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Strengthening Property Valuation for Taxation in Zambia

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Key Messages

1. Zambia currently employs a market-based approach to property valuation that is costly, opaque, and subjective.
2. Given these constraints, Zambia should empower local councils to adopt simplified automated valuation models, while delegating more property tax functions to the local level.
3. This would speed up the valuation process, reduce costs, and enhance the transparency of value estimates, hopefully improving voluntary compliance and overall property tax collection.

Introduction

Assessing the value of properties in a way that is time- and cost-efficient, relatively transparent and equitable is foundational to improving property tax collection. In many sub-Saharan countries, manual data collection, limited use of information technology (IT) and a heavy reliance on opaque market-based assessment methods contribute to incomplete or out-of-date valuation rolls, property tax systems that are poorly understood and not trusted by taxpayers, and, consequently, relatively low collection rates.

Property valuation in Zambia, like in other sub-Saharan countries, relies on highly-trained professional valuers to manually collect property data and produce estimates of the market value of each property in a jurisdiction. When implemented well, market-based valuation ensures vertical equity so that more valuable properties are charged a correspondingly higher tax amount. Market-based valuation can also help maintain the buoyancy of the tax base so that assessments increase naturally as property values rise.

But implementing market-based valuation is difficult in practice and often costly. Estimating the market value of properties relies on the availability and accessibility of relatively comprehensive and up-to-date property transaction data. Where such data is absent or incomplete, market-based valuation becomes subjective and opaque. Market-based valuation is also costly, especially when valuation expertise is limited and data collection relies on manual methods. Given these challenges, improvements could be achieved by simplifying the valuation process and building upon existing expertise in Zambia.

To explore the challenges and potential reform solutions for property valuation in Zambia, LoGRI conducted a diagnostic assessment of the property tax system in three local councils: Livingstone, Mansa and Samfya. LoGRI also led the implementation of a pilot valuation exercise in Mansa to examine the feasibility of using an AVM approach for property assessment in Zambia and conducted extensive interviews with national-level stakeholders in Lusaka. The project was funded by the Federal Ministry for Economic Cooperation and Development (BMZ), supported by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), in a joint effort with LoGRI.

Drawing on these sources, this brief suggests that Zambia should consider enabling councils to adopt a simplified AVM approach to assessment, along with delegating more property tax functions to local councils. These reforms could help speed up the valuation process, reduce costs for councils and enhance the objectivity and transparency of value estimates. Ultimately, reforming the valuation approach could contribute to improved perceptions of equity and a better understanding of the tax system among the population – both outcomes that may contribute to improved voluntary compliance and property tax collection.

Zambia's Current Approach to Valuation

Legislation in Zambia dictates that market-based valuation should be used for property taxation. To achieve that goal, professional valuation surveyors from the central government Department of Valuation and Property Management (DVPM) coordinate teams to gather available real estate market data, as well as information on the size and characteristics of the properties to be assessed. This information is then used to calculate the estimated price for which each property would sell on the open market.

For residential properties, the valuation calculation is based on three factors: location, size and quality features. Location and size provide the baseline property value, and data on quality features allow those baseline values to be adjusted upwards or downwards.

The location factor is included by defining 'rating areas' within which properties are assumed to be of roughly comparable value. Valuation surveyors have the autonomy to designate rating areas and use market data gathered by their teams to calculate average per-square-foot values for each rating area. Average rating area values are calculated based on property sales data from the local councils and Ministry of Lands, information collected from real estate agents and the Zambia Revenue Authority, and interviews with property owners.

After calculating average rating area values, properties need to be measured and enumerated for the features likely to inform their value. Property measurements and data collection take place through physical site visits to each property and are typically recorded on paper forms.

Initial property value estimates are generated by multiplying the property size by the relevant per-square-foot rating area value. Valuation surveyors then have discretion to manually adjust estimates upwards or downwards to account for building quality or other considerations.

Valuation surveyors approach the assessment of commercial properties on a case-by-case basis, as this process can be significantly more complex, and time- and data-intensive. For instance, valuers might consider construction costs or the income generated by commercial properties in their assessments.

Challenges to Effective and Equitable Valuation

Broadly speaking, Zambia's valuation system functions relatively well and seems to avoid many of the pitfalls that plague property valuation in other African countries, such as widespread rent-seeking and informal deal-making. However, dependence on a centralized team of professional valuers to calculate estimated market values for each property, as well as reliance on manual measurements and data collection, renders the valuation process rather expensive, slow, opaque and subjective. Addressing these limitations could play an important role in a broader reform agenda to unlock transformative improvements in property tax collection.

