

Estimating the Value Added Tax (VAT) gap in Zambia: 2009-2011



- In brief**
- This study estimated the VAT gap for Zambia over the years 2009, 2010, and 2011, using the ‘top down method’ and data from the Central Statistical Office and the Zambia Revenue Authority. The study also used regression analysis to compare VAT efficiency in Zambia to that of other comparable countries.
 - Results show the VAT gap reduced from an estimated 3% of GDP (50% of the VAT liability) in 2009 to approximately 2% of GDP (30% of the VAT liability) between 2010 and 2011.
 - Zambia VAT efficiency was revealed to be comparable to the average of other countries in sub-Saharan Africa, though it showed some volatility.
 - The study recommends that action focused on combatting cash sales, preventing false invoicing, and controlling ‘fly by night’ firms be taken both to narrow the VAT gap and increase Zambian VAT efficiency beyond the average.

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Introduction

Improving tax performance and increasing the tax to GDP ratio represent important strategic priorities for Zambia. In this endeavour, enhancing the role of VAT has been emphasised as essential, both to achieving the above objectives and, to improving the equity of the tax system. Enhancing the role of VAT revenue in overall tax revenue collection also raises the question: just how much VAT collection potential is there in Zambia if the current VAT law were ideally implemented? To answer this question, this study was developed as a product of the collaborative partnership between the Zambia Revenue Authority (ZRA) and the International Growth Centre (IGC). It was first commissioned in 2012 and concluded in August 2015.

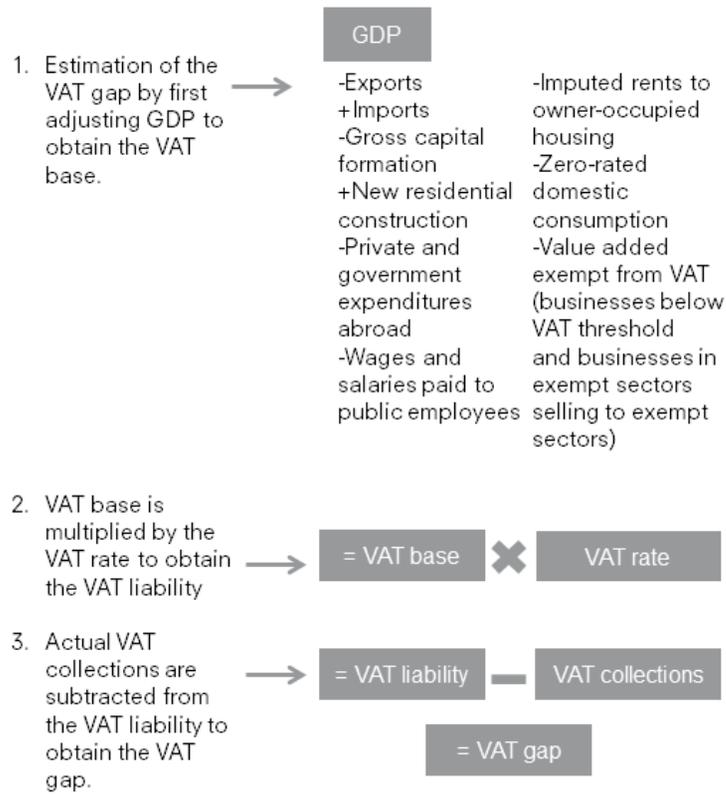
The VAT gap is the difference between the VAT liability (VAT revenue that should have been collected, given Zambia's VAT base and law) and actual VAT collections. Actual VAT revenue can differ from what should be collected owing to both tax evasion as well as non-fraudulent reasons such as legitimate tax avoidance and bankruptcies (usually minor compared to tax evasion).

Methods

The study utilised one of the 'top down' methods – the First Aggregate Method – in estimation of the VAT Gap for the period 2009-2011. Data on VAT collections was obtained from the Zambia Revenue Authority (ZRA). The above method was then used to obtain the VAT liability as well as the VAT gap as elaborated in Figure 1.

In addition, regression analysis was also used to compare actual VAT efficiency in Zambia relative to other countries. VAT efficiency was measured by dividing actual VAT collections by private consumption, multiplied by the VAT rate. This VAT efficiency measure tells us the proportion of VAT-liable private consumption that actual VAT collections make up. It also provides an indication of the departure of actual VAT collections from what VAT collections would be with a perfectly enforced tax levied at a uniform rate on all private consumption. A 'between effects', panel data model was used with data over the period 2007-2010 to obtain average VAT efficiency measures conditional on the basic structure of the economy (particularly, share of agriculture and trade openness) for other countries. VAT efficiency measures obtained from this analysis, termed 'predicted' efficiency measures, were then compared with efficiency measures obtained using data provided by the ZRA to compare actual Zambian VAT efficiency to this average efficiency obtained based on countries comparable to Zambia.

