

Presumptive Tax on Small and Microenterprises with a Gender Lens in Ethiopia

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Abstract

Governments often use simplified business tax systems, such as presumptive tax regimes, to register and tax small and microenterprises. Despite concerns about how such regimes could disproportionately affect female-owned and low-revenue entrepreneurs, there is a lack of empirical analysis examining the tax burden. The presumptive tax in Ethiopia has a complex assessment system, where the tax liabilities are determined according to the activity type and turnover (99 activities and 19 turnover bands), and some activities do not have a tax-free threshold. This paper uses two rounds of data in the Ethiopian Socioeconomic Surveys and the tax code to analyze the equity and gender implications of the presumptive tax on small and microenterprises by imputing the effective tax rates. There are

three key findings. First, the effective tax rates are higher for businesses in the lowest quartile at 4.3 percent of turnover compared to 1.5 percent for businesses in the highest quartile, using the most recent survey, resulting in a regressive system. Second, male-owned businesses tend to operate in sectors without a tax-free threshold and are more likely than female-owned businesses to face higher tax rates. Third, the effective tax rates are high for businesses in food and beverage services, which is female-dominated, and for transit services, which is male-dominated, due to the lack of a tax-free threshold for these sectors. The study finds that an alternative presumptive tax system with a single tax rate on turnover and an exemption for all low-revenue businesses would be simpler for tax assessment and more progressive.

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Presumptive Tax on Small and Microenterprises with a Gender Lens in Ethiopia¹

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1. Introduction

Governments in low- and middle-income countries are increasingly focusing on registering and taxing informal small and microenterprises (Dom and Prichard 2022, Ohnsorge and Yu 2021). Simplified or small business tax regimes that use simple and objective methods for tax assessments are often established for this purpose (Loeprick 2009). A presumptive tax on small and microenterprises is one of the simplified business tax regimes and it uses an indirect method of measuring tax liabilities, which can be assessed on turnover or other indicators (e.g., the number of tables, seats, or floor space) (Loeprick 2009). The rationale for a presumptive tax includes facilitating tax compliance, lowering compliance costs, and supporting formalization of businesses due to the simpler reporting requirements compared to the regular tax system (Mas-Montserrat et al., 2023); enabling revenue authorities to gain valuable information from businesses and to help them transition into the corporate tax system (Engelschak and Loeprick 2016); potentially raising tax revenue given the large informal sector in low- and middle-income countries (Joshi, Prichard and Heady, 2014); and increasing tax morale and tax compliance among formal taxpaying firms (Joshi, Prichard and Heady, 2014).

Women tend to be overrepresented in small and microenterprises and thus may be subject to the presumptive tax. In Ethiopia, the presumptive tax is relevant because women predominate in nonfarm enterprises as it is considered inappropriate for women to carry out certain agricultural tasks and there are limited income-earning opportunities elsewhere (Loening, Rijkers, and Söderbom, 2008, Rijkers and Costa 2013). Women's concentration in some sectors, such as hospitality, personal services, and food processing, may also have gender implications on the tax burden if the tax rates differ by sector. This is the case in Ethiopia where the presumptive tax has a complex assessment system with divergent tax rates by the activity type and turnover - with 99 activities and 19 turnover bands.

Yet, an empirical analysis of how the presumptive tax affects low-income and female entrepreneurs has received limited attention because of a lack of data and the low priority given by governments that often generate very little revenue from the presumptive tax (Mas-Montserrat et al., 2023). Despite this, the tax can be burdensome for small and microenterprises (Bucci 2020). Given governments' keen interest to register informal small businesses and to bring them into the tax net, it is important that the tax burdens on these businesses be examined.

This paper examines the gender and equity implications of the presumptive tax on small and microenterprises in Ethiopia by estimating the effective tax rates, disaggregated by the sex of the business owner. The study uses newly available data on household nonfarm enterprises from the 2018/2019 and 2021/2022 Ethiopian Socioeconomic Surveys (ESS) and the tax code to impute tax liabilities. The ESS also collected information on self-reported tax payments by household enterprises. The effective tax rates are

calculated by dividing the tax liabilities by the turnover using two different measures of tax liabilities: the self-reported taxes and imputed taxes.² Estimating the effective tax rate is relevant because high tax rates could discourage businesses from registering and complying with payments. For example, a survey of informal and formal firms in Ethiopia found high tax rates to be a disincentive for informal firms to formalize and pay taxes (World Bank 2016). Similarly, a study in Pakistan showed that increasing tax rates resulted in formal firms to become informal (Waseem 2018), and in Brazil, lowering tax rates encouraged more firms to formalize (Rocha, Ulyssea, and Rachter 2018).

There are three key findings from this study. First, the effective tax rates for the smallest businesses are high because the tax-free threshold is not available for some subsectors. Using the tax code, the effective tax rates for businesses in the lowest turnover quartile are 4.3% of turnover compared to 1.5% for businesses in the highest quartile, using the most recent data, resulting in a regressive system. Second, the effective tax rates in the lowest quartile are higher for male businesses than for female businesses because the former tend to operate in sectors *without* a tax-free threshold. Third, the effective tax rates for businesses in food and beverage services – a female-dominated sector, and in transit services – a male-dominated sector, are high due to the lack of a tax-free threshold for these sectors. Given the regressivity of the tax code, this paper conducts a policy simulation by estimating the tax burden of a hypothetical presumptive tax regime by exempting *all* businesses with a revenue of 50,000 birr or less and taxing a fixed rate on turnover for businesses earning above the threshold. This paper finds that a fixed tax rate of 2.5 percent on turnover and exemptions for low revenue firms would be simpler for tax assessment and more progressive.

This paper makes a contribution to the literature in three ways. First, the literature studying the tax burden of the presumptive tax is limited because of the lack of disaggregated data and the low priority given by governments as aforementioned. Among the exceptions are empirical studies by: Waiswa et al. (2021), who find some regressivity in the recently reformed presumptive tax in Uganda; Semboja (2015), who shows there is regressivity within some turnover bands in Tanzania; and Engelschalk and Loeprick (2016), who examine the policy design of simplified tax regimes of micro and small businesses in transition economies and conclude that these regimes often do not adequately consider tax fairness. Using a *de jure* analysis, Dube and Casale (2019) find the presumptive tax in Zimbabwe to be regressive with a particularly high tax burden for hairdressers, who are predominantly women. This paper builds on these studies by examining the equity and gender implications of the tax in Ethiopia. The explicit consideration of the different tax burdens on women and men in the Ethiopian context is important given that the activity-specific tax rates in the tax code and the gendered sectoral distribution of activities are likely to interact.

² The literature that estimates the effective corporate tax rates uses turnover, gross profits, net profits, or pre-tax income in the denominator (see Bachas et al. 2023 for a review). This paper uses turnover because it is the tax base used to calculate the presumptive tax.

Second, there is an emerging body of literature that finds that small firms or traders are required to pay multiple taxes or fees, such as trade association fees, business licenses, storage fees, and market fees in the Democratic Republic of Congo (Paler et al., 2017), Ghana (Anyidoho et al., 2022, Caroll 2011, Prichard and van den Boogaard 2017), Nigeria (Akpan and Cascant-Sempere 2022 and Meagher 2016), Sierra Leone (van den Boogaard 2018, van den Boogaard, Prichard, and Jibao 2019), Uganda (Pimhidzai and Fox 2013), and Zimbabwe (Ligomeka 2019). Many of these papers show evidence of regressivity of small taxes and fees on female traders and entrepreneurs. This paper contributes to this literature by focusing specifically on the presumptive tax on small enterprises with a gender lens.

Third, this paper makes a methodological contribution by demonstrating how the gender dimension of a small business tax can be evaluated with publicly available survey data, such as the ESS. It also shows how the effective tax rates and revenue implications can be examined through a policy simulation. Surveys typically do not collect data on taxes paid by small and microenterprises, but the ESS fills this data gap. The enterprise module in the ESS data with detailed information on enterprise activities, revenue, and tax questions allows for this type of granular analysis.

This paper is organized as follows: section 2 provides background on the presumptive tax in Ethiopia, section 3 describes the data and the descriptive statistics on gender and nonfarm enterprises, and section 4 discusses the empirical methodology. The results on the effective tax rates are discussed in section 5, the policy simulation of a hypothetical presumptive tax is presented in section 6, and section 7 provides the conclusion.

2. The presumptive tax on small and microenterprises: The Ethiopia context

Businesses in Ethiopia are classified into three groups for tax administration purposes, namely Category A, B, and C taxpayers. This paper's focus is on Category C taxpayers, which are unincorporated small and microenterprises, with an annual turnover of less than 500,000 birr (approximately USD 9,040³) (Harris and Seid 2021).⁴ Category C taxpayers pay the presumptive tax, which is calculated using the gross annual turnover, and are not required to keep a book of accounts (Proclamation No. 410/2017).⁵ The presumptive tax rates differ by activity and revenue, consisting of lump sum tax liabilities for 99 business sectors with 19 turnover bands (with a total of 1,881 activity-bands) (see Council of Ministers Regulation No. 410/2017

³ 1 USD=55.31 Ethiopian birr (exchange rate on October 6, 2023).

⁴ In contrast, Category A taxpayers are all incorporated businesses (regardless of turnover) and unincorporated businesses with a turnover of more than 1 million birr. Category B taxpayers are unincorporated businesses with a turnover between 500,000 and 1 million birr (Harris and Seid 2021, Mascagni and Molla 2018).

⁵ There is also an indicator system for operating public buses, freight transport, and flour mills (Council of Ministers Regulation No. 410/2017).

and Appendix 1 for the presumptive tax schedule for selected activities). The presumptive tax also includes liberal professionals (such as accountants, auditors, attorneys) provided that their annual earnings are below 500,000 birr. In contrast, in many other countries, the presumptive tax excludes liberal professionals because they are deemed to be able to comply with the accounting requirements of the standard tax regimes (Mas-Montserrat et al., 2023).

