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# Harnessing the power of electronic fiscal devices to increase VAT revenue in Zambia

*The role of consumers and Consumer Incentive Schemes*



- In brief:**
- Compliance by formal firms with consumption taxes such as Value Added Tax (VAT) remains low in Zambia.
  - Substantial VAT evasion happens at the point of retail sales, translating into lower VAT remittances to the treasury.
  - The Zambia Revenue Authority (ZRA) has implemented various policy tools targeted at this type of tax evasion. One key policy intervention was the rolling out of Electronic Fiscal Devices (EFDs) for VAT-registered firms.
  - EFDs, by themselves, may be insufficient to curb evasion. Consumer Incentive Schemes are a complementary policy that can help.
  - In this brief, we outline the findings from a survey of urban Zambian consumers on their experiences with EFDs, receipt requesting behaviour and price negotiating strategies.
  - We also outline key considerations that ought to be taken when designing a Consumer Incentive Scheme, which include: Awareness and trust of consumers; pay-out rates and frequency; seller responses to policy inventions; and pay-out modalities.
  - This work is part of a long-term collaboration between the IGC and ZRA to improve tax compliance in Zambia through experimental research.

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## Overview of the research

Compliance among formal firms for consumption taxes such as Value Added Tax (VAT) remains low in Zambia. The International Monetary Fund (IMF) (2019) estimates that, in 2015, Zambia only collected 30 percent of its potential VAT base. A primary source of tax evasion for VAT tends to happen during the final transaction between firms and final consumers in retail sales. VAT is most effective in business-to-business transactions because it creates opposing incentives for firms along the value chain, reducing the likelihood that they collude to avoid paying the tax. This feature often breaks down at the end of the value chain. The final consumer cannot claim a VAT rebate, and hence has no incentive to request an invoice (Gerard and Naritomi, 2018). This can lead to underreporting of VAT sales by firms, translating into lower VAT remittances to the treasury. This is known as VAT's last mile problem.

The Zambia Revenue Authority (ZRA) has implemented various policy tools targeted at this type of tax evasion. One of the key policy interventions was the rolling out of Electronic Fiscal Devices (EFDs) for all VAT registered firms. EFDs are web-enabled digital tax registers that generate an official tax invoice<sup>1</sup> at points of sale and send a record to the revenue administration in real time (Casey and Castro, 2015). EFDs enhance the monitoring capacity of the revenue administrators and can induce retailers and customers to pay taxes such as Value Added Tax (VAT) when they might otherwise hide the transaction from authorities. The devices also produce a standardised tax invoice that creates a paper trail for completed transactions.

The rollout of EFD technology does not guarantee that firms will report every transaction. Firms may opt to complete a sale without issuing an invoice generated by an EFD (Campbell et al, 2018). They may issue an unofficial receipt, one that to consumers is indistinguishable from an official VAT invoice. Sellers may collude with consumers by offering to lower the price if the transaction is completed without an invoice. Consumers may request special discounts and be willing to forego the official invoice as a condition for receiving a discount. These forms of tax avoidance are not addressed by EFDs.

Complementary policies that incentivise the issuance of an official and accurate invoice are needed to fully reduce evasive behaviour on the part of both firms and consumers. Consumer Incentive Schemes are one such complementary policy. Consumer Incentive Schemes differ in their design and implementation but generally their objective is to involve the consumer in the process of tax enforcement by encouraging the consumer to request a tax invoice when making purchases. Proper design of these policies requires understanding both the prevailing norms and beliefs regarding taxes, and the ways that firms and consumers respond to incentives intended to increase issuance of VAT invoices (Awasthi and Engelschalk, 2018).

As such, this research addressed two main questions:

- What are Zambian consumers experiences with VAT, EFDs and their receipt requesting and price negotiating strategies?
- What are the key considerations that should be taken when designing a Consumer Incentive Scheme?

To address these questions, a phone survey was undertaken between July and October 2020. We did not have access to a database of phone numbers, so our team developed a "phone tree" method of sampling. This approach used a convenience sample for a first wave of interviews, and then used targeted referrals from each group of interviewees to identify the next wave of potential respondents. This resulted in 628 respondents being surveyed in Lusaka, Kitwe, and Ndola, three of Zambia's biggest cities. The sample was urban, young, and fairly well educated.

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<sup>1</sup> VAT in Zambia is "invoice driven". It is calculated based upon the issuance and retention of tax invoices. In this paper we use the term tax invoice and receipt interchangeably at some points. But use the term tax invoice when referring solely to an official VAT invoice.

## Consumers' receipt requesting behaviour and experiences at retail stores

Receipt issuance is central to the effectiveness of VAT in an invoice driven system. We asked consumers about their experiences requesting and receiving receipts over the last six months. Because receipt-issuing practices vary across sectors and types of firms, we asked these questions twice, for two different types of firms: formal and semi-formal stores.

