



Market Analysis on Financial Sustainability and Commercial Viability of BRTs in Sub-Saharan Africa

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Contents

Acknowledgement	viii
Acronyms and Abbreviations.....	xi
Executive Summary	- 1 -
- 11 -	
Part 1 – Overview of Current Financing of BRT and Urban Transport in SSA.....	- 11 -
1 Introduction.....	- 12 -
1.1 Objective of Part I	- 12 -
1.2 Sources of Data	- 12 -
1.3 Structure of Part 1	- 12 -
2 Framework for Analysis.....	- 14 -
2.1 Identification of financing entities.....	- 14 -
2.2 Analysis of PPP Structure and Risk Allocation	- 14 -
3 Identification of Schemes	- 16 -
3.1 Case Study Review	- 17 -
3.2 SSA BRT Schemes	- 18 -
3.2.1 Lagos BRT-Lite and Line 2	- 18 -
3.2.2 South African BRT Schemes.....	- 24 -
3.2.3 Dar es Salaam BRT, Tanzania.....	- 29 -
3.2.4 Accra Quality Bus Corridors.....	- 31 -
3.2.5 Nairobi BRT, Kenya	- 34 -
3.2.6 BRT Case Study Scheme Summary	- 35 -
3.3 Investment Schemes of other Urban Transport Modes in SSA	- 36 -
3.3.1 Lagos Cable Transit System.....	- 36 -
3.3.2 Freetown Bus Transport Reform Project.....	- 38 -
3.3.3 Addis Ababa Light Rail.....	- 40 -
3.3.4 Koudougou bus station PPP project, Burkina Faso.....	- 40 -
4 Identification of Private Investors	- 42 -
5 Key Findings.....	- 45 -
5.1 Role of Public Sector	- 46 -
5.1.1 Role of government.....	- 46 -
5.1.2 Role of IFIs	- 47 -
5.1.3 Investment Funds – Public	- 48 -
5.2 Role of Private Sector	- 50 -
5.2.1 Development Finance Institutions (DFIs)	- 50 -

5.2.2	Investment Funds – Private	- 50 -
5.2.3	Commercial Banks	- 51 -
5.2.4	Local Operators	- 51 -
5.2.5	International Operators.....	- 52 -
5.2.6	Manufacturers	- 52 -
5.2.7	Private developers.....	- 53 -
5.2.8	Materialization of Risk.....	- 53 -
5.2.9	Summary of the Private Sector’s Participation in BRTs.....	- 58 -
Part 2 – Market Analysis Report		- 60 -
1	Introduction.....	- 61 -
2	Overview of the Consultation Process and Response Rates.....	- 62 -
2.1	Initial engagement	- 62 -
2.2	Number and categories of respondents to the online survey.....	- 62 -
2.3	Number and categories of interviewees for virtual consultation	- 73 -
3	The Respondents: Roles and Interests	- 74 -
3.1	Investors’ general investment preferences.....	- 75 -
3.2	Investors’ experience of BRTs.....	- 76 -
3.3	Investors’ experience with other Urban Transit Projects.....	- 78 -
3.4	Investors’ interest in future BRT Projects.....	- 79 -
3.5	Investors’ Perception of Influential Factors for Successful BRTs.....	- 82 -
4	Investors’ Perspectives on PPP Structures and Financing Schemes	- 85 -
4.1	Investors’ perspectives on PPP Structures	- 86 -
4.2	Investors’ perspectives on BRT financing schemes	- 89 -
5	Investors’ Assessment of Risks in BRT Projects	- 91 -
5.1	Risks related to project development	- 92 -
5.2	Risks related to project construction.....	- 97 -
5.3	Risks related to Operations and Maintenance	- 98 -
5.4	Environmental & Social risks	- 103 -
5.5	Political, legal, and financial risks	- 105 -
5.6	Investors’ Perspective on the SSA and BRT Markets	- 108 -
6	Key Overarching Findings	110
6.1	Key Findings on the current financing landscape.....	110
6.2	Investors’ appetite for BRTs.....	- 114 -
6.3	Key Observations and Recommendations from the Private Sector	- 115 -
7	Recommendations for Successful BRT Projects with Private Sector Participation	- 118 -
7.1	Limitations to the private sector perspective.....	- 118 -

7.2	Recommendations for the development of a successful BRT project attractive to the private sector	121
7.3	Key recommendations/actions for IFIs/DFIs	126
Appendices		128
Appendix A: Categories and Database of Existing and Potential Investors in BRTs in SSA...		129
A1. Framework for Analysis		130
A1.1.	Identification of financing entities.....	130
A1.2	Analysis of PPP Structure	131
A1.3	Breakdown of investment value by component and financing entity	132
A1.4	Analysis of Risk Allocation.....	132
A2 Investor Categories		135
A3.1	Initial Categories of Investors	135
A3.2	Updated Categories of Investors	137
Appendix B: Market Analysis Methodology and Questionnaire		- 140 -
B1 General Approach		- 141 -
B1.1	Stakeholder Engagement	- 141 -
B1.2	Investor Outreach Approach.....	- 142 -
B2 Questionnaire and interviews		- 143 -
B2.1	Questionnaire.....	- 143 -
B2.1.1	Questionnaire format	- 143 -
B2.1.2	Questionnaire content.....	- 143 -
B2.2	Interview	- 146 -
B2.3	Pilot Test.....	- 147 -
Appendix C: List of References.....		- 150 -

List of Figures (Executive Summary)