Figure 1: The first aggregate method of estimating the VAT gap



Results

Figure 2: Estimates of the VAT gap and VAT efficiency

	2009		2010		2011	
	ZMW** Million	%	ZMW** Million	%	ZMW** Million	%
VAT liability	4,967.73		4,677.01		5,775.84	
Actual VAT collections	2,475.50		3,159.60		3,964.60	
VAT gap	2,492.23		1,517.41		1,811.24	
VAT gap % of VAT liability		50		32		31
VAT gap % of GDP		3		2		2
Total tax revenue % of GDP**		14.6		16.4		19.3

* ZMW=Zambian Kwacha

** Source: Grote et al (2013)

As the table above reveals, for 2009, the VAT gap amounted to ZMW 2,492.23, which was 50% of the VAT liability and 3% of GDP. Effectively, only 50% of the potential VAT revenue was captured during 2009. This sizeable gap reduced notably to ZMW 1,517.41 (32% of the VAT liability and 2% of GDP) in 2010. The drop appeared to be partly due to the increase in exports as a share of total GDP from about 29% in 2009 to 37% in 2010. Moving to 2011, the VAT gap remained stable at ZMW 1,811.24 (31% of the VAT liability and 2% of GDP). Compared to the tax to GDP ratio of 14.6% in 2009, 16.4% in 2010, and 19.3% in 2011, it is evident that despite the noted reduction, the VAT gap cannot be considered insignificant.

Regression analysis of VAT efficiency in Zambia tells a varied story. Actual VAT efficiency in 2007, at 46%, was shown to be slightly above the average predicted efficiency for sub-Saharan Africa (SSA) at 45% obtained using the regression analysis. Comparably, for 2008 and 2009, actual Zambian VAT efficiency, at 38% and 39% respectively, lagged the regression predictions of 47% and 44%. The lower than predicted VAT efficiency would seem to imply that less VAT was being collected in Zambia compared to countries with similar economic and social structures. Possible reasons for this being the case could include: (i) Zambia zero-rates or exempts a greater share of private consumption than do other countries, (ii) Zambia's agricultural sector is bigger relative to its VAT base than it appears from the share of agriculture in GDP (a big part of Zambia's GDP is exports, which is zero-rated), and (iii) tax evasion/avoidance practices among taxpayers. In 2010, however, the actual VAT efficiency measure for Zambia improved and equalled the average predicted VAT efficiency for other SSA countries at 46%.

Conclusion and recommendations

This study estimated the VAT gap for Zambia over the period 2009-2011. To complement the VAT gap estimation, actual Zambian VAT efficiency was also compared to VAT efficiency in other comparable countries over the period 2007-2010. Key among the findings of the study is a reduction in the VAT gap as a share of the VAT liability from 50% in 2009 to approximately 30% between 2010 and 2011, and a reduction in the VAT gap as a share of GDP from 3% to 2% between 2009 and 2011. In addition, Zambia's VAT efficiency was found to be comparable to the average for other SSA countries at 46% in 2010. This represented an improvement from 2008 and 2009 when actual Zambian VAT efficiency was lower than predicted for SSA VAT efficiency.

Thus, both the VAT gap estimations and VAT efficiency comparisons seem to point to improvements in Zambian VAT administration, particularly between 2009 and 2010, that both led to a reduction in the VAT gap as well as an improvement in VAT efficiency. This notwithstanding, a VAT gap of 2% of GDP (approximately 30% of the VAT liability) is not insignificant, particularly when compared to the overall tax to GDP ratio. Similarly, Zambian VAT efficiency simply being at par with the average SSA VAT efficiency should not be taken as cause for comfort.

Therefore, these findings seem to point to there being significant room for improvement in VAT administration in Zambia if the country is to exceed the average in VAT efficiency and performance. The study recommends that action

focused on combatting cash sales, preventing false invoicing, and controlling ‘fly by night’ firms be taken both to narrow the VAT gap and increase VAT efficiency beyond the average.

Figure 3: Policy recommendations

<p>Combatting cash sales</p>	<ul style="list-style-type: none"> • Make it mandatory for all VAT registered traders to use cash registers. • Enhance cash register enforcement activities. • Introduce audit standards (including ratios) specific to particular industries and undertake selective on-site audits.
<p>Preventing false invoicing</p>	<ul style="list-style-type: none"> • Verify invoices, through standard audits and cross checking. • Develop audit indicators (specific to particular industries) where averages are used to determine the proportion of input credits to sales.
<p>Controlling ‘fly by night’ firms</p>	<ul style="list-style-type: none"> • Ensure, to the extent possible, that persons applying for VAT registration (and thus being able to charge VAT) are legitimate. • Develop transfer pricing rules for VAT between related parties. • Establish an investigations unit and perform selective cross checking of VAT returns to identify firms that sell (or purchase) but who do not either file returns or pay tax (or tax credits). • Develop a ‘white list’ of firms that comply with VAT. Other firms could be encouraged to deal only with such firms if refunds and credits are generally easier to obtain. • Develop a series of compliance indicators for exporters. Exporters who score high will receive rapid refunds.

References

Grote, M., Benedek, D., and Sunley, E. M. (2013). *Further proposals for tax base broadening*. International Monetary Fund, Fiscal Affairs Department.