Tax Me if You Can:

Evidence on Firm Misreporting Behavior and Evasion Substitution*

Paul Carrillo† Dina Pomeranz‡ Monica Singhal§

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Abstract

Reducing tax evasion is a key priority for many governments, particularly in developing countries. A growing literature has argued that the use of third party information to verify taxpayer self-reports is critical for tax enforcement and the growth of state capacity. However, there may be limits to the effectiveness of third party information if taxpayers can substitute misreporting to less verifiable margins. We present a simple framework to demonstrate the conditions under which substitution will occur and provide strong empirical evidence for substitution behavior by exploiting a natural experiment in Ecuador. We find that when firms are notified by the tax authority about detected revenue discrepancies on previously filed corporate income tax returns they increase reported revenues, matching the third party estimate when provided. Firms also increase reported costs, by 96 cents for every dollar of revenue adjustment, resulting in minor increases in total tax collection.

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†George Washington University, pcarrill@gwu.edu.

‡Harvard University and NBER, dpomeranz@hbs.edu.

§Harvard University and NBER, monica_singhal@harvard.edu.

1 Introduction

Improving fiscal capacity is an ongoing challenge for governments around the world, particularly in developing economies (Besley and Persson, 2013). Tax evasion results in billions of dollars of revenue losses as well as potentially large economic distortions. The canonical model of tax enforcement, the Allingham-Sandmo model (Allingham and Sandmo, 1972), is one in which the taxpayer trades off the benefits of tax evasion against the risk of being audited and facing a penalty. In practice, however, audits are costly and may be subject to corruption. In addition, it is difficult to reconcile low observed audit rates and penalties with the generally low levels of tax evasion in developed countries.

A recent theoretical literature has therefore highlighted the importance of third party information, the ability of the tax authority to verify the reports of the taxpayer against other sources, such as an employer report of salary or the reports of a firm's trading partners (Kopczuk and Slemrod, 2006; Gordon and Li, 2009; Kleven et al., 2009). In this paper, we examine a potential limit to the effectiveness of third party reporting: the ability of the taxpayer to substitute misreporting to less verifiable margins of the tax declaration. We demonstrate that such behavior would be expected under conditions common in many developing countries. We then provide strong empirical evidence of substitution in the context of a natural experiment in Ecuador in which the tax authority notified firms of discrepancies between declared revenues and revenues estimated from third party sources. Firms adjust reported revenues in response to the notifications but offset almost the entire adjustment with increases in reported costs, resulting in only minor increases in total tax collection.

We begin with a simple conceptual framework to examine the effects of third party reporting on firm tax evasion. In this model, which builds on Kleven, Kreiner and Saez (2009), firms can affect reported profits (and therefore tax liability) by misreporting revenues and/or costs. We show that if the audit probability is a decreasing function of the profit rate, firms will have an incentive to "look small," under-reporting revenues and potentially under-reporting costs. We show that third party reporting on revenues creates a floor on reported revenues and will cause firms to partially offset by increasing reported costs. If enforcement capacity on non-third party reported margins is weak, as is likely to be the case in many developing countries, these substitution effects will be large.

We examine behavioral responses to third party reporting in the context of the corporate income tax in Ecuador. In 2011 and 2012, the tax authority (Servicio de Rentas

Internas, SRI) notified a sample of almost 8,000 firms about revenue discrepancies on previously filed corporate income tax returns. Firms were asked to submit an amended tax declaration to address the discrepancy. These notifications represent the first time such third party information was used for tax enforcement in Ecuador in any systematic, large scale way.

We present three main sets of empirical results. First, we examine misreporting in the universe of all economically active firms (about 60,000 per year). We find that 24% of firm filings report revenues below third party estimated revenues and that there is little bunching at the third party amount. These findings are consistent with our prior that there was effectively no use of third party reporting prior to the notifications. We also provide direct evidence of cost under-reporting by firms, as predicted in our framework: 23% of firm filings report costs that are below third party estimated costs. While the majority of these are cases in which firms report no tax liability, we find that 5% of all firms with positive tax liability exhibit cost under-reporting. Since third party reporting of costs is highly incomplete, these estimates provide lower bounds on cost under-reporting. This type of behavior would not be predicted under many alternative models of firm evasion, which would suggest that firms should *over-report* costs to reduce tax liability, and has important policy implications. For example, if firms have incentives to under-report costs, the self-enforcement mechanism of the VAT may be undermined.[1]

Second, we show that firms increase reported revenues in response to the notifications. When firms are given a specific revenue estimate by the tax authority, 35% of all firms that file an amendment match the indicated amount exactly. Firms that adjust revenues do so by 93 cents on average for every dollar of revenue discrepancy. The relationship between revenue adjustment and discrepancy is linear and holds throughout the distribution of notified discrepancies. When firms are told that there is a discrepancy but are not provided with a specific revenue estimate, we observe minimal sharp bunching and adjustments to revenues that are substantially less than true revenue discrepancies on average. This is consistent with the predictions in our framework and provides strong evidence that firms are misreporting both before and after the notifications.

Finally, we find clear evidence of large substitution effects: firms increase reported

[1]See e.g. Gordon and Nielsen (1997); Fedeli and Forte (1999); Kopczuk and Slemrod (2006); De Paula and Scheinkman (2010); Keen and Lockwood (2010); and Pomeranz (2013) for further discussion of evasion in the VAT supply chain. Our finding of cost under-reporting is also consistent with Kopczuk (2012), who shows that the introduction of a flat tax in Poland lead to increases in both declared revenues and declared costs.

costs by 96 cents for every dollar of revenue adjustment. These effects again hold throughout the distribution, even when revenue adjustments are in the tens or hundreds of thousands of dollars. These effects also hold regardless of whether or not firms know the exact revenue discrepancy, indicating that firms are deliberately targeting their cost adjustments to match their revenue adjustments. As a result of these offsetting cost adjustments, tax collection is an order of magnitude less than it would have been had firms only adjusted revenues.

We do not see our results as contradicting the conventional view that third party reporting is an important component of modern tax collection. Rather, our results indicate that the effectiveness of third party reporting will depend on other aspects of the enforcement environment. When third party reporting is fairly complete and enforcement capacity on non-third party margins is strong, as is the case in many developed countries, third party reporting can indeed be a powerful tool for tax collection. However, when third party reporting is highly incomplete and enforcement capacity is weak, as is the case in many developing countries, there may be severe limits to its effectiveness. It is reasonable to believe that as countries develop both information and enforcement capacity, third party reporting will play an important role in tax collection. However, our results indicate that it is unlikely to provide an easy and immediate solution to the problem of improving fiscal capacity in low income economies .

Our findings contribute directly to an emerging empirical literature examining the effects of third party reporting.[2] In audit experiments in Denmark and Chile respectively, Kleven et al. (2010) show that evasion is substantially lower on third party reported line items and Pomeranz (2013) shows that third party reporting may substitute for traditional auditing in improving tax compliance. Naritomi (2013) and Kumler et al. (2013) show that information generated from consumers and workers may play an important role in monitoring compliance by firms. None of these studies examine substitution by taxpayers in response to third party reporting, the primary focus of this study.[3]

In addition, our paper speaks to the literature on multitasking. In the classic mul-

[2]Other studies have examined the effect of generalized deterrence of threat of audit messages (see e.g. Slemrod et al., 2001; Engstrom and Hesselius, 2007; and Fellner et al., 2013) or the effect of other related aspects of the tax system, such as the importance of the remitting party (Slemrod, 2008) and the role of withholding (Carrillo et al., 2012).

[3]Klepper and Daniel (1989) use observational data to show that US firms that have a large share of non-third party reported revenue have higher compliance on "inferior" evasion margins. However, they do not examine behavioral responses to third party reporting directly.

titasking problem (Holmstrom and Milgrom, 1991), increasing incentives or monitoring on one margin may cause agents to substitute adverse behavior to other margins. A natural application of this framework is in the context of crime, but empirical evidence of substitution of illegal activity in response to monitoring is scarce (Yang, 2008; Benson et al., 1992). Our results indicate that such displacement is indeed important in the tax context, and that evaluations of an enforcement policy should measure its global impact on all margins combined, rather than on the enforced margin alone.

Finally, our paper contributes to broader literatures on tax evasion by firms and public finance in developing countries. Direct empirical evidence on the determinants of misreporting and tax evasion by firms is limited. Exceptions include Joulfaian (2000) and DeBacker et al. (2012), who examine the effects of managerial preferences and culture on US corporate tax evasion, respectively, and Best et al. (2013), who document evasion responses to minimum taxes in Pakistan. We also contribute to a relatively new literature examining behavioral responses to taxation in developing countries using administrative data (Pomeranz, 2013; Carrillo et al., 2012; Kumler et al., 2013; Best et al., 2013; Kleven and Waseem, 2013).

The remainder of the paper proceeds as follows. Section 2 provides a brief conceptual framework for examining the effects of third party reporting on firm tax evasion. Section 3 describes the Ecuadorian tax system and outlines our empirical predictions. Section 4 discusses the data and methods. Section 5 presents the results and Section 6 concludes.

2 Conceptual Framework

2.1 Third Party Reporting in the Allingham-Sandmo Framework

In this section, we develop a conceptual framework to examine the effects of third party reporting on firm tax evasion. We begin with a brief review of Kleven, Kreiner and Saez (2009) – henceforth, KKS (2009) – who embed third party reporting in the standard Allingham-Sandmo framework.

Allingham and Sandmo (1972) is an application of the Becker (1968) model of crime to the case of tax evasion. The taxpayer has true income W and chooses her level of reported income, $\widehat{W}$. She pays taxes on her declared income at rate τ. If she is caught evading,

which happens with a probability of detection p, she must pay the owed tax as well as a penalty (at rate θ) on the evaded tax (Yitzhaki, 1974). The taxpayer then maximizes her expected utility, with the first order condition of the following maximization problem implicitly defining $\widehat{W}^*$.

$$EU = (1-p)U(W - \tau\widehat{W}) + pU(W - \tau W - \theta\tau(W - \widehat{W}))$$

In KKS (2009), W is comprised of two components: W_T, which is third party reported) and W_S, which is self-reported. The tax payer chooses the reported values of these income components: $\widehat{W_T}$ and $\widehat{W}_S$. The detection probability on third party reported income is 1, so the taxpayer will set $\widehat{W_T} = W_T$. However, if there is no constraint on the level or sign of $\widehat{W}_S$, third party reporting will be irrelevant to tax collection: the taxpayer is optimizing over total $\widehat{W}$, and $\widehat{W}^*$ remains unchanged. The taxpayer will fully substitute misreporting to $\widehat{W}_S$, or, in the terminology of KKS (2009), there will be full crowd out. KKS (2009) go on to show that this irrelevance result will fail to hold if self-reported losses are disallowed or if the audit rate depends on the level of self-reported income.

We now build on this intuition to model the effect of third party reporting on tax evasion in the firm context, derive a general result for the conditions under which full substitution will occur, and consider a specific case of the model that corresponds to our empirical context.

2.2 The Case of Firms

Firms have revenues and costs and pay a flat tax on declared profits, defined as declared revenues net of declared costs. Both revenues and costs are potentially comprised of components that are third party reported and components that are self-reported. We will assume throughout that $\pi \geq 0$ and $\widehat{\pi} \geq 0$. We therefore have:

$$\begin{aligned} R &= R_T + R_S = \text{revenues},\ \widehat{R} = \text{reported revenues} \\ C &= C_T + C_S = \text{costs},\ \widehat{C} = \text{reported costs} \\ \pi &= R - C = \text{profits},\ \widehat{\pi} = \widehat{R} - \widehat{C} = \text{reported profits} \\ Tax &= \tau\widehat{\pi} \end{aligned}$$

Note that there is an inherent asymmetry in the effect of third party reporting on revenues and costs. If third party reporting is partial, it provides a lower bound on true values. If firms declare $\widehat{R} < R_T$, it is clear that they are under-reporting revenues. However, if firms declare $\widehat{C} > C_T$, this could be due to over-reporting of costs or simply due to legitimate costs that were not third party reported. We return to the implications of this asymmetry below.

2.3 Evasion Substitution

2.3.1 General Case

We now examine a generalized version of the KKS (2009) framework applied to firms. The detection probability is a function of variables observed by the tax authority, which we take as firm reports and third party reports. We assume that if misreporting is detected, the tax authority determines true revenues and costs. The penalty is therefore a function of the tax rate, firm reports, and true revenues and costs.