<i>Figure ES1: Investors' Experience and Interest on BRTs.....</i>	<i>-4-</i>
<i>Figure ES2: Investment Preferences of BRTs in SSA.....</i>	<i>-6-</i>
<i>Figure ES3: Percentage of survey respondents identifying risks as high, n=16.....</i>	<i>-7-</i>

List of Figures (Part 1)

<i>Figure 3-1: BRT Schemes in Sub-Saharan Africa</i>	<i>- 18 -</i>
<i>Figure 3-2: Lagos BRT-Lite Bus Rapid Transit Project</i>	<i>- 19 -</i>
<i>Figure 3-3: Financing Flows of Lagos BRT-Lite Bus Rapid Transit Project</i>	<i>- 21 -</i>
<i>Figure 3-4: Lagos BRT Line 2 Ikorodu Extension</i>	<i>- 22 -</i>
<i>Figure 3-5: Cost recovery of Johannesburg BRT System</i>	<i>- 27 -</i>

<i>Figure 3-6: Aayalolo QBS Routes on Amasaman Corridor</i>	- 32 -
<i>Figure 3-7: Lagos Cable Transit System Map</i>	- 36 -
<i>Figure 5-1: Financing streams by portfolio size</i>	- 49 -

List of Figures (Part 2)

<i>Figure 4-1 Operation-Centered PPP Structure</i>	- 87 -
<i>Figure 4-2 Fully integrated PPP Structure</i>	- 87 -
<i>Figure 4-3 Typical Sources and Flows of BRT Financing</i>	- 90 -
<i>Figure 5-1: Percentage of survey respondents identifying development risks as high, n=16</i> -	92 -
<i>Figure 5-2: Percentage of survey respondents identifying construction risks as high, n=16</i> .	- 97 -
<i>Figure 5-3: Percentage of survey respondents identifying Operations and Maintenance risks as high, n=16</i>	- 99 -
<i>Figure 5-4: Percentage of survey respondents identifying environmental and social risks as high, n=16</i>	- 104 -
<i>Figure 5-5: Percentage of survey respondents identifying Political, Legal, and Financial risks as high, n=16</i>	- 106 -
<i>Figure 7-1 Strength and weaknesses of PPP Schemes</i>	120
<i>Figure A0-1: Initial Categories of Investors</i>	136
<i>Figure A0-2: Updated Categories of Stakeholders</i>	138
<i>Figure B0-1: Investor Outreach Approach</i>	- 142 -
<i>Table B0-1: Risk rating scheme</i>	- 146 -

List of Tables (Executive Summary)

<i>Table ES1: Case Studies of Urban Transportation</i>	-2-
<i>Table ES2: Key Features of the Financial Landscape for BRTs in SSA</i>	-2-

List of Tables (Part 1)

<i>Table 2-1: PPP components of bus rapid transit project (taking Lagos BRT-Lite as an example)</i> ..-	15 -
<i>Table 2-2: Risk allocation of bus rapid transit project (taking Accra Quality Bus Scheme as an example</i>	- 15 -
<i>Table 3-1: The components of Lagos BRT-Lite Bus Rapid Transit Project</i>	- 21 -
<i>Table 3-2: Risk Allocation of Lagos BRT-Lite Bus Rapid Transit Project</i>	- 24 -
<i>Table 3-3: The PPP components of Johannesburg BRT Project</i>	- 26 -
<i>Table 3-4: Risk Allocation of Rea Veya Bus Rapid Transit Scheme</i>	- 28 -
<i>Table 3-5: Risk Allocation between public and private Sectors for Dar BRT</i>	- 30 -
<i>Table 3-6: Risk Allocation of Accra Quality Bus Service Project</i>	- 33 -
<i>Table 3-7: Headline Statistics for the Case Study BRT Schemes</i>	- 36 -
<i>Table 3-8: Risk Allocation of Lagos Cable Transit Scheme</i>	- 37 -
<i>Table 5-1: Summary of investors and risks that materialized during project execution</i>	- 57 -
<i>Table 5-2: Roles in Project Structure of BRT Schemes</i>	- 59 -

List of Tables (Part 2)

<i>Table 3-1 Typical Equity IRR Expected by Investors</i>	- 75 -
<i>Table 3-2 Typical Gearing Expected by Investors</i>	- 76 -
<i>Table 3-3 Typical Capital Value of Transport Projects Considered by Investors</i>	- 76 -
<i>Table 3-4 Typical Focus Element of BRT Project</i>	- 77 -
<i>Table 3-5 Typical Focus Component of BRT Project</i>	- 77 -
<i>Table 3-6 Financing Produced Used in BRT Projects</i>	- 78 -
<i>Table 3-7 Overall Experience with BRT Projects</i>	- 78 -
<i>Table 3-8 Geographic Areas of Experience of Other Urban Transit Projects</i>	- 79 -
<i>Table 3-9 Investor’s Interest in Future BRT Projects</i>	- 79 -
<i>Table 3-10 Components of Interest in Future BRT projects</i>	- 80 -
<i>Table 3-11 Elements of Interest in Future BRT projects</i>	- 80 -
<i>Table 3-12 Financing Products of Interest for Future BRT projects</i>	- 81 -
<i>Table 3-13 Key Stakeholders’ Involvement</i>	- 81 -
<i>Table 3-14 Most Influential Enablers of Successful BRTs</i>	- 83 -
<i>Table 3-15 Most Influential Reasons for Unsuccessful BRTs</i>	- 84 -
<i>Table 6-1 Summary of Actors and Associated Challenges in Commissioned BRTs in SSA</i>	113
<i>Table A0-1: PPP components of bus rapid transit project (example: Lagos BRT-Lite)</i>	132
<i>Table A0-2: Risk allocation of bus rapid transit project (example: Accra Quality Bus Scheme)</i>	134

