DEVELOPMENT AND INFRASTRUCTURE FINANCE TO ENHANCE INDUSTRIALISATION

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Exploring the topic

Purpose of the study

The study seeks identify gaps in providing a comprehensive solution that integrates technology, finance and regulatory harmonization in addressing infrastructure financing in the region.

1. Innovative stratagems are required to compete effectively
   I. Project promotion
   II. Financing Models
   III. Project Execution

2. Infrastructure is the proponent for both intra-Africa trade and manufacturing of multidisciplinary components.
   I. The antiquate procurement mechanism
   II. Forward and Backward Linkages

This study is to investigate financing models of infrastructure, structured to create positive linkages with the domestic economy of the host country.

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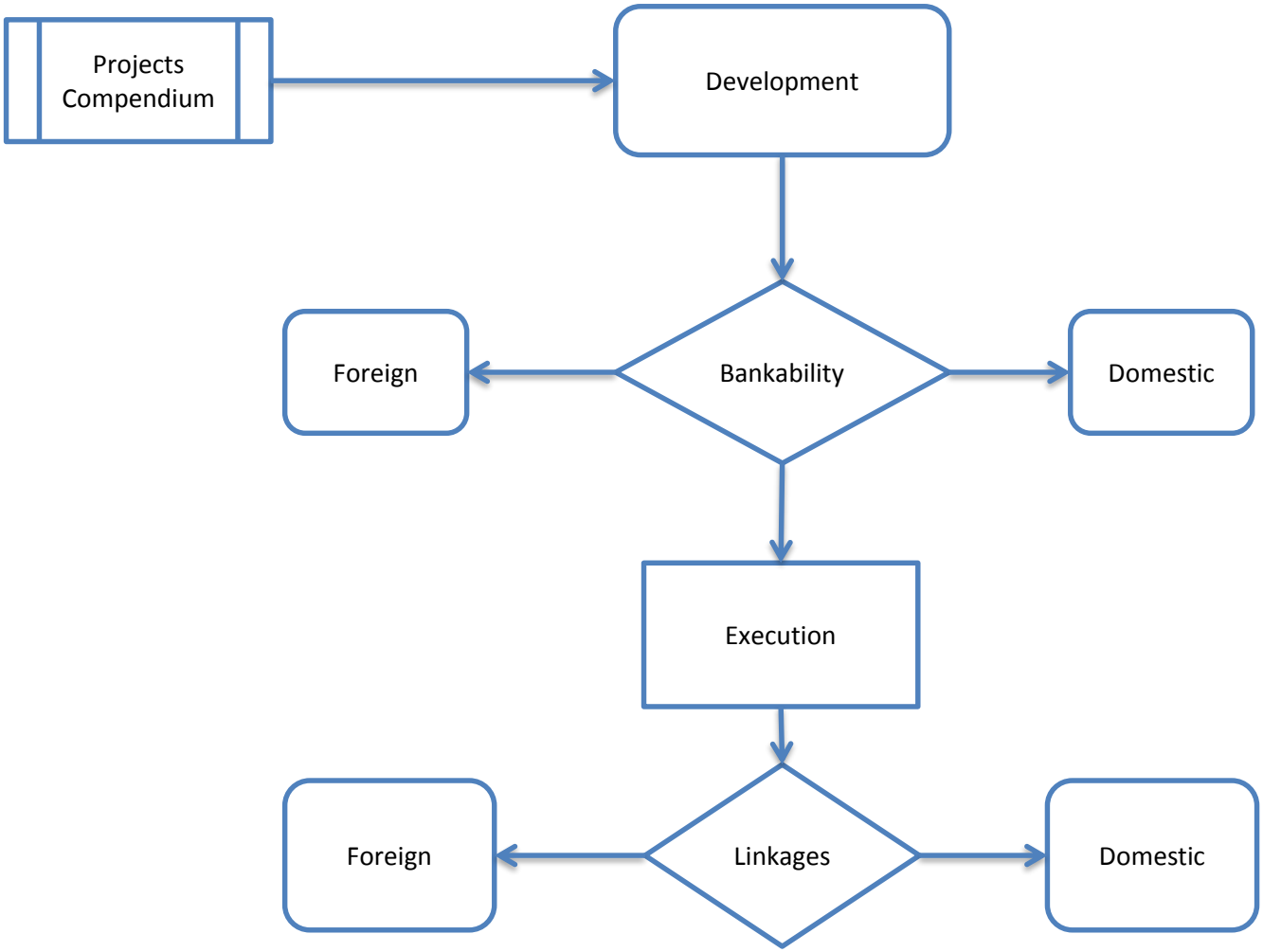
Exploring the topic