### Our findings

- Most notably, on average, respondents estimate that 90% of the time they receive a receipt, but within that 90% only 69% of the time do they receive a formal tax invoices.<sup>2</sup> This suggests that  $(0.9 \times 0.69) = 62.1\%$  of purchases at formal shops trigger the issuance of a formal VAT invoice.
- In contrast to their experience at formal shops, the average respondent receives a receipt only 21% of the time in semi-formal stores, and within that 21% only 28% of those receipts were believed to be formal VAT invoices by the respondent. This again suggests that only 6% of purchases at semi-formal shops result in the issuance of a formal VAT invoice.

**Table 1: Receipt requesting behaviour and experiences at formal and semi-formal stores**

	Formal Mean	Semi-Formal Mean
Purchased from formal shops, last 6 months (=1)	0.93	0.97
Percentage of time that received receipt	90.7	21.3
Percentage of receipts that were VAT invoices	68.9	28.4
Requested receipt and did not receive one (=1)	0.17	0.21
Why not always request receipts from formal shops?		
I always request a receipt	0.07	0
Don't see the point / don't think of it	0.27	0.38
Depends on item and shop	0.61	0.64
Takes too much time	0.14	0.14
Don't want to seem like I don't trust shopkeeper	0.04	0.05
Other	0.04	

Source: original survey data.

## Consumers' negotiation strategies and special discounts request

Consumers also shared experiences about price negotiation and requests for "special discounts." We had an interest on how bargaining over the sales price can be related to receipt issuance.

- Twenty one percent of respondents stated that at some point in the last six months they were offered a lower price if they forewent receiving a receipt. This occurred an average of 4.9 times over the last six months (among those who had this experience at least once).
- Similarly, 12% of respondents stated that a seller increased the price after they requested a receipt. This occurred 5.1 times on average, among those who experienced it at all.
- Roughly half of the sample (49%) reports requesting a special discount at the time of purchase over the last six months. Among this group, almost a third of special discounts (29%) were given on the condition that no receipt be provided.

<sup>2</sup> This variable may be measured with significant error, given that only 28% of respondents were "very confident" that they could distinguish real VAT invoices from other receipts.

## Key considerations when designing Consumer Incentive Schemes

Given the suggestive evidence on the experiences of consumers, there appears to be scope for the implementation of a Consumer Incentive Scheme in Zambia. Consumer Incentive Schemes can take different forms including VAT lotteries where consumers can win prizes or part of their VAT as a rebate by submitting their VAT invoices into a lottery draw. Others have a whistle blower mechanism where consumers can report firms not issuing receipts (Awasthi and Engelschalk, 2018). A number of conditions need to be met for a consumer incentive program such as a VAT lottery to be effective. In this section, we provide a broad overview of these conditions, incorporating lessons from the current study when relevant. We focus on considerations when implementing a VAT lottery.

### • Awareness and trust

Consumers must be aware of any incentive program if it is to be effective (Naritomi and Jensen, 2018). The roll-out of any new program should be accompanied by a large marketing campaign. Customers must also trust that the lottery is transparent and that lottery pay-outs will be forthcoming in the timeline promised. If the program is implemented well, trust should grow over time.

Possible actions to improve trust at the outset:

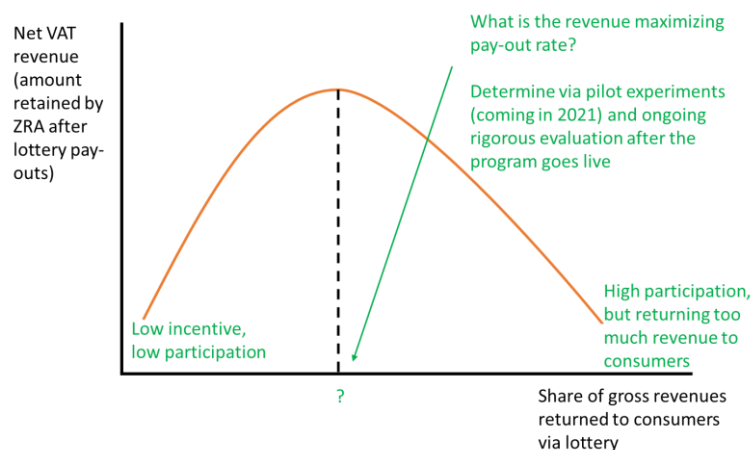
- (i) Establish a website or other information centre for tracking real-time information about VAT revenues and lotteries,
- (ii) Involve trusted partners inside and outside government to lend credibility, and
- (iii) Survey consumers before roll-out about any possible concerns, and to identify what types of information sharing would be most useful for building trust in the lottery.