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Acronyms and Abbreviations

Acronym	Definition
AfDB	African Development Bank
AFC	Africa Finance Corporation
AFD	Agence Française de Développement
AIIM	African Infrastructure Investment Managers
BOI	Bank of Industry
BRT	Bus Rapid Transit
DART	Dar Rapid Transit Agency
DBFOM	Design-Build-Finance-Operate-Maintain
DFI	Development Finance Institution
DFID	Department of International Development (UK)
EADB	East African Development Bank
ECA	Export Credit Agency
ESG	Environment, Social and Governance
ESIA	Environmental & Social Impact Assessment
EV	Electric Vehicles
FCFA	CFA Franc
FX	Foreign exchange
GAPTE	Greater Accra Passenger Transport Executive
GCF	Green Climate Fund
GEF	Global Environmental Facility
IDA	International Development Association
IFC	International Finance Corporation
IFI	International Financial Institution
IRR	Internal Rate of Return
ITDP	Institute for Transportation and Development
ITP	Integrated Transport Planning
ITS	Intelligent Transport Systems
JICA	Japan International Cooperation Agency
LC	Letter of Credit
LRT	Light Rail Transit
LUTP	Lagos Urban Transport Program
LVC	Land Value Capture
MDB	Multilateral Development Bank
MENA	Middle East and North Africa
MFD	Maximizing Finance for Development
MRG	Minimum Revenue Guarantee
O&M	Operations and Maintenance
OECD	Organisation for Economic Co-operation and Development
PAD	Project Appraisal Document
PIDG	Private Infrastructure Development Group
PPIAF	Public-private Infrastructure Advisory Facility
PPP	Public-private Partnership
QBS	Quality Bus Services
SMEs	Small and Medium Enterprises

SPC	Special Purpose Company
SPV	Special Purpose Vehicle
SSA	Sub-Saharan Africa
WB / WBG	World Bank / World Bank Group

Executive Summary

1 Over the past decade, Bus Rapid Transit (BRT) has been seen to offer an effective solution to the transport challenges faced in many cities in Sub-Saharan Africa (SSA), as a mass transit system which can deliver capacity matching that of urban rail systems, with the potential to be delivered more rapidly and at relatively lower cost.

2 While urban transport infrastructure has traditionally been financed by the public sector, there is increasing interest from SSA governments in engaging the private sector to support the delivery of BRT schemes. However, despite the private sector has expressed interest for investment, the mobilization of private sector capital has been slow and difficult.

3 The objective of this study is to undertake a systematic sector market analysis of BRT schemes in Sub-Saharan Africa from the perspective of the private sector, to understand the thinking and experience of private sector stakeholders participating in BRT schemes. The study also explores the reasons behind the hesitancy shown in this context by private investors.

4 The study is the second pillar of World Bank Technical Assistance (TA) on Enhancing Financial Sustainability and Commercial Viability of BRTs in SSA. It complements the TA's first pillar of the Factor Analysis¹ which analyzes the key factors, provides recommendation to SSA governments, and developed an assessment tool for systematic assessment on the factors affecting the financial sustainability and commercial viability of BRTs.

5 This report of the study comprises two main parts: (1) a desktop overview of the current commercial and financial landscape of BRT and urban transport financing in SSA, identifying current financing schemes and investors at presence or with interest; (2) a market assessment of investors' appetite for BRTs, and their risk analysis, based on responses to a survey questionnaire and interviews.

Part 1: Overview of the Current Commercial and Financial Landscape of BRT and Urban Transport Financing in SSA

6 *The commercial and financial landscape of BRTs in SSA is complex, involving multiple stakeholders in financing and funding.* Based on the review of the cases (listed in Table ES1), the study identifies the investor groups who are already present, or who have the potential to invest in BRT systems in SSA, including International Financial Institutions (IFIs), Development Finance Institutions (DFIs), Commercial Banks, Investment Funds (public and private), Bus or BRT operators, Bus or BRT manufacturers and others, such as land developers and construction firms.

Operational Schemes	SSA	BRT	Pipeline Scheme	SSA	BRT	SSA	Urban Transport System
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¹ Fan, Hongye; Beukes, Edward Andrew, 2021. Enhancing Financial Sustainability and Commercial Viability of Bus Rapid Transits (BRTs) in Sub Saharan Africa (SSA) : The Factor Analysis Report (English). Washington, D.C. : World Bank Group, accessed via [the link](#)

<ul style="list-style-type: none"> • Lagos BRT-Lite and Ikorodu Extension, Nigeria 	<ul style="list-style-type: none"> • Nairobi BRT, Kenya 	<ul style="list-style-type: none"> • Lagos Cable Transit System, Nigeria
<ul style="list-style-type: none"> • Johannesburg BRT System, South Africa 		<ul style="list-style-type: none"> • Freetown Bus Transport Reform Project,
<ul style="list-style-type: none"> • Cape Town BRT Systems, South Africa 		<ul style="list-style-type: none"> • Addis Ababa Light Rail, Ethiopia
<ul style="list-style-type: none"> • Dar es Salaam BRT, Tanzania 		<ul style="list-style-type: none"> • Koudougou Bus Station PPP, Burkina Faso
<ul style="list-style-type: none"> • Accra Quality Bus Corridors, Ghana 		

Table ES1: Case Studies of Urban Transportation

7 Different investor groups participate in investment in BRTs, showing certain tendencies in terms of their selection of BRT elements for investment and financing schemes. For example, IFIs often support the design and development of the schemes and extend concessional finance to support the capital costs of scheme construction. The private sector investment is typically in the form of vehicle fleet investment by operators, commonly through credit extended by commercial banks via loan or export credit guarantee. The fleet manufacturers rarely provide direct investment to the BRT projects, but often take responsibility for fleet maintenance. In some cases, fleet manufacturers lease their vehicles through a leasing contract with the government and bus operators. The paratransit operators in some cases merge as a cooperative or an operating enterprise, and in some cases establish a joint venture with international operators, to participate in the BRT investment. Such investment of paratransit operators is often in fleet procurement and operation, using the tariff revenue for loan repayment.