Some subsistence-level businesses (earning less than 50,000 birr) in certain sectors are subject to the presumptive tax. A tax exemption threshold exists for businesses with a revenue of less than 50,000 birr per year (approx. USD 904) in activities, such as trading in fruit and vegetables, cereal, edible oils, textiles, animal products, and selected services (Council of Ministers Regulation No. 410/2017). However, the tax-free threshold does not exist for food and beverage services (for example, bars, cafes, or hotels), construction, transit services, and trading in specific products (for example, flour, chat, and metals) (Council of Ministers Regulation No. 410/2017). Businesses in the latter group are therefore subject to tax from the moment they earn income.

Regional governments are responsible for administration of the presumptive tax (Dixon, Freedman and Yesegat 2019). The revenue generated from small and microbusinesses comprises a small proportion of the regional governments' tax revenues. For example, in Oromia, it accounts for less than 10 percent of the total tax revenues in 2016/2017 and 2017/2018 (Dixon, Freedman, and Yesegat 2019).

Businesses generally do not calculate presumptive tax liabilities themselves, rather, the government sends out revenue assessment teams at the woreda (district) level to estimate the firms' average daily revenue and extrapolate their annual turnover using an assumed number of working days (Workneh et al., 2019). The door-to-door collection and extrapolation of annual turnover have at times caused taxpayer dissatisfaction (Workneh et al., 2019). Taxpayers deemed the annual turnover estimation to be too high because they did not account for the business seasonality, and therefore overestimated their tax liabilities (Dixon, Freedman, and Yesegat 2019).⁶ A survey conducted soon after the 2017 reassessment of average daily revenue and presumptive taxes in Addis Ababa found that the assessment process lacked in objectivity, and applied inconsistent methods for estimating the incomes of similar enterprises (Workneh et al., 2019). There was also a lack of understanding of the assessment methods on the part of taxpayers and assessors because the tax schedule, which disaggregates businesses into 1,881 different tax activity-bands, is overly-complicated and subject to different interpretation (Getachew 2019, Workneh et al., 2019).

In addition to the presumptive tax, businesses are also subject to the *turnover tax*, which is required for firms earning below the VAT threshold of 1 million birr (Harris and Seid 2021). The turnover tax rate is 2% of annual turnover for locally sold goods and services provided by contractors, grain mills, combine

⁶ If revenues are estimated on a longer interval, such as on a monthly basis instead of daily revenue, it could account for seasonality.

harvesters, and 10% for other services (Harris and Seid 2021). The lack of an exemption threshold for the *turnover tax* and the high tax rate for most services make it particularly burdensome for microbusinesses, resulting in taxpayer dissatisfaction (Dixon, Freedman, and Yesegat 2019). In other countries, it is common to introduce a single small business tax or a presumptive tax regime, which replaces the VAT and other income taxes (Engelschalk and Loeprick 2016, IMF 2015).⁷ In contrast, in Ethiopia, small and microbusinesses are subject to two taxes – the presumptive tax and the *turnover tax* - with differing thresholds.⁸

3. Data and methodology

3.1 Data

The analysis uses two rounds of the Ethiopia Socioeconomic Survey (ESS) 2018/2019 and 2021/2022, a nationally representative panel survey, consisting of 6,770 households in 2018/2019 and 4,959 households in 2021/2022, although the Tigray region was excluded from the ESS 2021/2022.⁹ The nonfarm enterprises in the sample are representative of those operated by the households. Period 1 is defined to be the ESS 2018/2019 and period 2 is the ESS 2021/2022. The panel survey includes a nonfarm enterprise module with questions on whether anyone and who in the household owns a nonfarm enterprise, the enterprise activity, the average monthly revenue, and whether the business is registered. It also includes a question on whether the enterprise paid taxes on income as well as the amount paid. The focus on Category C enterprises (with an annual turnover of less than 500,000 birr) resulted in 109 firms being excluded because their revenue exceeded the cut-off. The annual turnover is estimated by multiplying the self-reported average monthly revenue by the number of months of operation in a year.

The resulting sample consists of 1,523 nonfarm household enterprises in 2018/2019 and 1,374 enterprises in 2021/2022, which are disaggregated by sex of the owners. Female businesses are defined as those owned exclusively by women, while male businesses are those owned exclusively by men or jointly by women and men. Jointly-owned firms are classified as male firms because the presence of a male owner allows for easier entry into male-dominated sectors, which are more profitable (Alibhai et al., 2017). The estimates in the paper use household weights.

3.2 Descriptive statistics: Gender and nonfarm enterprises

⁷ See Marchese (2021) for examples of these cases from Latin America.

⁸ The presumptive tax threshold at 500,000 birr is half the size of the VAT and turnover tax threshold at 1 million birr.

⁹ There were other ESS surveys that were conducted prior to the current presumptive tax schedule took effect in 2017 and are therefore excluded from the analysis.

Nonfarm activity is often the only way for women to generate income and it comprises a significant share of their income in Ethiopia (Fuje 2017, World Bank 2009). This is because it is considered inappropriate for women to engage in certain agricultural activities (such as using oxen and plowing land), which discourages single or widowed women from becoming independent farmers (Bezabih et al., 2016, World Bank 2009).

About a quarter of households own a nonfarm enterprise but there is heterogeneity by household type, as shown in Table 1. Households are classified by gender categories where female-only households are defined as those with female adults only whereas male or dual adult households are households with male adults or both male and female adults. In Appendix 2, households are also disaggregated by the sex of the household head.¹⁰ Results show that a higher share of female only households compared to male or dual adult households owned nonfarm enterprises in period 1, but the reverse is observed in period 2. The results are largely consistent when households are disaggregated by sex of the household head (see Appendix 2). In Table 2, when household characteristics are controlled for in a linear probability model, female only households are more likely than male or dual adult households to own an enterprise (which is significant in period 1 and marginally significant at 10% in period 2). In period 1, female-headed households are also more likely than their male counterparts to own an enterprise, but the difference is not significant in period 2.

There is also heterogeneity by poverty status: the probability of business ownership increases with household consumption for male or dual adult households, but the probability does not increase as steeply for female only households. Appendix 3 shows that smaller enterprises - measured by their turnover - tend to be owned by poorer households and poor female-only households. The question of whether low revenue enterprises face a disproportionate tax burden therefore is important from an equity and gender perspective.

Table 1: Percentage of households with a non-farm enterprise (NFE), by household type

	Period 1 (2018/2019)		Period 2 (2021/2022)	
% of households with NFEs	22.9		26.8	
<i>Number of households</i>	6,770		4,959	
	Period 1		Period 2	
	Male or dual adult household	Female only household	Male or dual adult household	Female only household
% of households with NFEs	22.5	25.5	27.2	21.2
<i>Number of households</i>	5,518	1,252	4,337	622

¹⁰ This paper primarily classifies households by whether there is a male adult, as the assignment of headship is often arbitrary across countries (see World Bank 2018 for a discussion). The presence of a male adult also results in women having better access to land and agricultural labor (see Komatsu et al. 2022).

% of poor households with NFEs	16.0	23.0	19.5	19.9
% of nonpoor households with NFEs	27.1	26.6	32.3	22.0

Author's calculations using ESS 2018/2019 (period 1) and 2021/2022 (period 2).

Notes: Female-only households are households with no male adult present.

Poor households are defined as those in the bottom 40% of the adult equivalent expenditure distribution.

Significant differences at $p < 0.05$ are shown in bold.

Table 2: Probability that a household owns a nonfarm enterprise

VARIABLES	(1)	(2)	(3)	(4)
	Period 1	Period 2	Period 1	Period 2
Female only household = 1	0.542*** (0.169)	0.392* (0.236)		
Log of household consumption	0.062*** (0.012)	0.047*** (0.015)	0.063*** (0.012)	0.047*** (0.016)
Female only household * log of household consumption	-0.053*** (0.017)	-0.041* (0.023)		
Household size	0.036*** (0.005)	0.028*** (0.005)	0.034*** (0.005)	0.029*** (0.004)
Rural	-0.181*** (0.021)	-0.204*** (0.027)	-0.181*** (0.021)	-0.205*** (0.027)
Female headed household = 1			0.351*** (0.133)	0.189 (0.187)
Female headed household * log of household consumption			-0.035** (0.013)	-0.021 (0.019)
Observations	6,770	4,959	6,770	4,959
R-squared	0.075	0.069	0.074	0.069

Source: Author's calculations using ESS 2018/2019 and 2021/22.

