation will underestimate the effect of reforms for the group that needed them the most.

Thresholds deserve special consideration as they cause behaviors that are not accounted for in the simple calculation of workload. The threshold at which a firm starts to be subject to a number of obligations creates discontinuity in the obligations schedule. While a firm with a turnover just below the threshold does not face any obligations, the firm just above the threshold faces all of them. The discontinuity provides incentives to stay below the threshold by restructuring, delaying the growth or splitting the operations among related firms. These responses are a type of compliance burden as they require managerial effort and may involve additional costs that are not recorded in the tax accounts. The framework views threshold effects as a part of statutory complexity and makes the prediction that threshold effects will concentrate in firms with the turnover close to the boundary. Saez (2010) tests whether taxpayers are bunching at kinks in tax schedules, the response that may be caused by thresholds.

2.2 Administrative Interface

The second layer is related to how tax authorities deliver the rules to firms. It includes pre-filled returns, the quality and clarity of the guidance, the simplicity of electronic filing/payment, consistency of rulings across officers/regions, accessibility of helplines, and responsiveness of tax authorities to inquiries and refunds. The administrative interface determines the share of statutory work that a firm has to perform itself. Even two systems with identical statutory regulations can have very different burden on firms depending on how they deliver their rules – the system with electronic pre-filled returns and clear guidance versus the system requiring paper filing and consulting the unclear statute. In Nigeria, Ojo and Shittu (2023) investigate the factors shaping VAT compliance among SMEs. In South Africa, Smulders *et al.* (2016) show that business turnover and employee numbers drive the internal compliance time.

The interface layer is distinct from statutory complexity for a reason that can easily be overlooked. The same legal rules can be delivered in a very different way and choosing the delivery channel is a policy decision. Complicated statute with good interface including electronic filing, pre-populated data from third parties, and clear guidance may impose lower burden on the firm than the simple statute delivered through paper forms, inconsistent

interpretations, and hard-to-reach helplines. The interface can compensate the complexity and in some cases may even hide it. Substitutability is one of the reasons why the framework distinguishes between layers. The analyst who looks only at the statute will not see the interface. Similarly, the policymaker who addresses only the interface will leave the workload generated by the statute untouched. Tax administration digitalization is monitored in different countries (OECD, 2025). Nose and Mengistu (2023) compare the adoption of selected digital technologies in tax administration.

The problem of pre-filling deserves particular attention. Kleven *et al.* (2011) demonstrated for Denmark that third-party reporting raises the precision of the reported income substantially. This is because the mechanism works on the interface level. Given that the tax authority has information collected from third parties and provides a pre-filled return, the taxpayer's task is no longer to collect the information, but to verify it. Thus, the cost of preparation decreases significantly because the firm does not need to reconstruct the transactions from its own data. Meanwhile, the verification task implies the cost of investigation, documentation, and correction of the record if the discrepancy is detected. The framework thus implies that pre-filling reduces the cost of routine preparation of the return, but increases the cost of reconciliation and depends upon the precision of the pre-filled data. Hesami *et al.* (2024) survey literature on e-invoicing and pre-filled returns as the tools of digital tax compliance. Now continuous transactional reporting for VAT becomes the subject of independent design guidance in OECD (2026).

The framework also suggests that interface improvements will have stronger effects in case of complex statutory layer. The logic is very simple. If the statute imposes little work, there is little work left to do for the interface to remove. If the statute imposes a lot of work, the burden of interface increases. Therefore, the improvements in interface may have strong effects, particularly in case of initially complex statute. This suggestion has important implications for the reform sequence. The reform which improves the interface prior to the simplification of statute will produce strong effects in the short run, but will not lead to a long-term reduction because of the remaining complexity. However, the opposite reform that simplifies the statute first will have modest initial effect and then amplifies it because of better interface.

