TaxDev

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Effective tax rates and firm size: the case of Honduras

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Effective Tax Rates and Firm Size: The Case of Honduras[1]

Servicio de Administración de Rentas: Departamento de Estudios Fiscales y Económicos
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Abstract

Do some firms pay more corporate taxes than others? If so, which types of firms benefit from a reduced tax burden, and how do they achieve this reduction? Are differences in tax rates due to the design of the tax system, to strategic tax planning or to differential enforcement? These questions matter for tax design and are difficult to answer in an empirically founded and comprehensive manner. We use administrative tax data in many countries to systematically calculate firm-level effective tax rates (ETRs) and study how ETRs vary across the firm size distribution. This note shows the results for Honduras, where the corporate statutory tax rate is 25%. We find that the ETR averages 21% across all firms, increases over the firm-size distribution, and decreases at the top for the largest firms.

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1 Introduction

The effective tax rate (ETR) summarizes the tax burden faced by firms. Two effective tax rate concepts exist for corporate taxes: forward-looking ETRs, which measure the tax burden of a hypothetical investment project over its lifetime, and backward-looking ETRs, which are based on taxes paid on realized sales and profits. Our study focuses on backward looking ETRs built ex-post from micro tax return data. Depending on the exact ETR definition (more details below), it captures a combination of the effect of statutory tax provisions (e.g. statutory tax rates and tax base definitions), differences in enforcement (e.g. size-dependent enforcement Basri et al. 2019), and firms' responses to the tax system (e.g. tax planning via deductions and exemptions Siegfried 1974, Tørsløv et al. 2020). While the statutory corporate tax rate is often the same for all firms, the ETR can still vary substantially across firms due to these other elements.

Differences in ETRs across firms could matter for efficiency and for equity. From an efficiency perspective, differences in tax rates across firms lead to a misallocation of resources lowering productivity (Diamond and Mirrlees 1971, Bachas et al. 2019). From an equity perspective, smaller firms are often owned by poorer entrepreneurs than larger firms (La Porta and Shleifer, 2014), and employ poorer/more informal workers (Ulyssea, 2018). Further, there is evidence that taxes on firms pass through to employees' wages (Arulampalam et al. 2012, Suárez Serrato and Zidar 2016, Fuest et al. 2018). Thus, if smaller firms bear a disproportionate tax liability, then taxes could exacerbate inequality.

A handful of studies examine the relationship between ETRs and firm size, but these studies differ in their methodologies and results. The studies differ in the data they use—financial statements, administrative tax data or survey data—and the definition of the ETR.[2] Results are thus hard to compare, and unsurprisingly the literature has not produced consistent evidence on the ETR-firm-size relation.

We use firm-level administrative tax returns and a transparent methodology which can be applied across countries, to estimate the ETR and describe the ETR-firm-size relation. We also correlate the ETR with firm characteristics such as sector of activity, location, ownership status and firm age. Administrative tax records are an attractive data source to construct ETRs since they cover all formal firms in a country, and contain precise information on firms' tax liability.[3] In contrast, financial statements, which

[2]For example in Uganda, Gauthier and Reinikka (2006) argue that most of the tax burden is borne by mid-size firms, whereas large firms benefit from tax exemptions and smaller firms evade taxes. Other studies find that the ETR increases with firm size (Zimmerman 1983), decreases with firm size (Nicodème 2002, Richardson and Lanis 2007), is U-shaped ETR in firm size (Halleux and Valenduc 2007, Mascagni and Mengistu 2019), or that there is no systematic relation between ETRs and firm size (Lazăr 2016).

[3]Of course tax data are self-reported by firms and subject to evasion and underestimation. Depending on the type of misreporting, ETR estimates from tax data could be lower or upper bounds on the true ETR. If misreporting is firm-size or industry-specific, this type of measurement error could bias the analysis of the ETR-firm-size relationship.

have often been used in the past, only feature accounting measures of taxable profits, and hence represent an approximation of the true tax-relevant variables. Besides, in low and middle-income countries, financial statements are only available for very large, listed companies.