8 Financial and commercial risks that materialize for the private sector in the BRTs in SSA are often caused by cost overrun, lower-than-expected ridership, and under-managed fare collection. These risks in some cases are transferred to the government through contractual arrangement such as gross-cost contract, but this requires the government to have at its disposal sufficient fiscal capacity and technical capacity to cope. In the case of net-cost contracts, the private sector would bear such risks; however, if these are not well managed, there is a high likelihood of default to their financiers and termination of service.

9 The following summary table shows key findings in terms of the challenges and opportunities for different groups of investors considering financing or investing in BRTs in SSA.

Stakeholder	Challenges	Business line/ Opportunities
IFIs	<ul style="list-style-type: none"> • Challenges in management of planning and implementation risks. • Difficulties in managing stakeholder engagement within the scheme development process. • Local constraints and context when developing the project structure and guiding government agencies towards the appropriate scheme definition. 	<ul style="list-style-type: none"> • Sharing of international experience and best practices. • Scheme definition and development. • Grant funding of scheme feasibility, development and capacity building. • Concessional financing to governments for infrastructure.

		<ul style="list-style-type: none"> • Concessional finance to governments to support vehicle fleet procurement.
Investment funds – Public	<ul style="list-style-type: none"> • Lacking the effective mechanism to invest in urban transport. • Potentially insufficient returns or higher perceived risk to urban transport investment in SSA. 	<ul style="list-style-type: none"> • Fully integrated scheme of BRT PPP with government and project guarantee may attract investment funds for the large scale of investment.
DFIs	<ul style="list-style-type: none"> • May lack local knowledge/market understanding. • Governance issues may present hurdles to investment in public transport operating sector. 	<ul style="list-style-type: none"> • Market rate loans to private sector. • Cofinancing with other financing institutions to share risk and support project viability.
Private Investment Funds	<ul style="list-style-type: none"> • Challenges may be similar to those identified for public investment funds. 	<ul style="list-style-type: none"> • A fully integrated PPP scheme with adequate guarantees could induce investment funds to participate on the considerable scale needed.
Commercial Banks	<ul style="list-style-type: none"> • Typical lending terms within the SSA context mismatched with the requirements for fleet investment: <ul style="list-style-type: none"> ▪ Short tenor (typically up to 3 years maximum) ▪ Preference for lending in local currency ▪ Onerous down payment requirements and hazardous chattel security conditions • Aversion to lending to existing transport operating sector (often following past experience of default). • Preference to finance small pilot lending projects to allow the risk and profitability to be assessed before extending further lending. This conflicts with the high initial investment requirement for commencement of BRT operations. • Skepticism regarding sustained political commitment to urban mobility projects. 	<ul style="list-style-type: none"> • Export Credit Intermediary. • Letter of Credit (LC) to support fleet procurement. • Commercial lending to private sector operators for fleet investment. • Management of ticketing and revenue collection. • Intermediary agency in revenue distribution.
Operators	<ul style="list-style-type: none"> • Local Operators: <ul style="list-style-type: none"> ▪ Fragmented operating sector with large numbers of small-scale operators. ▪ Lacking creditworthiness criteria to access commercial finance. ▪ Inadequate technical capability to manage and operate formalized services to the desired standards of service. 	<ul style="list-style-type: none"> • Local Operators: <ul style="list-style-type: none"> ▪ Formation of cooperatives or operating companies; ▪ Fleet investment – often with small equity component and commercial loan or lease arrangement; and ▪ Depot equipping and operation.
	<ul style="list-style-type: none"> • International Operators <ul style="list-style-type: none"> ▪ Local bias and insufficient political support. 	<ul style="list-style-type: none"> • International Operators:

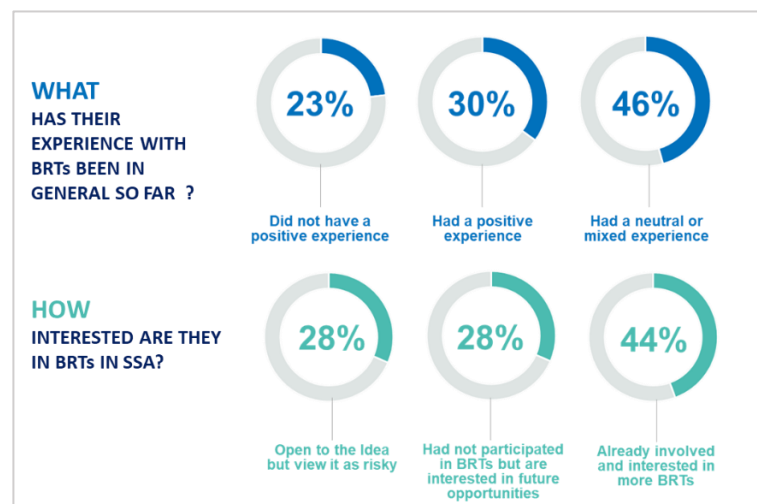
	<ul style="list-style-type: none"> ▪ Lack of knowledge of local operating environment. ▪ Perceived risk of operations in certain countries. 	<ul style="list-style-type: none"> ▪ Partnership with local operators to form a joint venture for operating the BRT service.
Bus Manufacturers	<ul style="list-style-type: none"> • High import duties on imported vehicles and parts, unless these are waived under the terms of the publicly promoted project. • Challenging environments in which to establish workshops and to train local staff in the operation and maintenance of vehicles. 	<ul style="list-style-type: none"> • Vehicle finance through manufacturer financial arm (often with support of Export Credit). • Fleet maintenance contract. • Design and construction of supporting facilities--depot, bus priority infrastructure, stations and terminals.
Other	<ul style="list-style-type: none"> • Lack of strong regulatory framework enabling the business operation. • Doubts about the potential scale of return. 	<ul style="list-style-type: none"> • Terminal/depot development opportunities for land developers.