Firms solve the following maximization problem:

$$EU = (1 - p(\widehat{R}, \widehat{C}, R_T, C_T))U(\pi - \tau\widehat{\pi}) + p(\widehat{R}, \widehat{C}, R_T, C_T)U(\pi - \tau\pi - \theta(\tau, \widehat{R}, \widehat{C}, R, C))$$

We take R_T and C_T as given for the firm. This assumption is appropriate to our empirical context, in which firms have no opportunity to take actions to change existing third party reports at the time the notifications are sent.[4] Suppose that $\widehat{R}$ is a weakly increasing function of R_T. In KKS (2009), for example, $\widehat{R} \geq R_T$.

Proposition 1. *If revenues and costs enter the detection probability function and the penalty function only in terms of reported profits, $(\widehat{R} - \widehat{C})$, third party reporting of revenue will have no effect on tax collection.*

Proof. Suppose that the firm optimization is as above and that the resulting optimal choice of profits is $\widehat{\pi}^*$. Now consider an incremental increase in R_T. Since $\widehat{R}$ is a weakly increasing function of R_T, this will cause $\widehat{R}$ to increase by some $x \geq 0$. Since the firm

[4] In equilibrium, firms may attempt to limit the information available to the tax authority. For example, they may engage in cash rather than credit card transactions. We discuss this possibility later in the paper. Here, we consider the optimization problem of an individual firm. Please see Pomeranz (2013) for further discussion of cross-firm spillovers in enforcement.

optimization problem is only in terms of $\widehat{\pi}$, the firm can return to its original optimal level of profits simply by increasing $\widehat{C}$ by x. The firm's detection probability and penalty function will remain unchanged. ■

Note that having third party information on costs does not prevent this full substitution from occurring for the asymmetry reason discussed above. Since third party reporting creates a floor on reported costs (not a ceiling), firms can increase their reported costs without the tax authority being able to determine whether or not these costs are legitimate.

As we show below, this full substitution effect can be broken if the audit or penalty functions treat revenues and costs asymmetrically. Nevertheless, the intuitive idea that firms may respond to third party reporting by shifting misreporting to margins on which third party reporting is less binding will continue to hold. This indicates an important link between third party reporting and traditional auditing, since the effectiveness of third party reporting will ultimately be determined by the tax authority's ability to enforce non-third party reported margins.

This result is somewhat analogous to the O-ring theory of development (Kremer, 1993), in that the "weakest links" may ultimately determine the ability of the tax authority to improve capacity through information reporting. These weakest links may be larger, weaker, and more difficult to enforce in developing countries, thereby easing firms' ability to substitute and reducing the effectiveness of third party reporting.

2.3.2 Specifying the Detection Probability

We now consider a specific case of the detection probability function. We begin with a baseline case in which the tax authority has no third party information about the firm but can observe whether firms' self-reports seem "internally consistent" with each other. The detection probability can therefore be a function of firms' self-reported variables ($\widehat{R}$ and $\widehat{C}$).

Specifically, we now assume that the tax authority has some information about the true distribution of profit rates. If a firm reports \$100 in profits on \$1,000 in revenue, that may be more plausible than if the firm reports \$100 in profits on \$1,000,000 in revenue. Correspondingly, we assume that the audit probability is $p(\frac{\widehat{\pi}+\varepsilon}{\widehat{R}})$ where $p' < 0$ and ε is

a small number greater than zero.[5] This specification of the audit rule is plausible for our empirical context. In a number of field interviews, tax authority staff indicated that the reported profit rate is one of the key characteristics they consider when determining whether to audit, and numerous firm owners and accountants reported that they believe that the tax authority pays close attention to this variable.

We model firms as risk averse, which is a realistic assumption for Ecuador, in which a large share of firms are sole proprietorships or owned by a single family and corresponds more generally to a context in which firms dislike volatility on profits. This also allows ease of comparison to the standard Allingham-Sandmo framework. We assume that the penalty function is a linear function of the evaded tax.

The firm optimization problem is now:

$$EU = (1 - p(\frac{\widehat{\pi} + \varepsilon}{\widehat{R}}))U(\pi - \tau\widehat{\pi}) + p(\frac{\widehat{\pi} + \varepsilon}{\widehat{R}})U(\pi - \tau\pi - \theta\tau(\pi - \widehat{\pi}))$$

Proposition 2. *Since $p' < 0$, firms will choose the lowest level of declared revenue consistent with their declared profits. Specifically, as $\varepsilon \to 0$, $\widehat{R}^* = \widehat{\pi}^*$. This then implies that $\widehat{C}^* = 0$.*

Proof. At any given level of $\widehat{\pi}$, the firm always prefers to minimize p. Since $\widehat{R} \geq \widehat{\pi}$ and $p' < 0$, the firm choice that minimizes p is $\widehat{R} = \widehat{\pi}$, which implies that $p = p(1)$. Define $\widehat{\pi}^*(p(1))$ as the optimal choice of reported profits at this audit probability, and call this $\widehat{\pi}^{**}$. Now note that the firm can change $\widehat{R}$ while keeping $\widehat{\pi}$ fixed (by adjusting $\widehat{C}$), and this does not affect expected utility at a given p. This defines $\widehat{R}^{**} = \widehat{\pi}^{**}$. Intuitively, the firm will maximize its reported profit rate to 100% in order to minimize its audit probability and chooses the optimal level of reported profits given this audit rate. The optimal choice of $\widehat{C}$ is then zero. ■

This result arises from two assumptions. First, we have assumed that the tax authority has no direct information about true revenues or costs, an assumption which we relax below. Second, we have assumed that the p function is monotonic, so that the tax authority is always less likely to audit as the reported profit rate increases.[6] Note that

[5]The addition of ε is simply to differentiate among cases where $\widehat{\pi} = 0$, so that declaring zero profits on a large amount of revenue is more likely to trigger an audit than declaring zero profits on a small amount of revenue.

[6]This assumption could be modified so that a reported profit rate that is "too high" also appears

firms will do *all* evasion on the revenue margin and will not even report their legitimate costs. This is because they can get to their desired level of profits by adjusting either reported revenues or reported costs, but under-reporting revenues gives the added benefit of reducing the audit rate.

The Effect of Third Party Reporting We now assume that the tax authority follows the audit rule above, but that it also has third party information on revenues. We model this as in KKS (2009) by assuming that the detection probability on third party reported revenue (R_T) is 1.

Proposition 3. *Define $\widehat{R}^*$ as the optimal firm choice in the absence of third party reporting. If $R_T \leq \widehat{R}^*$, third party reporting will have no effect. If $R_T > \widehat{R}^*$, then $\widehat{R}^{*\prime} = R_T$.*

Proof. Since the detection probability on third party reported revenue is 1, the firm must report $\widehat{R}' \geq R_T$. Suppose that the firm sets some $\widehat{R}' > R_T$ and then maximizes to get an optimal level of reported profits, $\widehat{\pi}^{*\prime}$, which implies an optimal level of reported costs, $\widehat{C}^{*\prime}$. Now suppose δ is a small constant greater than zero, and the firm instead chooses $\widehat{R}'' = \widehat{R}' - \delta$ and $\widehat{C}'' = \widehat{C}^{*\prime} + \delta$. The new level of reported profits is $\widehat{R}'' - \widehat{C}''$, which is equal to $\widehat{\pi}^{*\prime}$. However, the audit probability of the firm decreases and expected utility therefore increases. Thus, $\widehat{R}^{*\prime} = R_T$ ■

We can now examine the response of $\widehat{\pi}$ to R_T. Define $Y_N \equiv \pi - \tau\widehat{\pi}$ (after tax profits in the non-audited state) and $Y_A \equiv \pi - \tau\pi - \theta\tau(\pi - \widehat{\pi})$ (after tax profits in the audited state). Taking the first order condition with respect to $\widehat{\pi}$, we have:

$$p(\frac{\widehat{\pi}+\varepsilon}{R_T})U'(Y_A)\theta\tau - (1-p(\frac{\widehat{\pi}+\varepsilon}{R_T}))U'(Y_N)\tau - \frac{1}{R_T}p'(\frac{\widehat{\pi}+\varepsilon}{R_T})(U(Y_N)-U(Y_A))$$

The first and second terms capture the "standard" Allingham-Sandmo trade-off: higher evasion results in higher utility in the non-audited state but lower utility in the audited state. The third term captures the fact that higher evasion increases the probability of being audited. As $p' \to 0$, we would expect close to full substitution ($\frac{\partial\widehat{\pi}}{\partial R_T} \approx 0$). Intuitively, this corresponds to the audit probability function being fairly flat with respect

suspicious. Since our main focus is on the effects of third party reporting, which creates a *lower* bound on reported revenues, we retain the assumption of a monotonic p function for simplicity.

to the reported profit rate. This might, for example, be reasonable if audit capacities are low and the true variance in firm profitability is high.

Cost Under-Reporting One of the implications of our framework is that firms may under-report true costs: in the case above, $\widehat{C}^{*\prime} = R_T - \widehat{\pi}^{*\prime}$, but $\widehat{C}^{*\prime} \lesseqgtr C$. Firms will adjust their reported costs in response to an increase in third party reporting of revenues, but the new level of reported costs may be larger or smaller than their true costs. Intuitively, the audit rule creates incentives for firms to "look smaller" than they are. We present direct empirical evidence that firms do indeed under-report costs in some cases in Section 5.

This has several important implications. First, it provides a microfoundation for the idea that firms may understate overall economic activity to "fly under the radar" of tax or other regulatory authorities (Almunia and Lopez-Rodriguez, 2013; Schneider et al., 2010). Second, the self-enforcement mechanism in the VAT relies on purchasing firms having incentives to fully declare costs. If some firms in the production chain under-report costs, this self-enforcement mechanism may be partly undermined. Finally, and somewhat counterintuitively, the tax authority may in fact benefit from partial third party reporting of costs. In particular, if a firm is reporting $\widehat{C} < C_T$, it may be desirable for the tax authority to force it to declare higher costs since the firm will endogenously raise reported revenue in response. Simulation results confirm that this can result in higher reported profits for reasonable parameter values.[7]

2.3.3 Limits to Enforcement

We have assumed so far that the detection probability is one if firms' revenue reports are lower than third party reported revenue. However, if there are limits to enforcement, the effective detection probability could rise discontinuously at R_T but be limited below one. This could occur if the tax authority faces constraints on its ability to enforce tax collection, even conditional on observing misreporting (Carrillo et al., 2011; Gadenne and Singhal, 2013). Note that the effective detection probability is the probability that the firm is caught misreporting and that punishment is levied. We can specify the effective

[7]Results available on request.

detection probability function as follows:

$$p = p(\frac{\widehat{\pi} + \varepsilon}{\widehat{R}}) \text{ if } \widehat{R} \geq R_T$$
$$p = p(\frac{\widehat{\pi} + \varepsilon}{\widehat{R}}) + D \text{ if } \widehat{R} < R_T$$

In this case, firms may optimally choose a level of reported revenues that is below R_T, but they will never choose an amount that is in a close range below R_T. The logic is as follows: if the firm is just below R_T, it can instead report R_T. There is a loss to the firm from doing this in the form of having to pay higher tax but a benefit because the audit probability decreases *discontinuously* by D. Therefore, there will be a range of reported revenues over which firms will not locate, instead bunching at R_T.

3 Background and Empirical Predictions

3.1 Firm Taxation and Third party Information in Ecuador

3.1.1 Rates and Reporting Requirements

We now turn to our empirical setting: the corporate income tax in Ecuador. Ecuador's per capita GDP in 2011 was approximately 5,000 USD.[8] Tax revenues are approximately 12% of GDP, with indirect taxes comprising about half and corporate income tax making up the majority of the remainder. Oil-related royalties are also an important component of overall revenues.

All incorporated firms in Ecuador are required to file an annual profit tax return (Form F101). Pre-tax profits are defined as the difference between total revenues and total costs. Firms must distribute 15% of pre-tax profits among their employees and are then taxed at a flat rate of 25% on the remainder. The 25% rate is independent of firm size and was constant for over 20 years up to and including the years that were affected by the intervention in this study.[9] There are no tax refunds for losses, but losses can be

[8]Ecuador dollarized its economy in the year 2000. All financial figures in this paper are expressed in nominal USD.