This note presents the methodology and results on the ETR and the ETR-firm-size relationship for Honduras. Anonymized firm-level corporate tax records for Honduras are provided by the Servicio de Administración de Rentas in Honduras. The data contains all corporate tax records for the years 2014-2019.[4] It includes the main variables used to construct ETRs and information on firm characteristics such as sector, location, firm's age or ownership is available for Honduras.

2 Methodology

We define a firm's effective tax rate as the corporate income tax liability divided by economic profit. While the choice of the numerator is straightforward, the choice of the denominator is debated in the literature. Our objective is to measure firms' profitability without the influence of exemptions and non-standard deductions that lower firms' taxable profits via tax planning activities. The relevant concepts are represented in Figure 4 in the appendix. Using total sales/turnover as the denominator is the simplest option, but is problematic, as any comparison implicitly assumes that all firms have the same true profitability. Using the net tax base as the denominator would mechanically yield an ETR that equals the statutory tax rate, since all exemptions lowering a firm's tax base are already accounted for. There is thus a trade-off between choosing a concept that approaches a firm's true profitability, and taking into account tax expenditures.

Economic profit (i.e. net profit) is defined as total income minus all standard deductions: material, labor, operational costs, depreciation and financial costs. The measure is related to financial-statement-based measures of ETRs, which use Earnings Before Interest and Taxes (EBIT) or Earnings Before Interest, Taxes, Depreciation, and Amortization (EBITDA) as the denominator. But unlike these financial-statement-based measures, we allow depreciation, interest and financial expenses to be deducted when calculating net profit. Studies based on tax data often use gross profit, defined as turnover minus the cost of goods sold. The cost of goods sold includes only direct inputs and production costs, but does not include wages, management and overhead. In countries where the breakdown of costs into its components is available, we compare our ETR measure based on net profit to alternative measures. For Honduras, only cost of goods sold is available, so we can compare our ETR measure to a turnover-based and a gross profit measure (see Appendix Figure

[4]Firms can fill their tax returns manually (form 352), or electronically (form 357). The former return does not include a detailed breakdown of the costs or the profit variable, so we restrict our sample to taxpayers filling form 357. Medium and large businesses must file their CIT returns electronically, and we find that less than 11% of the sample fill form 352 in 2019. Yet, because of the sample restriction to electronic returns, our sample may be slightly biased towards the right side of the firm-size distribution.

6). We also look at the link between ETR and sector, and find no relationship (see Appendix Figure 7).

This ETR measure is transparent and comparable across countries. The construction of the measure does not depend on country-specific rules about exemptions and deductions. By using net profit as a denominator, we are confident that all economic costs have been deducted, but adjustments to taxable profit are yet to be made: re-integration of non deductible expenses, deductions of exempt incomes, applications of capital allowances and investment incentives exemptions, and finally carried over losses from previous periods. We can thus observe differences in effective taxation due to tax expenditures.

3 Empirical Evidence on the ETR-Firm-Size Relationship in Honduras

While Honduras's standard statutory corporate tax rate is 25% in 2019, there exist several alternative regimes for the taxation of legal entities. In 2014, a Minimum Income Tax (MIT) on turnover with a rate of 1.5% was introduced for firms with a gross revenue above a given threshold. Those firms have to pay the CIT on profit or the MIT on revenue, whichever is greater. By the last year of our panel, the MIT schedule has been almost entirely phased out, with only the largest firms still liable for the MIT, so we exclude those firms from our sample.[5] In addition to the corporate income tax, some firms maybe subject to two additional taxes: the asset tax, where firms have to pay 1% on the excess above L3 million of their total assets, and the solidarity tax, where firms pay 5% on the excess above L1 million of their taxable profit. While the asset tax happens in lieu of the CIT, the solidarity tax is in addition to it.

