Tax Evasion and missing imports: Evidence using Transaction Level Data

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Motivation

- Developing countries collect less taxes as a share of their economy compared to DCs (Besley and Persson (2014))

- Tax revenue is badly needed for their development efforts.

- Need to raise taxes without distorting economic activities. ⇒:
  - ✓ closing loopholes & effectively capturing evasions & avoidance
  - ✓ avoid over taxing the already complying taxpayers

- Ethiopia’s tax to GDP ratio is particularly low, even compared to other LDCs

- Reliance on foreign trade tax revenue - in 2013/14, 36%
Motivation

▶ Low tax capacity and significant need for investment required for development means:
  ✓ there is a need for increasing tax enforcement and
  ✓ optimizing the tax rates to encourage compliance

▶ Optimizing the tax rate requires understanding the relationship between tax rates and tax evasion

▶ This will also help in better understanding of the elasticity of tax loss to a decrease in tax rate
  ✓ That in turn is important in relation to Ethiopia’s accession to the WTO and other trade negotiations/reforms
Research questions and preview of results

▶ Is there any relationship between tax rates and tax evasion in Ethiopia’s foreign trade tax system?
  ✓ we find evidence that tax rates and evasion are related

▶ Contribution to the literature, methodology wise
  ✓ panel data and introduction of SUR tax in April 2007 → better estimation of the r/s b/n tax rates and tax evasion
  ✓ a more precise measure of evasion gap and trade tax (effective tax rate) using info. from transaction level data
  ✓ exchange rate regime → foreign currency rationing
Related Literature:

- Allingham and Sandmo (1972) makes ambiguous prediction on the impact of tax rates on evasion

- Not much has been done to empirically test this difficult to observe and measure evasion

- Tax rates and evasion based on international trade data
  - records of trade by both the exporting and importing countries
  - gap between exports as reported by the exporting & imports as reported by the importing country

- Fisman and Wei (2004) seminal work in the area
  - Quantify effects of tax rates on evasion using highly disaggregated (HS6) trade data between China and Hong Kong
  - under reporting of prices, quantities and misclassification
Methodology

Assumption in the literature ⇒
✓ Exporters tend to report the true amount of their exports as exports are usually tax free (FOB value)
✓ Importers are likely to report lower value of their imports as imports are taxed (in CIF terms)
✓ The gap that arises due to differences in recording (FOB vs CIF etc) are not related to the tax rate. Can be questioned

Standard approach relating the gap with tax rates as follows.

\[
\text{missingtrade}_{ptc} = \alpha + \beta_1 \text{tax}_{pt} + \varepsilon_{ptc} \tag{1}
\]

Two sources of variation in tax rates to estimate \( \beta_1 \):
✓ variation in ETR across products and
✓ variation in ETR for a given commodity over time.

Product fixed effect requires changes in tax rates across time. We use introduction the SUR tax in 2007.

\[
\text{missingtrade}_{pct} = \alpha + \beta_1 \text{tax}_{pt} + \delta_{pc} + \gamma_t + \varepsilon_{pct} \tag{2}
\]
Data

- Data on trade flows from UN’s COMTRADE database
  - available at 6-digit HS product classification
  - 10 relatively less corrupt partner countries which are also main trading partners to Ethiopia: USA, GBR, DEU, FRA, etc

- Variable measuring tariff evasion is generated at HS6 level
  \[
  \text{ValueGap}_{pct} = \log(\text{Exp Value}_{pct}) - \log(\text{Imp Value}_{pct})
  \]

- Data on import tax (MFN) rates comes from ERCA
  - putting together the Duty Rate, Excise, VAT and SUR ⇒ ETR (Statutory)
  - dividing the total tax paid by value of imports → Actual ETR
Descriptive Statistics

(a) All Countries: Statutory

(b) All Countries: Actual ETR

Figure: Trends in Average Effective Tax Rate across years
Baseline Results

- We do not find any relationship between Statutory tax rate and evasion.

- When we use the Effective Tax rate, there is a positive relationship between tax rates and evasion.

- This holds true even when we estimate a first difference model (before and after introduction of the SUR tax).

- Using a cross-sectional setting, we observe that this relationship is declining over time.
Role of Product Differentiation

- Product characteristics can make it easier or difficult to evade
- Differentiated products $\Rightarrow$ no standard price and of different variety $\Rightarrow$ easier to evade
- Homogeneous products $\Rightarrow$ standard price and less variety $\Rightarrow$ difficult to evade
- Literature (Javorcik and Narciso (2008) $\Rightarrow$ evasion is almost entirely due to differentiated products
- In the case of Ethiopia, our results point to the same direction but the difference is not statistically significant
Evasion through mislabeling

- Evasion can also take place through disguising of products

- Declaring goods as if they belong to another (similar) product with a lower tax rate

- To capture evasion through misclassification of products → the Avg or Median tax rate of all other products within the product’s 4-digit category.

- Suggestive evidence that importers evade taxes through mislabeling
Role of Foreign Currency Rationing

- Rationing ⇒ long wait to get (limited amount of) foreign currency

- Request an LC for a lower value of imports than they intend to import, and fill the gap by buying foreign currency from the parallel market

- Two counteracting effects on the relationship between tax rates and evasion
  
  1. High evasion: and since luxury goods are highly taxed and less likely to get an LC, the impact of tax rates on tax evasion may depend on the level of foreign currency shortage
  
  2. Less evasion: at times of foreign currency shortages getting an LC ⇒ higher returns on imports ⇒ more honest reporting

- Our results support the second hypothesis
Correcting for Trade Costs

- Comparing FOB values of exports and CIF values of imports of each HS6 product of/from partner

- Part of this gap is obviously explained by trade cost and not due to evasion

- Assumption: Trade cost and tax rates are not correlated
  - We find negative correlation and this may cause an upward bias in the effect of tax rates on evasion
  - adjusted the value of import gap for trade costs
  - does not change the results much ⇒ the assumption works once we include product and year effects
Conclusion and Points for Further Exploration

- evasion of import taxes is positively related to the tax rate
  - A 1 ppt increase in ETR is associated with about 1% increase in evasion gap
  - lowering import taxes (as part of trade reforms) may not lead to as much tax revenue loss as part of the decrease in revenue will be compensated by a decrease in evasion.

- Evasion also takes place through mislabeling of products

- Further work:
  - Estimating the amount of tax evasion
  - Evasion by sector or product group
Thank you!