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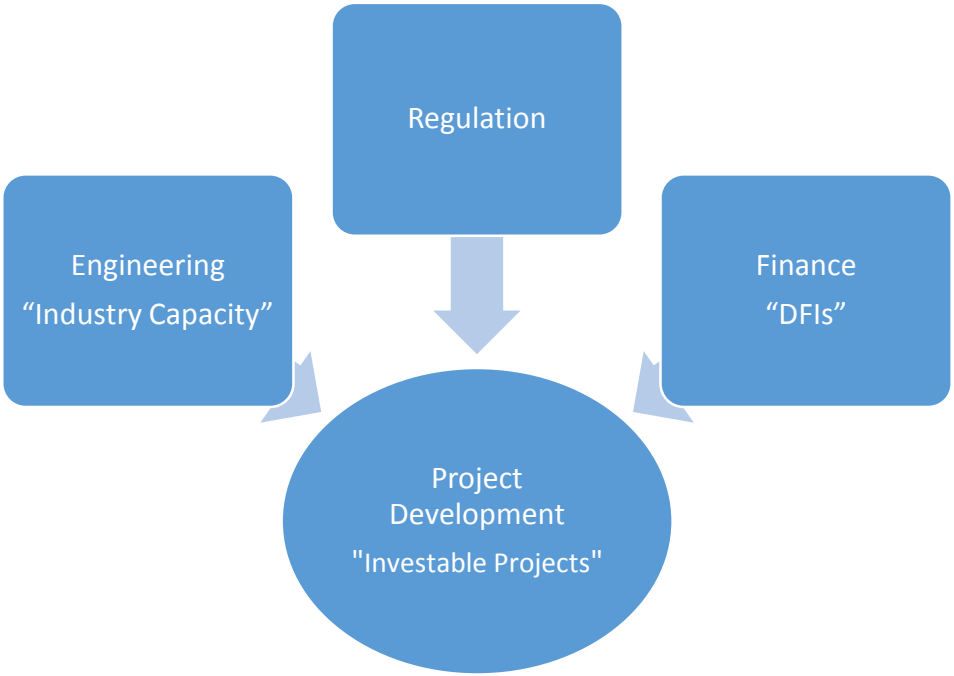
Project Development "Structured Partnership"

1. Traditional Procurement
2. PPP Procurement (DBFOT)



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Background

Africa Current Situation

1. Positive growth for the next three to four decades Pritchard (2013)
2. Railway transport benefits of
    I. energy efficiency,
    II. reduced greenhouse gas emissions
    III. and lower cost per kilometre

3. Railway infrastructure and rolling stock are antiquate and AfDB (2013)
    I. trade potential in many African countries
    II. cost of doing business
    III. negative impact on the GDP by 2%

4. Railway transport market share in better developed countries on the African continent is below 20% of the total volume of freight transport" AfDB (2015)

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Background

Africa Current Situation

1. Switching from rail to road
    I. structural inefficiencies “often describe as the “tragedy of the commons”
    II. phenomenon on a macro-economic scale.
    III. loss of economies of scale increased cost and tariffs
2. A modal shift to 50% for rail (from the current 14%)
    I. on the Durban corridor alone would decrease the freight bill for the corridor by R2billion (or 1.8% of the corridor cost).
3. Whereas a shift to 80%
    I. will save R3.2billion or (2.8% of the corridor cost).
4. An 80% rail market share figure for all corridors countrywide
    I. would save R22billion.
5. A saving of R22billion constitutes
    I. 12.8% of the nation’s freight bill, 6.5 % of the total logistics costs and 1% of GDP Havana (2013).

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Economic Impact

Economic Impact of Infrastructure

1. Key to economic activities such as;
    I. facilitating trade,
    II. economic growth,
    III. human development and productivity across many sectors of the economy
    IV. every dollar spent on a capital project generates an economic return ranging from 5% to 25% per annum WEF (2012)
    V. Impact on GDP per Capita
2. Infrastructure deficit, coupled with burdensome trade regulations,
    I. Raised the cost of doing business
    II. Constrain domestic productivity
3. The major two reasons,
    I. being the lack of financing of infrastructure
    II. and the underdeveloped institutional framework to allure investment.

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Investment Reserve

Significance, Currency and Impact

1. Infrastructure financing to increase from 3.8% to 5.6% GDP in 2020 worldwide McKinsey Global Institute (2012).
2. Developing countries to invest $1 trillion a year up to 2020 G20 (2013)
    I. the demands of urbanization,
    II. and better global integration and connectivity G20 (2013).
3. Developed countries needs similar amount to finance projects through 2050
    I. low-carbon emission energy;
    II. investments on transport
    III. and social infrastructure
4. For OECD member countries, total assets of pension funds and public pension reserve funds
    I. Increased from less than $25 trillion in 2002 to over $55 trillion by the end of 2012.
    II. Even so, portfolio allocations of pension funds to infrastructure debt and equity are small, at around 0.5% Della Croce (2012).
5. Ehlers (2014) emphasized “while there is a consensus that there is an infrastructure bottleneck, the underlying reasons for the lack of infrastructure finance by the private sector seem to be less debated”.