We present the ETR for two samples of taxpayers: those subjected to the standard 25% rate, and those subjected to the asset tax (around 11% of our sample). In theory, we can observe the taxable base on profit for all firms–even for firms that pay the asset tax since they must report both tax liabilities and pay whichever tax is greater. The main reason to distinguish them is that, empirically, the profits of the two groups differ significantly: firms subject to the asset tax tend to be among the largest firms, but also tend to report lower profit margins than other firms in the sample (Figure 5 in the appendix). Measures of ETR with net profit for firms paying the asset tax is also harder to compare to the benchmark statutory rate of 25% on profit. We keep this mind when analyzing the results in terms of level.[6] We find that the average effective tax rate is 19.9% (21.1%) in 2019, for firms paying the CIT (the asset tax); and 20.5% for the whole sample. The gap between the rates can be partially explained by loss-making firms within the distribution

[5]From 2014 to 2017, taxpayers with a gross revenue smaller than L10 million were exempt of the MIT. Above this threshold, young firms as well as some sectors faced a lower rate–0.75% instead of 1.5%. In 2018, the MIT threshold got moved from L10 to L300 million. In 2019, firms with revenue below L300 million became exempt, those with revenue between L300 and L600 million faced a 0.75% rate, and 1.5% above L600 million. The lower rate of 0.5% was maintained and extend for other specific sectors. In the last year, firms paying the MIT represents only 0.3% of our sample.

[6]We could disregard taxpayers subjected to the asset tax altogether. However, the asset tax is determined simultaneously to the CIT, and the firms must pay whichever tax is greater. We would miss on some of the largest firms by excluding them.

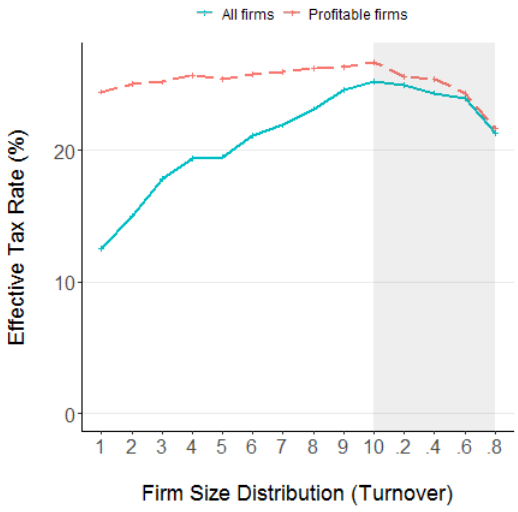
that face a negative or zero liability for the period, and hence an ETR of zero. For some firms, the ETR can be larger than the statutory rate since it is calculated before the re-integration of non-deductible costs, which artificially lowers profits to tax. In particular, for profitable firms only, the average ETR reaches 26% for CIT taxpayers. This can also be due to the addition of the Solidarity Tax which mechanically raises the STR to around 30% for some firms. The remaining *negative* gap between ETR and STR–where the ETR is lower than the STR–can be explained by the different tax exemptions. For firms paying the asset tax, the average remains around 21%.

We find that the CIT ETR increases with firm-size over most of the distribution (Figure 1). Figure 1a plots the average ETR by quantiles of firm turnover for CIT taxpayers, and shows that firms in the first decile face an ETR that is 10 percentage points lower that firms in the top decile. These differences in ETRs are mostly driven by differences in statutory tax rates and by loss-making firms. When we restrict the sample to profitable firms (red lines)–around 78% of the CIT sample–the slope flattens, suggesting that loss-making firms explain a large part of the relationship between ETR and firm-size. This is similar in other countries, where the ETR retains a slope–although steeper than in Honduras's case–in turnover for the sub-sample of profitable firms. Figure 1b focuses on firms paying the asset tax and shows a different pattern. The ETR is decreasing for the entire sample and for the largest firms where there is a drop in the ETR.