Table ES2: Key Features of the Financial Landscape for BRTs in SSA

Part 2: Assessment of Investors' Investment Appetite and Risk Tolerance on BRTs in SSA

10 Drawing from the 25² effective responses from consultation with investors representing different groups, the assessment investigates both quantitatively and qualitatively their investment appetite and risk tolerance and provides recommendations on how to enhance the financial viability and commercial viability of BRTs in SSA.

11 Most investors (72 percent) expressed their interest in the BRT projects in SSA, despite some of them view the venue of investment is risky. The majority of respondents (84 percent) had experience in urban transit globally and more than half of them had experience in SSA. Figure ES1 shows that many investors with experience on BRT in general is mixed. They have interest of BRTs in SSA regardless of having experience there or not.



² There were 23 investors involved in the market consultation, one investor assigned three respondents to provide responses from different business perspectives.

Figure ES1: Investors' Experience and Interest on BRTs

Investors' perspectives on PPP structures and financing schemes

12 Investors confirmed interest in two main PPP schemes for BRT projects in SSA including:

- 1) *The "operation-centered" structure*: the private partner takes responsibility for the provision and operations and maintenance (O&M) of the fleet, Intelligent Transport Systems (ITS), and fare collection systems; and the public authority is in charge of infrastructure delivery and maintenance; and
- 2) *The "fully integrated" PPP scheme*: the private partner is responsible for the infrastructure design, construction and maintenance, as well as the provision of all operational services and associated equipment.

13 *Investment funds prefer the fully integrated scheme*, as it gives them control over the entire life cycle of the project and assures them of the efficient integration of all the project components. However, they recognize that sole private funding of infrastructure will not make the project financially viable and prefer public funding for infrastructure delivery.

14 *Commercial banks prefer collaboration with political risk insurance providers such as ECA and IFI in financing BRTs*. Due to their sensitivity on risks and relatively shorter tenor of lending, commercial banks tend to be involved in smaller size of projects with some level of control on the tariff revenue. They often work with ECA and IFI for risk mitigation and support on local currency financing.

15 *Operators do not see themselves primarily as investors in BRT*. Instead, they see themselves as keen participants in PPP schemes in which they would have an O&M contract, preferably with a Special Project Company (SPC), to operate and maintain the service. They are also not keen on acquiring the fleet.

16 *Bus manufacturers stress the scarcity of financing for their products on this region*. The scheme typically adopted elsewhere—in which financing is provided on the basis of Export Credit Agency support—has relatively less presence in SSA. With regard to electric buses, the bus manufacturers expressed interest in leasing of buses and batteries as a way of financing.

17 On the optimal financing schemes, investors across the categories reached the broad consensus on that:

- Public funds (from cities or central government) are needed for project development and infrastructure delivery.
- Private financing can be raised for the bus fleet and operations equipment through a hybrid of equity, debt and insurance/guarantee products.
- The involvement of IFIs/DFIs remains essential both for the provision of financing (concessional sovereign lending and project debt) and credit enhancement products (payment guarantee and political risk insurance).

Investors' investment appetite and preferences

18 *There is larger appetite of investors on the SSA BRT projects with small-medium size of capital value, relatively high equity internal rate of return (EIRR), high debt/equity ratio,*

and significant engagement of public authority, and risk mitigation measures in place. The typical investment preferences of respondents were as follows:

- **Equity internal rate of return (EIRR):** a majority sought a range from 11 percent to 20 percent, with a preferred hurdle rate between 16 percent to 20 percent (indicated in Figure ES2).
- **Gearing:** 40 percent of respondents expected 70 to 79 percent debt, but 30 percent also indicated that they were open to different gearing scenarios depending on the context (indicated in Figure ES2).
- **Capital value:** half of respondents indicated that they sought to invest in projects with a capital value less than US\$500m (30 percent prefer capital value under US\$250 million). The other half of investors stated that they did not seek a specific size of capital investment.
- **BRT preferred financing:** while Investment funds confirmed being mostly interested in equity financing (with IFIs/DFIs interested in all financing instruments), operators were mostly interested in loans, sovereign financing and grants.
- **Economic Internal Return Rate (EIRR):** No pattern of preference was observed regarding EIRR, gearing and capital value targets among the different categories of investors.
- **BRT element(s) of interest:** investors' interest was mostly in the financing element of BRT, although an almost equal expression of interest was confirmed for the design-construction, operations and maintenance elements.
- **Main stakeholders to be involved:** investors deem BRT projects involving key stakeholders to be more attractive. These key stakeholders include public authorities (78 percent of responses), IFIs/DFIs (44 percent of responses) and credit/political risk insurance providers (44 percent of responses).