### • Pay-out rates and frequency

In designing a consumer incentive program, the revenue authority must choose a pay-out rate, i.e., the share of VAT revenue associated with the lottery-eligible purchases that will be returned to consumers (Campbell et al, 2018). The implementer must also choose the frequency with which these pay-outs are distributed. The higher the frequency of pay-outs, the more important it is that the administrative processes leading from purchases to pay-outs are secure, streamlined, and standardised. All else equal, it seems likely that consumer interest in the program is likely to increase with the frequency of pay-outs.

The revenue implications of a consumer lottery depend critically on the choice of pay-out rate. The rate must be sufficiently high to induce customers to request VAT invoices, but not so high that it undercuts the capacity for the VAT to generate revenue. Figure one below illustrates this.

Figure 1: The optimal pay rate



Source: Authors

Our work to date does not shed light on the optimal pay-out rate. However, the 2020 survey was intended as a prelude to a series of pilot experiments, the goal of which is to evaluate the performance of different pay-out rates. We expect this experimental work to proceed between March and August 2021.

- **Seller responses**

If a Consumer Incentive Scheme is to be effective, retailers must respond to consumer requests by producing a formal invoice, rather than by re-negotiating the price in exchange for not issuing an invoice. Absent any other enforcement mechanism or motivation to comply with tax laws, retailers *always* benefit by lowering the price and not reporting the transaction to ZRA (there is always a price higher than what the seller would receive net of VAT remittance, and lower than what the consumer's expected total price after accounting for possible lottery winnings). Many factors can influence seller compliance, including:

- Audits, secret shoppers, and other direct enforcement actions.
- Reputational benefits at high-end shops that need to maintain an appearance of professionalism and respect for the rule of law.
- Appeals to firms' obligation to contribute to the public good.
- Consumer willingness to accept a re-negotiated price in lieu of a VAT invoice.

Additional policy tools might be useful to induce greater compliance with consumer requests. These could include:

- Hotlines or websites for reporting seller non-compliance.
- Secret shopper enforcement campaigns.
- A financial reward for consumers who report firms that are found to be negotiating against receipt requests could be an important component of program design.
- Rewarding firms for issuing a receipt that is a lottery winner.

As with the consumer rebates, the benefits of using incentives to alter firm behaviour must be compared to the costs of returning some VAT revenues. **Experimental research** is critical to ensuring that these elements of the program design are optimised, from a revenue perspective.

- **Pay-out modality**

Payments made by consumer lottery programs take a variety of forms, including bank transfers, mobile money transfers, physical cash rewards, and in-kind awards (laptops, apartments, etc.). There is a tension between the form of the payment system, the administrative cost of the program, and the share of the population that can or will choose to participate. The more formal and burdensome is the payment system, the more costly it is to run. For example, in Brazil, consumers create an account on web platform that is specifically for administering the VAT rebate program (Naritomi, 2019). On that account they can observe their past transactions (if they gave their TPIN at the point of sale), can manage any winnings, and can report firms that are not complying. Setting up and managing such a system is far more cumbersome than setting up a system in which winnings are distributed via mobile money transfer.

## References

Awasthi, R. and Engelschalk, M. (2018) "Taxation and the Shadow Economy How the Tax System Can Stimulate and Enforce the Formalization of Business Activities" World Bank Series Policy Research Working Paper 8391

Campbell, S., Gerard, F., Jensen, A., Naritomi, J., Zeitlin, A., and Tourek, G. (2017). "Strengthening consumers' participation in VAT compliance strategies in Rwanda", International Growth Centre Project Report.

Casey, P. and Castro, P. (2015). Electronic fiscal devices (EFDs): An empirical study of their impact on taxpayer compliance and administrative efficiency. IMF Working Paper WP 15/73. Washington DC: International Monetary Fund (IMF). <https://doi.org/10.5089/9781475521023.001>

Gerard, F. and Naritomi, J. (2018). Value Added Tax in developing countries: Lessons from recent research, IGC Growth Brief Series 015, London: International Growth Centre. Accessible: <https://www.theigc.org/publication/value-added-tax-developing-countries-lessons-recent-research/>

International Monetary Fund/IMF (2019). Article IV Consultation: IMF Country Report No. 19/263, Washington: International Monetary Fund.

Naritomi, J. (2019). "Consumers as Tax Auditors", *American Economic Review*, 109 (9): 3031-72.  
DOI: 10.1257/aer.20160658

Naritomi, J. and Jensen, A. (2018). "Strengthening consumers' participation in VAT compliance strategies in Rwanda", IGC Policy Brief 38417. London: International Growth Centre

Pomeranz, D. (2015). "No Taxation without Information: Deterrence and Self-Enforcement in the Value Added Tax", *American Economic Review*, 105(8): 2539–69.