2.3 Firm Capability

The third layer covers the capabilities of the firm to comply. This includes the presence of an accountant or a bookkeeper, the use of an external tax adviser, quality of the accounting software used by the firm and its integration, the tax knowledge of the firm owner, and the record keeping system of the firm. Firm's capability intermediates the effect of the two previous layers because capable firm is able to absorb a complicated statute at lower marginal cost and benefits more from the well-developed interface. In the framework, capability is the variable that defines how efficiently the residual burden is done. Evidence from the SMEs in Ghana relates to the capabilities in the form of owner's characteristics and perceptions of state legitimacy: Peprah *et al.* (2020) research the compliance with income tax administration, Ababio and Gnonsio Mangueye (2021) study state legitimacy and compliance, Carsamer and Abbam (2023) consider religion.

OECD (2014) stresses that the capability of SMEs to comply depends on its processes and availability of the support. Capability is the layer where size effects are most likely to occur, and it is also the layer that is most likely to be confounded with size in the empirical study. Large firms are able to spread fixed compliance costs over the bigger revenue and thus afford

specialized staff. They can hire tax adviser on the retainer basis and invest into integrated accounting systems and tax function inside the firm. Small firm usually relies on its owner that may have limited time, limited skills, and other commitments. However, the framework does not deny that the size effect exists. Instead, it explains that the size works through capability, which can vary across firms of different size. The small firm with a skilled bookkeeper and good software may be better prepared to comply than a larger firm having no computerized records, and the framework predicts that the burden difference will be explained by capability and not by turnover.

Also, capability is dynamic. In the framework, the capability is treated as a variable which can change over time, because firms learn, hire, and invest. A firm that grows may hire a bookkeeper and move to integrated software, and the burden will fall although nothing happened in the statute. A firm losing its bookkeeper will face an increase in burden. This dynamism has two implications. First, the comparison of capability across firms in a cross section may underestimate the effect of learning, because the current capability is a result of the firm's past history. Second, an intervention that increases capability, such as advisory services, training programs, and availability of affordable software, will have lasting effect.

2.4 Enforcement Climate

Finally, the fourth layer pertains to the perceived and objective probabilities and consequences of audit and penalties. In the vein of Allingham and Sandmo (1972), a firm that expects many audits or severe penalties would be expected to devote more efforts to documentations, record keeping, and consulting, thereby increasing its measured burden, even though the statutory provisions of the interface have remained unchanged. This increase does not pertain directly to the cost of compliance in the statutory sense. This expenditure is defensive in nature and can be seen as a reaction to the risk. According to the framework, this effort is a function of audit probability and the consequences of an adverse audit outcome, as well as the perceived exposure. Slemrod *et al.* (2001) find in a controlled experiment that an increased audit probability affects income reporting. Alm and McKee (2006) find that both certainty of audit and audit productivity influence compliance. Cummings *et al.* (2009) and Feld and Frey (2002) demonstrate that how people are treated influences their tax morale and compliance. Sandmo (2005) reviews the development of the theory of tax evasion following the original model. Dubin *et al.* (1990) estimate the effects of varying audit rates on federal individual income tax outcomes from 1977 to 1986.

There are two aspects of the enforcement layer that are worth highlighting. The first is that the enforcement intensity is partially perceived. Firms derive their belief of the audit probability based on their own experience, peer's experience, and publicly available information regarding the activity of the tax authority. The belief may not coincide with the objective probability. A firm with high belief of audit probability may invest heavily into defensive efforts, even if the actual audit probability is relatively low, and vice versa. The framework therefore distinguishes between actual enforcement intensity and the perceived enforcement risk, predicting that the measured defensive effort will be a closer reflection of the perceived quantity rather than actual one.

The second point is that the enforcement layer generates measured burden that is voluntarily chosen. An increase in the measured compliance time following an increase in the audit intensity does not necessarily mean an increased difficulty of the statute or the interface. It may reflect the

firm's choice of reducing its exposure to a bad audit result. It is important for policy because it means that an increase in measured burden does not necessarily signal about bad design of the policy. A policymaker responding to the increase in measured burden by simplification of the statute will discover that the defensive element remains, since it is caused by the enforcement layer and not by the rules. Conversely, reducing enforcement uncertainty will lead to a reduction of defensive effort, although the statute is unchanged. Clear rulings, predictable audit selection, and transparent penalty schedules may all help reduce the perception of risk, driving the defensive effort.