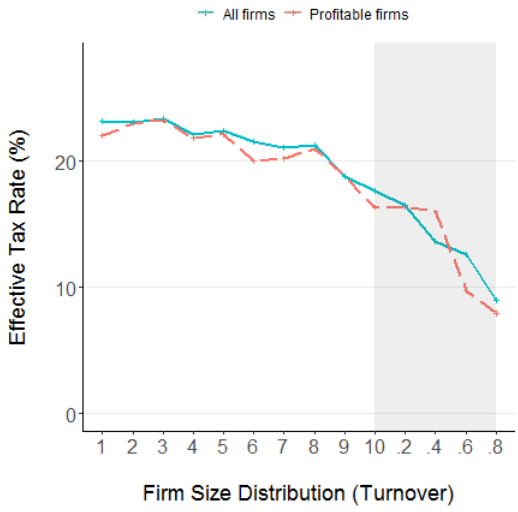
Given the contribution of the largest firms to total revenue collection, we are also interested in the ETR at the very top of the firm-size distribution. Figure 1c presents the distribution in percentiles, and further decomposes the top 1% in the top 0.1%. For the CIT, the ETR slope actually increases from the 99th percentile by more than 10 percentage points for the largest firms. This suggests that the corporate income tax is progressive and the largest firm face a relatively higher tax burden. For the asset tax (1d), the picture shows the opposite, where the top firms face a significantly lower tax burden. The data points behind the fit also show, however, than there might be no specific trend. In other countries, we observe a general decreasing trend at the top.

Alternative measures of the firm-size distribution yield a similar message. Figure 2 plots the CIT ETR by equally-spaced intervals of log turnover and shows a very similar pattern. The ETR is increasing in log(turnover) and slightly decreasing when we reach the very top of the distribution. Finally, the results are consistent when the firm's ETR is built with total liability and total net profit across years (2014-2019).

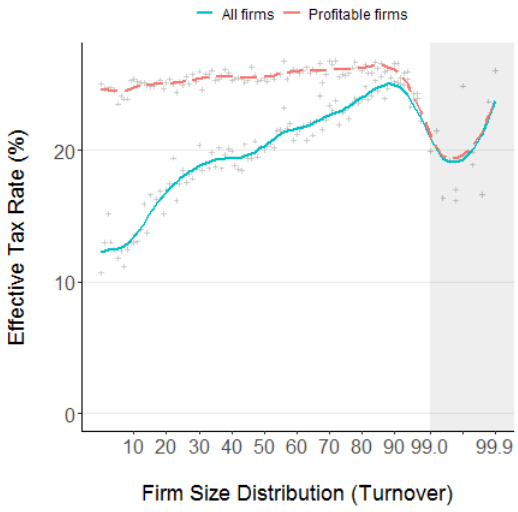
Figure 1: **Average Effective Tax Rate, by Taxes Paid**



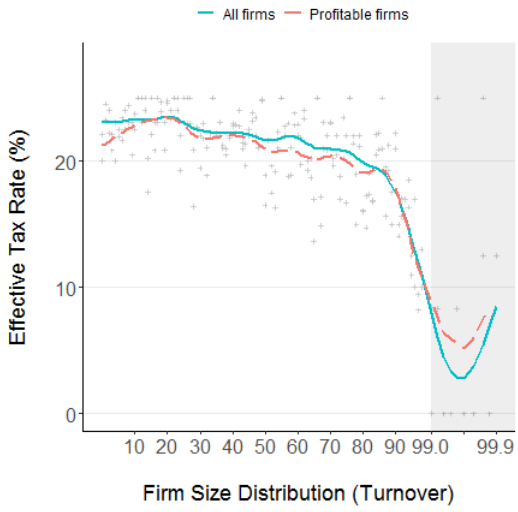
(a) Corporate Income Tax (Deciles)



(b) Asset Tax (Deciles)