One of the main challenges with the current valuation methodology is its relatively high costs for local councils. Across LoGRI's three study councils, the cost of the most recent valuation exercises averaged about ZMW 130 (US \$8.20)¹ per property. In comparison, a 2020 property tax reform in Freetown, Sierra Leone achieved a valuation cost per property of about US \$4.50 with the implementation of a simplified AVM, similar to the approach piloted in Mansa.

The main expense inflating valuation costs in Zambia is the allowances that must be paid to the DVPM. These allowances are lump-sum payments that the DVPM uses to cover travel, accommodation and other costs for their staff. For example, implementing the 2018 Mansa valuation roll cost approximately ZMW 638,000 (US \$61,000)² – 74 per cent of which went towards allowances for the appointed valuation surveyor and their staff. The remaining 26 per cent covered travel and lunch expenses for council staff participating in data collection, printing and distributing public notices, and the sitting of the Rating Valuation Tribunal to approve the final tax roll.

Despite the relatively high costs, councils are required by law to contract the DVPM for a new valuation exercise every five years. In theory, councils are also permitted to add new or upgraded properties to the roll in-between this period through a supplementary valuation process. Supplementary valuations, however, follow the same process as the main valuation and require councils to contract DVPM staff. In practice, councils view supplementary valuations as prohibitively expensive, and because they are not legally required to do so, they rarely contract the DVPM for this purpose. As a result, potentially valuable properties often go untaxed for several years, undermining revenue collection and taxpayer perceptions of equity.

Relying on physical site visits to measure properties and collect data is also a time-consuming process, limiting the pace at which valuations can be completed. During site visits, field staff are expected to enter properties and measure their internal floor area, as well as the extent of any landholdings. This requirement can introduce significant delays to the valuation process, especially when property owners are unavailable and field staff need to revisit the same property multiple times to gain access. The time-consuming nature of manual data collection is one of the primary factors inflating the allowances that councils must pay to the DVPM for the valuation exercise.

¹ Conversion based on average 2018-2022 exchange rates.

² Conversion based on the average 2018 exchange rate. Conversion based on the average 2018 exchange rate.

In addition to relatively high costs, one of the main challenges facing Zambia's valuation system is its inconsistency. Maintaining consistency in a market-based valuation system relies on comprehensive, easily accessible and up-to-date property transaction data. In Zambia, as in most sub-Saharan real estate markets, property sales data can be very sparse – especially for areas outside the major cities. Without easily accessible and transparent data, property assessments become highly contingent on the subjective judgements of individual valuers. For instance, the estimates of different professional valuers assessing the same properties in Mansa differed by 23 per cent on average, and the level of inconsistency grew as the value of properties increased. The average difference in estimates for the least valuable properties was 21 per cent, which increased to 52 per cent for the most valuable properties. This type of subjectivity in the valuation process contributes to perceptions among taxpayers that property assessments are arbitrary and applied unfairly across different properties.

In addition to inconsistency, the current approach to valuation is not transparent to taxpayers. Information on how rates are calculated is not made publicly available, and taxpayers are only informed of the final assessed value of their property. When taxpayers do not understand how their rates are calculated and why they differ from their neighbours, they have no way to judge if the assessed value is fair or consistent with similar properties. This opacity undermines taxpayer trust in the system and contributes to relatively low levels of voluntary compliance.

Possibilities for Reform

Building on experience in other sub-Saharan countries³, LoGRI researchers implemented a pilot project in Mansa to test the feasibility of deploying an AVM in Zambia to help address the issues highlighted above. The pilot results suggest potentially significant benefits to using an AVM for property assessment, including reduced costs, faster implementation and greater transparency for taxpayers.

— Automated Valuation Models (AVMs)

AVMs are a broad class of strategies that rely on statistical modelling techniques and software to estimate the value of properties. The AVM piloted in Mansa deploys a simplified model that uses regression analysis to translate easily observable property characteristics into value estimates. The simplified AVM formula is calibrated with a representative sample of properties for which both the characteristics and estimated market values are known.⁴ Regression analysis is then used to generate value predictions for properties outside the initial sample, using data on property characteristics (e.g. size, location, and quality of features) as the explanatory variables.