The enforcement layer also relates to the issue of information reporting, as demonstrated by Kleven *et al.* (2011), who proved that third-party information reporting has a large impact on compliance in the Danish setting. The information reporting works through two layers simultaneously. On the one hand, it changes the enforcement layer by increasing the detection of misreporting, and on the other hand, it changes the interface by prefilling returns using third party data. Therefore, the framework expects the information reporting to decrease the burden of audit preparations, because it becomes less likely that a firm's records are different from the information that the tax authority possesses, and increase the burden of routine reconciliations in the case of discrepancies. The net effect depends on the design of the system and the accuracy of third-party data. It is an empirical question addressed in the framework in Section 2.6. Edwards *et al.* (2024) study third-party reporting in cross-border tax planning setting.

There is an interesting interplay between the enforcement layer and the capability, which is relevant for policy. Low-capability firms are less capable to differentiate between the two kinds of compliance effort. With the help of the trained adviser, a firm is able to determine what kind of record keeping measure is required by the law and what kind is just prudence, allocating effort accordingly. A firm without such help will see all record keeping measures as mandatory, leading to an increase in measured burden. It implies that the enforcement intensity is likely to generate the largest increase in measured effort for low-capability firms.

2.5 The Structure of Interaction

The four layers could be thought of as a system, in which the layers affect each other via specific channels. The systems approach underlying the structure is the same that the OECD (2014) uses, in which the improvement in one aspect of the tax system will lead to little gain if all other aspects remain the same. Statutory complexity establishes the nature of the work to be done. The interface determines how much of that work the firm has to do. Capability determines how efficiently the firm does the remaining work. Enforcement determines how much additional defensive work the firm does. In other words, the first three layers determine the direct cost of compliance, whereas the last layer affects both direct and indirect costs, as the defensive efforts involve also the cost of the advice that would not be sought otherwise.

The structure yields three conclusions that the remainder of the paper discusses. First, the layers are partially substitutable and partially complementary. An improvement in the interface could counterbalance statutory complexity, so the two layers substitute each other in producing low burden. Capability, on the contrary, is complementary to the interface, as the firm cannot benefit from the electronic filing system without the capability to use it, and it cannot benefit from the clear rulings without the capability to understand them. Second, the impact of each particular layer depends on the condition of others. The benefit of simplification depends on the capability; the benefit of improvement of the interface depends on statutory complexity, as shown in Section

3. Third, the layers have different time profiles. Statutory complexity varies through legislative change, which can happen at some specific points of time. The interface could vary through systems investments, which take some time. Capability varies gradually as the firms learn and develop and hire more. The enforcement climate can vary rapidly as the tax authority changes its audit activity or firms see changes in others' outcomes. Different time profiles are important for the evaluation, because the observed change in burden can reflect the fastest-moving layer rather than the target one.

Table 1 summarizes the four layers, the core question each layer addresses, representative variables for measuring the layers, and the relevant policy levers.

Table 1: Layers of the compliance burden framework, core questions, representative variables, and associated policy levers

Layer	Core question	Representative variables	Policy levers
Statutory complexity	How much work do the rules require?	Number of tax types; rate schedules and thresholds; filing frequency; exceptions and special regimes; frequency of rule changes	Consolidation of obligations; threshold redesign with phase-outs; removal of low-yield exceptions; stability commitments
Administrative interface	How is the work delivered?	Share of pre-filled returns; guidance quality; electronic filing availability; consistency of rulings; responsiveness of helplines	Pre-filling from third-party data; guidance redesign; digital services; ruling consistency programs
Firm capability	What can the firm absorb?	In-house accounting staff; use of external advisers; software integration; owner tax literacy; record keeping quality	Subsidized advice; training programs; access to affordable software
Enforcement climate	What risk does the firm perceive and face?	Audit frequency; penalty severity; perceived detection risk; third-party reporting coverage	Information reporting; transparent audit selection; predictable penalty design