Notes: Coefficients are significant at *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

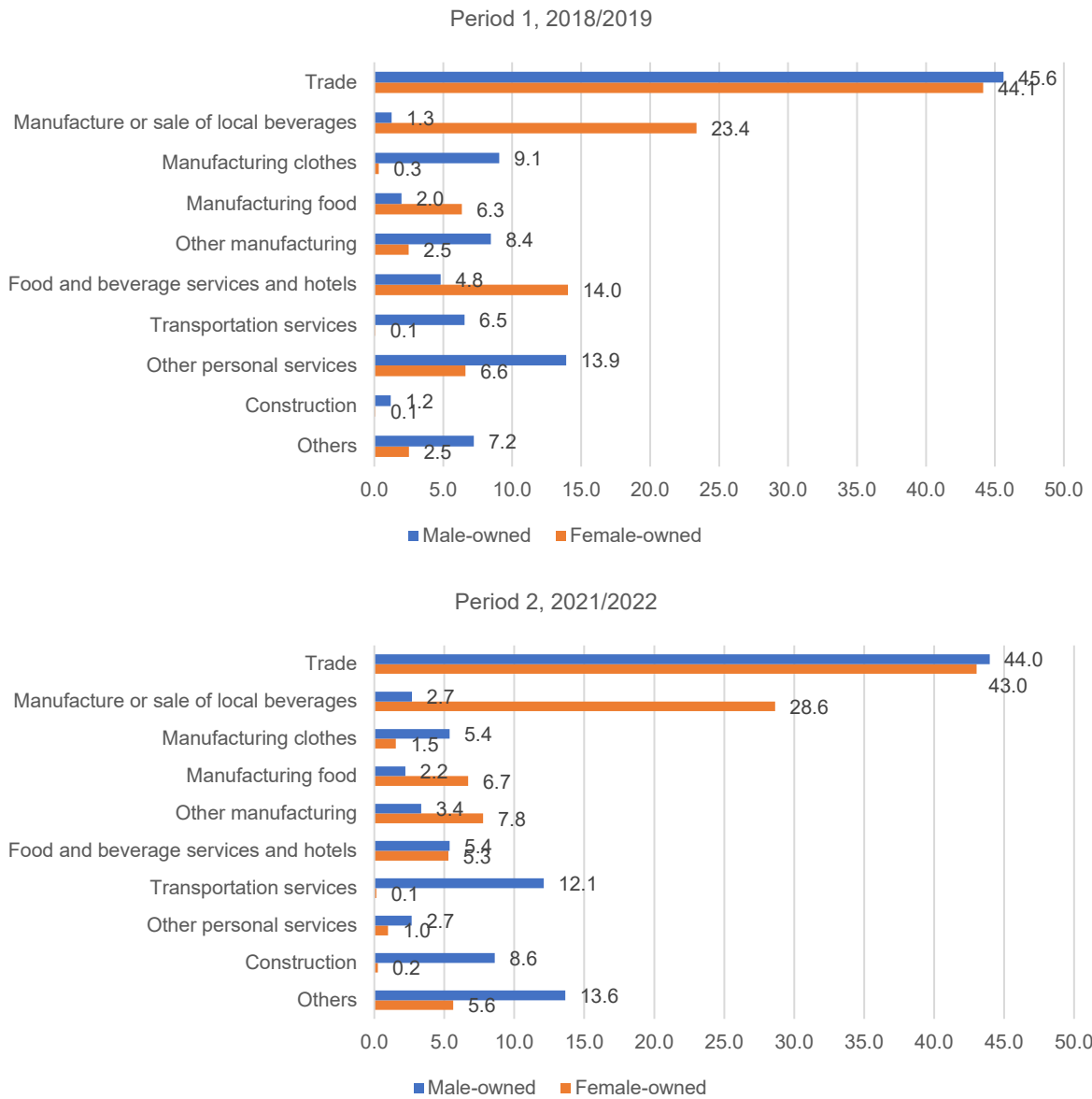
Coefficients from a linear probability model using OLS regression are presented. OLS regression includes the number of children disaggregated by age groups, household size, marital status of household head, age of household head, whether the household uses electricity for cooking or lighting, dummy variables for regions, and the religion of the household head, but are not shown. Standard errors in parentheses are clustered at the enumeration area. Female-only households are households with no male adult present. Household consumption is the spatially-adjusted adult equivalent scale household consumption.

Of the female entrepreneurs, 40% are divorced, widowed, or unmarried, and approximately 40% live in female-headed households (in Appendix 4). There is some evidence that the composition of enterprise-owning households changed between the survey periods. In period 1, 32% of female entrepreneurs live in households without male adults, but this percentage drops to 9.5% in period 2. The absence of male adults in the households is likely to be disadvantageous for women wanting to engage in more profitable activities. Studies have shown that spousal support or male mentors could play an important role in helping female entrepreneurs enter male-dominated and more profitable sectors (Alibhai et al., 2017, World Bank 2022).

There is gendered sector segregation in nonfarm activities and differences in business locations. For example, a majority of female enterprises, compared to only a third of male enterprises, operate in or close to their homes (see Appendix 5). In contrast, male businesses are more likely to be mobile (approximately 20% in Appendix 5). Manufacturing or sale of local alcoholic beverages (e.g., *araki*, *tela*) is a low-revenue, labor-intensive activity that women predominate (Woldehanna 2009, World Bank 2009). This activity is distinguished from food and beverage services, which include bars, restaurants, cafes, and other food and beverage-related services. Figure 1 shows that women-owned businesses are overrepresented in local beverage manufacturing or sale in both periods and for period 1, in the food and beverage services also. Male-owned businesses, in contrast, are predominant in transportation services. About 40% of male and female enterprises are involved in trade.¹¹ There was also a shift in the sectoral distribution between the two survey periods, which has implications for the presumptive tax. At the end of this section, there is a discussion on how it affects the presumptive tax liabilities.

¹¹ Household enterprises in Tigray region are excluded from period 2, therefore the distributions of businesses in periods 1 and 2 are not directly comparable. However, the results are largely consistent when the sample is restricted to households observed in both periods 1 and 2 (see Appendix 7).

Figure 1: Sector of nonfarm enterprises (%)



Source: Author’s calculations using ESS 2018/2019 (period 1) and ESS2021/2022 (period 2).

Most are microenterprises (defined as having five employees or fewer) and 94% of female businesses are sole proprietors (with no employees) compared to 83% of male businesses (Table 3).¹² Female enterprises earn less revenue and are less likely than male enterprises to be registered. Manufacturing or sale of local beverages – a female-dominated activity – generates the lowest median annual sales of all the sectors (Table

¹² The government defines microenterprises to be those with no more than five employees and assets valued at or less than 1 million birr (World Bank 2021).

4), corroborating previous findings by the World Bank (2009). Even when they operate in the same sectors, female businesses generally earn less than male businesses, as seen in the trade sector.

Table 3: Enterprise characteristics, by sex of owner

	Period 1 (2018/2019)			Period 2 (2021/2022)		
	Male-owned	Female-owned	P-values	Male-owned	Female-owned	P-values
Microenterprise (%)	96.0	98.8	0.05	97.1	98.0	0.54
Own account (%)	81.6	94.0	0.00	83.4	93.3	0.00
Registered (%)	28.3	12.0	0.00	24.4	7.6	0.00
Urban (%)	56.8	52.1	0.33	51.3	40.0	0.04
Annual sales						
Median annual sales ('000 birr)	18.0	6.0		28.8	8.0	
Average annual sales ('000 birr)	40.6	17.8	0.00	59.4	26.7	0.00
	(63.8)	(37.9)		(82.5)	(56.3)	
% with sales <=50,000 birr	77.0	92.3	0.00	63.4	88.6	0.00
Taxes						
Paid market tax or municipality fees (%)	8.2	2.6	0.01	11.0	1.8	0.00
Paid tax on business income (%)	15.6	7.7	0.00	18.4	7.2	0.00
Average tax paid on business income (birr, self-reported)	397.2	132.4	0.00	472.6	148.2	0.00
	(1630.5)	(685.4)		(1532.5)	(760.4)	
Number of enterprises	778	745		711	663	
% of enterprises in presumptive tax net	44.1	29.9	0.01	61.0	16.8	0.00
Average presumptive tax (birr, imputed)	641.9	224.7	0.00	1222.0	262.5	0.00
	(1825.3)	(724.7)		(472.6)	(148.2)	
% in sectors with tax-free threshold	68.6	74.6	0.26	63.2	91.9	0.00
Number of enterprises	478	458		498	449	

Source: Authors' calculations using ESS 2018/2019 (period 1) and ESS2021/2022 (period 2).

Notes: Numbers in parentheses indicate the standard deviation. Significant differences at $p < 0.05$ are shown in bold.

Firms liable for the presumptive tax are defined as those that are estimated to be in the presumptive tax net based on the government's tax code. Imputed presumptive taxes are calculated using the estimated annual turnover, business activity, and the presumptive tax schedule in the Council of Ministers Regulation No. 410/2017. There are multiple tax rates within each sector, which requires details on business activity type. Some activities, particularly in the retail and wholesale sector, lack sufficient detail to impute presumptive tax, resulting in some enterprises with missing values.

Table 4: Enterprise characteristics, by sex of owner and sector

	Period 1		Period 2		Number of enterprises			
					Period 1		Period 2	
	Male-owned	Female-owned	Male-owned	Female-owned	Male-owned	Female-owned	Male-owned	Female-owned
Median annual sales ('000 birr) by sector								
Manufacturing beverages	na	3.2	na	6.0		113		94
Food and beverage services	na	9.6	na	40.0		112		61
Retail trade	19.6	9.6	36.0	10.0	355	392	305	392
Transit services	48.0	na	42.0	na	81		108	
Average annual sales ('000 birr) by sector								
Manufacturing beverages	na	7.5	na	12.2		113		94

Food and beverage services	na	16.6	na	54.4		112		61
Retail trade	44.8	22.8	60.7	35.6	355	392	305	392
Transit services	59.1	na	67.6	na	81		108	
% of firms with sales <50,000 birr								
Manufacturing beverages	na	99.1	na	99.5		113		94
Food and beverage services	na	92.2	na	62.1		112		61
Retail trade	74.0	88.7	60.1	85.6	355	392	305	392
Transit services	50.4	na	56.5	na	81		108	

Source: Author's calculations using ESS 2018/2019 and ESS2021/2022.

Note: Significant differences at $p < 0.05$ are shown in bold.