One benefit of the simplified AVM is that professional valuers only need to generate estimates for the initial sample of properties. Once this is done, and the model is specified, value estimates for other properties in the jurisdiction can be generated from data collected by local staff. Relying on local staff to collect the bulk of data needed for assessment would reduce the fees paid to the DVPM and, in turn, lead to significant cost savings for local councils.

³ At the time of publication, LoGRI has implemented similar simplified AVMs for property assessment in Freetown and Kenema, Sierra Leone, and in Kananga, DRC.

⁴ LoGRI has published a guidance note on the implementation of simplified AVMs here: Orgeira Pillai, Schenker, Prichard, & Stewart-Wilson (2024). [Implementing a Points-Based Valuation System for Property Taxation](#) [Guidance Note 02]. Local Government Revenue Initiative. (accessed August 19, 2024).

AVMs can also enable the use of other cost- and time-saving reforms, such as measuring properties with satellite imagery rather than in-person physical measurements. With the conventional valuation approach, staff physically visit properties to take measurements and collect data. In the Mansa pilot, these functions were split. Technicians working with satellite imagery remotely measured building rooflines as a proxy for property area, while local data collectors visited each property to collect data on externally visible characteristics with a simple smart phone app. Under the conventional approach, each staff member completes measurements and data collection at an average pace of about 4.5 properties per day. In the Mansa pilot, each technician measured 140 properties per day on average, while data collectors collected information on 25 properties per day on average.

Overall, implementation data from the Mansa pilot suggest that scaling-up the simplified AVM approach would have a per-property cost about 20 per cent lower than for the most recent DVPM-led valuation exercise. Furthermore, additional cost savings are likely with full implementation, as the Mansa pilot relied on an expensive survey firm for data collection rather than local staff. Implementation with council staff or locally-contracted staff would likely increase cost savings by a significant margin.

In addition to time and cost savings, a simplified AVM has the potential to be significantly more transparent and consistent, which can help improve taxpayer perceptions about the overall fairness of the property tax system. The simplified AVM piloted in Mansa translates external property features into value estimates, and the same features and formula are used for all properties. As a result, the basis for assessment and the calculation used can be easily communicated to taxpayers on their bills. It also allows taxpayers to easily compare the assessments of different properties and to understand why they are valued differently. Assessing all properties with the same systematic, structured and transparent methodology also helps eliminate subjectivity and the need for one-off value adjustments. Reducing opacity and potential bias in the valuation process could improve residents' perception of the fairness and equity of the property tax system, thereby fostering voluntary compliance.

The main downside of AVMs is that they only produce estimates of property value and can therefore be biased if poor-quality or insufficient data is used to calibrate their formulas. However, the benefits in terms of cost and time savings and transparency in most cases will significantly outweigh the risks. Given these potential benefits, Zambia could consider enabling councils to move towards using simplified AVM approaches for valuation by launching it initially in some jurisdictions. Alternatively, a medium-term solution could be to authorize the use of AVMs for residential properties, while reserving the assessment of more complex and idiosyncratic commercial properties for valuation surveyors from the DVPM.

— Decentralizing Property Tax Functions

In addition to pursuing a simplified AVM approach to valuation, Zambia could also further decentralize the valuation system to give greater autonomy to local councils and make the system nimbler and more capable of responding to citizens' needs.

One of the benefits of an AVM approach is that local councils can take responsibility for hiring, training and overseeing local staff to collect property data, while central government valuers focus on quality control and calibrating the valuation model. Such an approach would not only lower costs by reducing the need to pay allowances for out-of-district staff but would also give councils more direct responsibility in monitoring and overseeing the data used for local revenue collection. If local councils lead the valuation process, then they will also be better positioned to answer taxpayers' questions and concerns about valuation, which can help to build transparency and a sense of trust in the tax system.

Many local councils already have valuation officers on staff, although few are officially registered with the national professional association and their responsibilities are restricted to assisting the centrally-appointed DVPM valuation surveyor. As a medium-term solution, council valuation officers could take responsibility for supplementary valuations that happen between the mandated five-year update to valuation rolls. Current legislation requires councils to contract DVPM staff for supplementary valuations, but most councils find this requirement prohibitively expensive compared to the expected revenue potential. Delegating responsibility for supplementary valuations to councils would help to gradually build valuation capacity at the local level, while maintaining central government oversight when a new valuation roll is created.