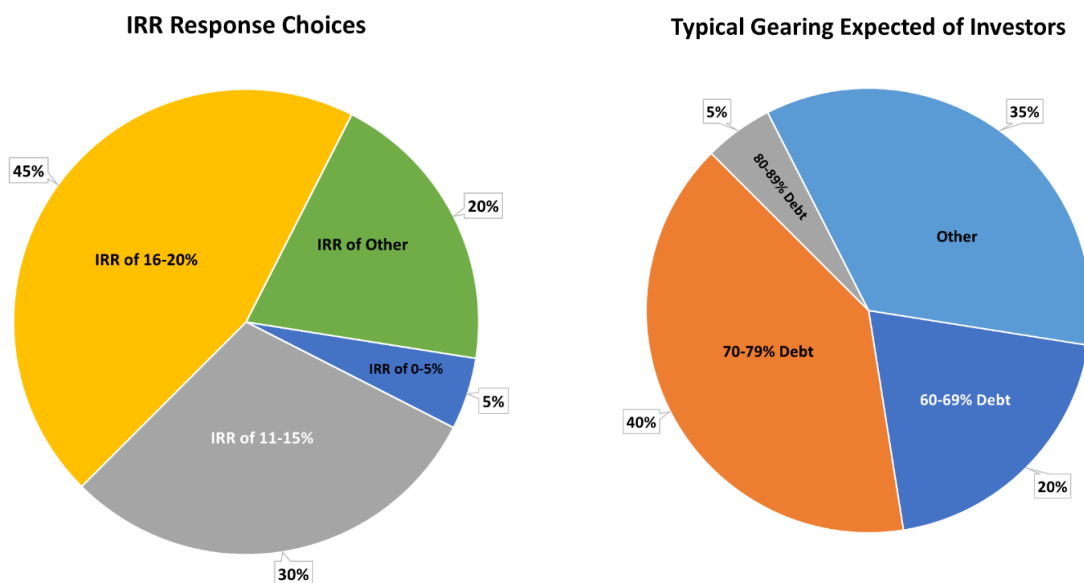


Figure ES2: Investment Preferences of BRTs in SSA

Investors' Assessment of Risks in BRT Projects

19 Investors perceived the SSA market riskier than other geographic areas because SSA cities have complex geometry and mobility patterns, relatively high political and legal risks, insufficient capacity of project design and management, lengthy procurement and contractual processes, volatile local currencies, and atomized incumbent operators with weak technical and financial capacity. The key risks of SSA BRTs in their view are presented in Figure ES3.

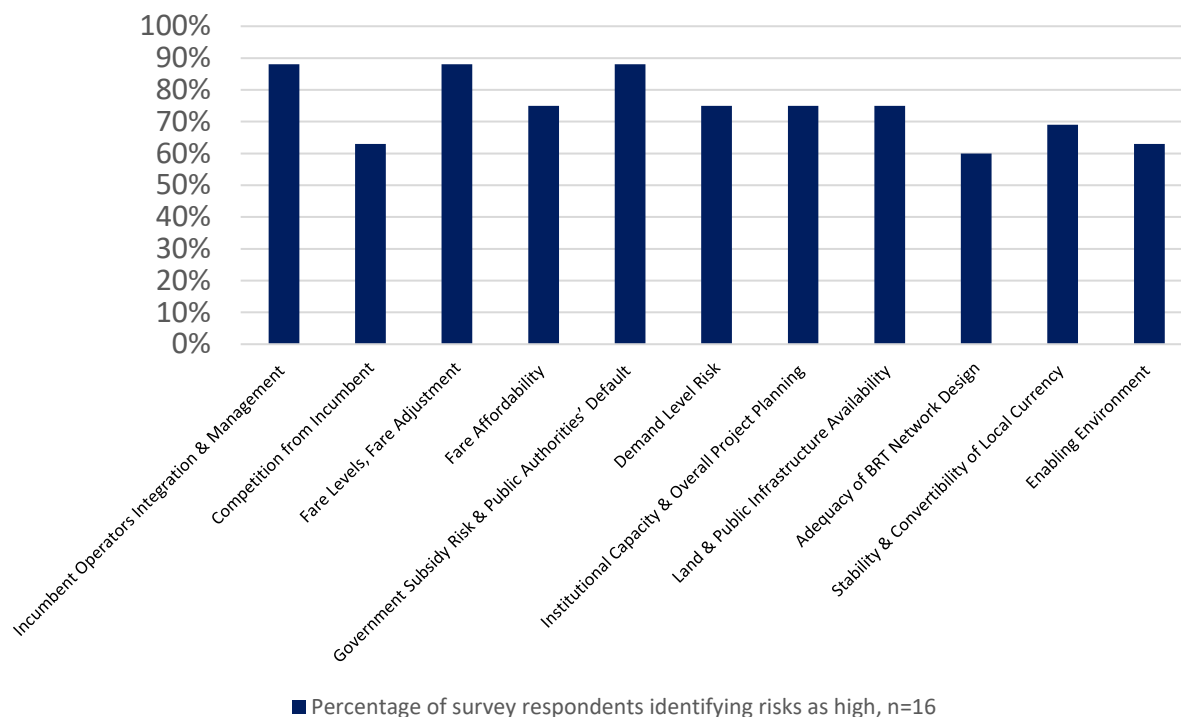


Figure ES3: Percentage of survey respondents identifying risks as high, n=16

20 The integration and management of incumbent operators was viewed as a high risk by 88 percent of investors surveyed and the related risk of competition from incumbents was estimated to be high for 63 percent of respondents. Investors recommend this risk be addressed as early as possible in the project design stage, along with the objectives of providing compensation where appropriate, involvement of incumbents in the provision of the new service and minimization of negative socioeconomic impacts due to lost jobs. Some suggestions from investors to address this risk include: i) offering compensation for routes that will be rendered obsolete by the new service as well as the opportunity to bid or participate in delivery of the new service upon commissioning; ii) informal sector incumbents can also be offered compensation if displaced by the new BRT service, or integrated into the workforce that operates the new service via bespoke training programs and initiatives.