3.3 Sector composition and implications for the presumptive tax

Male-owned businesses are more likely to pay taxes on incomes (17% versus 7% of female enterprises as shown in Table 3) and larger businesses are more likely to pay taxes than smaller businesses (see Appendix 7). By imputing how much presumptive tax would be paid using the tax code, the results show that a lower share of female enterprises (16.8%) would be liable for the presumptive tax compared to male businesses in period 2 (61% in Table 3). Further, between the two surveys, there was a change in the percentage of businesses estimated to be in the tax net (earning revenue above the tax-free threshold). For female enterprises, the share of businesses in the tax net dropped (from 29.9% in period 1 to 16.8% in period 2) because a higher share operated in sectors *with* a tax-free threshold in period 2. The drop in the share of female businesses in food and beverage services – a sector without a tax-free threshold – contributes to this result. In contrast, for male enterprises, a larger share is operating in sectors *without* a tax-free threshold – such as transportation services and construction – and there are more firms with earnings exceeding the exemption threshold (50,000 birr p.a.) in period 2, so the proportion estimated to be in the tax net is 17 percentage points higher (44% in period 1 versus 61% in period 2).

Disaggregating by turnover quartiles, Table 5 shows that the shifts in sector distribution between the two surveys result in a lower share of the female businesses and a higher share of male businesses in *non-exempt* sectors (without a tax-free threshold). In Appendix 6, the exit and entry of businesses (for households observed in both periods) show that, compared to female only households, male or dual adult households are more likely to have reported a new business in period 2 and are less likely to have lost an enterprise, resulting in a net gain of businesses for male or dual households. In contrast, there is no change for female households. By sector, 3.6% of female only households lost a food service enterprise, while 1.7% of male or dual households gained a transit enterprise. During the two surveys, several factors may have contributed to the fall in the share of food and beverage service businesses, including the conflict in Ethiopia, the pandemic, and the worst infestation of locusts in 25 years, which posed a threat to food security.¹³

¹³ See <https://www.aljazeera.com/gallery/2020/10/21/in-picture-ethiopia-struggles-to-suppress-desert-locust-infestat>

Table 5: Percentage of businesses in non-exempt sectors, by turnover quartile

Quartile (turnover)	Period 1		Period 2	
	Male-owned	Female-owned	Male-owned	Female-owned
1	26.0	21.4	37.8	2.4
2	19.3	18.3	28.5	4.2
3	24.1	35.1	33.6	12.0
4	46.5	35.5	40.3	27.0
<i>Number of enterprises</i>	476	452	496	445

Source: Author's calculations using ESS 2018/2019 and 2021/2022.

Notes: Significant differences at $p < 0.05$ are shown in bold. Non-exempt sectors are defined as sectors without a tax-free threshold, for example, bars, cafes, hotels, construction, transit services, and trading in specific products, such as flour, chat, and metals (Council of Ministers Regulation No. 410/2017). Businesses in some activities, particularly in the retail sector, that lack sufficient detail to impute presumptive tax are excluded. Businesses are grouped into turnover quartiles.

4. Empirical methodology

The effective tax rate of the presumptive tax is estimated by dividing the tax liability by the turnover, as shown in equation 1. In the literature on corporate tax burdens, this indicator takes a backward-looking approach, which measures the tax burden the enterprises face after all investment and planning decisions have taken place (Nicodème 2002).¹⁴ This is a first-order approximation of the tax burden, which does not account for behavioral responses to taxes. The disadvantage of using turnover (rather than profits) is that it assumes that the profit margins are constant across firms (Nicodème 2002). Nevertheless, turnover is used in this paper because it is the basis for assessing the presumptive tax. Since businesses cannot deduct costs to reduce taxable income in the presumptive tax regime, turnover is equivalent to taxable income. It is also difficult to get reliable estimates of profits in the data because household business expenses cannot be easily separated from the overall household expenses. For example, respondents can misclassify goods and materials for household use as business expenses; owners' payment to themselves as employee wage costs; and household rent as business rent (see de Mel, McKenzie, and Woodruff, 2009 for a discussion).

$$\text{Effective tax rate} = \frac{\text{Presumptive tax liabilities}}{\text{Turnover}} \quad (1)$$

Two measures of tax liabilities are used to estimate the tax burden of the presumptive tax. The first measure is the self-reported tax payments made in the 12 months prior in the ESS data, which is what the businesses claimed to have paid in taxes on income and profits. The second measure is imputed tax

¹⁴ In contrast, forward-looking tax rates are calculated to estimate firms' decisions about investments, financing, or locations (Lazar 2014).

liabilities, which is estimated from the government’s presumptive tax code and ESS data on business annual turnover and activity type. The effective tax rates using self-reported data represent the tax burden based on what businesses claim to have paid, while the imputed effective tax rates represent what the tax burden would be using the tax code.

The self-reported tax payment in the ESS data measures the taxes paid on income and profits. It is possible that the information provided by respondents could include the *turnover tax*, which is different from the presumptive tax that businesses pay instead of the VAT as discussed in section 2. This means that the self-reported tax payment could overestimate the presumptive tax payment if it also includes the *turnover tax*. The analysis compares the self-reported tax payments on income and profits with the imputed presumptive tax liabilities using the tax code, keeping in mind that the self-reported payments may overestimate the presumptive tax because it could include payments for the *turnover tax*.¹⁵

The imputation method makes the following assumptions. First, it assumes that there is 100% tax compliance. Second, because there are 99 different business activity types in the tax schedule, it is not always clear which tax rate should be applied for tax assessment. For example, since there is no specific rate for electricians, it is not clear whether they should be taxed as “electrical lift works and repair” or as “building contractors”, which has a different tax rate. There is also no clear business activity in the tax schedule for individuals who brew and sell local alcohol, so it is assumed that they are taxed as those in the general merchandise, trade, and grocery activity, which has an exemption threshold for incomes below 50,000 birr. The difficulty in determining the tax rates for each activity highlights how the Revenue Authority tax assessment teams could easily apply different rates for firms engaging in similar activities. Third, detailed information on business activities is required to impute the presumptive tax, but some businesses in the trade sector do not provide sufficient detail about which commodity it was trading in. For example, the tax rates are different for trading in cotton or chat versus trading in vegetables (see Appendix 1). This resulted in some trade enterprises which lacked information on the commodities they were trading in with missing values for the imputed tax liabilities.

5. Results

a. Effective tax rates by turnover quartile and sex of business owner

First to be estimated is the effective tax rate by turnover quartile using the self-reported method (panel 1) and imputed taxes (panel 2) in Figure 2. In the self-reported method (panel 1), the tax burden falls more

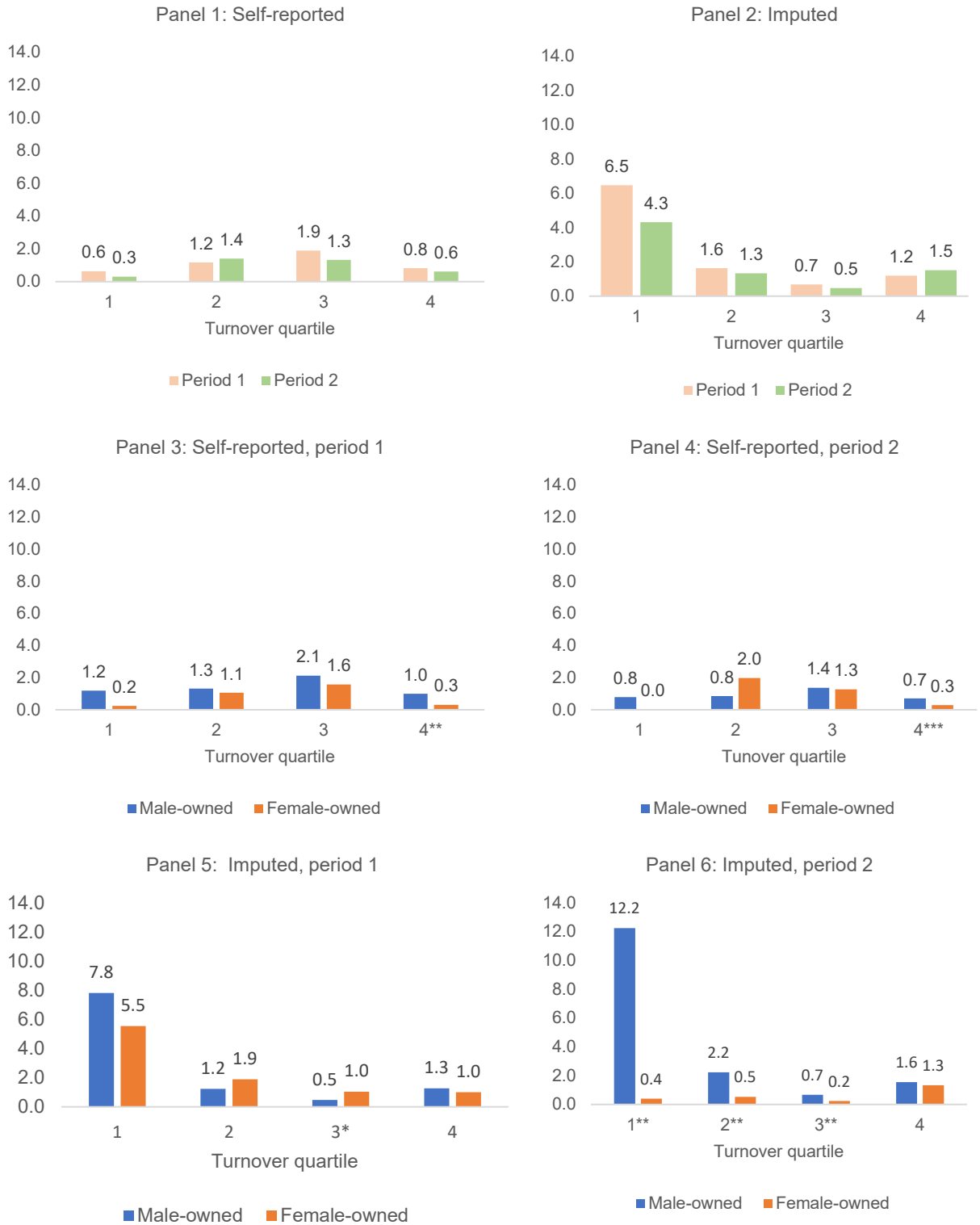
¹⁵ The reasons for excluding the *turnover tax* in the estimation are because this paper focuses on the presumptive tax and there is also not enough information in the ESS data to distinguish locally sold goods and services provided by contractors, grain mills, and combine harvesters (which is charged 2% of turnover) and other services (which is charged 10% of turnover).

heavily on the middle quartiles than on the lowest and fourth quartiles. In contrast, if businesses are taxed according to the tax code (panel 2), the presumptive tax is regressive. There is a disproportionate burden on the smallest businesses (in the lowest quartile) who pay 4.3% of turnover in taxes compared to larger businesses (in the highest quartile), who pay 1.5% of turnover using the most recent data. The high effective tax rates that the smallest businesses face using the tax code is particularly concerning because firms could be discouraged from registering and complying with tax payments.

