Is minimum the maximum? The case of unbiased evasion estimates and tax recycling under informality

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Theoretically, value added tax (VAT) regimes are economically neutral because the firms only collect and remit tax on value added by them. The informal sector gets an extra burden because it cannot claim credit for tax paid in the upstream supply chain. This is extra VAT for the taxman. Practically, however, developing countries face significant VAT evasion driven by the informal economy.

The imposition of minimum VAT is a tax policy which breaks the economic neutrality principle but promises extra revenues. This study examines the minimum value addition (MVA) regime in Pakistan to:

- determine the extent of pure VAT evasion by isolating the inherent 'Income Tax effect';
- estimate how much of the extra tax burden in VAT gets back to the taxman;
- estimate the segregation between formal and informal sectors;
- use the two estimates to provide first evidence on recycling of VAT; and
- compare VAT with turnover tax.

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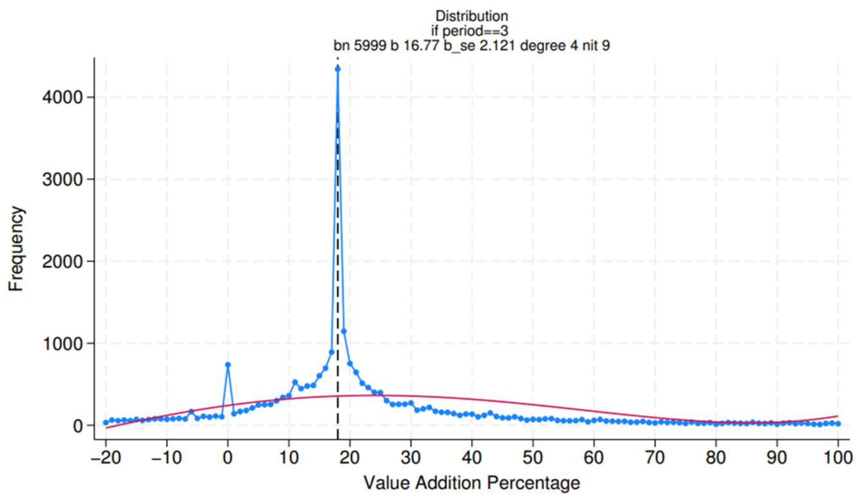
Minimum VAT in Pakistan

Pakistan imposes a minimum tax regime on imports by non-manufacturer importers. Minimum tax is an import-based turnover tax which is adjustable only if the VAT payable at sale is greater than this advance deduction. Firms pay VAT at standard rate (16%); an extra tax, at 2% and later at 3%, is collected at the import stage. It translates to an MVA threshold of 12.5% and 18.75% respectively. Income tax is withheld on imports and treated as 'final' tax. It makes this setting unique because the response can be solely attributed to VAT.

Minimum VAT creates kinks and evasion behaviour can be estimated using bunching estimation. The bunching techniques developed for income tax in Saez (2010) and Chetty et al. (2011) can be applied with certain modifications unique to the VAT setting.

The firms have a strong incentive to bunch at or below the threshold. The study found a strong bunching response at the threshold. Interestingly, when the threshold is raised, the firms immediately start bunching at new threshold. Approximately 50% of the firms bunch at the threshold (Figure 1).

Figure 1. VAT threshold and bunching effect



The graph shows the number of firms corresponding to their declared value addition with strong bunching at MVA threshold

This behaviour shows that the firms are not declaring their correct value addition post-importation.

What is going on?

The results show high evasion elasticity of 4.5, which is higher than the average estimates of 2.5-4 found in the literature. Therefore, even in the absence of an 'income tax benefit', unbiased VAT evasion estimates are very high. The misreporting in VAT is possible when the sale is to an informal firm. Developing countries like Pakistan have large informal sectors whose size estimates range from 20-35%. Because the goods are actually being sold to the informal sector, therefore, it is easy for registered firms to manipulate the value of goods sold to pay only the minimum tax they need to pay.