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Research Development

Significance, Currency and Impact

Academic theory and research on project finance distantly lag the state of current practice Esty (2014)

1. Project financed investment grew at a compound annual rate of Esty (2014)
    I. 20% through most of the 1990s and
    II. peaked at $217 billion in 2001
2. Additional research is clearly needed not only to guide practice, but also to refine existing finance theories and to generate unfaded ideas Esty (2014)
3. Project companies are potential “Strategic Research Sites”
    I. Mozal Smelter Plant Project
    II. Sasol Gas Project
    III. Gautrain Rapid Rail Project
    IV. Rail Concessions
4. Mismatch between investment demand and supply of finance
    I. Lack of investable projects

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Investment Dilemma

Significance, Currency and Impact

1. The inherent challenges requires innovative thinking as equity or debt investors face two simultaneous dilemmas BIS (2014),
   I. long-term commitments of financial resources to an investment which is typically not liquid,
   II. an inherent difficulty to price the associated long-term risks.

2. A key obstacle to the emergence of infrastructure as a separate asset class is the heterogeneity in the setup of projects and the lack of readily available data Ehlers (2014)

3. Across countries, but even within a given country, infrastructure projects often have completely different contractual structures" Ehlers (2014)

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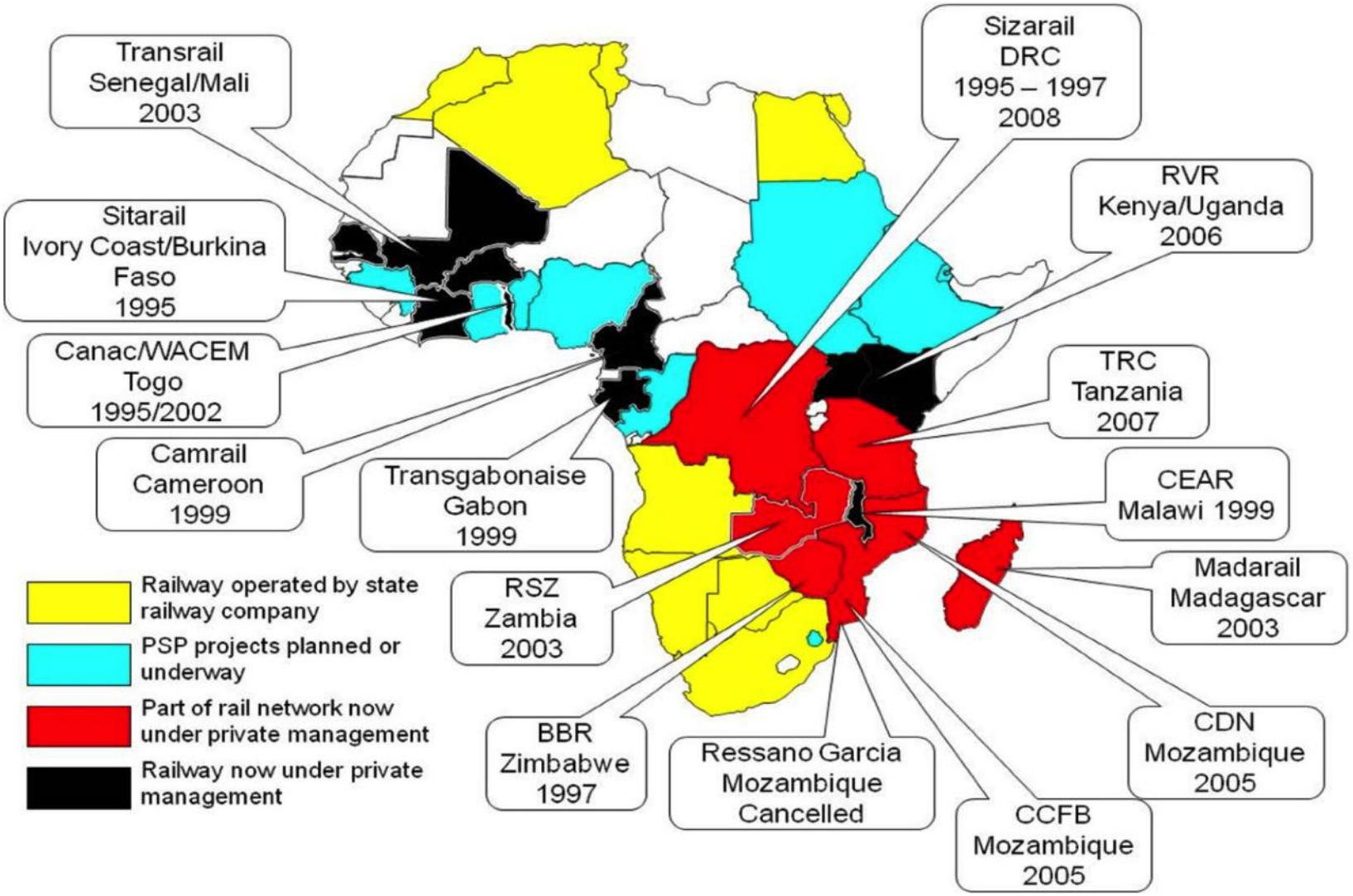
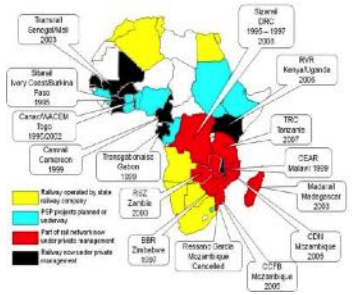
Railways Concessions in SSA