2.6 Measurement Requirements

The distinction between the components of cost (direct versus indirect), and the definitional problems that the cost literature has discussed, are both relevant for the design of these measures. Implementing the framework implies having measures that can discriminate among the four layers. Survey instruments that ask the firm about the total compliance time or cost cannot help to distinguish the statutory and interface effects, and cannot reveal the enforcement component. The research design should therefore gather, for each firm, information that corresponds to each of the layers. Table 2 gives the set of the indicators suggested by the framework, the layer that each indicator reflects, and the way of recording it. Indicators are selected in a way that they can be easily observed in practice and do not require firms to make judgments that they are poorly equipped for. Measurement problems outlined above are the problems that Slemrod and Blumenthal (1996) encountered when estimating business compliance costs from surveys.

Table 2: Indicators recommended for each layer, recording method, and interpretation

Layer	Indicator	Recording method	Interpretive note
Statutory complexity	Types of taxes and filing requirements	Number counted in the statute and filing schedule	Coded using a standard system of coding
Statutory complexity	Number of conditional thresholds and special regimes	Count from the statute	Weighted by the number of firms affected
Statutory complexity	Frequency of regulation changes in the observation period	Number of changes impacting the requirements of the firm	Indicates volatility but not diversity
Administrative interface	Percentage of returns either pre-populated or electronic	Report from company cross-checked against official files when possible	Separates delivery from legal substance
Administrative interface	Time for receiving an answer or decision regarding a question	Firm report and data from authority service	Responds to ability rather than to quality
Firm capability	Presence of trained accounting staff	Firm report of staff role and qualification	Captures the resource, not its use
Firm capability	Use of external tax adviser and frequency of consultation	Firm report and invoices where available	Separates advice from in-house work
Firm capability	Integration of software with online submission	Firm report on software type and capabilities	Evaluates ability to utilize the interface

Layer	Indicator	Recording method	Interpretive note
Enforcement climate	Audit experience for the preceding three years	Firm reports and authorization documents where applicable	Risk is actual as opposed to perceived
Enforcement climate	Perceived detection risk	Scaled survey item on expected audit probability	Captures the belief that drives defensive effort
Enforcement climate	Share of effort described as record keeping beyond legal requirement	Structured time diary with purpose coding	Identifies defensive effort, subject to self-report bias

The indicators presented in Table 2 are aimed at helping empirical research to capture the layers. Statutory indicators enable the analyst to estimate the workload generated by the rules. Interface indicators enable the analyst to estimate the degree to which the authority takes the workload on itself. Capability indicators capture the firm's resource endowment with regard to the residual workload. Enforcement indicators capture the firm's perception of risk and the effort spent on defense. The analysis of all eleven indicators would make it possible to quantify the impact of each layer and to allocate the total burden among the layers.

A few measurement issues merit attention. First, there is the issue of the difference between time and cost of resources. Firms can report the time they spend on tax matters, but the cost of time varies greatly depending on who spends this time. Time spent by the owner is not comparable to the time spent by the bookkeeper. External advisors spend time and incur fixed costs associated with the knowledge and skill of the person providing advice. The suggested framework calls for reporting time and cost separately to differentiate between reduction in time and outsourcing of the task. Reduction in firm's burden may not imply a reduction of burden in the aggregate, but just a transfer of some work to the intermediary. The separation of performer and price makes this possible.

Second, there is the issue of the comparability of the statutory index across countries. There are differences in the base categories in tax laws, in the definition of a taxable period, and in the number of obligations imposed by tax law on different types of firms. A simple count of obligations does not provide a direct comparison of statutory indexes. The framework suggests construction of a statutory complexity index using a common coding scheme with the detailed rules of counting obligations and weighting thresholds and special regimes. It is suggested to report the index together with the raw counts to allow assessment of its sensitivity to the coding rules. The researcher who reports just the index may hide some valuable variation while the one who reports just the counts cannot make any comparison across systems.

