

Electricity fluctuations and tax revenue in Sub-Saharan Africa: insights from a bias-corrected linear dynamic panel model

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Electricity is an important ingredient for development; however, inadequate electricity supply and its frequent fluctuations adversely affect the productivity and profits of small and medium enterprises in sub-Saharan Africa (SSA). In turn, the adverse effects pose challenges to economic growth and subsequently narrow further the low tax base in the region. Information regarding the macroeconomic effects of electricity fluctuations on the tax base in SSA is limited, thus calling for a detailed and refined study of this nature to analyse the effect of electricity fluctuations on the tax base in SSA. A bias-corrected linear dynamic estimator is employed for the analysis using a panel dataset for 41 SSA countries from 2000 to 2022. The results show that electricity consumption is positively related to the tax base in SSA while electricity fluctuation creates fiscal losses in terms of narrowing the tax base. Specifically, gross capital formation and informal economic activities are adversely affected by electricity fluctuations. This is a dramatic dampening effect that requires policy attention. The results indicate that the African governments in SSA need to increase investments in (including renovation of) the electricity infrastructures and diversify sources of energy into visible and tangible levels. This is because unreliable supply of electricity denies these countries the benefit of digital transformation, especially internet access. Sustaining the pace of stable and reliable electricity is paramount for economic growth and the growth of tax revenue in SSA countries. The article offers a highlight in energy policy review to include reliability as a prime concern for elevating economic growth and tax base in SSA countries. The findings suggest that African countries should speed up renovating/investing in electricity infrastructures that would enable expanded access to electricity and the Internet, among other digital transformation opportunities. Furthermore, policymakers and communities in SSA should continue

expanding their knowledge on another source of energy (including renewable energy) in view of ensuring sustainable and reliable access to electricity in the region to support economic growth and subsequent expansion of the tax base.