Investment Dilema



Compendium of projects

Project Development
Preparation
Feasibilities

Fin/GTG/Ind

Lack of coordination
Inbound concentration

IRDC

Project Proponents
Free Trade for Africa
SA Focus on Investment
SOE Restructuring
Re-Industrialization
AU Declaration on Rail
Research coordination

SA Inc

Financing Models
Sovereign Bonds
Corporate Finance
Project Finance
Value Capture

Mandate Consideration
Industry Capacity
National Value Add
Nexus with IFCs
User Pay/ Off-Takers

EPC

Infra Disc

Infra Disc

Infra Disc

Contracting
Regulation
Designation
National Value Add

Cluster

Cluster

Cluster

Financing Models
Debt/Equity
DFIs as catalyst
Grants

EPC and FDI Management
National Value Add
Profit Repatriation
Debt Amortization

Impact to the economy
GDP Contribution
External Balances
Growth Stability
Income and Savings
Relevant industries
Transformation

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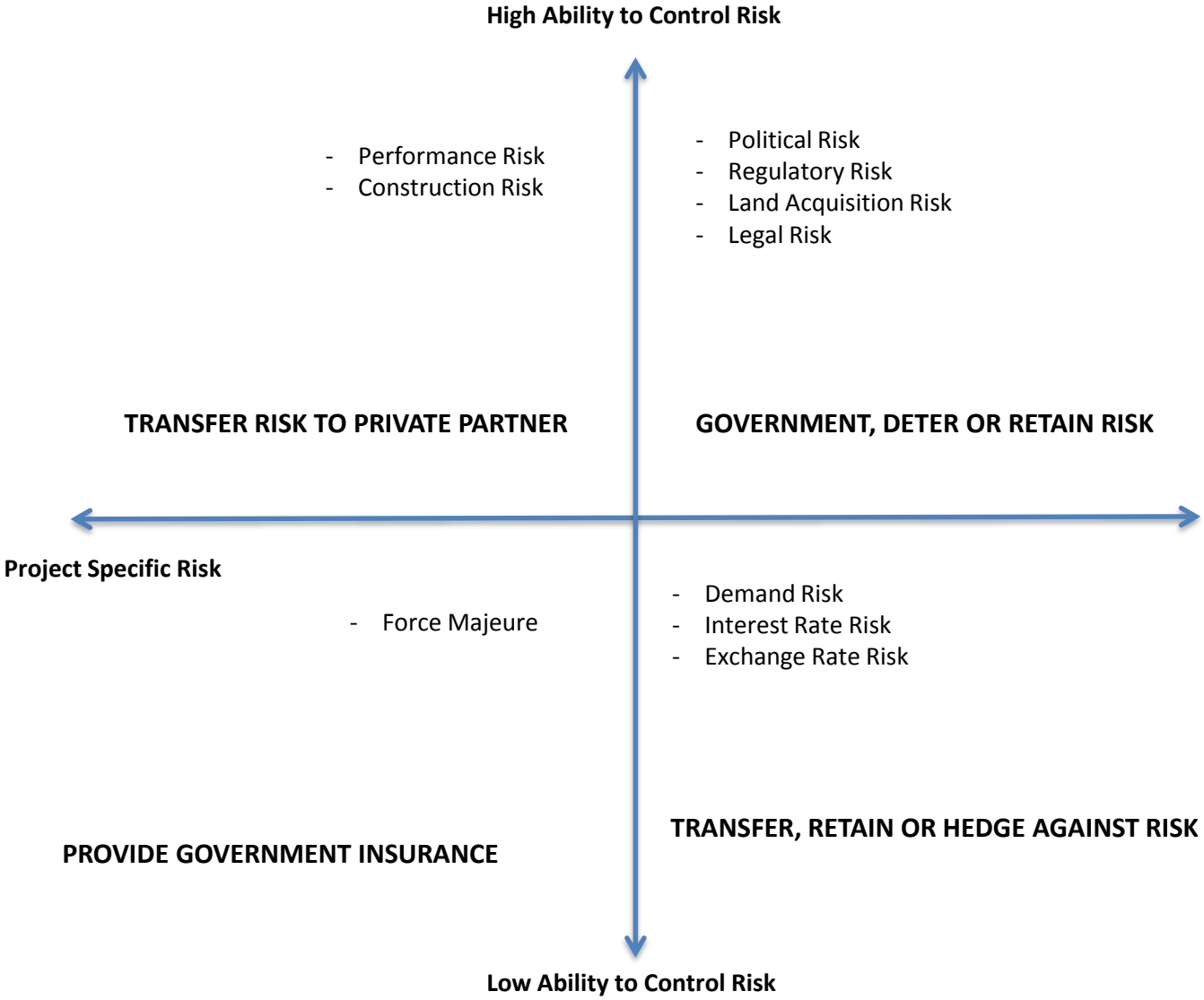
Risk Incentive

Host Government Support
No change of law
Foreign exchange availability
No expropriation/Nationalization
Fixed negotiated levels of Tax
No Imposition or exclusion from exchange control
Guarantees on permits