Enhancing the autonomy of local councils by giving them responsibility for more aspects of the property tax system would also improve their incentives to engage directly with taxpayers, to explain the basis for assessment and uses of property tax revenue, and over time to build the local political support necessary for more transformative reform efforts.

Conclusion

Relying on expert market valuation and manual property measurements makes Zambia's property valuation system less efficient and transparent than it could be. As a result, taxpayers have a poor understanding of how rates are calculated and trust in the tax system is eroded, fostering non-compliance and low revenue collection. Adopting an AVM approach to valuation, coupled with efforts to delegate some valuation functions to local councils, could help address these limitations and improve local revenue generation.

However, streamlining property valuation is only one piece of the puzzle of sustained improvements in local revenue collection. Reform efforts also need to focus on broadening the tax base, improving compliance and building trust with taxpayers that services will be rendered in exchange for taxes paid. What all these reform priorities have in common is an emphasis on relative simplicity, transparency and equity to help build broader taxpayer understanding of the system and facilitate the development of the types of political coalitions likely to support long-term property tax reform.

Further Reading

- Ali, D.A., Deininger, K., and Wild, M. (2018). Using satellite imagery to revolutionize creation of tax maps and local revenue collection [Policy Research Working Paper 8437]. World Bank.
- Bergeron, A., Fournier, A., Kabeya, J.K., Tourek, G., & Weigel, J.L. (2023). [Using machine learning to create a property tax roll: Evidence from the city of Kananga, D.R. Congo](#) [ICTD Working Paper 176]. International Centre for Tax & Development. (accessed August 3, 2024).
- Brimble, P., McSharry, P., Bachofer, F., Bower, J., & Braun, A. (2020). Using machine learning and remote sensing to value property in Kigali [IGC Working Paper C-38315-RWA-1]. International Growth Centre.
- Collier, P., Glaeser, E., Venables, T., Manwaring, P., & Blake, M. (2018). Land and property taxes: Exploiting untapped municipal revenues [IGC Cities that Work Policy Brief]. International Growth Centre.
- Dzansi, J., Jensen, A., Lagakos, D., & Telli, H. (2022). Technology and tax capacity: Evidence from local governments in Ghana [NBER Working Paper 29923]. National Bureau of Economic Research.
- Grieco, K., Kamara, A.B., Michel, J., Prichard, W., & Stewart-Wilson, G. (2019). [Simplifying property tax administration in Africa: piloting a points-based valuation in Freetown, Sierra Leone](#) [ICTD Summary Brief 19]. International Centre for Tax and Development. (accessed August 3, 2024).
- Knebelmann, J. (2022). Digitalisation of property taxation in developing countries: Recent advances and remaining challenges [ODI Report]. Overseas Development Institute.
- Knebelmann, J. & Pouliquen, V. (2021, July 8) [Strengthening property valuation for taxation in Dakar, Senegal](#). International Centre for Tax and Development. (accessed August 3, 2024)
- Nyabwengi, L., K'Akumu, O.A., & Kimani, M. (2020). An evaluation of the property valuation process for county government property taxation, Nairobi City. *Africa Habitat Review Journal*, 14(1), 1731-43.
- Okunogbe, O. & Santoro, F. (2023). [Increasing tax collection in African countries: The role of information technology](#), *Journal of African Economies*, 32(Supplement_1), i57-83. (accessed August 3, 2024).
- Zebong, N., Fish, P., & Prichard, W. (2017). [Valuation for property tax purposes](#) [ICTD Summary Brief 10]. International Centre for Tax and Development. (accessed August 3, 2024).

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LoGRI Local Government Revenue Initiative

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Cities in the Global South need significant revenue to build infrastructure and provide local services. However, efforts to collect taxes, particularly on property, are often ineffective and inequitable. LoGRI supports governments to raise local revenue more fairly and in ways that promote trust, transparency and accountability.

We do this by:

- › Partnering with governments to provide hands-on support and advice
- › Conducting collaborative, applied research to inform reform projects
- › Developing operational tools, including technology solutions
- › Delivering skills training to develop local capacity

We also seek to share insights and shape policy by engaging with regional and international stakeholders on local public finance issues. LoGRI is based at the Munk School of Global Affairs & Public Policy and is an initiative of the International Centre for Tax and Development (ICTD).

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