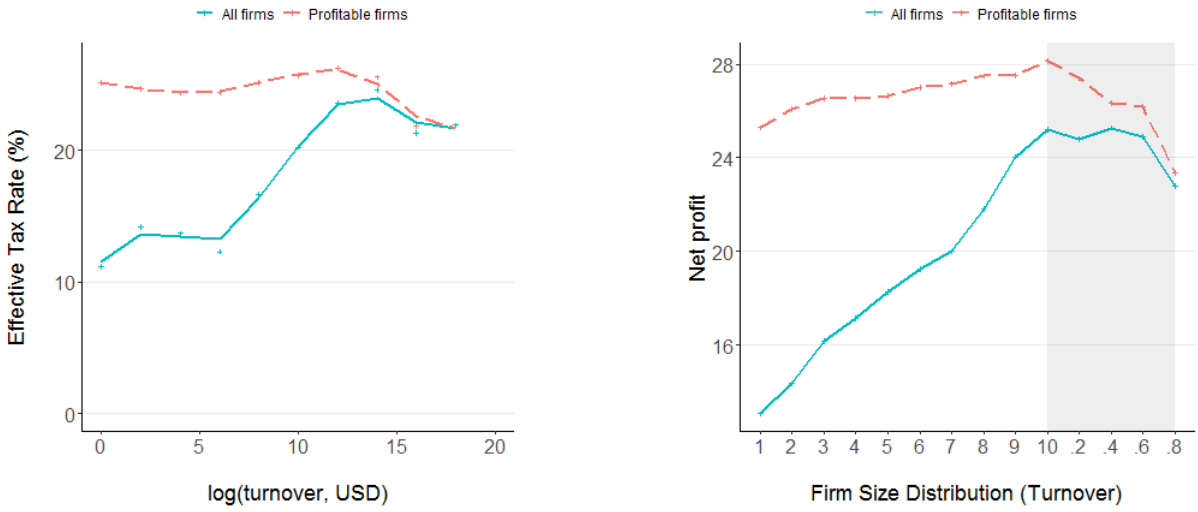
(c) Corporate Income Tax (Percentiles)



(d) Asset Tax (Percentiles)

Panel (a) and (b) show the average ETR (CIT liability/Net profit) for (a) CIT taxpayers and (b) Asset tax taxpayers, by deciles of turnover for the last available cross-section (2019). Panel (c) and (d) shows the average ETR by percentiles of turnover. Decile 10 in (a) is split in 5 or in quantiles 99.9 and 99.99 in (b), and represented in the grey area. The blue line includes all firms and negative ETRs are set to zero. The red line includes only profitable firms.

Figure 2: **CIT Average Effective Tax Rate – Alternative Measures**



(a) By Log Turnover

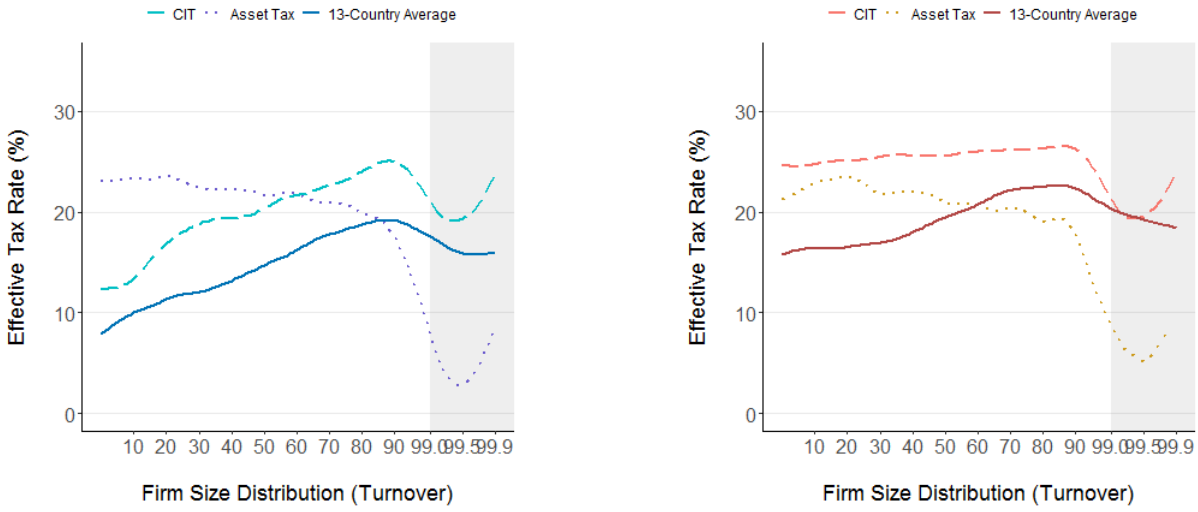
(b) By Deciles, Averages 2014-2019

Panel (a) shows the average ETR by equally-sized bins of log turnover (in USD) for 2019. Panel (b) shows the average ETR by deciles of turnover for the last year of the panel (2014-2019). In (b), the ETR is built at the firm level as the ratio of Total CIT liability over Total profit, where the totals are the sums across the years. Decile 10 in is split in 5, and represented in the grey area. The blue line includes all firms and negative ETRs are set to zero. The red line includes only profitable firms.