The comparison of the effective tax rates using two measures shows that businesses in the highest quartile should be paying more in taxes as the tax rates are higher in the imputed method than in the self-reported method. There could be several reasons for the discrepancy between the two measures. First, some low-revenue businesses operate in sectors *without* a tax-free threshold and are not paying taxes even though they should (see Appendix 8 for the share of businesses paying taxes by quartile). The lack of an exemption threshold for subsistence businesses explains the regressive nature of the imputed method compared to the self-reported method. Second, there could be a difference in the methods used to estimate annual turnover between the government and this paper. The government assessment of annual revenue is extrapolated from daily revenue with an assumed number of working days whereas this paper estimates annual revenue by multiplying self-reported average monthly income by the number of months of operation. The former method – using daily revenues to extrapolate annual income – is less likely to take seasonal fluctuations in income into account and has been deemed by taxpayers to overestimate turnover and tax liabilities as discussed before. Third, the self-reported tax payment could overestimate the presumptive tax payment if it also includes the *turnover tax*, which is separate from the presumptive tax.

When the results are disaggregated by sex of the owner (panels 3 - 6), the effective tax rates for male businesses in the first quartile are greater than for their female counterparts because a larger share of low revenue male businesses operate in sectors without a tax-free threshold (see Table 5 above). Between the two survey periods, the share of male businesses without a tax-free threshold increased in period 2, while it decreased for female businesses (as discussed in section 3.2), resulting in a larger gender gap in tax burdens for the first quartile in period 2. The effective tax rate for low revenue male businesses using the tax code is particularly high at 12.2%, compared to their female counterparts at 0.4% using the most recent data (panel 6).

Figure 2: Effective tax rates (percentage of turnover), by turnover quartile



Source: Author's calculations using ESS 2018/2019 and 2021/2022.

Notes: Panels show the effective tax rates (tax as a percentage of turnover) by quartile of turnover. The test of means is significant at *** p<0.01, **p<0.05.

b. Effective tax rates by sector and sex of owner

Next, we examine the effective tax rates by sex of the business owner, which are presented in rows 1 - 4 in Table 6. The gender difference in tax burden is significant using the tax code with the most recent data (row 2) where male-owned businesses bear a larger tax burden (at 3.1%) than female-owned businesses (at 0.5%).

Using self-reported taxes and conditional on positive tax payments (row 3), the effective tax rates are very high for both female businesses and male businesses at 12.4% and 5.0%, respectively, in period 2. Such high rates could be detrimental for business growth and could potentially push them into the informal sector. For example, as a comparison in Ukraine, taxpayers deemed a presumptive tax rate of 6 percent on turnover to be too high, causing discontent in this tax regime (Coolidge and Yilmaz 2016).

The results by sector show that the tax burden is low for: (1) the retail trade sector (in rows 7 and 11), as some low revenue firms in this sector (e.g., trading in fruits and vegetables) are exempt, and (2) enterprises that manufacture or sell local beverages (rows 5 and 9) because most fall below the exemption threshold. However, for food and beverage services – a female-dominated sub-sector, female-businesses’ effective tax rates are high (at 13.9% in period 1 and 5.1% in period 2 using the tax code in row 10). Given that low revenue firms are not exempt from the presumptive tax in this sector, the effective tax rate is particularly high. Similarly, low revenue transit services - a male-dominated sector - are not exempt from tax, and so the effective tax rates for male businesses in the transit service sector are also high (at 16.4% in period 1 and 10.3% in period 2 in row 12). The effective tax rates for these two sectors are much higher than for the retail trade sector, which are only 0.9% for male and 0.1% for female businesses with the most recent data.

Taken together, the results show that the tax burden of the presumptive tax tends to fall more heavily on the middle quartiles using the self-reported method, but the tax burden using the tax code is regressive. The effective tax rates for male businesses in the lowest quartile are high under the imputed method because 38% operate in sectors without a tax-free threshold. The effective tax rates are also high for the female-dominated food and beverage service sector and for businesses in the transit service, which is male-dominated, because there is no tax exemption for low revenue firms for these sectors.

Table 6: Effective tax rates (percentage of turnover), by sector and sex of owner

	(1)	(2)	(3)	(4)	Number of enterprises			
	Period 1		Period 2		Period 1		Period 2	
	Male-owned	Female-owned	Male-owned	Female-owned	Male-owned	Female-owned	Male-owned	Female-owned
(1) Effective tax rate (self-reported)	1.4	0.8	0.9	0.9	775	740	703	658
	(6.0)	(4.6)	(3.4)	(5.0)				

(2) Effective tax rate (imputed)	2.5 (9.6)	2.9 (9.9)	3.1 (9.7)	0.5 (2.1)	476	452	496	445
(3) Effective tax rate (self-reported), given tax>0	9.1 (12.7)	10.7 (13.3)	5.0 (6.6)	12.4 (14.7)	161	79	167	84
(4) Effective tax rate (imputed), given tax>0	5.6 (13.9)	10.2 (16.2)	5.2 (12.1)	3.0 (4.3)	276	182	327	166
Effective tax rate (self-reported), by sector								
(5) Manufacturing or sale of local beverages	na	0.1 (0.6)	na	0.0 (0.2)		113		94
(6) Food and beverage services	na	0.6 (2.7)	na	1.5 (5.9)		111		61
(7) Retail trade	0.8 (4.1)	1.1 (5.3)	1.0 (3.8)	1.8 (7.2)	353	389	302	387
(8) Transit services	4.1 (8.0)	Na	2.1 (4.9)	na	81		108	
Effective tax rate (imputed), by sector								
(9) Manufacturing or sale of local beverages	na	0.0 (0.1)	na	0.0 (0.1)		113		94
(10) Food and beverage services	na	13.9 (18.5)	na	5.1 (5.6)		100		60
(11) Retail trade	0.5 (2.2)	0.1 (0.4)	0.9 (3.2)	0.1 (0.4)	139	144	198	214
(12) Transit services	16.4 (23.5)	na	10.3 (14.8)	na	80		106	

Source: Author's calculations using ESS 2018/2019 and 2021/2022.

Notes:

Imputed presumptive taxes are calculated using the estimated annual turnover and the presumptive tax schedule in the Council of Ministers Regulation No. 410/2017 according to the enterprise activity. This resulted in 599 enterprises with missing values because the activities are not specific enough to assign the presumptive tax values. Significant differences at $p < 0.05$ are shown in bold. Na indicates sample size is below 50. Numbers in parentheses indicate standard deviation.

6. Policy simulation: A hypothetical presumptive tax with an exemption threshold for microbusinesses and a single tax rate on turnover

Given the regressivity of the presumptive tax, a policy is simulated where the tax burden of a hypothetical tax is estimated with an exemption threshold for *all* firms earning less than 50,000 birr (which is already in place for some sectors), and a single rate on turnover in tax liabilities for firms earning above this threshold. The value of 2.5% on turnover is chosen in this paper as the hypothetical presumptive tax rate for several reasons. There are tradeoffs to consider in setting the tax rate. It should not be set too high such that it discourages formalization, but it should not be set too low so that it could hinder the migration of a growing business from the presumptive tax system to the standard business tax system (Engelschalk and Loeprick 2016). If the rate is set much lower than the standard tax regime, it could encourage businesses

to bunch below the standard business tax rate threshold. Yet, it is not easy to compare the effective tax rates between the presumptive tax and the standard business tax because in the presumptive tax system, business expenses, such as labor costs, materials, and depreciation of assets, cannot be deducted from the taxable income when it is assessed on turnover.¹⁶ In the ESS data, profits could not reliably be estimated because there is fungibility between business expenses and household expenses, which makes the effective tax rates comparison between the two tax systems difficult. There are also compliance costs related to paying the standard business taxes because of the requirement for financial record-keeping and the possible need for hiring accountants to comply with taxes. The tax rate of 2.5% is also the percentage that the government could charge without losing tax revenue, which is discussed in more detail in Appendix 9.

Table 7 shows the estimated effective tax rates of this hypothetical system and Figure 3 disaggregates the results by turnover quartiles. There are three main findings from the analysis. First, the tax burden is lower for female than male businesses (row 1) because most female enterprises earn less than the 50,000 birr threshold. Second, the effective tax rates for all businesses (row 1) as well as for those conditional on positive tax payments (row 2 in Table 7) under the hypothetical presumptive tax are lower compared to the effective tax rates in the current system (rows 2 and 4 in Table 6, respectively). This is largely due to the exemption of low revenue firms, which reduces the overall effective tax rates. Third, the hypothetical presumptive tax is more progressive, as larger firms would face higher burdens than smaller firms (Figure 3) and larger firms would pay more taxes in the hypothetical system than under the existing system. The results are similar when a 2% tax on turnover is used, except that the effective tax rates are 2% for firms with positive tax liabilities (see Appendix 10).

