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Understanding the private sector's reluctance to invest in Sub-Saharan African electricity infrastructure: The impact of governance

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Experience and Clarifications

- Experience: 23+ years in the financial markets and a former electricity project developer.
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- Hypothesis: the lack of private investment in SSA electricity infrastructure, is due to excessive risk or negative uncertainty, surrounding the development and operation process of electricity infrastructure.
- Motivation of this paper: to explain how excessive risk, caused by governance, undermines private investment in SSA.
- Clarifications:
  - Sub-Saharan Africa in this paper does not include South Africa,
  - Private investment in this paper, only describes international investment, as most of the region's banking system is to immature to privately finance infrastructure.
  - 'Risk' and 'negative uncertainty', recognising that it's exact meaning is subjective, encompasses: 'factors that are material to the development of infrastructure, that cannot be predicted, and will negatively impact the infrastructure's ability to attract private sector investment" [Gregory and Sovacool, 2018].

Research Methods

An extensive desk based, interdisciplinary literature review – overlaid on my own personal financial markets and development experience, of 23 years.

Summary of the problem

- Well over half of all SSA does not have access to electricity – particularly in rural areas (recognising there is contestability over exact numbers).
- This is due to a lack of electricity infrastructure being built in the region.
- The Wolfensohn's presidency of the World Bank in the 1990's, said that this type of infrastructure development should be financed by the private sector.
- Continuing calls from various multilateral organisations and recently from SSA governments, for private sector participation.
- Despite these constant calls for support, the private sector remains reticent to engage in the financing of SSA electricity infrastructure projects.

Definition of Governance

Governance is a process and an enabling variable.

Governance, when it concerns SSA, is often applied narrowly, negatively and ideologically [Hufty, 2011]: as a description of an act of financial misappropriation [Booth, 2012]; through a ‘principal-agency’ framework [Eisenhardt, 1989].

This conference paper intends to widen this definition of governance, and remove the ideological implications. Governance is not being utilised as a method of criticism, but as a description of process.

Governance continued

Governance encompasses interactions and decision-making among the various relevant stakeholders, reflecting the gradients of power and influence, involved in a collective purpose - that being in this paper, the development and operation of electricity infrastructure within SSA.
These interactions then lead to the creation or reinforcement of rules and social norms, along with accompanying institutions.

Governance efficiency and sustainability (good or bad) is determined by its ability to deliver acceptable outcomes for all the relevant stakeholders, by successfully aligning stakeholder interests.

Ambiguity of ‘Good’ Governance

Ambiguity in establishing what ‘good’ governance entails, is due to its effectiveness being normally defined too narrowly, and from the perspective of the stakeholder that is applying it.

To get a holistic picture of ‘good’ governance, we need to synthesise multiple stakeholder perspectives. In this paper that will involve –

1. **Financial governance:** the perspective of the private sector investor, utilising investment theory.
2. **Political governance**: the perspective of political economy, utilising development theory;
3. **Technology governance**: the perspective of technology application, utilising innovation theory.

Defining Investment

"An act that incurs an immediate cost in the expectation of future rewards"

[Dixit & Pindyck, 1994 – Investing under uncertainty]

Investment is a function of risk and reward

Key investment dynamics, surrounding electricity infrastructure

- Such investments are illiquid;
- Electricity infrastructure, which has a correctly regulated tariff, is a low margin business;
- Private investment in infrastructure, has to be long dated, with a duration of at least 20 + years

Filters of an Investment

Before an investment in infrastructure can proceed in SSA, a potential private investor will always ask these three questions:

1. Am I likely to see the value of my investment again (the initial cost)?
2. How likely am I going to get the return: that I am anticipating to receive and when it is expected (the rewards) ?
3. How does this investment opportunity compare to every other, that I can invest in? (every investment is a relative decision)

I will now apply these three questions, as research questions, to each of my three perspectives of governance – to illustrate how governance negatively impacts electricity infrastructure development in SSA.

Financial Governance

The private sector investor's perspective, which focuses on the rules and institutions (or lack of) that directly influence the investment environment in SSA

"Good Financial Governance": can be observed as entailing the factors that protect the 'immediate cost' of an investment and then enable the delivery of the 'future rewards' proficiently and with certainty;

"Bad financial governance": concern factors that destroy or remove value from both the 'immediate cost' and the 'future rewards' of the investment, delivering 'negative uncertainty' or Risk.