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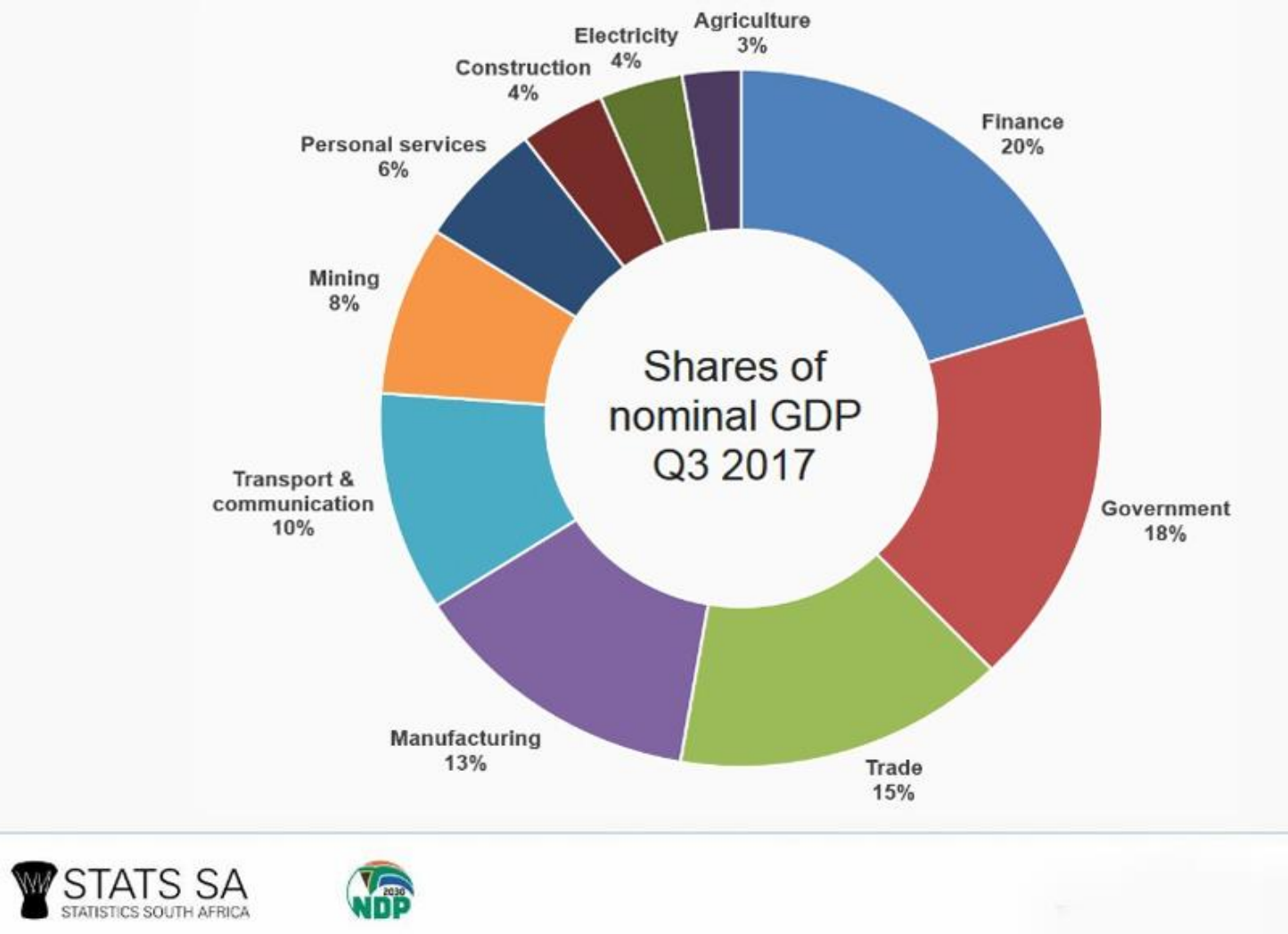
Risk Incentives

Sectors Contributing to GDP



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Efficiency Gains

Efficiency Gains in Africa ICA (2014)

1. Infrastructure spending needs of about $93 billion a year PIDA (2012)

2. Infrastructure spend by Africa is at $45 billion a year PIDA (2012)

3. India and China invested 32% and 42% respectively while Africa invested 15% - 25% on transport infrastructure period 2005 -2012 UNCTAD (2011)

4. Rolling Stock has a Global market share of >$61 billion p.a. and Africa only share $2 billion p.a. Berger Report (2014)

5. Efficiency gap has a potential dividends of $17 billion a year BIS (2013)

6. Most flagrant inefficiencies is the failure to maintain infrastructure assets

7. Institutional reform remains essential for tackling utilities' operational inefficiencies

8. Closing Africa's infrastructure financing gap is critical to the region's

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Efficiency Gains

Efficiency Gains in Africa ICA (2014)