[9]Corporate tax rates were reduced to 24%, 23% and 22% in fiscal years 2011, 2012 and 2013, respectively. The tax rate is lower for profits that are reinvested; however, this aspect of the tax code is not relevant for the interventions examined here. There are certain special provisions that apply to oil

carried forward, with some limitations, for 5 years with a maximum deduction against 25% of profits. The Ecuadorian fiscal year corresponds to the calendar year and firms file the annual corporate tax return the following April.

All firms are also required to file a monthly value added tax (VAT) return (Form F104). In order to deduct input costs, this form must include a purchase annex listing the amount purchased from each supplier along with the supplier's tax ID.[10] A similar annex for sales to client firms must be submitted by firms with annual sales above 200,000 USD as well as Large Taxpaying Units, public sector firms, financial institutions, credit card companies, and firms requesting withholding refunds.

3.1.2 Third party Information and Cross Checks

The SRI can check firm self reports against several sources. Data from the purchase and sales annexes can be used to verify firm self-reports against the reports of trading partners. For example, SRI can compare a firm's own reported sales to the sum of all purchases reported *from* that firm by other firms. SRI supplements this information with credit card sales (credit card companies report total sales per month for each firm), exports and imports recorded by the Ecuadorian Customs, and returns to financial investments recorded by financial institutions.

The ability of the SRI to utilize this third party information is relatively recent. Digitized purchase and sales annex data have only been collected since 2007 and discrepancies were initially computed only in special cases, such as in the process of auditing a large company. SRI began conducting large scale cross checks of taxpayers in 2011, computing revenue discrepancies for previously filed corporate income tax returns. The notifications we now describe represent the first time SRI used third party information for tax enforcement in any large scale, systematic way.

companies and public sector companies. These firms are included in our full sample analysis but were not subject to the policy interventions.

[10] In addition to VAT withholding, firms withhold a percentage of their payments to suppliers, which they transfer to the tax authority. This withholding can be used by suppliers as a credit against their tax liability.

3.2 Policy Intervention

Our results are based on a series of natural policy experiments in which SRI notified selected firms about discrepancies between third party calculated revenue and firms' self-reported revenues on previous corporate income tax returns. Notified firms were asked to file an amended return to address the detected discrepancy. While the specific firm selection methodology is confidential to SRI, key factors included the magnitude of discrepancies and potential tax adjustment. We discuss firm selection in the context of our empirical strategy below.

We examine three rounds of notifications corresponding to detected discrepancies on tax returns from 2008, 2009, and 2010. We refer to these as the 2008, 2009, and 2010 rounds respectively. The notifications corresponding to the 2008 returns were sent in the summer of 2011; the notifications corresponding to the 2009 and 2010 returns were sent in the spring of 2012. Note that in all cases, notifications were sent for previously filed tax returns after all real transactions for the relevant tax period had been completed. Therefore, any changes we observe in response to the notifications are reporting rather than real behavioral responses.

For the 2008 round, 3,136 firms were selected for notification. The full original notification (in Spanish) is available in the appendix and the relevant portion of the message is translated below:

"Dear Mr/Mrs [XXX], General Manager of Firm [XXX],

After reviewing the databases which it possesses, the Tax Administration has identified revenue amounts that are attributable to the firm that you represent, which are larger than the amount reported on its 2008 corporate income tax return. [...] The Tax Administration requests that you submit an amended declaration for the year 2008 via Internet within 10 business days."

The SRI selected 2,221 firms for the 2009 round and 2,636 firms for the 2010 round. In these rounds, the notifications included the SRI estimate of the firm revenue based on third party sources. The relevant portion of the message is translated below:

"Dear Mr/Mrs [XXX], General Manager of Firm [XXX],

After reviewing the databases which it possesses, the Tax Administration has identified revenue amounts that are attributable to the firm that you represent, which are larger than the amount reported on its 20XX corporate income tax return, as shown in the following

table:

Fiscal Year	Line Item of the Corporate Income Tax	Value Calculated by the Tax Administration	Value Declared by the Taxpayer
20XX	699. Total Revenue	$255,300	$190,500

[...] The Tax Administration urges you to submit an amended declaration for the year 20XX."

Notifications were sent by email to the address on record, which typically belongs to the general manager or accountant of the firm. We observe firms' initial filings as well as any subsequent amendments made to their returns.

3.3 Empirical Predictions

We now discuss the policy notifications in the context of the model. In the model, the key effect of third party reporting of revenues (R_T) is to create a threshold for reported revenues, below which there is a discontinuous increase in the effective detection probability. Recall that the effective detection probability is the probability that evasion is determined and a punishment is levied on the firm. If $\widehat{R} < R_T$, this detection probability is one in the baseline case and below one (but higher than if $\widehat{R} \geq R_T$) in the case with limits to enforcement. This framework implicitly incorporates two underlying components of third party revenues: the government must have the information and use it for enforcement purposes. As discussed above, the tax authority in Ecuador did not use third party reporting in any large scale, systematic way prior to the notifications described above. The detection probability function faced by firms was thus equivalent to one in which the tax authority had no third party reports about firms ($R_T = 0$). Therefore, we can think of the policy notifications as effectively introducing R_T for notified firms.

Put in a slightly different way, we can think of our experiment as capturing what happens when the government actually tries to use the third party information it has to improve revenue collection. The mechanism through which this happens in practice is precisely what we observe in the experiment: the tax authority notifies taxpayers when a discrepancy is detected and requests them to rectify it. Note that such discrepancy notifications must be ex post to the original filing by definition but will determine *ex ante* behavior in equilibrium. As the tax authority continues to collect and use third party information, taxpayers will update their expectations about the consequences of

filing a return with a discrepancy and adjust their initial reports on both third party reported and non-third party reported margins accordingly. The experiment sheds light on the short-run equilibrium effects of third party reporting, holding other aspects of the enforcement environment constant. As we discuss in the concluding section, there may be additional long-run equilibrium effects of third party reporting as tax authorities improve their overall enforcement capacity.

There are at least two reasons that the responses we observe are, if anything, likely to provide an upper bound on the short-run equilibrium effect of third party reporting on revenue collection. First, in equilibrium, firms may respond to the use of third party reporting by attempting to reduce the information available to the government. For example, firms might switch from credit card to cash transactions. Our experiment does not capture these margins of behavioral response, since firms no longer have the ability to affect third party reports for prior tax years. Second, we might expect that perceptions of the overall enforcement environment (audit rates and penalties) are likely to be higher once the firm has been informed by the tax authority that there is a problem with its return and that it is under scrutiny relative to a situation in which firms are filing initial reports about their revenues and costs. However, we cannot rule out the possibility that substitution effects are larger in our experiment than they would be in equilibrium. For example, if taxpayers see the notifications as the start of a bargaining process, they might choose an aggressive "opening offer," as hypothesized in Slemrod et al. (2001).

We begin with predictions for revenue and cost discrepancies in the universe of firms. If there was effectively no third party reporting prior to the policy notifications, we should observe some firms setting revenues below the third party level ($\widehat{R} < R_T$), and we should not see bunching at R_T (bunching would arise from the third party constraint binding). Note that it is consistent with the model for some firms to set $\widehat{R} > R_T$: this would simply indicate that the constraint is not binding. For example, if a firm is very risk averse, it might choose a high level of reported profits and would then need to choose a level of reported revenue consistent with that level of declared profits.

The model also predicts that some firms may under-report costs, setting $\widehat{C} < C$. While we do not observe real costs C, we can perform a stricter test for cost under-reporting by examining whether firms report $\widehat{C} < C_T$. Since C_T is likely to be substantially smaller than C (only a small share of firms are required to file sales annexes), this test will provide a lower bound on the extent of cost under-reporting.[11]

[11]It is possible that partner firms misreporting sales, on which the third party cost variable is based.

We next turn to the policy experiments. All firms in the notification sample have $\widehat{R} < R_T$ by definition, since SRI only sent notifications to firms that under-reported revenues relative to third party estimates. We first note that firms could only have been legally prosecuted for failure to submit an amended return if a written notification had been delivered to them in person by a member of SRI staff. This is very expensive, and the email option for notifications was chosen due to resource constraints. Our context thus best corresponds to the "limits to enforcement" case in Section 2. If there are limits to enforcement and a fixed cost to filing an amended return, some firms may simply choose not to file an amendment. Again, this occurs because the effective detection probability, the probability that the firm is caught and punished, is below one in the limits to enforcement case even when $\widehat{R} < R_T$.

Among firms that do file an amendment, we should see bunching of reported revenues at R_T when R_T is disclosed (2009 and 2010 rounds), as discussed in Section 2. We also expect to see firms offsetting the increase in reported revenue with an increase in reported costs. The magnitude of this substitution effect will depend on the gradient of the audit probability with respect to the reported profit rate. If this gradient is fairly flat, substitution effects will be large.

4 Data and Empirical Strategy

4.1 Data

We combine several data sources from SRI. Information about self-reported revenues and costs on all original and amended tax returns is compiled from the corporate income tax form F101. We observe values for all line items as well as the submission date for each amended version of the return. Note that firms can submit amendments to the F101 without presenting any additional documentation to SRI.

Revenue and cost discrepancies are calculated using third party data. Specifically, third party revenue is the sum of exports, bank interest, and the maximum of purchases reported by other firms and purchases made from the firm using credit cards. We take the maximum because we do not have transaction-level credit card purchases and therefore

However, since the incentive is for firms to under-report revenues, this type of misreporting will typically result in a *lower* C_T.

cannot determine the overlap between the final two categories. Third party costs are the sum of imports and sales reported by other firms. Purchases and sales reported by other firms are calculated for each firm by SRI using data from the F104 annexes described in Section 3.

This third party revenue measure was hand checked by SRI staff for the samples of notified firms, resulting in some adjustments. These adjusted measures of R_T were provided to firms in the 2009 and 2010 rounds and were calculated (but not provided to firms) in the 2008 round. In our results below, we use the unadjusted third party measure for the cross-sectional results and the SRI-adjusted measure for evaluating behavioral responses to the policy experiments. In practice, the adjusted and unadjusted measures are highly correlated, and the policy experiment results are robust to using only the unadjusted variation in R_T.

We define the universe of all firms as firms that filed an F101 in a given year and for whom there is evidence that they are economically active: either the firm self-reports non-zero revenues or costs or we have non-zero third party information on revenues or costs for that firm. In 2008, we have third party information for the notification sample but not complete third party information for all firms. In this year, we therefore include firms for whom self-reported revenues or costs are non-zero.[12]

Table 1 shows summary statistics for the full sample for fiscal years 2008-2010 (pooled). The sample includes 87,076 firms and almost 200,000 firm-year observations. The mean declared annual revenue is $1.58 million, with a median of $42,200. Declared costs have a mean of $1.48 million and a median of $41,600. Correspondingly, there is a large range in tax liabilities. The mean is $23,000; however, the median is essentially zero (22 cents), and the standard deviation is over $600,000. The fact that the median firm reports zero tax liability is not unique to Ecuador: a 2008 US Government Accountability Office (GAO) report showed that between 1998 and 2005 an average of 65% of all US firms, including small and medium enterprises, reported no tax liability (U.S. Government Accountability Office, 2008).[13]

When examining firms' own reported revenues and costs minus the third party estimates, we find that means and medians on both variables are positive, indicating that the average firm reports both larger revenues and larger costs than the third party estimate.

[12] 77% of firms in the 2009-10 sample meet this criterion.

[13] This figure reflects US held corporations that filed the 1120 or 1120A tax form.

Note that the fact that average reported costs are higher than third party costs does not mean that firms are over-reporting costs: third party estimated costs are likely to be incomplete. In addition, there is heterogeneity in these discrepancies. As we discuss in detail below, a substantial share of firms report lower revenues or costs than the third party estimates.

We now turn to the policy experiment samples (Table 2). The top panel shows firms that were selected for notification by SRI in each of the three notification rounds, corresponding to firms' 2008, 2009, and 2010 returns. Figures reflect the last pre-notification filing corresponding to the relevant tax year. In this sample, own reported revenues are lower than third party revenues for all firms by definition. Revenue discrepancies are large, both in absolute terms and as a share of baseline reported revenue. On average, self-reports were lower than third party estimates by \$307,000, \$176,000 and \$197,000 in 2008, 2009 and 2010 respectively. Examining the distribution of $(R_T - \widehat{R})/(\widehat{R} + 1)$, we find that the median is 0.63. The mean is close to 50,000, largely reflecting the fact that 28% of firms in the notification sample report zero revenues despite large third party revenue estimates. Conversations with SRI staff confirm that summary statistics for the 2008 round differ from the 2009 and 2010 rounds because of adjustments in the selection criteria for notification; summary statistics for the full sample are very similar across the three years.