Finally, there is the issue related to enforcement layer. The detected risk is the firm's belief and is subject to measurement error. This belief may depend on recent events, peer experience, media exposure, and all of those vary with time. The framework calls for measuring the perceived risk

at several points in time and relating it to the actual audit experience to allow analysis of the difference between belief and experience. The framework also calls for careful design of the time diary allowing to identify defensive effort. Respondents are supposed to report the purpose of each activity and researchers are to code it without knowing the firm's characteristics. It is done to avoid the bias due to researchers' prior expectations of which firms should show the high level of effort.

Lastly, according to the framework, it is recommended that researchers pre-register their coding rules and definitions of the layers before analysis. Since layers are conceptual, their translation to variables requires choices that may influence results of research. Pre-registration makes such influence of researcher's decisions less likely, allowing the reader to check whether the results are robust for alternative definitions of layers.

3. RESULTS: ILLUSTRATIVE APPLICATION

In order to illustrate how the framework works, the next section considers a stylized comparison of two hypothetical firms. The separation of the cost of regulation in terms of direct cost of preparation and indirect cost of understanding and defending positions relies on the definition of layers in the descriptive literature, so that each element of the illustration could be assigned to a particular layer. This example is stylized. The numbers are not based on actual data, but are chosen so as to demonstrate the logic of the layers and their implications for the impact of a policy change. The purpose of this illustration is to show how the same reform affects differently two firms with different binding layers, and how the framework could be used to organize data on real firms. The stylization technique is typical of the compliance cost literature, in line with the tradition of Slemrod and Blumenthal (1996).

Imagine two firms called Firm A and Firm B operating in the same sector and having the same annual turnover. These firms are small and medium enterprises. Firm A is run by a manager who received education as an accountant, employs a bookkeeper, uses accounting software that integrates with electronic filing service of the tax authority, and hires external adviser for annual review of the company. Firm B is owned by a trader who has not much formal education, uses spreadsheet for recordkeeping, files paper reports in some cases and does not employ adviser. Both firms are subject to the same statute, which involves four tax types, three filing frequencies, and additional registration threshold for firms with the fixed turnover level.

Let us now consider a reform package consisting of three measures. The first measure entails the simplification of the statute by combining two tax types in one return and eliminating the additional registration threshold. The second measure is aimed to improve the interface by automatically filling the return with the third party information on payments and sales. The third measure increases the enforcement clarity through publication of audit selection criteria and schedule of penalties. We want to see how the framework predicts the impact of each measure for our firms.

Table 3 contains the stylized values used in the illustration. The values are measured in annual hours of compliance effort and are used to demonstrate the logic of the layers, not the magnitude of actual effect. Each row corresponds to one layer, and the four value columns reflect the situation for both firms before and after the reform.

Table 3: Illustration of stylized compliance effort for two firms before and after three-part reform, in annual hours

Layer	Firm A before	Firm A after	Firm B before	Firm B after
Statutory complexity (minimum workload)	60	45	60	45
Administrative interface (residual preparation)	20	8	40	12
Firm capability (efficiency adjustment)	−10	−10	15	15
Enforcement climate (defensive effort)	5	4	30	14
Total annual hours	75	47	145	86

The table has to be interpreted carefully. Both firms benefit from the simplification in the form of reduction of statutory burden to 45 hours, because the simplification entails reduction of obligations that both firms have to comply with. Interface is reduced to a greater extent for Firm B than for Firm A, because Firm B uses paper filing and manual recordkeeping and the pre-filled return saves a lot of time on manual recordkeeping, while Firm A is already using electronic filing and integrated software. The capability adjustment is negative for Firm A, indicating its high capability to perform statutory tasks and positive for Firm B, indicating lower capability. The most interesting aspect of the illustration is represented by the enforcement component. For Firm B, the defensive effort is quite large, because the owner faces uncertainty regarding the requirements for recordkeeping, which is removed by the reform through the introduction of audit criteria and penalty schedule. The defensive effort of Firm B declines more than twofold. For Firm A, the defensive effort is very small from the start, because its adviser already provides clarity regarding the recordkeeping requirements, thus, the reform makes no change in Firm A's defensive effort.