Railways	Date	Type of a Train	Cost/Vehicle	No of vehicles	Suppliers
Israel	2011	Diesel-Electric Locomotives	$4.7m	16	Vosslo Espafia
Sri Lanka	2008	Diesel Motor units	$2.67m	16	CSR Sifing
Ukraine	2011	Iron Ore Pellet wagons	$65 000	400	Stakhvin
Turkey	2013	Oil tank wagons	$300 000	100	Legios
Italy	2011	E464 Electric Locomotives	$3.72m	50	Bombardier
South Africa	2014	66% Electric and 44% Diesel	$4.45m	1064	Multiple OEM

Source: ALG and Railstics based on multiple sources

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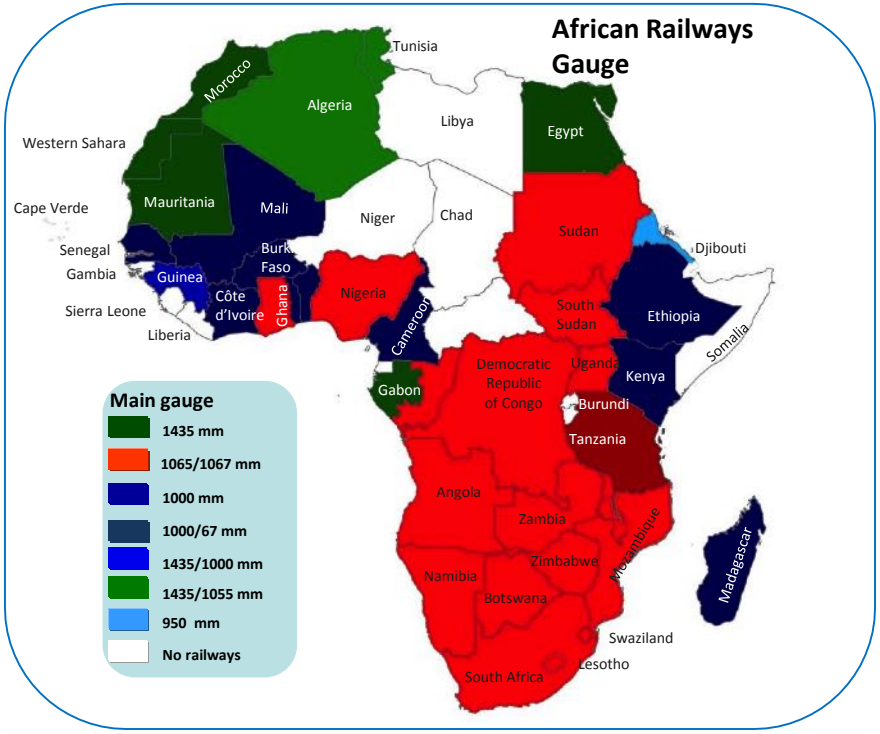
Interconnectivity & Interoperability



Cooperate to enhance inter-connectivity and interoperability

Enhanced through Collaboration - Corridor approach

- Cape-gauge (1067mm) provides flexibility for SADC rail growth as an **existing** interconnected system
- Restore rail infrastructure to **agreed standards**
  - Axle loading, bridge and tunnel structures
  - Re-establish disconnected rail links
- Introduce **minimum maintenance standards**
  - Ensure longevity and sustainability of:
    - Infrastructure, and
    - Rolling stock
- Productivity and Efficient use of rolling stock

Finance Models

Four Financing Models

1. Corporate Finance
2. Sovereign Bonds
3. Project Finance
4. Value Capture Finance

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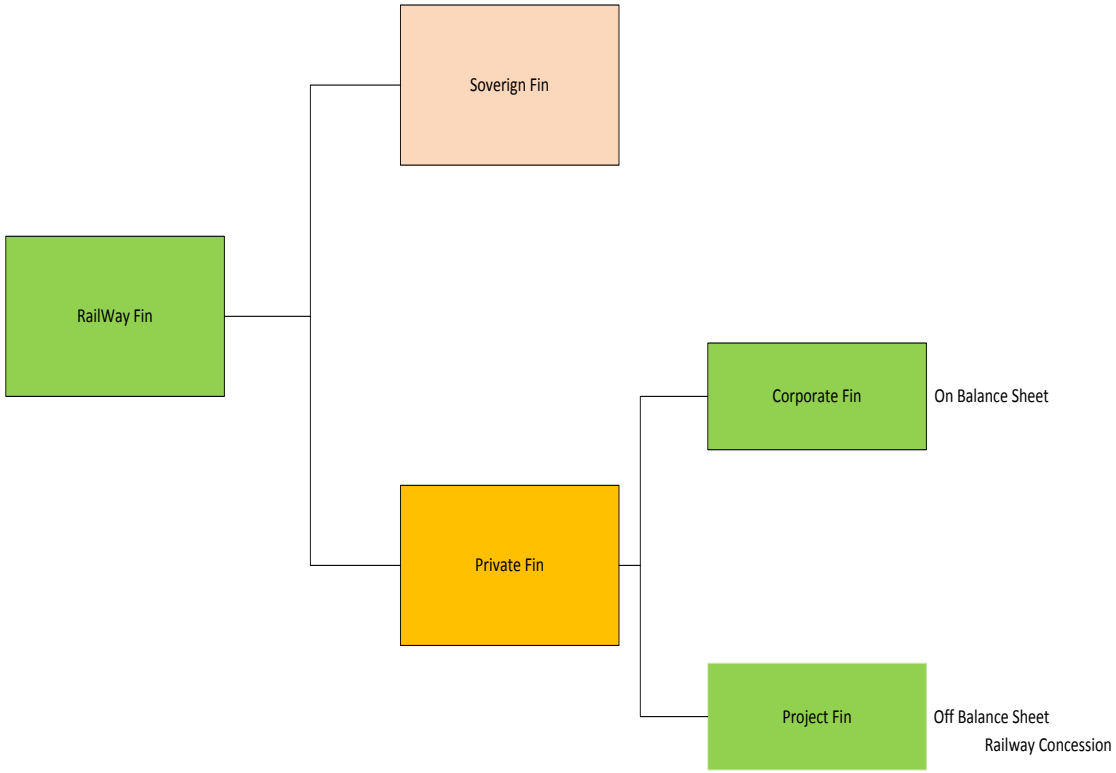
Finance Models