The significant financial governance issues:

1. Property Rights: includes the transfer of ownership of project, before construction;
2. Planning costs;
3. Unearned equity dilution, and ownership restrictions;
4. Exchange rate issues
5. Uncommercial tariff rates
6. Monopoly electricity supply
7. Uncertain law and order impacts

Political Governance

The political economy perspective, which relate to the indirect investment consequences resulting from the way that SSA governments govern.

Understanding this approach to governance, is best done by realising it has three causal influences – which create two types of risk:

1. Power asymmetry
2. Neo-patrimonialism
3. Policy confusion

→ Misappropriation risk

Policy fluidity risk

Technology Governance

The technology application perspective, which entails how the current structure of electricity delivery regimes, impact investment in electricity infrastructure development in SSA.

Dominant Regime: centrally controlled, network ‘hub & spoke’ model.

This paradigm currently involves: large scale, electricity generating assets, with supporting transmission and distribution systems.

However, this is a ‘path dependent’ delivery model, that is expensive and capital intensive to build and operate.

Technology governance: continued

From an investment perspective, this regime paradigm has historically been compromised by three systemic impediments; and recently, it has been overwhelmed by a fourth:

1) The inability of African households to both: afford the required commercial price of electricity to finance the roll-out of its distributive grid that this delivery paradigm requires – particularly in rural areas; and then use the electricity, once it is available;
2) A failure of the centralised monopoly utilities, to manage and operate such a template efficiently and successfully in the region;
3) A shortfall in the required political capital from the relevant political actors, to make this electricity service paradigm succeed.
4) There is also currently an investor *'perfect storm'* enveloping this development landscape – these three traditional regime challenges are being compounded by a global transition of electricity service technology – from a paradigm based on fossil fuels, to one based on distributive renewable technologies.

Summary

Good governance requires the delivery of a positive answer, to each our 3 investment filter questions.

- Financial governance – if you want the private sector to invest in electricity infrastructure:
  - Minimal risks to the immediate cost of an investment;
  - Maximum certainty to the future rewards of an investment.

- Political governance – if you want the private sector to invest in electricity infrastructure:
  - Cost and policy certainty for electricity infrastructure financiers is needed: as tariff regulated electricity infrastructure is not a high margin business – excessive change or added costs, stops private investment.

- Technology governance – if you want the private sector to invest in electricity infrastructure:
  - Discard, or at least a adapt, the ‘network, hub and spoke’ model.
  - Monopoly control needs relinquishing, and control of electricity delivery needs to be decentralised – to allow flexibility to be incorporated into solutions, due to the underlying technology transformation, that the electricity service regime is undertaking.

Possible new policy approaches

Structure policy in a way that aligns all stakeholder interests

This can be partly done, by turning problems into solutions:

A change in Language and Structure

Stop thinking of a private investment in infrastructure as a handover of control of public property; but instead, as a granting of a licence for a set period of time.

- PPP – BOOT – Build, Own, Operate, Transfer

  Rather than ownership, offer a set licence period (say 30 years), that gives 100% control (ownership of benefits / management) of the project, but an automatic transfer of this control back to government on expiry.

You can charge for the licence, and this will give certainty to the investor for a set period of time, and allow a quantifiable demand structure for electricity to develop.

Identify and then monetise externality benefits

For example

- Infrastructure planning is expensive, and can be as high as 10% of the project cost – with no certainty of success.
- The development and diffusion of ‘project’ capabilities is important for the future development of infrastructure.

So why not pay the private sector to train ‘apprentices’ in the capabilities of identifying and designing new electricity infrastructure, during the planning process of a new project – this can dissipate the planning risks (costs) for the private sector incurred in planning, whilst improving the project capabilities of the country as a whole, in such planning and designing processes.

Turn ‘poor’ electricity consumers – into electricity producers

- One of the major identified impediments to electricity access, is affordability.
- A further impediment, is the security of electricity infrastructure assets

So why not turn consumers into producers, through a reliable and sustainable credit worthy Feed-in-tariff (FIT), and align their interests with the success of the electricity delivery system?

Adapt the ‘TESLA’ model that was applied to Australia

Thank You