Table 7: Policy Simulation, Effective tax rates of a hypothetical presumptive tax (2.5% of turnover and exemption for businesses earning less than 50,000 birr), by sex of owner

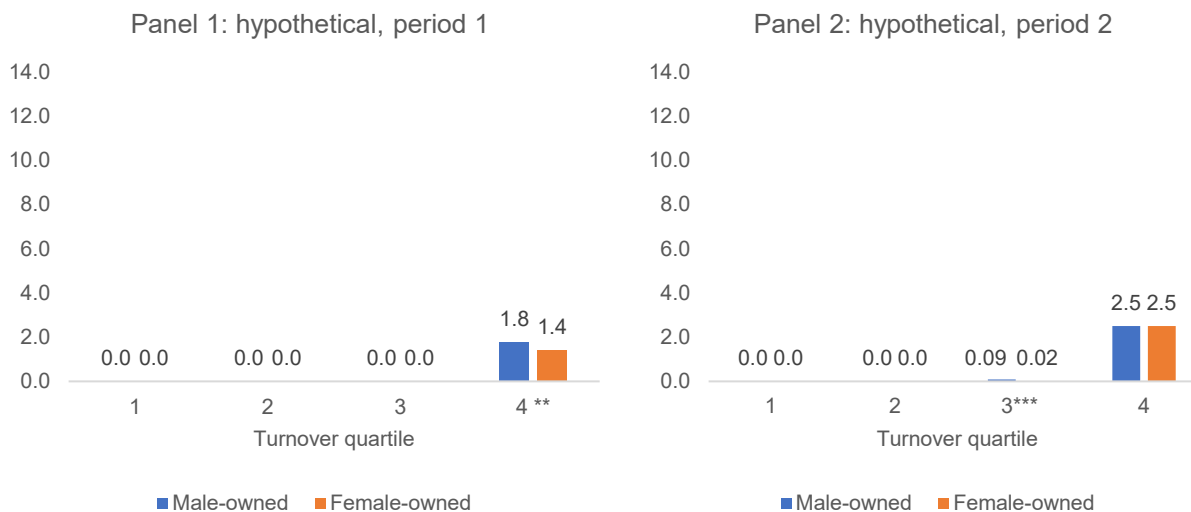
	Period 1		Period 2	
	Male-owned	Female-owned	Male-owned	Female-owned
(1) Effective tax rate (all)	0.6	0.2	0.9	0.3
(2) Effective tax rate, given tax>0	2.5	2.5	2.5	2.5
<i>Number of enterprises</i>	775	740	703	658

Source: Author's calculations using ESS 2018/2019 and 2021/2022.

Notes: The presumptive taxes are calculated based on 2.5% of turnover and an exemption threshold for firms with a revenue of 50,000 birr or less. Significant differences at $p < 0.05$ are shown in bold.

¹⁶ The business income tax system here refers to Category B taxpayers (unincorporated businesses earning between 500,000 and 1 million birr) and Category A taxpayers (incorporated businesses regardless of turnover or unincorporated businesses earning more than 1 million birr). Categories A and B taxpayers can deduct business expenses from the taxable income whereas Category C taxpayers in the presumptive tax system cannot.

Figure 3: Effective tax rates of a hypothetical presumptive tax (2.5% of turnover and exemption for businesses earning less than 50,000 birr), by turnover quartile



Source: Author’s calculations using ESS 2018/2019 and 2021/2022.

Notes: The figure shows the effective tax rates (tax as a percentage of turnover) by quartile of turnover for the hypothetical presumptive tax. The exemption threshold of 50,000 birr is placed within the fourth quartile so some businesses would be exempt even in this quartile. The difference in means between male- and female-owned enterprises is significant at ** $p < 0.05$, *** < 0.01 .

The hypothetical presumptive tax, with an exemption threshold and a flat percentage on turnover in taxes, has several advantages over the current system. First, it is less complicated than the current system which determines tax liabilities based on 1,881 activity-bands. A simpler system would be more transparent and easier for tax assessors and taxpayers to understand. Second, it would eliminate the policy notches that exist within each turnover band in the current system where tax liabilities are lump sum payments according to the turnover bands and activity. Third, the exemption for microbusinesses could facilitate the formalization of informal businesses and bring them into the tax system as the businesses grow. Fourth, it would reduce the activity-specific horizontal inequity the current system has (see Appendix 1 for examples of the tax rates). Fifth, the administration costs of tax collection could be lower because the tax authorities can focus on higher revenue firms instead of collecting taxes door-to-door from micro-subsistence businesses.

The possible disadvantages of the hypothetical tax system include: 1) it assumes a fixed profit margin for all firms regardless of sector and profitability; 2) if women operate businesses with lower profit margins than men, a flat tax rate could disproportionately affect women (among those who earn above the tax-free threshold); and 3) with a tax increase for higher revenue businesses, some may choose to stay just below the exemption threshold to avoid paying tax, although it is not clear whether this would occur in Ethiopia. For example, there is lack of evidence of bunching of formal incorporated firms around the VAT threshold

in Ethiopia (Mascagni and Molla 2018). It is unclear if a similar pattern would be observed around the presumptive tax exemption threshold.

The design of a tax on small and microenterprises needs to consider the tradeoffs between bringing informal businesses into the tax net and the administrative costs (Keen and Mintz 2004). These considerations are particularly important for microenterprises because of their limited revenue generation potential. While medium-sized firms may benefit from tax registration by increasing their customer base and sales, micro-level businesses may not reap the benefits of formalization (see Benhassine et al. 2018 and McKenzie and Sakho 2010 for examples from Benin and Bolivia, respectively). Tax administrations' capacity in terms of resources and skills may also be limited to monitor and collect taxes from microenterprises.

7. Conclusion

This paper examines the equity and gender implications of the presumptive tax on small and microenterprises. Using nationally representative household data and the tax code, the findings show that the tax burden is borne most heavily by the smallest enterprises, thereby making it regressive. The smallest male-owned businesses face a higher effective tax rate compared to female-owned businesses because a larger share of male-owned businesses operate in sectors without an exemption threshold. The results also show that businesses in the food and beverage service subsector, which are predominantly female-owned, and the transit service subsector, which are predominantly male-owned, face a high tax burden because of the lack of a tax-free threshold for these subsectors. Such high tax rates for small enterprises could discourage entrepreneurs from registering their business for taxation and threaten the business sustainability.

The presumptive taxation on small and microenterprises in Ethiopia consists of different tax rates for 99 business sectors with 19 turnover bands (with a total of 1,881 activity-bands). The complexity of the tax schedule and the existing process of estimating tax liabilities using daily revenue to extrapolate annual revenues have led to discontent among taxpayers, which could undermine trust towards tax authorities and the perception of tax fairness. An alternative presumptive tax system that is assessed on a fixed percentage on turnover and exempts low revenue firms would reduce the regressivity and promote equity and simplicity.

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Appendix 1: Presumptive Tax Schedule for Selected Sectors

CATEGORY "C" PRESUMPTIVE TAX

BUSINESS SECTORS	Av Annual Profit Rate	Presumptive Tax (Birr) Per Year																		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		Up to 50000	50001-75000	75001-100000	100001-125000	125001-150000	150001-175000	175001-200000	200001-225000	225001-250000	250001-275000	275001-300000	300001-325000	325001-350000	350001-375000	375001-400000	400001-425000	425001-450000	450001-475000	475001-500000
Charcoal Trade	10	0	30	280	530	780	1030	1290	1665	2040	2415	2790	3165	3540	3915	4370	4870	5370	5870	6370
Tailoring Service Only	10	0	30	280	530	780	1030	1290	1665	2040	2415	2790	3165	3540	3915	4370	4870	5370	5870	6370
Cereals and Pulses Trade	10	0	30	280	530	780	1030	1290	1665	2040	2415	2790	3165	3540	3915	4370	4870	5370	5870	6370
Fruits and Vegetables Trade	13	0	255	580	905	1230	1703	2190	2678	3165	3653	4170	4820	5470	6120	6770	7420	8070	8720	9470
Food Items Supply	15	30	405	780	1155	1665	2228	2790	3353	3915	4620	5370	6120	6870	7620	8370	9158	10095	11033	11970
Chat Trade	16	80	480	880	1290	1890	2490	3090	3690	4370	5170	5970	6770	7570	8370	9220	10220	11220	12220	13220
Hotels, Bars and Snacks	25	530	1155	2040	2978	3915	5120	6370	7620	8870	10408	11970	13533	15095	14813	17000	19188	21375	23563	25750
Transit Service	30	780	1665	2790	3915	5370	6870	8370	10095	11970	13845	15720	16125	18750	21375	24000	26625	29250	31875	34500

Source: Council of Ministers Regulation No. 410/20

Appendix 2: Percentage of households with a non-farm enterprise (NFE), by sex of household head

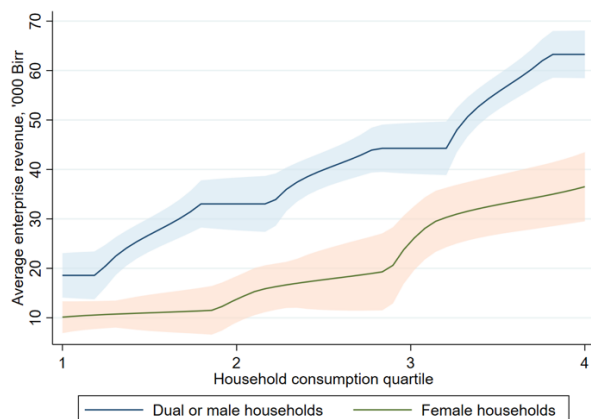
	Period 1 2018/2019		Period 2 2021/2022	
% of households with NFEs	22.9		26.8	
	6770		4959	
	Period 1		Period 2	
	Male-headed households	Female-headed households	Male-headed households	Female-headed households
% of households with NFEs	22.4	24.4	26.6	27.3
<i>Number of households</i>	4627	2143	3416	1543
% of poor households with NFEs	16.1	19.5	19.8	18.6
% of nonpoor households with NFEs	26.9	27.2	31.4	32.1

Author's calculations using ESS 2018/2019 (period 1) and 2021/2022 (period 2).