The illustration is compatible with the layered structure discussed in Section 2.5. Both firms benefit from the statutory simplification and improvements in the interface component, and Firm B benefits more in proportion. Enforcement clarity has the greatest impact on the low-capability firm. The illustration also demonstrates that the total burden gap between the firms, which was 70 hours before the reform, decreases to 39 hours after the reform. Firm B still does not reach the level of Firm A, because its capability remains lower. Thus, a policymaker interested in closing the gap would have to address the issue of capability directly, because statutory simplification and improvement in the interface do not change the efficiency gap.

The illustration demonstrates what a conventional analysis could overlook. If the measurement was made in total burden, measured in hours, and related to firm size, it would have found that the smaller of the two firms bears a bigger burden, which is consistent with the descriptive literature. However, conventional analysis would not be able to distinguish between the effect of the statute, interface, and enforcement environment and would not be able to determine which

firms gain the most from which component of the reform. The layered structure provides the required information to make the necessary predictions and to identify the required data to confirm them.

4. DISCUSSION

The framework developed above has several implications for the design, evaluation, and explanation of the compliance reform, which is the aim of this project. Its implications for the design are consistent with the systems perspective of the OECD (2014). Its implications for the interpretation of measured burden follow the deterrence logic of Allingham and Sandmo (1972). They derive from the layered structure of the framework and are presented below in three groups. First, they concern the design of reform packages. Second, they concern the evaluation of reforms. Third, they concern the interpretation of measured burden. This focus on the design as a system follows the view that the cost of compliance is a subject of tax design, as it was suggested by Slemrod and Blumenthal (1996).

4.1 Designing Reform Packages

The first implication of the layered model is that a single instrument does not address the whole burden. It is the "systems approach" suggested by the OECD (2014). Reform that simplifies the statute will help those firms with low capability the most, but it will not change the defensive effort caused by the uncertainty of enforcement and the residual effort caused by poor interface. Reform that improves electronic filing will help firms that have complicated obligations, but it might be useless for those firms that simply do not understand the rule and the interface cannot make it simpler. Enforcement reform that discloses the audit criteria and penalty schedules will lower defensive effort among uncertain firms, but it will not affect firms that already have clear advice. Package design, therefore, requires the analysis of what layers bind what firms, and the framework offers the vocabulary for that purpose. OECD (2017) analyzes the technologies of evasion detection, and OECD (2022) describes how to support SMEs in fulfilling their tax obligations.

The layered structure suggests the logic of sequencing. Best *et al.* (2015) show that when there is a lack of tax capacity, the balance of production and revenue efficiency influences instrument feasibility. Hence, sequencing is contingent on administrative capacity. When the statute is complicated and the interface is weak, the fastest and biggest gain is achievable through the improvements of interface (especially pre-filing), since it does not require changing the statute. When the statute is the major source of complexity, simplification is necessary, and the interface improvements will have more effect once the statute is simplified. When capability is low across all firms, investment in capability has persistent effect beyond any statute change and it may be the most durable resource allocation. However, sequencing is not a universal logic of prioritization. It allows to match an instrument with the bound layer in a certain environment.

Another design issue concerns small firms in statutory thresholds. Basri *et al.* (2021) analyze the impact of tax administration compared to the statutory rates in corporate taxation in Indonesia, thus indicating that design can be crucial as much as the statutory rate itself. The framework recognizes threshold design as the source of both burden and behavioral reaction. Threshold that produces the discontinuity of obligations encourages firms to stay under the threshold and this reaction can cause additional costs that do not reflect in the tax accounts. Phase-ins or gradual increases in the obligations reduce the incentives for bunching under the threshold and can

reduce the administrative efforts spent by the authority for monitoring the threshold. The framework does not offer a threshold design, but it highlights the channel through which threshold affects the burden and predicts the intensity of reaction.