There were 3,136 firms selected for the 2008 round; 2,221 for the 2009 round; and 2,636 for the 2010 round. Notifications were sent in the summer of 2011 for the 2008 round and in the spring of 2012 for the 2009 and 2010 rounds. Some firms were notified in more than one round; our results are robust to restricting the samples to firms that were only notified once during the period. Not all firms selected for notification actually received notifications: approximately 7% of messages bounced due to invalid email addresses, and it is possible that additional notifications were not received or read by the intended recipients. We can therefore think of the notification sample as an "intent-to-treat" sample.

The lower panel presents summary statistics for firms that submitted an amended return after receiving the notification. We count a firm as an amending firm if it filed an amendment within a three month window after the notification.[14] The share of firms in

[14]In 2009 and 2010, we observe the firm-specific notification date. In 2008, as we discuss below, we impute the exact notification start date and we do not observe firm specific notification dates. We assume that the 2008 notifications were made over a one month period following the start date, as in 2009 and 2010, and therefore consider amendments filed within a four month window of the start date in 2008 to be

the notification sample that filed an amendment was 19% in the 2008 round, 11% in the 2009 round, and 16% in the 2010 round. Note that these figures understate true response rates since, as discussed above, not all firms in the notification sample actually received a notification. The observation that a substantial share of firms choose not to amend is consistent with limits to enforcement: if the probability of being caught and punished is less than one even if self-reported revenues are lower than third party reports, firms may optimally choose to maintain revenue discrepancies after receiving a notification. Amending firms are somewhat smaller in terms of overall economic activity than the full notification sample, but median revenue discrepancies are actually quite similar in the two samples.

Given the magnitude of revenue discrepancies, notifications had the potential for large effects on total tax collection. For example, if all firms in the 2009 and 2010 rounds had amended their returns to match the SRI provided estimates of revenue, aggregate pre-tax revenue would have increased by approximately $391 and $522 million for the 2009 and 2010 fiscal years, respectively. As a back-of-the-envelope calculation, this would have increased tax collection by a total of $194 million.[15] Among just the group of firms that amended their returns, total tax collection would have increased by $39 million for 2009 and $76 million for 2010 had firms only adjusted revenues to match SRI-estimated revenues. As we show below, actual tax revenue increases were substantially smaller as a result of firms offsetting their revenue adjustments with adjustments to reported costs.

4.2 Empirical Strategy

We first consider the external validity of our experiment. The sample of firms selected for notification is not random: firms were selected based in large part on their revenue discrepancies and potential tax adjustment. The observed responses might therefore be different in the general population of firms. However, the sample we study is of particular interest in the context of tax enforcement, since these are precisely the firms for whom the introduction of third party reporting had the greatest potential for improved tax collection.

We next turn to internal validity. We estimate the causal effects of the notifications

as consistent as possible with the later rounds. In practice, over half the firms that amended their return responded in less than one month and our results are robust to choice of the post-notification window.

[15] We estimate predicted tax revenue as the tax rate (25%) multiplied by 85% of the additional revenue, which reflects the new pre-tax profits net of distributions to workers.

by comparing firms' post-notification and pre-notification filings. The identifying assumption is that firms' own pre-notification filings provide a valid counterfactual for revenue and cost reports in the absence of notification. The intuitive justification for this identifying assumption is that the probability that firms spontaneously revise their returns for previous years after such a long period absent a notification is extremely low.

This assumption is confirmed in Figure 1, which plots amendment rates for the notification sample (right hand column) and for the rest of the full sample of firms (left hand column) relative to the start of the notification period, indicated by zero on the x-axis. Amendment rates are essentially zero for both samples prior to the notifications. In the notification sample, we see a clear increase in the amendment rate following the commencement of the notifications. There is no such increase in the non-notified full sample. Moreover, as we show below, the types of adjustments made by non-notified firms that happen to revise their returns are entirely different from the amendments by notified firms. Correspondingly, the comparison between the pre-notification and the amended return of firms that received a notification provides a causal estimate of the detected discrepancy notification on firms' reporting decisions.

In the 2008 round, we know that notifications were sent in August and September of 2011 but do not observe the precise notification dates. However, we can impute the start date based on the timing of the spike in the amendment rate for the notification sample as compared with the 2009 and 2010 rounds. Based on this discontinuity, we impute the start date for the 2008 round as August 11, 2011. In the subsequent analysis, we use the firm-specific notification dates for the 2009 and 2010 rounds and August 11, 2011 as the notification date for the 2008 round. The pre-notification reports are defined by the last observed F101 filing or amendment prior to these dates. The post-notification reports are defined by the first observed amendment (if any) after the notification during the post-notification windows defined above.

In our main empirical results, we focus on the sample of amending firms. We also present results for the full notification sample. These results are mechanically attenuated, since a firm in the notification sample that did not file an amendment will have no change to its reported revenues and costs by definition, but the estimates are still highly statistically significant.

5 Results

5.1 Evidence from the Full Sample of Firms

5.1.1 Revenue Discrepancies

Before analyzing the impacts of the discrepancy notifications, we briefly examine the pattern of revenue and cost discrepancies in the full sample of active firms in 2009 and 2010, the two years for which we have data on third party reported revenues and costs for all firms. Figure 2, Panel A plots the difference between the log of own reported revenue and the log of third party revenue for firms with non-zero third party reported revenue. We add one to these variables and in all other log specifications to deal with zero reports.

As discussed above, firms file reports with own reported revenues that are larger than third party estimated revenues on average. However, consistent with our empirical predictions, we also see filings with revenue under-reporting: 24% of filings report revenues that are below third party revenues. We do observe a small degree of approximate bunching around R_T. However, this bunching is not sharp: only 3.8% of filings have own reported revenues that exactly match the third party estimate, and these are cases where R_T is relatively small on average. As we will show, responses to the notifications result in much stronger approximate and sharp bunching.

5.1.2 Cost Discrepancies

Figure 2, Panel B plots analogous differences in costs for firms with non-zero third party reported costs. We observe firms with declared costs both above and below the third party level and essentially no bunching at C_T. If we examine the full sample, including filings for which we do not have third party information, we see somewhat stronger bunching at both R_T and C_T (Figure A1). This additional bunching reflects cases in which both the own report and the third party report are zero.

One of the predictions of our model is that firms may under-report true costs, counter to the intuition that firms should wish to over-report costs in order to reduce tax liability. This prediction arises from the incentive for firms to understate overall economic activity in order to lower audit risk. We provide direct evidence on cost under-reporting in the full sample of firms by examining the share of firms that report costs below the third

party level ($\widehat{C} < C_T$). We stress again that these estimates provide a lower bound on the extent of true cost under-reporting ($\widehat{C} < C$) due to the incomplete nature of third party cost reporting.

We find that 23% of firm filings report costs that are lower than third party costs. Although firms are allowed to carry losses forward, it is possible that limitations on loss carryforwards result in weak incentives for firms to declare costs fully if they are reporting zero tax liability. We find that firms under-report costs even when declaring positive tax liability: 9% of under-reporting firm filings have positive tax liability and 5% of all filings that have positive tax liability exhibit under-reporting of costs.

The finding that a substantial share of firms under-report costs not only provides empirical support for our conceptual framework but also has broader implications for the effectiveness of the VAT. One of the main attractive features of the VAT is that it has self-enforcing properties as a result of the conflicting incentives between buyers and sellers. Specifically, although sellers have incentives to under-report the value of the transaction, buyers will want the transaction to be reported fully in order to maximize their cost deductions. However, if buyers have incentives to under-report true costs, opportunities for evasion and collusion in the VAT can arise and production chains outside the VAT system can emerge (Keen and Smith, 2006).

5.2 Response to Notifications

We now turn to an analysis of behavioral responses to the policy notifications. We first examine how firms' reported revenues respond to the notifications and then consider effects on costs and tax liabilities. We begin with a graphical investigation of both revenue and cost adjustments and then present regression results and robustness tests.

5.2.1 Revenue Adjustments

We begin with the 2009 and 2010 rounds, in which firms were provided a specific value of the third party reported revenue R_T. Recall that our conceptual framework predicts that among firms that amend their return in response to the notification, we should observe strong bunching at R_T. This is indeed what we observe in the data.

Figure 3 shows the difference between the log of post-amendment self-declared rev-

enue and the log of third party revenue among amending firms. In contrast to the full sample results, we see very large bunching around zero, indicating that firms are adjusting their revenues to match the provided estimate of R_T. 39% of firms in the 2009 round and 35% of firms in the 2010 round match exactly, setting $\widehat{R}' = R_T$. The graph on the right shows results for the 2008 round, in which firms were told that their reported revenues were below third party estimates but were not given the actual estimate of R_T. As expected, we observe much less bunching, and only 6% of firms match R_T exactly. This exact matching in the 2008 round could reflect some firms seeking out and obtaining additional information about their revenue discrepancies from SRI.

We next investigate revenue responses in more detail by plotting the change in declared revenue (revenue adjustment) against the pre-treatment revenue discrepancy (Figure 4). Panel A shows results for amending firms. Approximately 15% of amending firms filed an amendment but did not change reported revenues or any other major variables. These firms are essentially analogous to non-amending firms. We therefore define a sample of adjusting firms as firms which made any positive adjustment to revenue following the notifications.

The first two graphs of Panel B present the results for adjusting firms for the 2009 and 2010 rounds. Conditional on making any revenue adjustment, firms tend to locate closely along the 45 degree line, matching the third party estimate. The displayed data points are restricted to the range zero to one million, but the fitted line and confidence interval reflect the full sample. The figure shows clearly that the observed bunching around zero in Figure 3 is not limited to small firms: even firms with very large revenue discrepancies matched the third party amount in their amended returns. These results show revenue discrepancies and adjustments in absolute terms without making adjustments for firm size. If anything, observed matching is stronger if we scale both axes by baseline reported revenue (Figure A2).

The right-most graphs in Figure 4 present results for the 2008 round. We do see that firms with larger revenue discrepancies make larger revenue adjustments on average, but there is much higher variance than in the 2009 and 2010 rounds. In addition, the fitted line in Panel B lies clearly below the 45 degree line, indicating that firms in the 2008 round tend to adjust revenues by less than the true estimated revenue discrepancies.

Comparing the 2008 results with the 2009 and 2010 rounds yields several implications. First, these results indicate that the notifications did in fact effectively change R_T.

An alternative possibility is that firms knew R_T even prior to the notifications, and the notifications changed only the effective detection probability. If this were true, we would not see differences in responses between 2008 and the other rounds. Second, we find that when firms are not provided an estimate of R_T, they tend to make revenue adjustments that are smaller than estimated discrepancies. This is consistent with the model's prediction that firms will try to minimize $\widehat{R}$. Finally, the 2008 results provide strong evidence of misreporting both before and after the notifications. One possible interpretation of the 2009 and 2010 results is that the responses are a result of firms correcting honest errors in previous returns, with the matching to R_T arising from firms and SRI converging on a true estimate of revenues. The results for 2008 provide strong evidence against this hypothesis.

5.2.2 Substitution Effects

We next demonstrate that firms made substantial offsetting adjustments to their reported costs. Figure 5 plots the change in reported costs against change in reported revenue for adjusting firms. We see that in all three rounds, firms locate almost exactly along the 45 degree line. This behavior is not restricted to small firms: it holds along the entire distribution of changes in reported revenue, even when these revenue adjustments are very large. These results hold for the 2008 round, again indicating that firms are indeed targeting their chosen level of reported revenue rather than correcting honest omissions in initial reports. We see very similar effects when cost and revenue adjustments are scaled by baseline reported revenues (Figure A3).

Table 3 presents the results from Figure 4 and Figure 5 in regression form, along with robustness tests. Standard errors are clustered by firm, and all results reported below are statistically significant at the 1% level. Panel A presents regressions of revenue adjustments on revenue discrepancies for the pooled 2009 and 2010 rounds. The baseline regression coefficient corresponds to the fitted line in Figure 4, Panel B. This coefficient is 0.927, indicating that adjusting firms increase their reported revenues by 93 cents for every dollar of third party revenue. This coefficient is 1.02 when we restrict the sample to firms notified in only one round. The effects are not driven by firms responding to large revenue discrepancies: the coefficients are almost identical when we restrict the sample to firms with revenue discrepancies below $1,000,000 or firms with revenue discrepancies below $250,000. These results confirm that the observed effects hold throughout the

distribution. A very small number of firms make negative revenue adjustments; including these firms makes no difference to the estimated coefficients.