21 Fare levels and fare adjustment were viewed as high risks by 88 percent of investors surveyed and fare affordability was viewed as a high risk by 75 percent of investors surveyed. Ideally, fare levels must simultaneously support project feasibility and be affordable to users, although investors recognize that sometimes it is not possible to achieve this dual objective. The proposed mitigating strategies include minimum revenue guarantee mechanisms, possibly funded through waiving value-added tax (VAT) or fuel surcharges.

22 Government subsidy risk and public authorities' default were both rated as high risks by 88 percent of investors surveyed. The recommended mitigation strategies include securing political risk insurance and providing capacity building to public authorities. Some private investors indicated they might choose not to become involved with a particular public counterparty, should they view it as untrustworthy.

23 Demand risk was rated as a high risk by 75 percent of investors surveyed. Investors' recommended mitigation strategies include minimum revenue guarantees and effective mitigation of incumbent operator integration and potential competition.

24 Institutional capacity and overall project planning were viewed as a high risk by 75 percent of investors surveyed. Their proposed mitigation of this risk involves capacity building of public entities and the securing of more binding public sector commitments in relevant contracts. Topics treated during capacity building events could include: i) management of complex projects; ii) engagement of communities; and iii) role of the public sector throughout the BRT life cycle.

25 Land and public infrastructure availability and the adequacy of BRT network design were rated as high risks by 75 percent and 60 percent of investors respectively. They recommended that several measures be taken to mitigate these risks, including customizing the network design to meet the specific physical attributes of the city, anticipating and minimizing expropriation requirements at the design stage and designing for a practical travel experience for users.

26 The stability and convertibility of local currency were rated as a high risk by 69 percent of investors surveyed. Mitigation strategies include partial local currency financing and exploring the willingness of development financial institutions to underwrite first loss insurance to a local currency instrument.

27 The enabling environment was rated as a high risk by 63 percent of investors surveyed. This can be mitigated through capacity building targeted towards maintenance of rules and regulations and the resolution of commercial disputes through transparent processes.

Recommendations on developing SSA BRT projects attractive to the private sector

28 To make the SSA BRTs more attractive to private sector investment, investors recommend to address the risks at both upstream policy design and urban transport planning as well as downstream project implementation and transaction structuring. Key recommendations include:

- *Improving the enabling environment.* It is important to ensure that political support is coordinated among public agencies that establish and observe clear and stable regulations. Governments should also enhance their capacity and build a good track record in urban transit project management, thereby increasing the trustworthiness of private sector participants.

- *Dedicating the time and effort needed in upstream planning activities* including: i) unbiased traffic forecasts³; ii) an analysis on whether or not BRT is the best transit solution; iii) a holistic incorporation of any proposed BRT within a broad municipal mobility plan, including other corridors and feeder lines; iv) an early assessment of expropriation and resettlement needs; v) an analysis of the economic and financial feasibility of the project; and (vi) an engagement with current operators, to understand how to include them in the solution.
- *Designing BRT to respond the local needs and ensure alignment with costs considerations and ability to pay.* The BRT design should take into consideration of the geometric constraints of each city in SSA and the resulting cost and social impact of expropriation and resettlement. The level of service and the sophistication of the systems should be inherent to passengers' expectations and their wiliness to pay as well as the government's ability of subsidizing the financial gap for project viability.
- *Setting up a clear and transparent fare adjustment mechanism with alternative solutions in place.* This should be based on changes in cost of services. In the case of anticipated public antipathy toward tariff adjustments, alternative approaches such as waivers of taxes or other mechanisms that offer leeway can be adopted.
- *Undertaking PPP option analysis and structuring a PPP scheme that will attract experienced and credible investors.* The PPP scheme design should identify the BRT elements and components appropriate to the project context and the private sector appetite as well as allocate the risks between public and private sectors according to their risk tolerance and available measures for risk mitigation.
- *Exploring the full range of financing options and innovative financing mechanism.*
 - While the public sector and IFIs/DFIs will likely need to continue to finance the infrastructure, the cofinancing option by investment fund in a fully-integrated PPP scheme can be explored.
 - Rolling stock can be acquired by the public sector or private sector depending on project conditions. A bus leasing model with cofinancing from IFI/DFI will be interested by private sector and considerations are also given to leasing of electric buses whose batteries hold a significant residual value.
 - Climate financing instruments and new financing models should be explored to support the involvement of wider private sector investors and enable local participation.
- *Ensuring the sustainability of required fiscal support and diversifying the revenue sources for investors.* Identifying and reinfencing dedicated sources such as fuel taxes, and parking charges as the fiscal support required for the BRT projects will improve the sustainability and foreseeability of the government payment to the investors, especially with additional oversight and payment guarantee from IFI and

³ Hoyos Guerrero, Alejandro; Lopez Dodero, Abel. 2021. Public-Private Partnerships in Urban Bus Systems : An Analytical Framework for Project Identification and Preparation. International Development in Focus;. Washington, DC: World Bank. © World Bank. Accessed via [the link](#).

DFI. In addition, investors prefer the diversified revenue sources to avoid over-reliance on the fiscal subsidy.

