

## **Abstrakt**

This dissertation thesis touches on some important aspects of development, including financial development and improved access to reliable energy sources, regional integration and expanded opportunities for trade. This thesis was written to help guide policy reforms especially in developing countries to expand sources of growth and put countries on track to better meet their long-term development goals, including a better and more sustainable future for everyone. This dissertation consists of three papers.

In the first paper I investigate the empirical evidence on the relationship between financial development and economic growth. In doing so, I assessed over 270 studies for their potential inclusion in a meta-analysis. From those studies that contained an empirical estimate of the finance growth relationship, I compiled 1,334 coefficients and coded study characteristics for each. Taking the reported estimates together, I find a positive link between financial development and economic growth, but with widely varying individual estimates. By applying a multi-variate meta-regression, I explain the variation in reported results, stemming not only from differences in research design (by authors addressing or ignoring potential endogeneity issues) but also from real drivers (different regional and time effects).

In the second paper, I estimate the costs of scaling up access to electricity through the main grid. I do so in view of the limited access to modern electricity services among countries in Sub-Saharan Africa, despite its widely recognised importance for human and economic development. Specifically, I estimate the incremental costs of scaling up electricity access in the Southern African Power Pool. I do so by developing and applying a least-cost power system generation despatch and investment model for the region. My analysis shows that at the current rate of progress in providing households with access, less than 60% of the population in SAPP will have access to electricity by 2030. Yet, the incremental costs of providing access are relatively low when compared to the overall forward-looking system generation cost of serving the current households and the non-residential sectors of the economy. In fact, the resulting cost is below of what a typical household pays for poor alternatives to electricity, such as kerosene for lighting, implying that policy makers should accelerate the rate at which electricity access is provided.

The lack of access to modern electricity services in Sub-Saharan Africa is often linked to affordability issues. With this in mind, in the third paper I look at how certain policy actions could

reduce the cost of providing electricity access, and therefore help to shift towards more sustainable sources of energy in the region. Specifically, I look at how increased power trade and electricity interconnection among countries in SAPP could reduce the underlying cost of generation and hence the costs of supply. I find that the existing interconnection capacity in the SAPP region is not utilised efficiently and that countries are foregoing some benefits of power trade in the short term and benefits of taking a regional approach to power system planning. Utilising the existing interconnector capacity efficiently and building and using new interconnectors when economically beneficial to do so reduces forward looking costs of generation and transmission interconnector investments by almost 6% compared to no trade. The lower cost helps to reduce the affordability constraint related to electricity access, with access to reliable energy being one of the key drivers of human and economic development. I also find that trade can significantly contribute towards meeting other policy objectives, such as reducing greenhouse gas emissions. With trade, less coal fired generation is required, particularly in South Africa and Zimbabwe, and more hydro and solar photovoltaics renewable generation capacity is developed elsewhere in the region.