We perform two final robustness tests. First, our baseline specification uses the last F101 filing prior to the notifications as our baseline measure of reported revenue. In some cases, the measure of baseline revenue provided to firms on the letters from SRI differs slightly. Using the letter measure in our calculation of revenue adjustments makes no difference to the results. Finally, as discussed above, the measure of R_T provided to firms is derived from the cross check data but was adjusted in some cases by SRI staff. Our results are robust to restricting the sample to cases where the unadjusted and adjusted measures are the same, so that all variation in R_T arises solely from the cross check data itself.

Panel B presents regressions of cost adjustments on revenue adjustments for the pooled 2008-2010 rounds. The baseline regression coefficient corresponds to the fitted line in Figure 5. This coefficient is 0.962, indicating that adjusting firms increase their reported costs by 96 cents for every dollar of revenue adjustment on average. This result is strongly robust to the same robustness tests described above.

5.2.3 Effects on Tax Revenue

Given the results above, it is not surprising that overall effects on tax collection are modest. Figure 6 plots a histogram of changes in log tax liability for adjusting firms. We see a large spike around zero, consistent with firms having offset much of their revenue adjustments with corresponding cost adjustments.

Table 4 presents regressions of levels and logs of revenue adjustments, cost adjustments, and resulting changes in tax liability. Panel A shows results for firms that submitted an amended declaration after receiving the notification and Panel B for all firms that were intended to be notified. The coefficient on 'post' indicates the difference in declared amounts before and after the notifications. If a firm made no amendment in the relevant post-notification window, its post-notification values are defined as being the same as its pre-notification values. Standard errors are clustered at the firm level, and all results are significant at the 1% level.

Panel A shows that amending firms on average increased their reported revenue by \$86,000 and their costs by \$80,000, resulting in an average change in tax liability of \$1,900.

This increase in tax liability is an order of magnitude less than the counterfactual in which firms adjusted only revenues. The log estimates indicate that the notifications resulted in an approximately 30-fold increase and revenues and costs and about a 7-fold increase in tax liability. This large percentage increase in tax liability reflects the fact that some of the treated firms had very low levels of pre-treatment declared tax liability.

We see similar patterns in the full notification sample (Panel B). These effects are mechanically attenuated by the amendment rate, since non-amender firms in the notification sample had zero adjustments by definition. However, even in this sample, the observed effects are significant at the 1% level.

Our estimates imply that the total incremental tax collection attributable to the notifications was approximately $2 million. While non-trivial, this is a tiny fraction of the approximately $400 million SRI would have received had all firms amended in response to the notifications, adjusted revenues to match the third party estimates, and made no offsetting cost adjustments.

Finally, we return to our initial identifying assumption, which is that the pre-post difference in firms reports can be taken as a causal effect of the notifications. Table 4 shows a placebo test in which we simulate treatment effects for non-notified firms, assuming that these firms had been notified on the first day of the notification period in each year. We see no significant changes in revenues, costs, or tax liabilities, and the point estimates for revenue and cost adjustments are of opposite sign.

5.3 Interpretation

Overall, our results provide strong evidence indicating the limits of third party reporting. While the notifications did cause firms to adjust their reported revenues to match third party estimates, they offset much of this adjustment in increases in reported costs. These results cannot be driven by real behavioral responses, since all decisions for the relevant tax returns were made well prior to the notifications. The pattern of behavioral responses provides strong evidence of misreporting by firms, both before and after the notifications.

A natural question is why SRI would not immediately "go after" these firms. While we do not have information on actions taken against specific firms, conversations with SRI staff indicate that they are indeed planning (and may have already started) follow-up control efforts. However, note that such efforts would necessarily involve full audits of

these firms, which is time consuming and very costly. The main purpose of third party reporting is that, unlike audits, it is meant to provide a simple, low-cost mechanism to enforce tax collection.

Our results indicate that the effectiveness of third party reporting depends on other features of the enforcement environment, which may be weak in developing countries. In the context of the model, the failure of some firms to amend in response to the notifications reflects the fact that the effective detection probability, even conditional on a revenue discrepancy, is less than one. The large substitution effects we observe conditional on amending reflect a low gradient of the detection probability with respect to the reported profit rate.

While modeling the optimal audit policy of the government is beyond the scope of this paper, it is reasonable to believe that as information capacity expands, the margins on which taxpayers can substitute misreporting will diminish. In turn, tax authorities may be able to concentrate their auditing efforts on these non-third party reported margins, thereby improving the effectiveness of third party reporting for revenue collection.

6 Conclusion

Third party reporting allows tax authorities to verify taxpayer self-reports and has been shown to be a key mechanism through which developed country governments are able to enforce tax collection. In less developed countries, however, incomplete information and limits to enforcement can reduce the effectiveness of this mechanism: taxpayers may simply substitute misreporting from margins where third party information is available to other, less verifiable margins.

We present a simple conceptual framework to examine tax evasion by firms and demonstrate conditions under which such substitution behavior will occur. Specifically, we show that if the detection probability depends on firms' reported profit rates, firms will have an incentive to under-report revenues and potentially under-report costs. An increase in third party reporting will cause firms to increase reported revenues but firms will partially offset this change in revenue by increasing reported costs.

We examine the effects of third party reporting empirically in the context of the corporate income tax in Ecuador. We first demonstrate that in the cross-section of all

firms, a substantial share of firms report revenues below third party estimated revenues. Notably, we also find that some firms under-report costs, even when they have positive tax liability. This finding is consistent with our framework and has important implications beyond the context of this study, since self-enforcement in the VAT may be undermined if some firms in the production chain have incentives to under-report costs.

We next test for evasion substitution directly by exploiting a natural policy experiment in which the tax authority notified selected firms about discrepancies between declared revenue and revenue calculated from third party sources. Firms respond strongly to the notifications, amending their returns with higher reported revenues and often exactly matching the amount indicated by the tax authority. However, firms offset much of this increase through an increase in reported costs, leaving their profits and corresponding corporate tax liabilities nearly unchanged. This is true even when adjustments are in the tens or even hundreds of thousands of dollars. Critically, the notifications addressed previously filed tax returns, so observed responses indicate reporting changes rather than real economic responses.

These results demonstrate the importance of taking possible substitution effects into account when examining the effectiveness of tax enforcement measures. They also indicate the limits of third party reporting in improving tax collection when third party information is partial. The collection of third party information may have different levels of effectiveness depending on the amount of information available on other margins: as in the O-ring theory of economic development (Kremer, 1993), the weakest link may play a preponderant role for tax collection.

We do not see our results as inconsistent with the commonly held belief that third party reporting is important for revenue collection and is a key component of why developed country governments are able to sustain large fiscal capacity. Third party reporting is likely to be effective when there are relatively few margins that are not third party reported and when the tax authority can audit these margins effectively. This description provides a reasonable approximation of the environment in many developed countries. In many developing countries, however, third party reporting is often highly incomplete and there are severe limits to the effectiveness of traditional auditing. Our results provide strong evidence that in these types of environments, as theory would predict, third party reporting alone may not be a "silver bullet" in solving the problem of improving state fiscal capacity.

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Tables and Figures

Table 1
Descriptive Statistics, All Firms, 2008-2010

Revenue ($000)	1,576
	(42,169)
	[46]
Costs ($000)	1,475
	(41,560)
	[46]
Tax liability ($000)	23
	(626)
	[0]
For 2009-2010 only	
Reported revenue − third party revenue ($000)	536
	(13,505)
	[5]
Reported costs − third party costs ($000)	678
	(26,861)
	[24]
% of firms with positive third party revenue	72%
% of firms with positive third party costs	90%
Observations	192,882
Number of Firms	87,076

Notes: Group means are reported along with standard deviations in parentheses and medians in brackets. All monetary figures in USD.

Table 2
Descriptive Statistics By Year, Notified and Amending Firms

	Fiscal Year		
	2008	2009	2010
Notified Firms			
Revenue ($000)	1,542	624	592
	(6,118)	(1,260)	(1,237)
	[136]	[120]	[103]
Costs ($000)	1,439	583	552.0
	(5,398)	(1,170)	(1,153)
	[129]	[113]	[96]
Tax liability ($000)	26	11	10
	(171)	(31.0)	(27.6)
	[1]	[1]	[1]
Reported revenue − third party revenue ($000)	-307	-176	-197
	(1,741)	(312)	(388)
	[-42]	[-64]	[-66]
Observations	3,136	2,221	2,636
Number of firms with invalid email addresses	–	159	163
Amending Firms			
Revenue ($000)	1,402	370	417
	(4,367)	(944)	(959)
	[179]	[56]	[34]
Costs ($000)	1,331	352	397
	(4,172)	(887)	(923)
	[163]	[62]	[33]
Tax liability ($000)	18	5	5
	(70)	(17)	(13)
	[1]	[0]	[0]
Reported revenue − third party revenue ($000)	-217	-151	-173
	(806)	(299)	(333)
	[-40]	[-55]	[-63]
Observations	596	249	421
Start of notification period	August 11, 2011	March 26, 2012	March 26, 2012
End of notification period	–	April 20, 2012	April 20, 2012

Notes: Group means are reported along with standard deviations in parentheses and medians in brackets. Notified firms are defined as those to whom the SRI sent an email notification (including those for whom the email bounced back). Amending firms are defined as those who filed an amended return in our post-notification window (see text for details). Dates of notification period available only for 2009-2010; start date imputed for 2008 (see text for details). All monetary figures in USD.

Table 3
Treatment Effects and Robustness Tests for Adjusting Firms:
Revenue and Cost Matching

Specification:	Coefficient	(SE)	N	R^2
Panel A: Regressing Revenue Adjustment on Revenue Discrepancy (2009-2010)				
Baseline (Corresponds to Figure 4B)	0.927***	(0.105)	570	0.728
Robustness Tests				
Only firms notified in no more than one round	1.016***	(0.094)	410	0.798
Censoring to revenue discrepancies < $1,000,000	0.900***	(0.112)	556	0.623
Censoring to revenue discrepancies < $250,000	0.917***	(0.052)	495	0.657
Including negative revenue adjustments	0.926***	(0.105)	580	0.285
SRI letter measure of baseline $\widehat{R}$	0.932***	(0.098)	571	0.744
Using only unadjusted variation in R_T	1.111***	(0.151)	249	0.811
Panel B: Regressing Cost Adjustment on Revenue Adjustment (2008-2010)				
Baseline (Corresponds to Figure 5)	0.962***	(0.016)	979	0.982
Robustness Tests				
Only firms notified in no more than one round	0.960***	(0.017)	737	0.983
Censoring to revenue adjustments < $1,000,000	0.975***	(0.029)	960	0.882
Censoring to revenue adjustments < $250,000	0.897***	(0.042)	886	0.677
Including negative revenue adjustments	0.974***	(0.015)	1,016	0.988
SRI letter measure of baseline $\widehat{R}$	0.942***	(0.022)	1,054	0.962

Notes: Panel A shows linear regressions of revenue adjustments on revenue discrepancies for adjusting firms in 2009 and 2010. Panel B shows linear regressions of cost adjustments on revenue adjustments for adjusting firms in 2008-2010. All monetary figures in USD. Standard errors clustered by firm in parentheses. Level of significance: ***p ¡ 0.01, **p ¡ 0.05, *p ¡ 0.10.