Corporate Finance



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Finance Models

Sovereign Bonds

1. African Development Bank has established Africa50 Infrastructure Fund
2. The fund intends to tap and leverage reserve of;
    I. African Central Banks
    II. Pension Funds
    III. Sovereign Wealth Funds
    IV. African Diaspora
    V. High Net Worth individual in the Continent

3. Municipality Bonds
    I. Municipality capacity
    II. Tradability of sub-sovereign bonds
        a) Enhancement of secondary markets
        b) Limited number of market players
        c) Distorted yields

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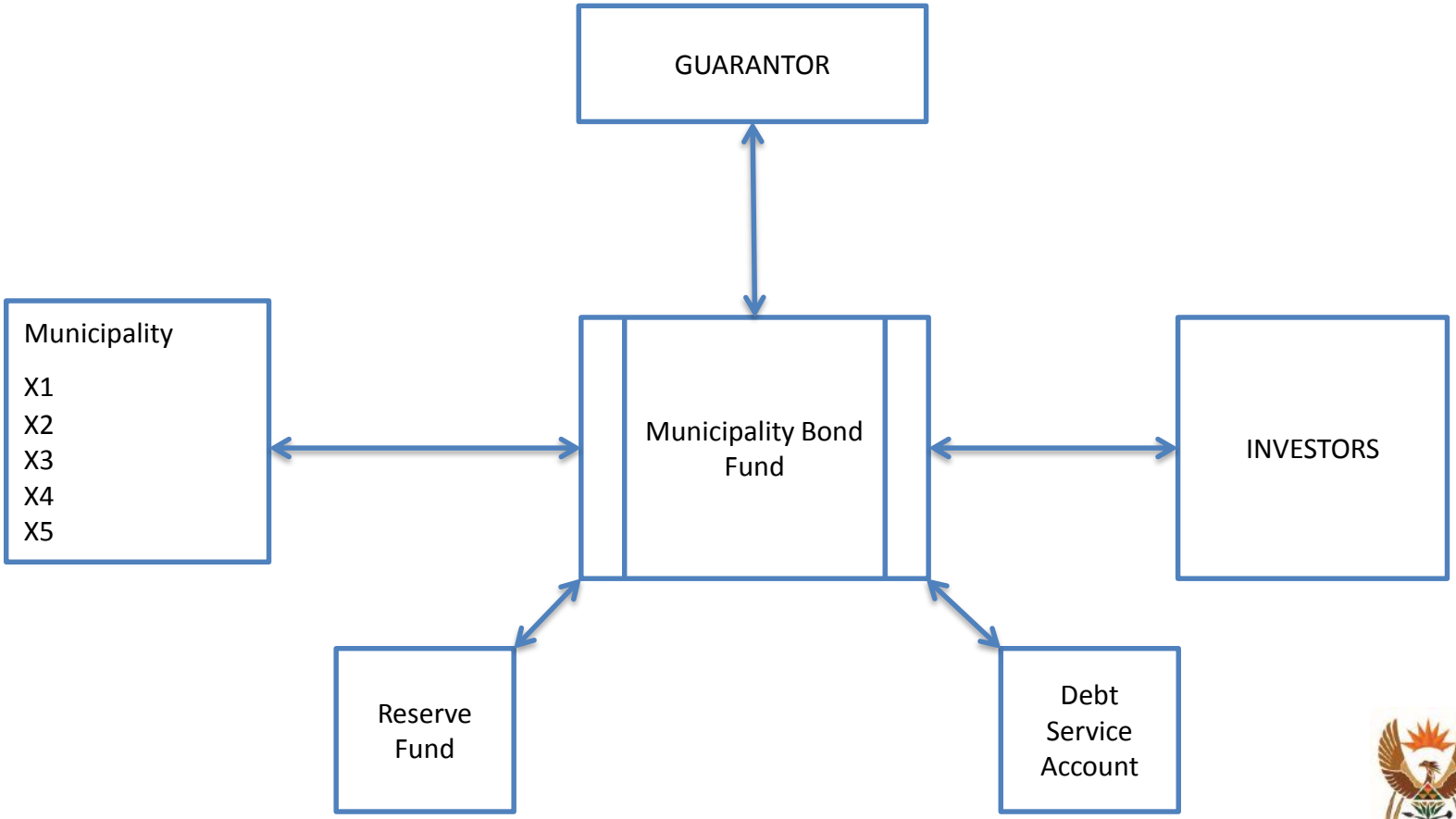
Finance Models