Honduras's ETR by firm size resembles that of the 13 other countries for which such data is available for most of the distribution. Figure 8 shows the CIT and Asset Tax ETR distribution by percentile of turnover for Honduras vs other countries. The patterns of CIT ETR by firm size are similar between the two samples, except at the top of the distribution: the ETR is increasing across most of the distribution, and increases for the largest firms (figure 3a) in Honduras, whereas it decreases for the 13-country average. In both samples, the increasing slope is progressive and sustained up to the 90th percentile. Regarding the ETR at the top, while there is a drop in the average sample, Honduras differs from the other countries by its sharp increase in the ETR for the largest firms. When we focus on the asset tax, the ETR exhibits mostly a decreasing trend, which is accentuated at the top.

When we account for loss-making firms (figure 8b), the average slope is reduced in the 13-countries average and for the CIT in Honduras. The results at the top remain fairly similar compared to the first panel. For the Asset Tax ETR, there is a sharp decreasing slope from the 90th percentile. Although it would differ in level, combining both the CIT and the Asset tax distributions would give a similar pattern as the one of the 13-average countries.

Figure 3: **International Comparison**



(a) All Firms

(b) Profitable Firms Only

Figure 8 shows the average ETR (CIT liability/Net profit) by percentile of turnover for the last year for Honduras CIT taxpayers (dashed line), asset tax taxpayers (dotted line) and for our international sample of countries (solid line). Our sample includes 13 countries: 5 countries in Africa, 6 in Latin America and 2 in the Balkans. Panel (a) includes all firms and negative ETRs are set to zero, and Panel (b) includes only profitable firms. See Appendix figure 8a for a Latin American comparison only.