Table 4
Treatment Effects on Overall Revenues, Costs, and Tax Liabilities, 2008-2010

	(1) Revenue	(2) Costs	(3) Tax Liability	(4) Log Revenue	(5) Log Costs	(6) Log Tax Liability
Panel A: Amending Firms						
Post	86,203***	80,155***	1,857***	3.448***	3.405***	1.939***
	(15,346)	(15,037)	(222)	(0.204)	(0.205)	(0.125)
Constant	871,286***	827,971***	11,237***	8.595***	8.604***	4.815***
	(7,673)	(7,518)	(111)	(0.102)	(0.103)	(0.062)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.996	0.995	0.996	0.721	0.713	0.828
Observations	2,532	2,532	2,532	2,532	2,532	2,532
Number of firms	1,175	1,175	1,175	1,175	1,175	1,175
Panel B: Notified Firms						
Post	13,653***	12,695***	294***	0.546***	0.539***	0.307***
	(2,363)	(2,310)	(35)	(0.036)	(0.037)	(0.022)
Constant	973,367***	908,564***	16,224***	9.012***	9.016***	5.201***
	(1,181)	(1,155)	(17)	(0.018)	(0.018)	(0.011)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.998	0.998	0.998	0.916	0.915	0.924
Observations	15,986	15,986	15,986	15,986	15,986	15,986
Number of firms	6,532	6,532	6,532	6,532	6,532	6,532

Notes: In Columns (1)-(3), dependent variables are in levels. In Columns (4)-(6), dependent variables are in logs (+1) to avoid exclusion of zero values. Panel A shows linear regressions for amending firms. Panel B shows linear regressions for all notified firms. Firms are pooled across 2008-2010. All monetary figures in USD. Standard errors clustered by firm in parentheses. Level of significance: $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

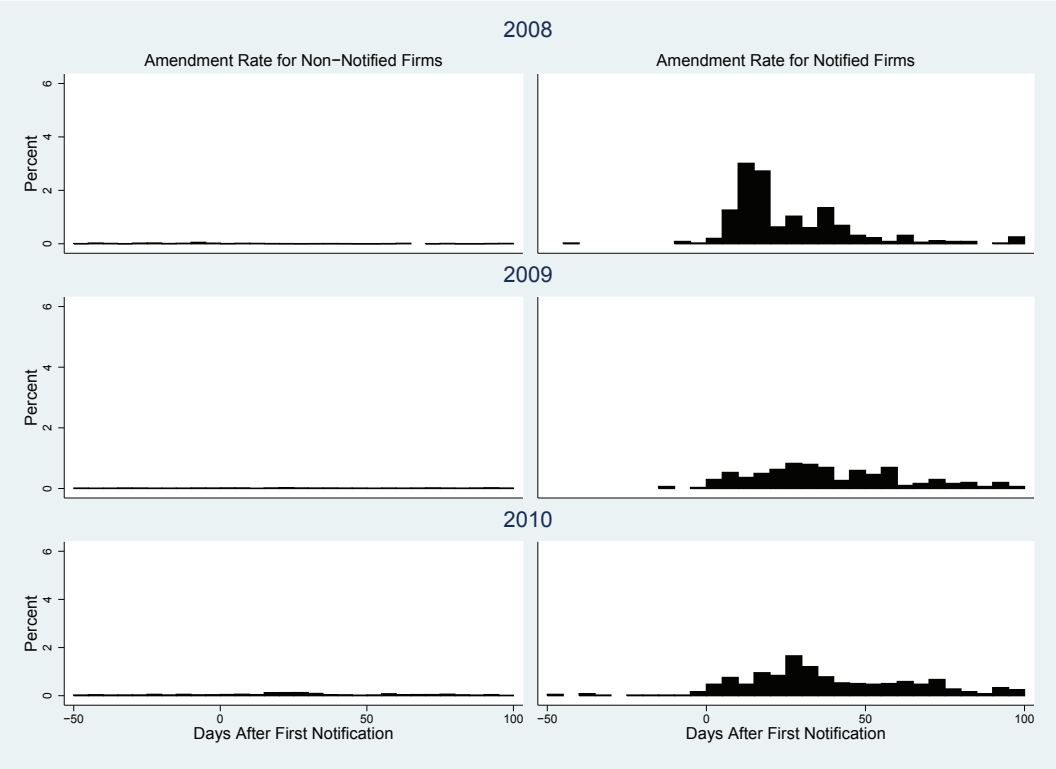
Table 5

Placebo Tests: Simulated Treatment Effects for Non-Notified Firms, 2008-2010

	(1) Revenue	(2) Costs	(3) Tax Liability
Non-Notified firms			
Post	1,820	-1,524	546
	(1,616)	(2,417)	(598)
Constant	1,488,306***	1,393,331***	22,099***
	(811)	(1,214)	(299)
Firm FE	Yes	Yes	Yes
R^2	0.848	0.836	0.856
Observations	400,128	400,128	401,482
Number of firms	90,264	90,264	90,264

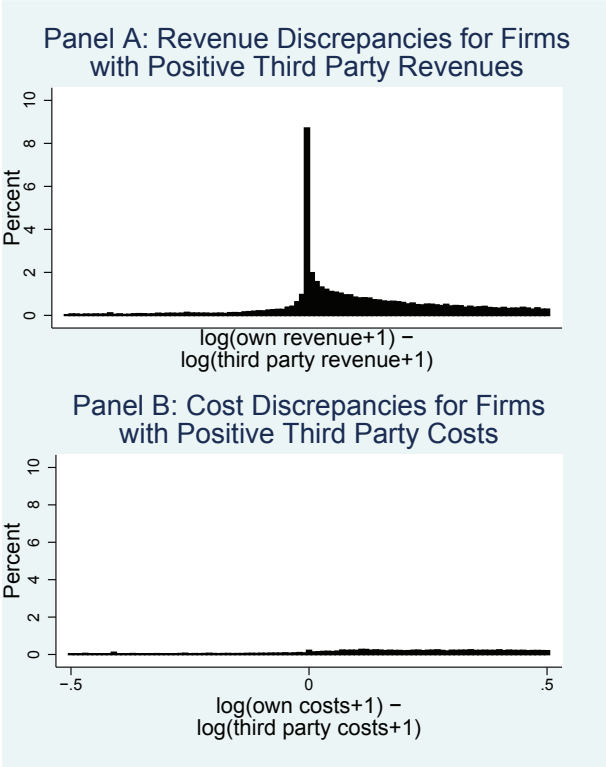
Notes: This table shows linear regressions for non-notified firms, supposing that they were notified on the first day of the notification period for each year. Firms are pooled across 2008-2010. All monetary figures in USD. Standard errors clustered by firm in parentheses. Level of significance: $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

Figure 1
Amendment Rates



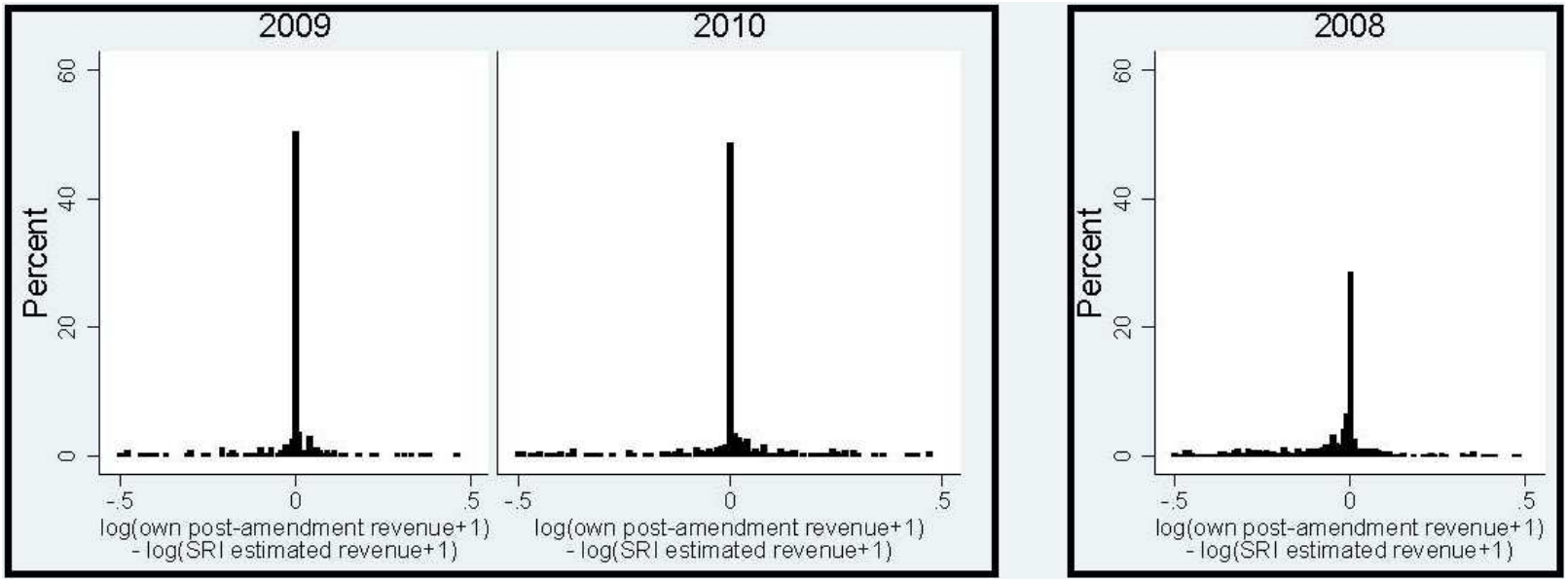
Notes: The left column plots amendment rates for the universe of non-notified firms before and after the start of the intervention. The right column does the same for notified firms. Start date imputed for 2008 (see text for details).

Figure 2
Revenue and Cost Discrepancies, All Firms with Positive Third Party Information



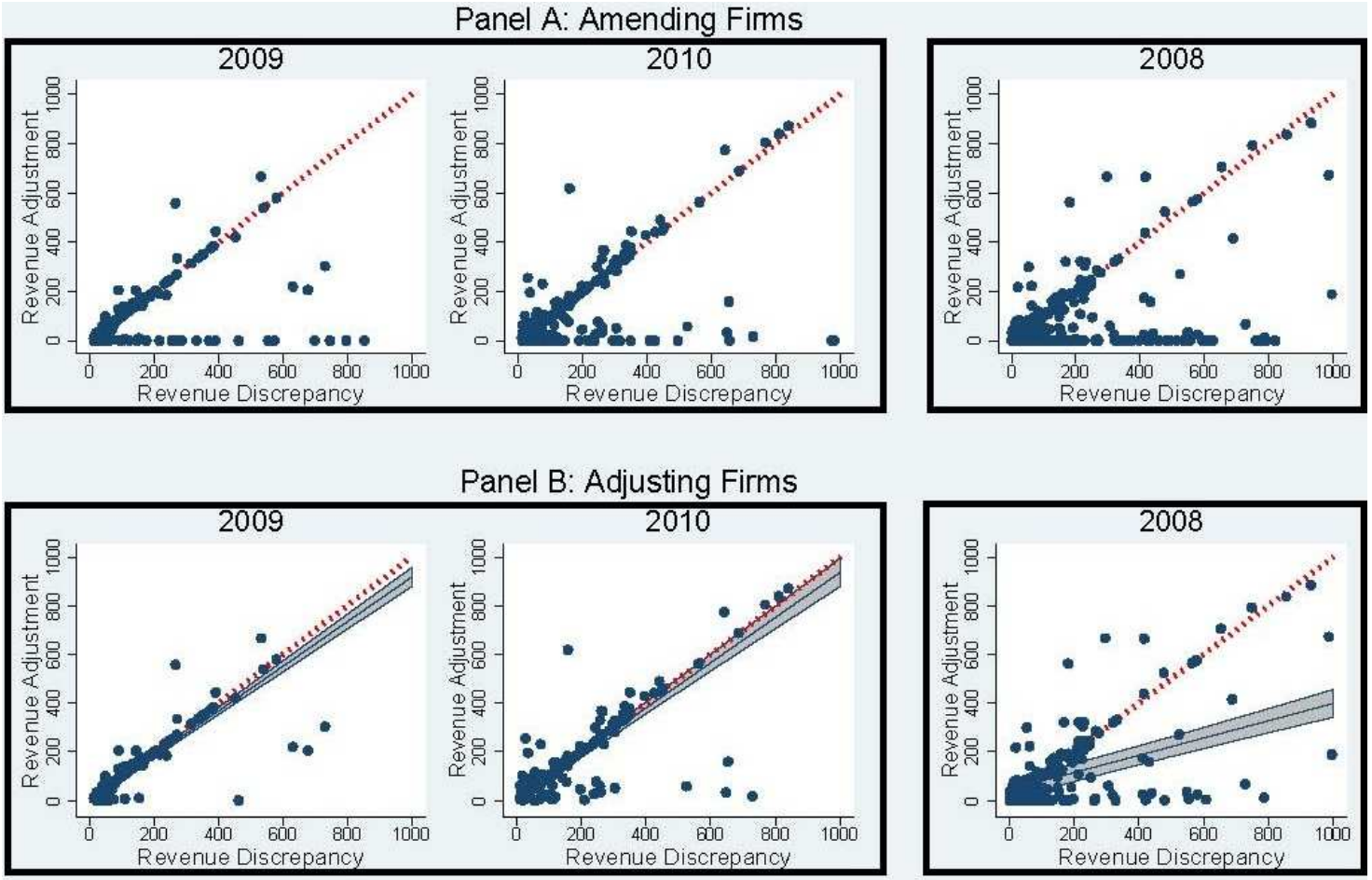
Notes: Results are shown for the sample of 59,937 active firms for which there are positive third party revenues and the sample of 74,519 active firms for which there are positive third party costs. Both panels show data for 2009-2010, the years for which complete third party information is available. Results are similar if histograms are separated by year. Bins are of size 0.01, and the top and bottom 1% of the sample are omitted when calculating bin heights for computational purposes. 3.8% of reports match revenues exactly; 0.1% match costs exactly.

