



Tax evasion in Kenya and Tanzania: Evidence from missing imports[☆]

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ABSTRACT

In this paper we estimate the amount of tax evasion in customs authorities in both Kenya and Tanzania by calculating measurement errors in reported trade flows between the two countries and correlate those errors with tax rates. We find that the measurement error is correlated with the tax rates in Tanzania. We also introduced a third country into our analysis, the United Kingdom, and tax evasion seems to be more severe in trade flows between Kenya and Tanzania compared to trade flows between the United Kingdom and Kenya/Tanzania. Finally we also find that the tax evasion coefficient is lower in the Kenya–United Kingdom case compared to the Tanzanian–United Kingdom case which suggests that tax evasion is more severe in the Tanzanian customs authority.

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1. Introduction

Building the capacity of low-income countries to mobilise more tax revenues is currently at the top of the development policy agenda. Tax-systems have undergone major changes since the mid-1990s, and the reform process is expected to continue. Some of the important changes expected are a simplification of the tax-regime, including broadening of the tax-base; the rationalisation of the exemption-system to avoid further erosion of the tax-base; and a review/change of tariff-rates and the introduction of revenue-raising measures to compensate for possible losses arising from the further liberalisation of the trade-regime (IMF, 2011). Another important change is to improve the efficiency of the tax administration itself. A number of African countries have implemented comprehensive reforms of their tax administrations. Part of the exercise has been to establish autonomous revenue authorities, which would be less vulnerable to political intervention and tax evasion practices.

According to the [Transparency International Corruption Perception Index](#), Tanzania has always ranked higher than Kenya in the overall perception index ([Transparency International \(TI\), various years](#)). In the Kenyan case, a more detailed analysis shows that the overall bribery index has declined over the years (TI-Kenya bribery reports, various issues). The Kenyan tax authority has improved its overall index over time, and it was ranked as one of the most improved organisations within the country in 2004. Corrupt practices have been reported within

the tax administration in Tanzania ([Ehrhart and Mwaipopo, 2003; Fjeldstad and Rakner, 2003](#)). More recent evidence suggests that this is still the case in Tanzania: a third of those that had been in contact with the customs department had paid a bribe ([Transparency International-Kenya, 2013](#)). In the same survey, it was also found that 23% bribed the tax authorities. In the Kenyan case, 25% paid a bribe to the customs department while 14% paid a bribe to the tax authorities. Thus, although Tanzania is performing better on the overall corruption rating compared to Kenya, Tanzania is performing worse in those institutions that are crucial to the mobilisation of tax revenue.

In this paper, we estimate the amount of tax evasion in Kenya and Tanzania based on trade flows and the average tax rate on imported products. Following the methodology outlined by [Fisman and Wei \(2004\)](#), we compare the discrepancy in Tanzania's recorded imports from Kenya with Kenya's recorded exports to Tanzania. The same approach, but opposite, is used to evaluate tax evasion on the Kenyan side. The trade gap is assumed to be a proxy for tax evasion. In principle, the reported trade flows should be the same, assuming no evasion (and measurement errors). In their study on China, [Fisman and Wei \(2004\)](#) matched the measurement error with product-specific tax rates and found that the measurement error is highly correlated with Chinese tax rates. A novel feature of their approach is that they were able to differentiate between three different aspects of tax evasion: under-reporting of unit value, under-reporting of taxable quantities, and mislabelling a higher-taxed product as a lower-taxed type.

In this paper, we present evidence of tax evasion in both Kenya and Tanzania. By studying the developments over two years, we are also able to report whether tax evasion is improving or worsening over time. Furthermore, introducing a third country, the United Kingdom (UK), enables us to compare tax evasion not only between two developing countries but also between a developed and a developing country. Finally, using the method of [Pritchett and Sethi \(1994\)](#), we examine the responsiveness of tariff revenues to tax rates for Kenya and

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Tanzania and use those results as a robustness check for the other results obtained in this paper.

The paper proceeds as follows. In the next section, we provide a brief overview of the theory of tax evasion and related empirical studies. Section three describes the methodology and the data used in the study. The empirical results are presented and analysed in section four. Finally, conclusions are provided in the closing section.

2. Tax evasion – theory and empirics

A number of theoretical models that aim to incorporate tax evasion have been developed. The seminal work in the area is from Allingham and Sandmo (1972), who created a model based on a risk-averse taxpayer. The outcome of the model shows that a higher penalty rate or a higher probability of detection tends to discourage tax evasion and that a higher tax rate will induce more tax evasion. More recent studies have questioned the expected utility maximisation framework of the Allingham–Sandmo model (A–S model) due to its poor fit to observed behaviour of choice under uncertainty. For example, Eide (2002) replaced the expected utility with rank-dependent expected utility, which resulted in a more restricted model, but the comparative statics of the evading person were still the same as in the A–S model. Another critique of the A–S model is that it isolates the decision to evade from other types of economic decisions, e.g., the decision to work in the informal market. Sandmo (2004) sketches an extension of the A–S model to allow for a labour–leisure choice in the utility function, mirroring the choice between hours spent to earn regular income and hours spent either on leisure or on informal market activities.