4 Appendix

Figure 4: **Concepts and Variables**

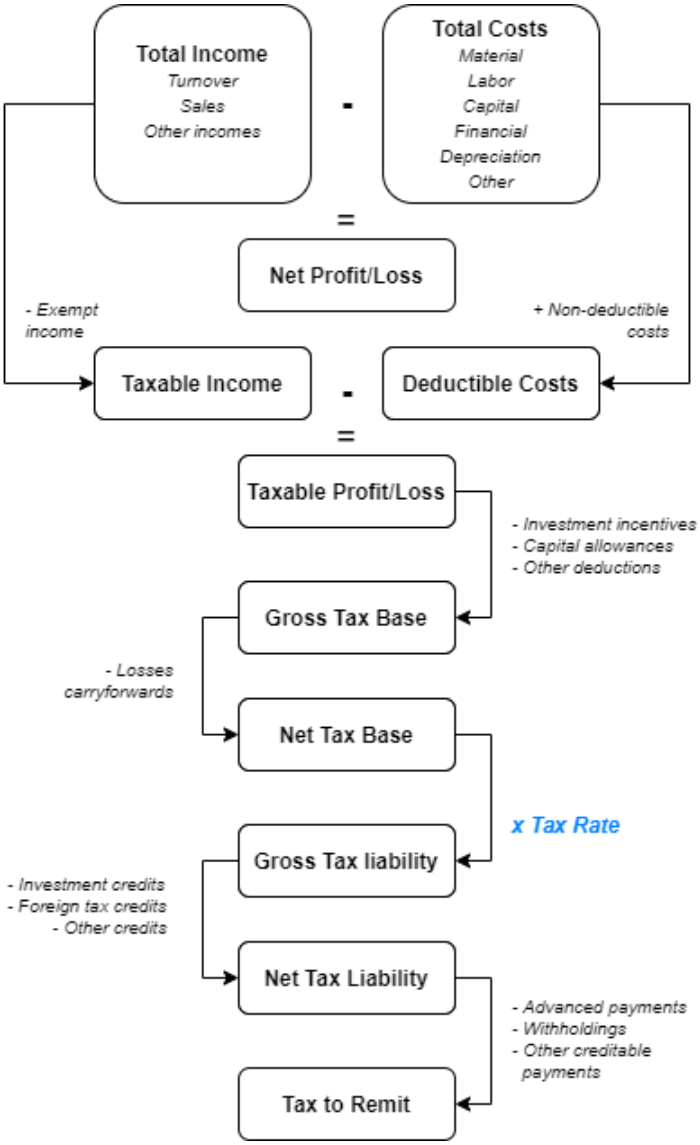
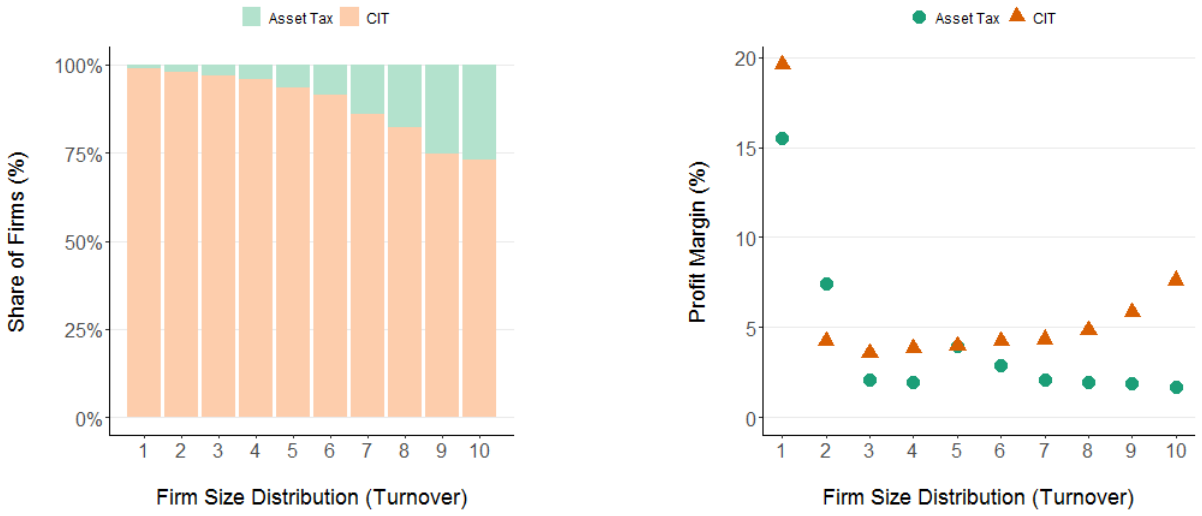