Figure 3
Revenue Adjustments among Amending Firms



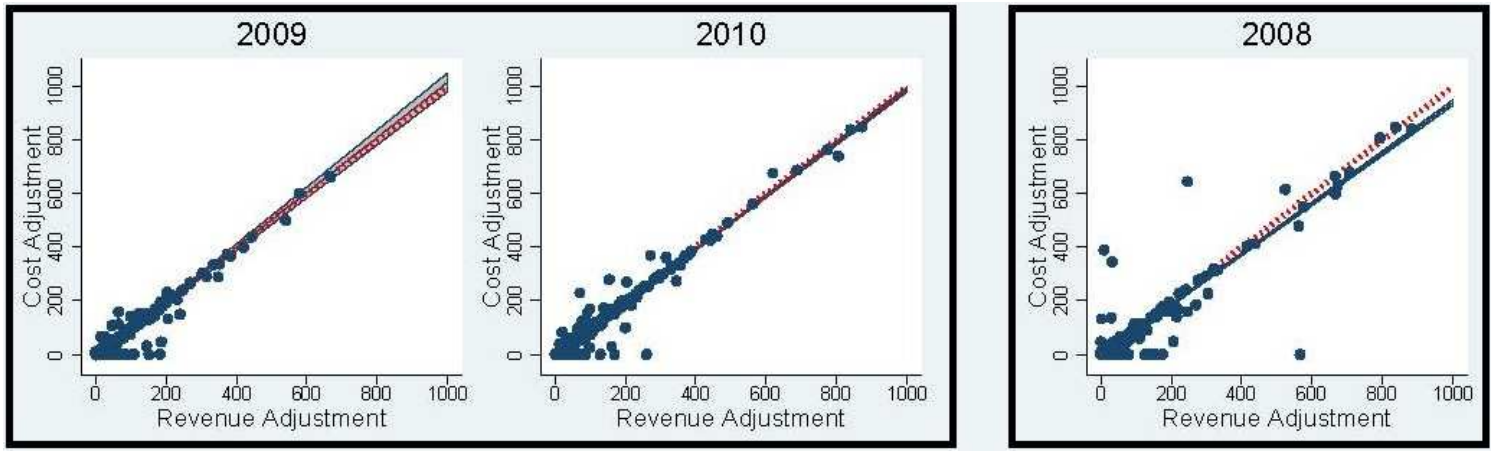
Notes: Bins are of size 0.01, and the top and bottom 1% of the sample are omitted when calculating bin heights for computational purposes. 39% of firms match exactly in 2009; 35% matched exactly in 2010; 6% matched exactly in 2008.

Figure 4
Revenue Matching



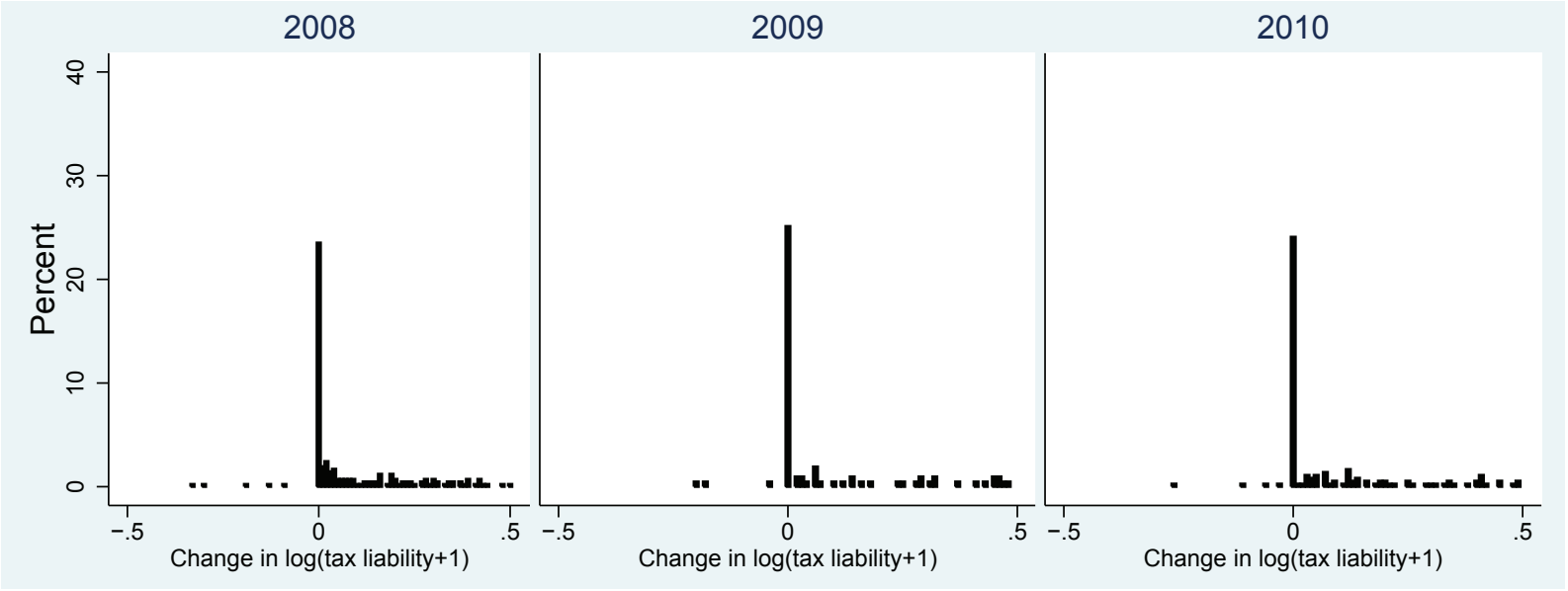
Notes: Panel A plots revenue adjustments on the y-axis against pre-notification revenue discrepancies on the x-axis for the sample of amending firms. Panel B does the same for amending firms that made a positive revenue adjustment. Also shown is a 45-degree line, a fitted line, and a 95% confidence interval for the fitted line. Axes are restricted to show zero to one million but the fitted line and confidence interval reflect the unrestricted sample. Axes are in thousands of USD. Slopes are as follows: 0.916 for 2009, 0.930 for 2010, and 0.355 for 2008.

Figure 5
Cost Matching



Notes: The figure plots cost adjustments on the y-axis against revenue adjustments on the x-axis for amending firms that made a positive revenue adjustment. Also shown is a 45-degree line, a fitted line, and a 95% confidence interval for the fitted line. Axes are restricted to show zero to one million but the fitted line and confidence interval reflect the unrestricted sample. Axes are in thousands of USD. Slopes are as follows: 1.028 for 2009, 0.993 for 2010, and 0.942 for 2008.

Figure 6
Changes in Taxes Among Adjusting Firms

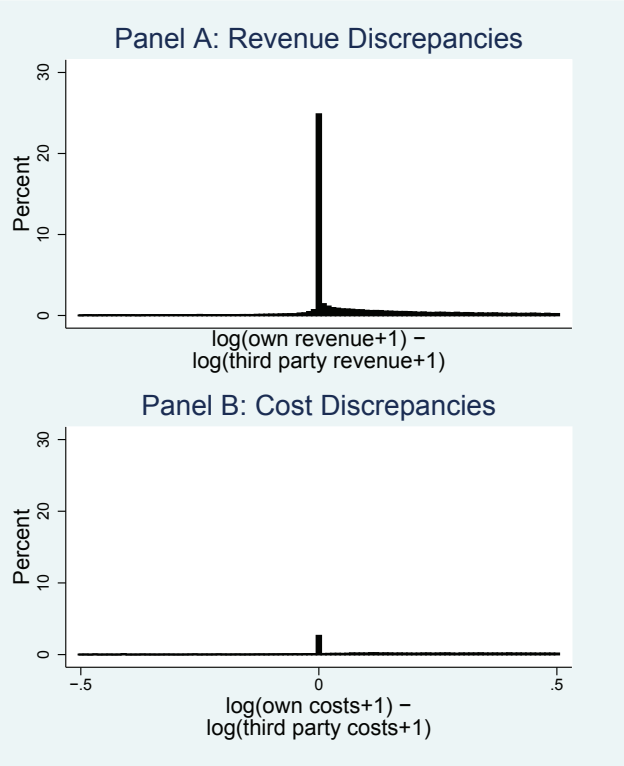


Notes: Histograms of the change in log(tax liability +1) between pre- and post-notification for amending firms that made a positive revenue adjustment. Bins are of size 0.01, and the bottom 1% of the sample is omitted when calculating bin heights for computational reasons.

Appendix

Appendix A1: Additional Figures

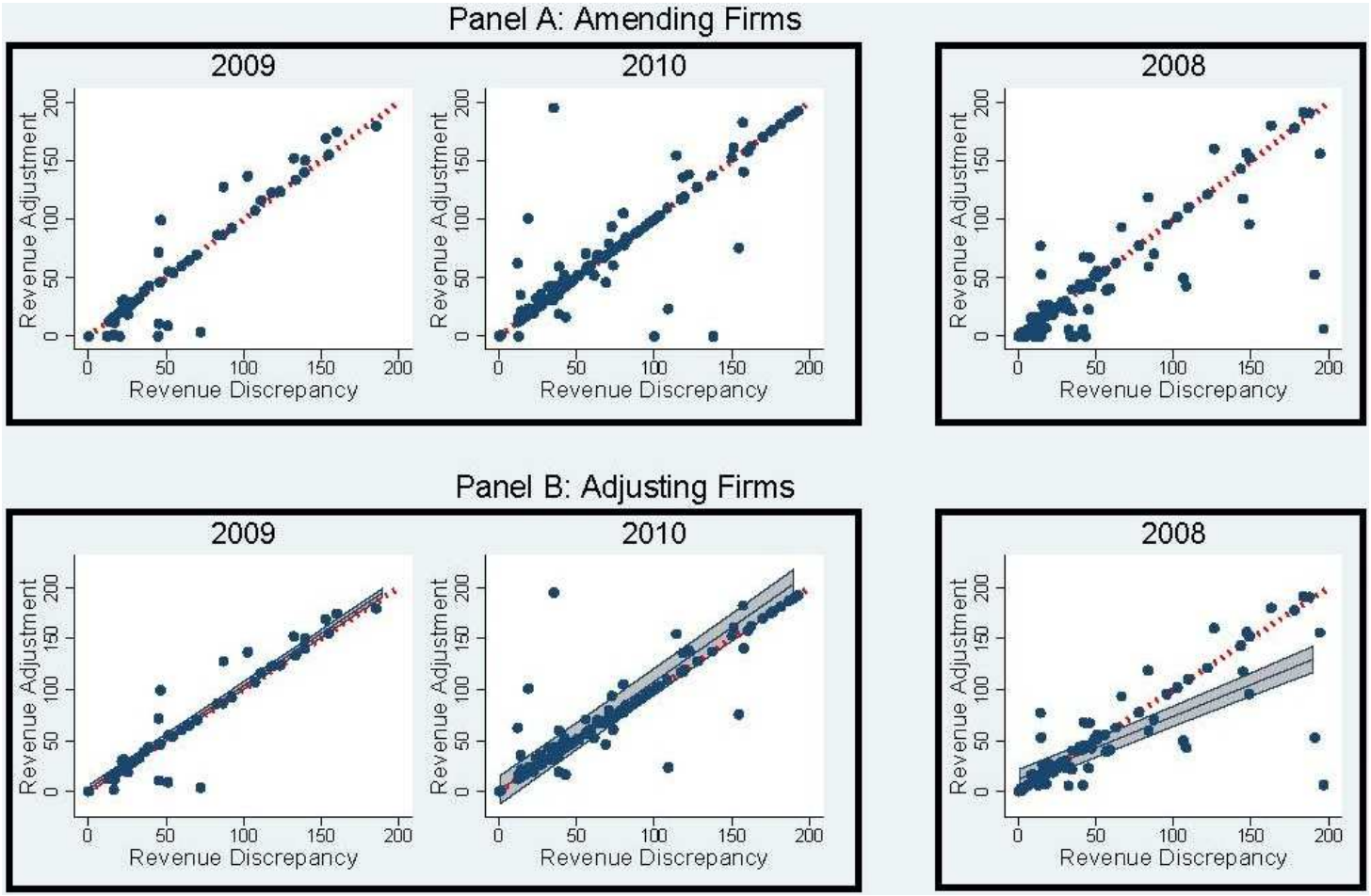
Figure A1
Revenue and Cost Discrepancies, All Firms
(Includes Filings with Zero Third Party Reports)



Notes: Results are shown for the entire sample of 82,774 active firms. Both panels show data for 2009-2010, since third party costs are not available for 2008. Results are similar if histograms are separated by year. Bins are of size 0.01, and the top and bottom 1% of the sample is omitted when calculating bin heights for computational reasons. 21.0% of reports match revenues exactly; 2.5% match costs exactly.