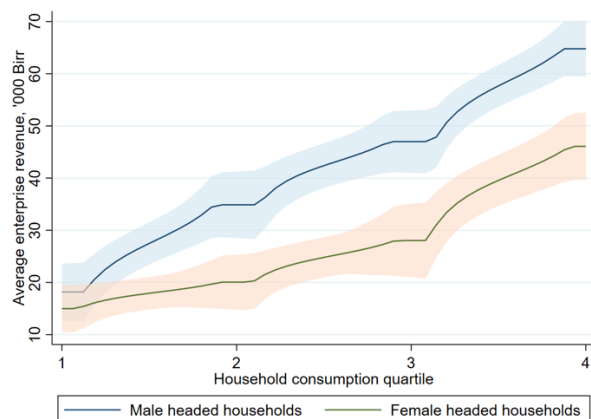
Notes: Poor households are defined as those in the bottom 40% of the adult equivalent expenditure distribution.

Appendix 3: Average enterprise turnover, by household consumption quartile

Panel 1: By household type^a



Panel 2: By sex of household head



Source: Author's calculations using pooled data from ESS 2018/2019 and 2021/2022.

Notes: The graph shows the local polynomial regressions of the average turnover of the enterprise owned by the household (in '000 birr, 2019 prices) on the household consumption quartile, where household consumption is the spatially adjusted adult equivalent scale household consumption (in 2019 prices). The sample excludes households that do not own an enterprise.

^a Female households are households with no male adult present.

Appendix 4: Characteristics of enterprise owners

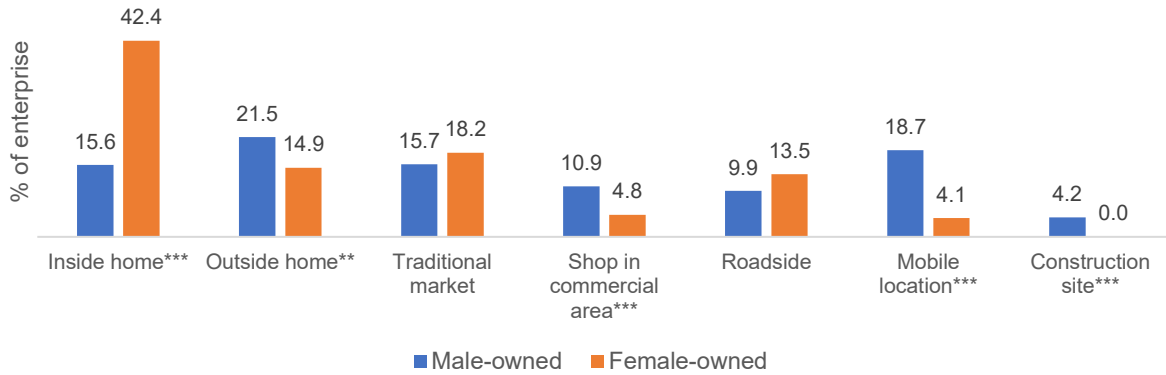
	Period 1		Period 2	
	Male owner	Female owner	Male owner	Female owner
Age	34.7	33.1	36.4	35.6
Relation to household head (%)				
Household head	84.7	41.1	73.6	25.3
Spouse of head	2.0	47.2	1.6	55.0
Marital status (%)				
Married	76.7	57.5	70.1	63.6
Never married, divorced or widowed	23.3	42.5	29.9	36.3
Literacy (%)				
Can read and write	79.5	51.0	85.8	51.3
Household characteristics				
% of owners living in female-headed household	5.9	46.8	10.5	35.1
No male adults in household (%)	0.7	31.6	0.0	9.5
Household size	4.6	4.4	5.0	4.8
Dependency ratio	0.84	0.96	0.67	0.71
Number of owners	794	953	724	821

Source: Author's calculations using ESS 2018/2019 and ESS 2021/2022.

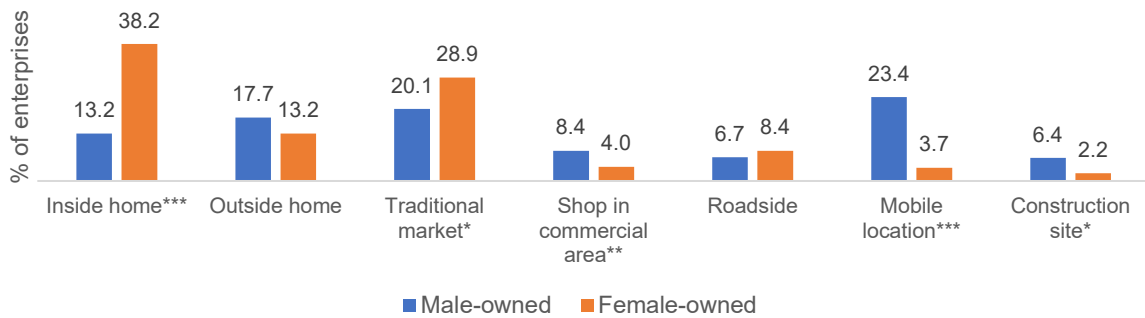
Notes: For some enterprises, there is more than one owner. Adults are defined as age 18 or over. There is one male owner of an enterprise, who is 17 years old, living in a household with no male adults.

Appendix 5: Primary location where enterprise operates

Period 1 (2018/2019)



Period 2 (2021/2022)



Note: Author's calculations using ESS 2018/2019 and 2021/2022.

Significant at ***1%, **5%, *10%.

Appendix 6: Percentage of households with nonfarm enterprises (restricted to households in *both* periods 1 and 2)

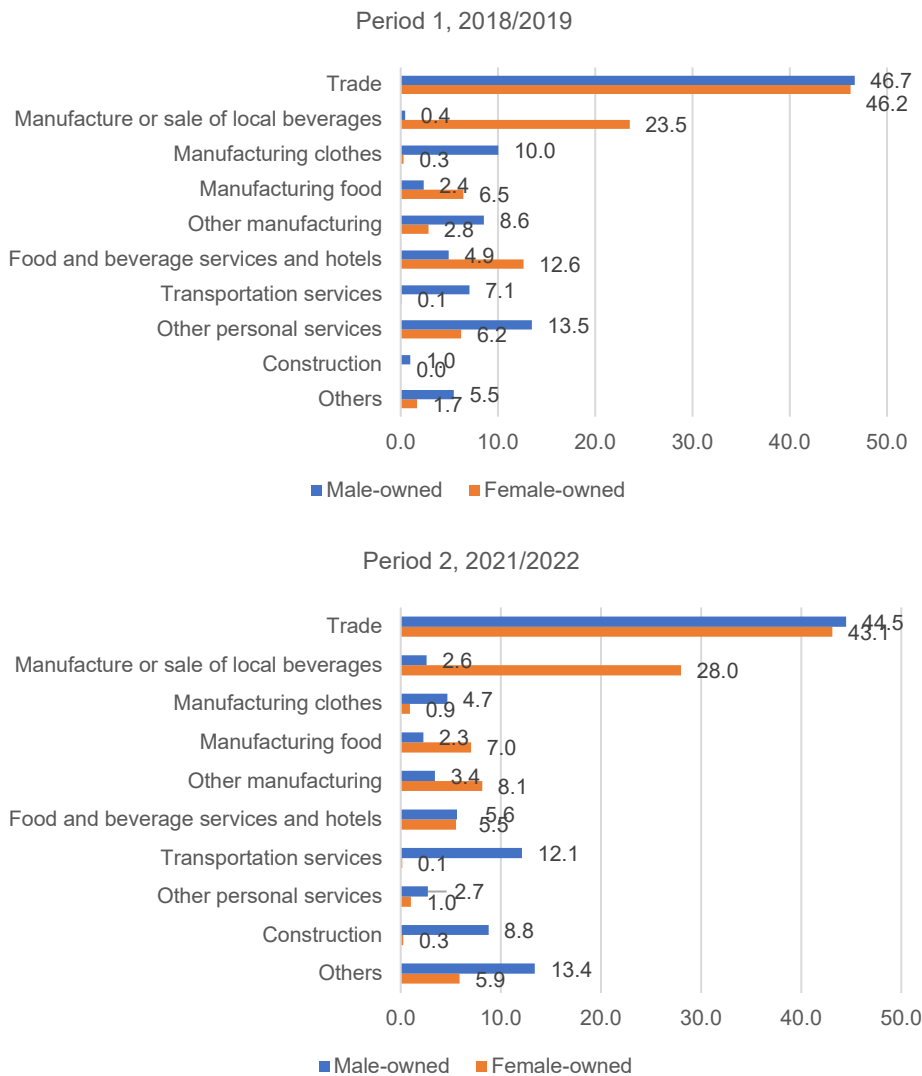
Percentage of households:	Male or dual adult household	Female only household
With an enterprise in period 1 (2018/2019)	22.2	25.2
With an enterprise in period 2 (2021/2022)	27.0	22.6
Reported fewer enterprises in period 2 than in period 1	8.9	9.8
Reported a new enterprise in period 2	15.3	9.6
With a food service enterprise in period 2	1.3	2.3
Reported fewer enterprises in food service in period 2	0.9	3.6
Reported a new food service enterprise in period 2	1.1	1.0
With a transit service enterprise in period 2	1.9	0.0
Reported fewer enterprises in transit service in period 2	0.5	0.1
Reported a new transit service enterprise in period 2	1.7	0.0
Number of households	4,014	835

Source: Author's calculations using ESS 2018/2019 and 2021/2022.