Pre-filing deserves special attention in design due to its high potential of producing large gains for complex statutes. Okunogbe and Pouliquen (2022) analyze the introduction of electronic tax filing and its association with corruption. It means that technology not only changes the cost of filing, but alters the design of the administrative interface as well. According to the framework, pre-filing works through transferring the task from construction to verification. Its effectiveness is dependent on the quality of the third-party data used for pre-filling. Pre-filled return with inaccurate data can increase burden, because the firm should find and correct the mistakes in the record it has not created. Therefore, designers of pre-filing systems have to pay attention to the quality of the third-party data and procedures for corrections. Bird *et al.* (2008) investigate the relation between the level of tax effort and corruption and voice in developing countries.

4.2 Evaluating Reform

There is a significant implication of the framework for evaluating reform. Namely, evaluation should measure the layers separately, rather than total change in the burden. Cost literature makes a similar claim regarding the measure: the total cost figure cannot be assigned to a certain cause without decomposition of components. Reduction of total burden by some amount achieved via large change in one layer and small in another can require different policy responses. Evaluation of the reform that does not include layer-based measurement can mislead policymakers in interpretation of the results.

The evaluator should also distinguish effects on burden from effects on the overall resource cost of compliance. As discussed in Section 2.6, a reduction in the burden borne by the firm may simply involve moving the task to an intermediary, such as a hired adviser. The task is not removed and merely moved into the adviser's fee. A complete evaluation would track both the burden borne by the firm and the cost of the substitutes, allowing the analyst to determine whether the reform has reduced the resource cost of compliance or merely shifted it.

Timing is also an important part of evaluation, since enforcement and compliance dynamics change over time. Enforcement interacts with compliance over time, and that relationship is reviewed in Slemrod (2019). As noted above, the layers change at different rates. The statutory change occurs at fixed dates, the interface improvement requires investment and may take time to implement, the capability change builds up gradually, and the enforcement perception can change quickly. An evaluation conducted in the first few months after the reform will measure the enforcement and interface effects, but will fail to capture the capability effect, because it develops more slowly. Evaluation after many years may capture the capability effect, but may have missed the effect of the statute in the meantime. Evaluation at multiple times, with the appropriate interval between the points of evaluation, would allow measuring all the layers' effects, at least in terms of burden.

Lastly, the framework recommends that evaluation pay explicit attention to heterogeneity. The layered nature of the framework predicts that the effects will vary between firms based on the firm's capability and its initial position on the other layers. Average effects will mask heterogeneity. If a reform greatly helps low-capability firms and little helps high-capability firms, the average effect may be modest and fail to show the value of the reform to the firms who

need it most. Effects on firms with different capabilities, and on the other layers where the relevant data exist, will paint a much more accurate picture for policymakers. Compliance experiments with taxpayers, such as Hallsworth *et al.* (2017), demonstrate that very small changes in communication influence payment behavior, which reinforces the evaluation design recommended above.

4.3 Interpreting Measured Burden

The third implication concerns the way the measured burden should be interpreted. The deterrence theory of Allingham and Sandmo (1972), and the empirical findings of Kleven *et al.* (2011) on third-party reporting, bear on that issue directly. The framework considers enforcement to be a source of burden that is partially voluntary. A firm that increases its record keeping in response to rising enforcement intensity is reacting to the changed situation rationally and is not necessarily experiencing an ill-designed statute or interface. A policymaker who interprets any increase in the measured burden as an indication of poor policy design will be misinterpreting the situation and making inappropriate response by simplifying a statute that is not the cause of the situation, or cutting down enforcement and removing the deterrent power of audits.

The distinction between necessary and defensive compliance is, therefore, crucial for interpreting the burden. Necessary compliance is what the law requires of the firm. Defensive compliance is the additional effort to mitigate the firm's exposure. The framework predicts that defensive compliance will be higher among firms that have low capability and high enforcement exposure, and can be reduced by providing better guidance on what needs to be recorded and by making the enforcement process more predictable. When the defensive compliance is a substantial part of the burden, clarity becomes more powerful than simplification, and the right thing to do is to reduce uncertainty, not simplify the statute. Bérgolo *et al.* (2023) present field experimental evidence of the effect of audit campaigns on non-audited taxpayers, which is one of the channels of the spread of defensive effort. Almunia and López-Rodríguez (2018) analyze the effect of firm monitoring on its tax compliance.