Figure A2

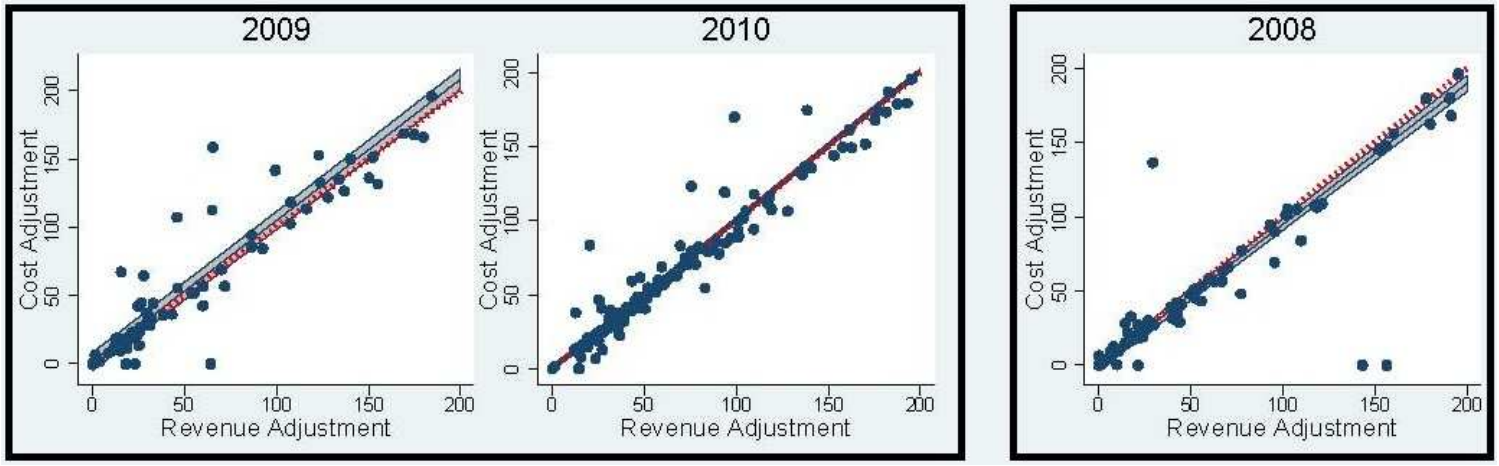
Revenue Matching, Scaled by Baseline Reported Revenues



Notes: Panel A plots revenue adjustments on the y-axis against pre-notification revenue discrepancies on the x-axis for the sample of amending firms, scaled by dividing the variables on both axes by (pre-notification reported revenue +1). Panel B does the same for amending firms that adjusted revenues. Also shown is a 45-degree line, a fitted line, and a 95% confidence interval for the fitted line. Axes are restricted to show zero to 200 thousand but the fitted line and confidence interval reflect the unrestricted sample. Axes are in thousands. Slopes are as follows: 1.017 for 2009, 1.067 for 2010, and 0.620 for 2008.

Figure A3

Cost Matching, Scaled by Baseline Reported Revenues



Notes: The figure plots cost adjustments on the y-axis against revenue adjustments on the x-axis for the sample of amending firms that adjusted revenues, scaled by dividing both the variables on the y and x-axis by (pre-notification reported revenue +1). Also shown is a 45-degree line, a fitted line, and a 95% confidence interval for the fitted line. Axes are restricted to show zero to 200 thousand but the fitted line and confidence interval reflect the unrestricted sample. Axes are in thousands. Slopes are as follows: 1.035 for 2009, 1.003 for 2010, and 0.949 for 2008.

Appendix A1: Policy Intervention Message: Year 2008

SERVICIO DE RENTAS INTERNAS

DEPARTAMENTO DE GESTIÓN TRIBUTARIA

Quito, 5 de septiembre del 2011

Señor (a) xxxxxx

Gerente General de xxxxx

El Art. 67 del Código Tributario y el segundo artículo de la Ley de Creación del Servicio de Rentas Internas otorgan a esta Administración Tributaria la facultad para efectuar la determinación, recaudación y control de los tributos internos del Estado.

Esta Administración Tributaria, luego de revisar las bases de datos con las que cuenta, *ha identificado valores atribuibles a ingresos de la sociedad a la que usted representa superiores al monto registrado en la declaración de impuesto a la renta correspondiente al ejercicio fiscal 2008.*

De conformidad a lo establecido por los artículos 89 del Código Tributario y 101 de la Ley de Régimen Tributario, las declaraciones de impuestos efectuadas por los sujetos pasivos tienen el carácter de definitivas y vinculantes, por lo que hacen responsable al declarante y, en su caso, al contador que firme la declaración, por la exactitud y veracidad de los datos que contenga; sin embargo el sujeto pasivo, a petición expresa del Servicio de Rentas Internas podrá, dentro de los seis años siguientes a la fecha de presentación de la declaración original, rectificar en una declaración sustitutiva, *los rubros requeridos por la Administración Tributaria.*

El Art. 19 de la Ley de Régimen Tributario Interno y el artículo 37 de su reglamento, establecen que todas las sociedades están obligadas a llevar contabilidad y declarar el impuesto en base a los resultados que arroje la misma. Adicionalmente los libros contables tienen que estar debidamente respaldados por los correspondientes comprobantes de venta y demás documentos pertinentes, documentación toda que puede ser requerida en cualquier momento por la Administración Tributaria para fines de control.

En atención a los antecedentes y a las normas legales citadas, esta Administración le

solicita presente la declaración sustitutiva correspondiente al impuesto a la renta del ejercicio fiscal 2008 vía Internet, dentro de los diez (10) días hábiles posteriores a la presente comunicación.

Adicionalmente le recordamos que en la declaración del impuesto a la renta del año 2008, debe registrar el valor del anticipo calculado de impuesto a la renta con cargo al ejercicio fiscal 2009, de conformidad al artículo 41 de la Ley de Régimen Tributario Interno.

A la vez se le informa que de ser el caso, el sujeto pasivo, deberá calcular el impuesto, interés y multa a pagar considerando los pagos previos efectuados, conforme la normativa tributaria vigente respecto a la imputación al pago.

Finalmente, se advierte al sujeto pasivo que la Administración Tributaria se reserva el derecho de verificar oportunamente la información contenida en las declaraciones de impuestos, que en el caso de que el sujeto activo ejerza su facultad determinadora procederá a cobrar un recargo del veinte por ciento (20%) calculado en base al impuesto determinado, y que en caso de comprobar la existencia de actos de ocultación o falsedad, por los que se haya dejado de pagar en todo o en parte los tributos debidos, en provecho propio o de un tercero, tales hechos se considerarán defraudación fiscal, conforme lo señala el artículo 342 del Código Tributario y cuyas sanciones se especifican en el Libro Cuarto del mismo cuerpo legal que se refiere al Ilícito Tributario.

En caso de requerir mayor información sobre la presente comunicación puede acercarse a las oficinas del Departamento de Gestión Tributaria, ubicadas a nivel nacional.

El envío de este correo es automático, por favor no lo responda.

Atentamente,

Servicio de Rentas Internas

Nota: Ahora es más fácil cumplir con sus obligaciones tributarias, utilizando nuestro servicio gratuito de declaraciones y anexos por internet, que le permitirá presentar ágilmente la información. Obtenga su clave de seguridad y el programa en cualquiera de las oficinas del Servicio de Rentas Internas a nivel nacional.

Appendix A3: Policy Intervention Message: Years 2009 - 2010



SERVICIO DE RENTAS INTERNAS
DEPARTAMENTO DE GESTIÓN TRIBUTARIA

Quito, a viernes, 20 de abril de 2012

Señor (a) xx

Representante Legal de xx

El Art. 67 del Código Tributario y el segundo artículo de la Ley de Creación del Servicio de Rentas Internas otorgan a esta Administración Tributaria la facultad para efectuar la determinación, recaudación y control de los tributos internos del Estado.

El Servicio de Rentas Internas, ha realizado el cruce especial de información donde se verifican los valores declarados en el rubro Ventas Gravadas y No Gravadas. Así, luego de revisar las bases de datos con las que cuenta, ha detectado valores atribuibles a la sociedad a la que usted representa, diferentes a los montos registrados en la declaración de impuesto a la renta correspondiente al ejercicio fiscal 20XX, según se puede observar en el siguiente detalle:

Año Fiscal	Casillero de la Declaración de Impuesto a la Renta	Valor calculado por la Administración Tributaria	Valor declarado por el contribuyente
20XX	699 - TOTAL INGRESOS	777.499,10	719.153,50

De conformidad a lo establecido por los artículos 89 del Código Tributario y 101 de la Ley de Régimen Tributario, las declaraciones de impuestos efectuadas por los sujetos pasivos tienen el carácter de definitivas y vinculantes, por lo que hacen responsables al declarante y al contador que firmen la declaración, por la exactitud y veracidad de los datos que contenga la misma; sin embargo el sujeto pasivo, a petición expresa del Servicio de Rentas Internas podrá, dentro de los seis años siguientes a la fecha de presentación de la declaracin original, rectificar en una declaración sustitutiva, los rubros requeridos por la Administración Tributaria.

El Art. 19 de la Ley de Régimen Tributario Interno y el artículo 37 de su reglamento, establecen que todas las sociedades están obligadas a llevar contabilidad y declarar el impuesto en base a los resultados que arroje la misma. Adicionalmente los libros contables tienen que estar debidamente respaldados por los correspondientes comprobantes de venta y demás documentos pertinentes, documentación toda que puede ser requerida por la Administración Tributaria para fines de control.

En atención a los antecedentes y a las normas legales citadas, esta Administración le apremia a presentar la declaración sustitutiva correspondiente al impuesto a la renta del ejercicio fiscal 20XX vía Internet.

Adicionalmente se le recuerda que en la declaración del impuesto a la renta del año 20XX debe registrar el valor del anticipo calculado de impuesto a la renta con cargo al ejercicio fiscal 20XX, de conformidad al artículo 41 de la Ley de Régimen Tributario Interno.

De ser el caso, el sujeto pasivo deberá calcular el impuesto, interés y multa a pagar, considerando los pagos previos efectuados, conforme la normativa tributaria vigente respecto a la imputación al pago.

Finalmente, se informa al sujeto pasivo que la Administración Tributaria se reserva el derecho de verificar oportunamente la información contenida en las declaraciones de impuestos, y que en el caso de que el sujeto activo ejerza su facultad determinadora procederá cobrar un recargo del veinte por ciento (20%) calculado en base al impuesto determinado; así como también, que en caso de comprobar la existencia de actos de ocultación o falsedad, por los que se haya dejado de pagar en todo o en parte los tributos debidos, en provecho propio o de un tercero, tales hechos se considerarán defraudación fiscal, conforme lo señala el artículo 342 del Código Tributario y cuyas sanciones se especifican en el Libro Cuarto

del mismo cuerpo legal que se refiere al Ilícito Tributario.

La asesora que se requiera para el cumplimiento de obligaciones tributarias, la puede obtener en todas las oficinas del Servicio de Rentas Internas a nivel nacional o a travs de nuestra página web (www.sri.gob.ec).

Atentamente,

Servicio de Rentas Internas