The theoretical literature is often concerned with evasion by individual taxpayers, but firms can also be evaders of indirect taxes. The seminal work in this area is Marrelli (1984), who extended the A–S model to instead fit a risk-averse firm and established results very similar to the A–S model. In a later study, Marrelli and Martina (1988) extended Marrelli's (1984) work to an oligopolistic framework with strategic interaction between firms. More recently, the research regarding the connection between firm behaviour and tax evasion has shifted attention from indirect taxes to corporate income taxes (Chen and Chu, 2002; Crocker and Slemrod, 2003). According to this literature, the theoretical framework of the A–S model is inadequate because the model does not distinguish between ownership and control of a firm, which is crucial because the choice to evade depends on who will be penalised. A recent review of the literature on tax evasion has shown that the theoretical predictions for the effect of tax rates on evasion are dependent on modelling assumptions (Slemrod and Yitzhaki, 2002). Hence, empirical studies would be useful both from a theoretical and a policy perspective.

Pritchett and Sethi (1994) examine the relationship between tariff revenues and tariff rates using data from Jamaica, Kenya, and Pakistan. They find a weak relationship between de facto tariff rates, calculated by dividing tariff revenues with import values for each product, and statutory rates. Fisman and Wei (2004) analyse the effect of tax rates on tax evasion in the trade flow between Hong Kong and China, and they note that the evasion gap is highly correlated with tax rates: much revenue is lost on products with higher tax rates. The point estimates suggest that China's average tax rate on its imports is already on the wrong side of the Laffer curve: any increase in the tax rate is likely to produce a reduction rather than an increase in tax revenue. On average, a one percentage point increase in the tax rate induces a three percent increase in evasion. They also conclude that practices such as underreporting import unit values and mislabelling higher-taxed products as lower-taxed varieties are widespread.

One important area where tax evasion has been reported to be a severe problem is customs duties. There are, to our knowledge, only a few studies in this area focused on African data. For instance, in Mozambique, there are substantial differences between the policy stance as given in the published tariff rates and de facto trade policy

(Arndt and Tarp, 2007). Overall, the actual tariff revenue in 1997 was slightly less than 40% of the level projected by the de jure tariff rates and estimated import volumes. A more recent analysis using the Fisman–Wei approach found a strong and positive effect from tax rates on tax evasion in Mozambique (Dunem and Arndt, 2009). For every percentage point increase in customs tax rates, evasion increases by 1.4%.

Bouët and Roy (2012) in a comparative study of Kenya, Nigeria and Mauritius also found a significant effect from tariff rates on evasion. The point elasticity for Kenya was similar to the above study on Mozambique, at approximately 1.4. However, this evasion elasticity is based on import tariffs only, excluding other taxes.¹ They also found that the ranking of the estimated evasion elasticity matched the ranking of these three countries in terms of institutional quality approximated by the Transparency International Corruption Perception Index. Even if the Kenya bribery index appears to have improved over time, their estimate for the evasion elasticity appears to have risen between 2001 and 2004.

Tsikata (1999) finds large discrepancies for Tanzania between revenues as implied by the published tariff and estimated import volumes versus the actual receipts. The differences are explained by a combination of (legal) exemptions, corruption/smuggling across official entry points (ports and roads) and smuggling across unofficial entry points (unguarded borders). A study by Mpango (1996) focused on measuring the magnitude of deliberate under-invoicing of imports in Tanzania and the related motivating factors. The magnitude of deliberate aggregate under-invoicing of imports was found to be approximately 20%, induced by high scheduled tariff rates, vigorous exchange rate adjustment, low salaries and minimal incentives offered to the customs staff and opportunities for evasion. The issue of tax evasion as a factor that contributes to poor tax performance is also discussed in Mwinjyirwa (1996), who cites avenues for the evasion of import duties and sales and excise taxes that include under-invoicing, smuggling, the use of tax exemptions, complex tax schedules, excessive documentation, and corruption.

Although tax reforms in Tanzania have made the tax regime simpler in terms of rate structure and the number of tariff bands, tax exemptions are still a concern. In 2000, the Tanzania Revenue Authorities reported that tax exemptions were in the range of 2.3% of the tax-GDP ratio, which is equal to approximately 24% of total revenue collected (Sogema, 2013). The level of tax exemptions in Tanzania is still high. In Tanzania, between 2005/6 and 2007/08, tax exemptions averaged 3.9% of GDP. In comparison, in Kenya and Uganda, exemptions amounted to 1% and 0.4% of GDP, respectively (Sogema, 2013).

3. Methodology and data

In this study, we will focus on four issues. The first is whether there is any correlation between the measurement error, as reported by the ratio between exports and imports, and the tax rate in both Tanzania and Kenya.² This correlation can be identified in two ways: we first utilise data on imports and exports reported in values and we secondly utilise data on imports and exports reported in quantities. The second issue that we want to analyse is whether the trade gap is due to mislabelling a higher-taxed product as a lower-taxed type or not, using both value and quantity data. Thirdly, we will also analyse whether there is any

¹ As in Fisman and Wei (2004), we will argue that the sum of tariffs, VAT and excise duties is the most appropriate measure. Multiple sources of taxation that increase the average tax rate on imported products are, from a theoretical perspective, likely to lead to higher evasion. As a robustness check, we have also replicated some of the regressions, restricting the tax variable to include only the tariff rate at customs. The results are similar to those reported in the text.

² In this study, legal import tax exemptions are accounted for. The ratio between exports and imports includes all registered trade-flows including legal exemptions. As statutory tax rates are used in the regressions, the results are not affected by any difference in legal exemptions between the two countries. However, using de facto tax rates (as in Section 4.1), legal exemptions could affect the results.

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