4.4 Limitations and Research Agenda

The framework has various weaknesses, and the research agenda that comes out of this includes the following. The first weakness is that the framework is conceptual in nature. The four layers in the framework are described based on their roles, and are indicated in the form of indicators. However, the indicators themselves are flawed and the layers might not be clearly separable. A firm's capability for instance might arise out of the use of a good interface by the firm, in the sense that a firm that is provided with good software is able to keep better records. Where this happens, the layers become interdependent, and attributing any effect to one layer over another will depend on what assumption is made. The framework takes this into consideration, and recommends that researchers be explicit in stating their identification assumptions.

The second weakness arises from the fact that informal compliance has been ignored in the framework. Carrillo *et al.* (2017) highlight the inefficacy of tax enforcement in case of firms engaging in misreporting practices, which is relevant to the informal firms discussed here. Kleven *et al.* (2011) show how the reporting environment influences compliance, meaning that the informal firms comply in the context of a different reporting environment rather than without any at all. A lot of the SMEs operate informally in the context of the formal tax system, and their choices concerning registration, record keeping and reporting are influenced by elements not

included in the framework. It may be the case that the burden faced by the informal firms in the formal system is zero in the sense that they do not comply, but that their decision to be informal is a reaction to the burden of compliance. In order to integrate the issue of informality in the framework, there has to be developed a model of entry in the formal tax system, which is outside the scope of this paper. Naritomi (2019) examines how consumers requesting receipts can act as tax auditors.

The third weakness is related to tax morale and social norms. The framework considers the taxpayer behavior as responsive to the layers, but does not consider the motivation to comply which taxpayers have. Those firms that perceive the tax system to be legitimate will comply with less defensive effort as compared to firms which see it as being illegitimate, even if the layers are the same. Tax morale may therefore temper the impact of enforcement, and a full theory of the process should consider it. The framework highlights this as a line for further research rather than as an element of the current framework. OECD (2019, 2021b) explain how tax morale and taxpayer education can be measured and cultivated.

The fourth weakness has to do with the issue of political uncertainty. When a firm anticipates frequent changes in the tax law, it will invest less in capability, in the sense that its returns from the specific knowledge are shorter-lived. Political uncertainty therefore influences the capability layer, but may also influence the statutory layer through the instability dimension identified in Section 2.1. The framework incorporates the notion of instability in the framework as an aspect of the statute, but does not model the feedback effects from instability to investment. Modeling these effects would improve the framework's description of capability dynamics.

In light of these weaknesses, the following are the areas of research identified: Developing validated indicators of each layer, especially enforcement layer which is difficult to measure. Collection of panel data allowing for testing of the framework's account of each layer over time. Comparative analysis of reform packages in different jurisdictions with focus on the layers targeted and reaction of firms of different capability to reforms. Theoretical research incorporating issues of informality, tax morale and political uncertainty into the framework to extend its account of burden to beyond the formal SME sector.

5. CONCLUSION

The compliance burden on small and medium enterprises can be viewed as resulting from a combination of four layers – statutory complexity, administrative interface, firm capability, and enforcement climate. While the layers have different research questions, measurable variables, and levers for policy-making, their interactions mean that the effect of one intervention will depend on the condition of the other layers. This theoretical framework helps us understand how scholars can specify the layer under consideration when conducting their research, while it allows policy-makers to select the right interventions in relation to the layers that are applicable to specific firms. In this way, the framework highlights heterogeneity that the average estimates could overlook. Furthermore, it is subject to empirical testing. This theoretical framework should not be seen as a replacement of the descriptive and behavioral literature. On the contrary, it is based on the findings of the literature and provides a lens through which we can understand the interaction effects producing the heterogeneity in the compliance burden. Researchers need to empirically test the layered model using firm-level panel data covering all the four layers, and see whether capability interventions bring about permanent reduction of burden.

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