Municipality Bonds



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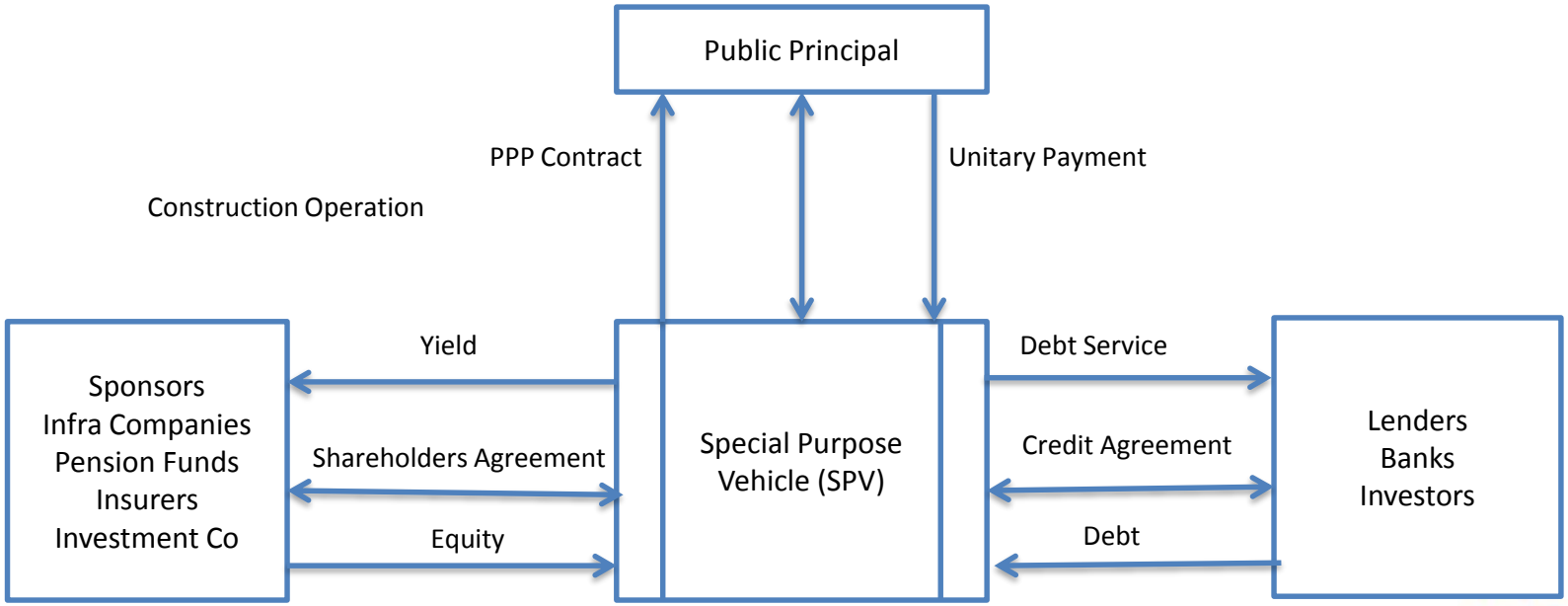
Finance Models

Project Finance



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Finance Models

Value Capture Finance

1. Value Capture Tools
    1. Fiscal
    2. Taxes and Fees
    3. Regulatory

2. Three motivations for using VC tools
    1. VC to deepen land value taxation
    2. VC to finance urban infrastructure
    3. VC to Control land use

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Contribution to Growth

Gross Domestic Product

GDP = C + I + G + (X – M) …… (1)

Factor Cost

It is defined as the total expenditure (factor payments) done by producers to produce good and services in the economy during a year.

GDP at Market Value = GDP at Factor Cost + Indirect Taxes……(2)
For any period

$$GDPFC_{2010}\,(1 + r) - GDPFC_{2020}\ (-) = 0$$

$$r = [GDPFC_{2020}\,(-) / GDPFC_{2010}]^{1/10} - 1\text{……..(3)}$$

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Conclusions

Infrastructure Project Finance

1. Mega Projects are Capital intensive
2. Rely heavily on imported intermediates
3. Linkage to public budget via tax revenue
4. Sanctity of business Contracts over Social Contracts
5. Idiosyncratic Risk Cover
    I. Profit repatriation
    II. Impact on NVA
    III. Corruption opportune
6. Project development “Innovative Partnerships”
    I. DFIs to play a catalytic role in these of investments
    II. Sacrosanctity of pension funds and Central Banks

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Questions

" Africa's prosperity is on Infrastructure, similarly her impoverishment is on infrastructure'

"The freedom to move capital in and out of a country at will is a freedom that some exercise, at enormous cost to others" (FDR)

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