Note: The sample is restricted to all households that are observed in both periods for comparability. It excludes Tigray region. A household is defined to have reported fewer enterprises if the number of enterprises owned in period 2 is less than in period 1. A household reported a new enterprise if the number of enterprises owned in period 2 is greater than in period 1.

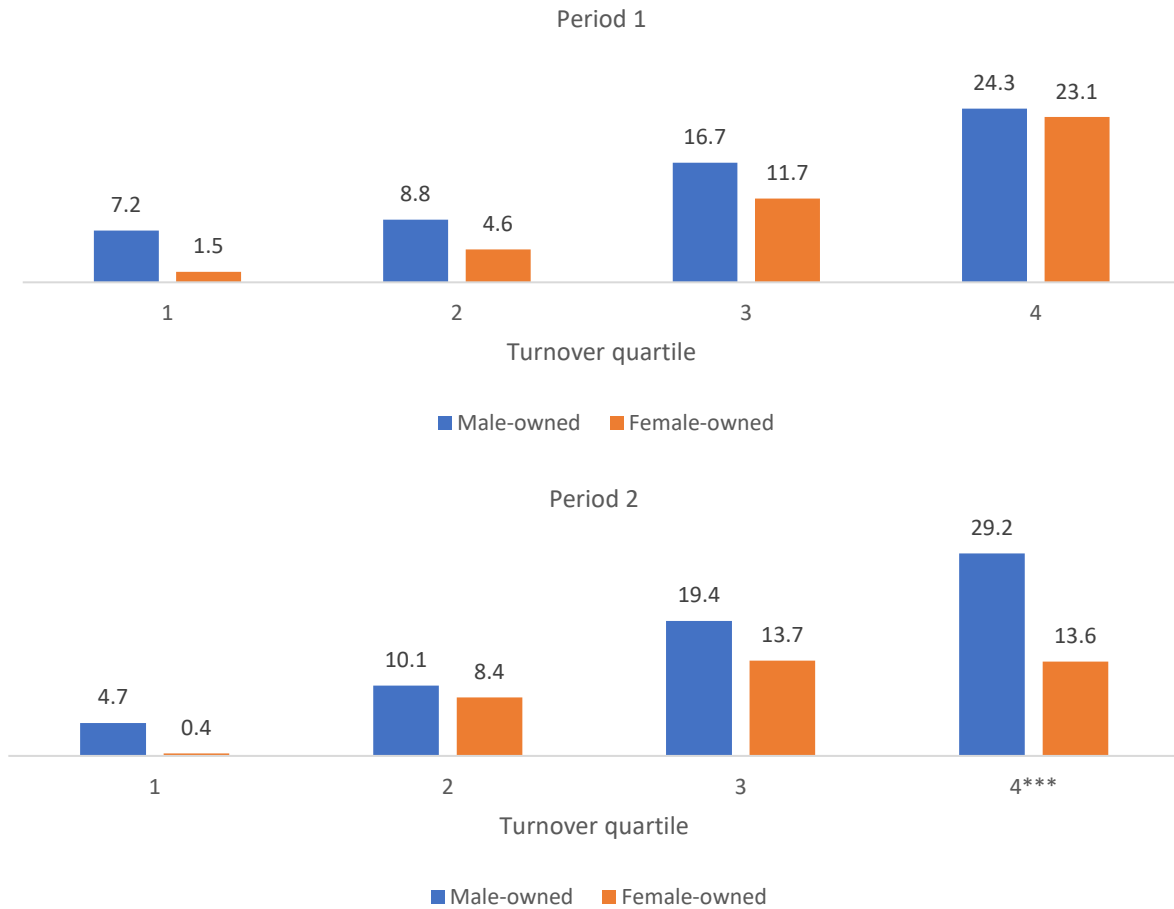
Appendix 7: Sector distribution of enterprises, by wave (restricted to households in both periods 1 and 2)

The figures restrict the sample to households that are observed in *both* periods 1 and 2 to observe the change in the distribution of sectors between the two periods. The service sector share is lower in period 1 than in period 2 for women and men, but there are gender differences in composition within the service sector. Among female enterprises, the share of food and beverage services – which is a sector without a tax-free threshold – fell from 12.6% in period 1 to 5.5% in period 2, while the share of manufacturing of local beverages increased by 4.5 percentage points. For male enterprises, the “other personal services” category fell from 13.5% to 2.7% and the transportation services increased by 5 percentage points. The proportion of construction also increased among male businesses. Both the transportation services and construction are sectors without a tax-free threshold with implications for the presumptive tax.



Note: Author’s calculations using ESS 2018/2019 and 2021/2022. The sample is restricted to enterprises in households that are included in both periods for comparability. It excludes Tigray region.

Appendix 8: Businesses who paid tax, by turnover quartile (%)



Note: Author's calculations using ESS 2018/2019 and 2021/2022. ***<0.01. Businesses are grouped into turnover quartiles.

Appendix 9: Revenue implications of the Hypothetical Presumptive Tax

The hypothetical presumptive tax system in section 6 (with an exemption for low-revenue firms and a 2.5% of turnover in taxes) shows that it is more equitable than the current system. In this Appendix, the possible implications of the hypothetical tax on tax revenue are estimated using the most recent ESS data. In the first scenario, it is assumed that there is a 100% tax compliance rate under the hypothetical presumptive tax system. In the second scenario, it is assumed that only businesses with an annual revenue of over 100,000 birr pay the presumptive tax.

The following assumptions are made. First, the compliance rate of higher revenue businesses is assumed to be much greater than the existing system where only 29% of male and 14% of female businesses

in the fourth quartile in period 2 pay taxes (see Appendix 8). Second, the self-reported tax payment is assumed to reflect the presumptive tax remitted to government, with the caveat that the self-reported amount might be overestimated because it could include the turnover tax - a separate tax on small businesses. Third, it is assumed that there are no behavioral responses in turnover due to the new tax rates, so the existing turnover is used for estimating the tax revenue in the hypothetical scenarios. Another limitation of the analysis is that the enterprises in the data are representative of those operated by households and are not representative of the business population. For this reason, it is likely that the turnover of the businesses in this data is skewed towards the lower end of the distribution and underestimates the total presumptive tax revenue.

Table A9.1 presents the results. Under the assumption of 100% tax compliance (in the first scenario), the share of taxpaying firms at 25% and the estimated revenue (row 2) would be higher than the existing system (row 1). Even if only larger firms with over 100,000 birr pay taxes (in the second scenario), the estimated revenue is higher and about the same proportion of taxpaying firms, suggesting that the hypothetical tax system would likely increase tax revenues if there is tax compliance for higher revenue enterprises (earning over 100,000 birr).

In Table A9.2, an alternative hypothetical tax system is shown with a lower presumptive tax rate at 2% of turnover and only firms earning over 100,000 birr remit payments. The estimated tax revenue in the second scenario (compliance by larger firms earning over 100,000 birr) is greater than the current estimated amount, but since the tax compliance is likely to be less than 100%, the results suggest that the tax rate on the turnover should be closer to 2.5% to not lose revenue.

Table A9.1: Estimated Tax Revenue (2.5% of turnover and exemption for firms earning 50,000 birr or less), ESS 2021/2022

	'000,000 birr	Percentage of taxpaying firms (%)
Existing system		
(1) Estimated revenue	1776.3	13.3
First Scenario: 2.5% on turnover, 100% tax compliance		
(2) Estimated revenue under hypothetical system (100% compliance)	4786.9	25.1
Second Scenario: 2.5% on turnover, only tax compliance by larger revenue firms >100,000 birr		
(3) Estimated revenue under hypothetical system (only by larger revenue firms)	3660.2	13.6
Number of enterprises	1374	

Source: Author's calculations using 2021/2022.

^a The presumptive taxes under the hypothetical system are calculated based on 2.5% of turnover and an exemption threshold for firms with a revenue of 50,000 birr or less.

Appendix A9.2: Estimated Tax Revenue (2% of turnover and exemption for firms earning 50,000 birr or less), ESS 2021/2022

	'000,000 birr	Percentage of taxpaying firms (%)
Existing system		
(1) Estimated revenue	1776.3	13.3
First Scenario: 2% on turnover, 100% tax compliance		
(2) Estimated revenue under hypothetical system (100% compliance)	3829.5	25.1
Second Scenario: 2% on turnover, only tax compliance by larger revenue firms >100,000 birr		
(3) Estimated revenue under hypothetical system (only by larger revenue firms)	2928.1	13.6
Number of enterprises	1374	

Notes: Author's calculations using 2021/2022.

^a The presumptive taxes under the hypothetical system are calculated based on 2% of turnover and an exemption threshold for firms with a revenue of 50,000 birr or less.

Appendix 10: Effective tax rates of a hypothetical presumptive tax, by sex (tax = 2% of turnover)

	Period 1		Period 2	
	Male- owned	Female- owned	Male- owned	Female- owned
(1) Effective tax rate (all)	0.5	0.2	0.7	0.2
(2) Effective tax rate, given tax>0	2.0	2.0	2.0	2.0
Number of enterprises	775	740	703	658

Source: Author's calculations using ESS 2018/2019 and 2021/2022.

Notes: The presumptive taxes are calculated based on 2% of turnover and an exemption threshold for firms with a revenue of 50,000 birr or less. Significant differences at $p < 0.05$ are shown in bold.