Figure 5: **Shares and Profit Margin, by Taxes Paid and by Deciles**

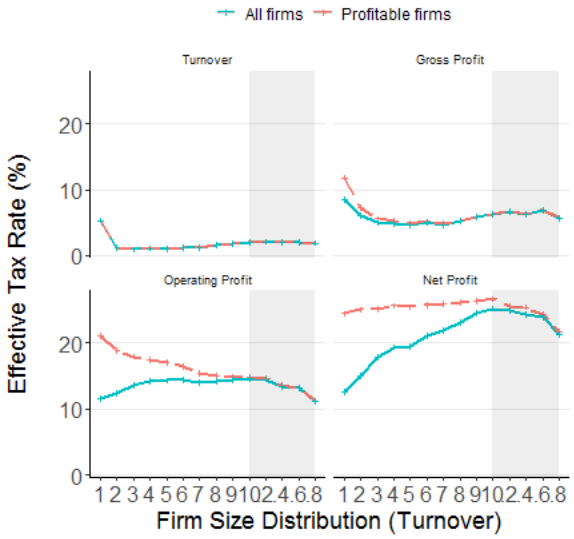


(a) Share of Firms

(b) Average Profit Margin

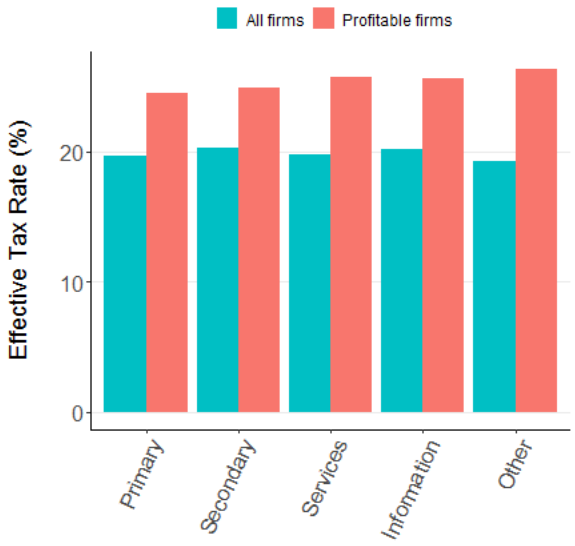
Panel (a) shows the share of firms by deciles that pay the CIT or the Asset tax. Each bins is of equal size and contains about 2,200 firms. Panel (b) shows the average profit margin (net profit/total income) by taxes paid and across the firm-size distribution. Profit margins are capped at 0 and 100%.

Figure 6: **CIT Average Effective Tax Rate with Different Profit Metrics**



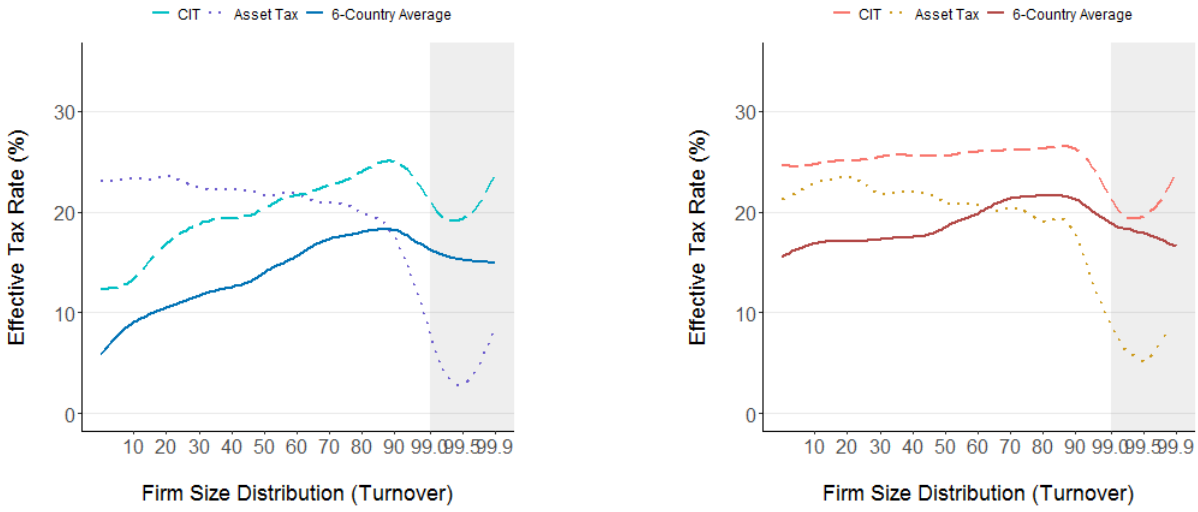
These graphs show the average for different ETR measures: CIT liability divided by Turnover, Gross Profit, Operating Profit and Net Profit, for each decile of turnover for the last year of the panel (2019). Everything else is as in Figure 1.

Figure 7: **CIT Average Effective Tax Rate By Sectors**



These graphs show the average ETR (CIT liability/Net Profit), by large categories of sectors: Primary activities (Agriculture and Mining), Secondary activities (Manufacturing, Electricity & Water supply, Construction), Services (Transport, Food and Accommodation, Health, Entertainment, Administration, Real Estate, Wholesale and Other services), Information activities (Financial activities, Information and Communication, Scientific activities and Education), and Other activities; for the last year of the panel (2019).

Figure 8: **Latin American Comparison**



(a) All Firms

(b) Profitable Firms Only

Figure 8 shows the average ETR (CIT liability/Net profit) by percentile of turnover for the last year for Honduras CIT taxpayers (dashed line), asset tax taxpayers (dotted line) and for our Latina American sample of countries (solid line). Our sample includes 6 countries. Panel (a) includes all firms and negative ETRs are set to zero, and Panel (b) includes only profitable firms.

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