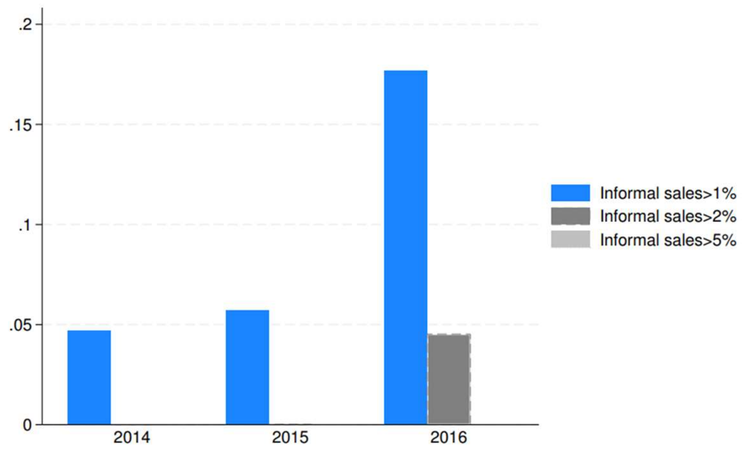
When we look at reported sales to the informal sector, we find negligible sales to informal firms and consumers. Figure 2 shows that almost no firm showed greater than 5% sales to the informal sector. This absence is puzzling because theory suggests that the more you sell to the informal sector, the more you are likely to evade. To resolve this paradox, we need to explain three things:

- Actual sales are to the informal sector but are misreported by manipulating the value declared to the tax authorities.
- Firms started declaring more sales when the threshold increased, which should otherwise not impact the declarations.
- Near-perfect segregation of formal and informal sectors according to the returns.

This can only be explained by the presence of so-called ‘flying’ invoices:

- Sales to the informal sector give rise to a credit which can be sold to another formal firm at a ‘price’.
- These flying invoices are nearly impossible to track or detect
- The tax burden is transferred to the informal sector but this VAT does not get back to the tax authority
- The real beneficiaries are formal firms and the extent of this evasion is massive and not limited to a few firms.

Figure 2. Firms’ sales to the informal sector



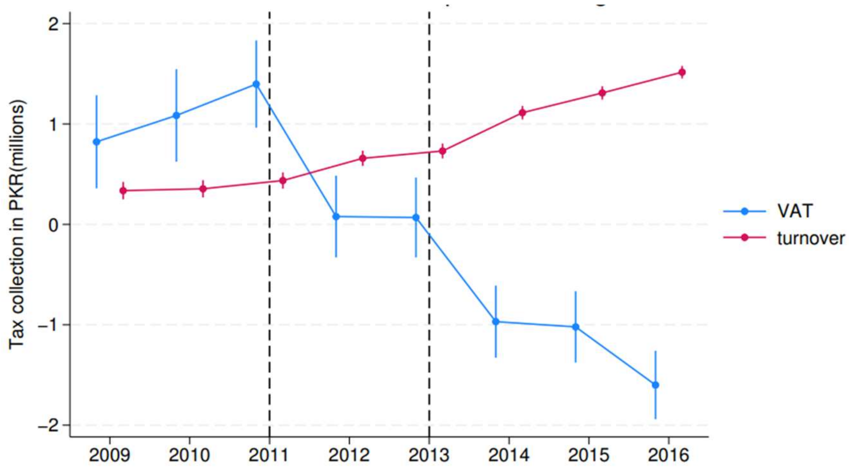
The bar chart shows the percentage of firms who showed sales greater than 1%, 2%, or 5% to informal sector. Above 5% sales are non-existent in all years.

Comparing VAT with turnover tax

This setting allows us to compare turnover tax with VAT. Minimum VAT is, in fact, a turnover tax on firms whose value addition is less than or equal to the threshold. If we compare minimum VAT with the total VAT that would have been paid in the absence of this minimum, twe can observe how a turnover tax compares to VAT. Figure 3 shows that when turnover rate is low, VAT collection based on declared values would be greater. However, when turnover rate is increased, the declared sales values drop significantly to levels which are lower than those with low turnover rate.

The negative trend is driven by firms that experienced substantial losses, but still had to pay minimum tax under the assumption that their value addition was 18.75%.

Figure 3. VAT vs turnover tax at purchase stage



The figure plots collection through turnover-based minimum tax compared to VAT collection under the normal regime. The firms' VAT sales declarations fall as turnover tax is increased over the years.

Policy implications

The study finds that:

- VAT evasion is high even when there is no corresponding income tax benefit.
- Formal firms can collude with each other to recycle the tax charged to informal sector. It reduces the amount collected by the tax authorities and this tax is recycled between formal firms.
- In tax records, formal and informal sectors are completely segregated.
- A significant part of this segregation is not real and is driven by evasion.
- VAT is both economically and revenue-wise efficient compared to low turnover tax.

- If the primary consideration is revenue for the government, these deviations from standard VAT can be justified.
- The economic cost of such policies could be very high for loss-making firms

References

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