- *Maintaining the public sector's support in O&M phase.* It is critical that public sector to be fully vested in projects even after execution of an operational contract assigned to a private party. Investors view the public sector as a key actor: to handle the social aspects of BRT even during operations; to conduct timely maintenance of the infrastructure in a manner coordinated with the operator; and to ensure that incumbent operators comply with service integration and non-competition regulations.
- *Engaging IFIs/DFIs to de-risk BRT projects.* IFI and DFIs play an important role in de-risking projects for investors, in the aspects of:
 - Managing local currency risk by partial local currency financing and underwriting first loss insurance to a local currency instrument.
 - Managing public sector risks by providing political risk insurance and government payment guarantee.
 - Managing technical risks and project management risks by technical assistance and capacity building.

Key recommendations and actions for IFIs/DFIs

29 Recommendations were developed for the attention of IFIs/DFIs, given their important role in the delivery of successful BRT projects. These recommendations include:

- *Assisting the public sector with capacity building* on a variety of topics including: i) its role throughout the project life cycle; ii) the importance of quality upstream planning; iii) the need for stable and clear regulations; and iv) enhanced skills in the preparation and management of PPP schemes.
- *Continuing to provide Technical Assistance to the public sector* by: i) conducting robust factor assessment for project screening and design; ii) promoting the preparation of upstream analyses including key social and environmental considerations; iii) examining the assumptions on which a forecast is built and strengthening the accuracy of the analysis; and iv) identifying financially sustainable solutions.
- *Continuing to provide financing and credit enhancement products* such as concessional lending, insurance against political risks, and underwriting of first loss insurance to the local currency. The IFI/DFI's role is seen as a key partnership that de-risks the contracts for the private sector.
- *Conducting additional research on innovative financing approaches* such as fleet acquisition through bus leasing model with IFI co-financing and mobilization of climate financing sources to SSA BRTs.



Part 1 – Overview of Current Financing of BRT and Urban Transport in SSA

1 | Introduction

1.1 Objective of Part I

30 The objective of Part I of this report is to review the financing landscape relating to bus rapid transit (BRT) systems and other relevant financing of urban transport in order to provide a strong foundation for the development of the market sector analysis and engagement with potential private sector investors.

31 The scoping review undertaken to develop Part I focuses on:

- Identifying the key public and private actors and financing agencies involved in the delivery of urban transport investments, with an emphasis on private investor involvement in supporting BRT and other urban mobility initiatives;
- Examining the financing structure of completed and expected schemes, for both BRT and wider urban transport, in SSA and beyond; and
- Understanding how each actor has been involved, including the allocation of responsibility and risk.

1.2 Sources of Data

32 This review draws on desk-based research on the financing arrangements for delivered schemes and those currently in the pipeline.

33 In particular, it draws on the following documentation and literature:

- World Bank documents;
- BRT scheme websites;
- IFI project appraisal documents (PAD);
- Scheme Evaluation reporting by third parties;
- Financial information from operators (where available); and
- Wider evaluation literature.

34 Given the commercially sensitive nature of certain aspects of private investor activity, with terms and conditions governing private transactions accordingly, information is in some cases not in the public domain. Where this is the case, data gaps are flagged, with a view to revisiting these in the investor interviews.

1.3 Structure of Part 1

35 After this introductory chapter, the structure is as follows:

- Chapter 2 sets out the framework for the analysis, indicating how private investors are identified from the review of current activity, and how the Public Private Partnership (PPP) schemes, financing flows and risk/responsibility allocations are captured;
- Chapter 3 presents the relevant case studies, focusing on operational and pipeline BRT projects in SSA, and relevant urban transport projects in the region and beyond;
- Chapter 4 lists the private sector investors involved in the case study schemes, with details on their financing portfolio in the urban transport sector, the typical terms of financing and the information available on their project selection criteria in SSA, where this information is available; and
- Chapter 5 summarizes the key themes and findings of the scoping review, with a list of key considerations explored by the investor interviews.

2 | Framework for Analysis

36 The case analysis follows a three-pronged approach to identify investors and focuses on their financing schemes and risk allocation. The details of the analysis framework are given in Appendix A1.

2.1 Identification of financing entities

37 The investors were identified through the review of BRT projects and other urban transport projects in SSA and relevant fields in other regions. The scale and nature of the investment made by each actor were whenever possible identified by BRT component, investing entity, and the type of financing. For the purpose of this study, investor groups are categorized as:

- International Financial Institutions (IFIs): multilateral development banks, bilateral development banks and other agencies;
- Development Finance Institutions (DFIs): specialized development organizations which lend to the private sector to support projects which promote social goals such as job creation and sustainable development;
- Commercial Banks: private lending institutions which may be national or international;
- Public Investment Funds: these manage and invest public money on behalf of a government (a sovereign wealth fund being a salient example);
- Private Investment Funds: these invest in projects that aim to generate returns for the private investors involved;
- Bus/BRT operators: either private or publicly owned prospective operator of the BRT system (this could be a local public transport operator or an international operating company); or
- Others: such as private developers, construction companies, or integrated technological service providers motivated to invest in BRT schemes in order to benefit from linked or associated contracts.

2.2 Analysis of PPP Structure and Risk Allocation

38 The case review analyzes the PPP structure and risk allocation to define the allocation of responsibility for project delivery and operation between public and private entities, using matrices adapted from the *Analytical Framework of Public-Private Partnerships in Urban Bus Systems* (World Bank, 2019). Tables 2-1 and 2-2 present a worked example for each matrix respectively.

<i>Lane infrastructure</i>	<i>Signaling and traffic lights</i>	<i>Terminals and stations</i>	<i>Depots and workshops</i>	<i>Rolling stock</i>	<i>Project-specific fare collection system</i>
--------------------------------	---	---------------------------------------	-------------------------------------	--------------------------	--

Planning						
Design and procurement						
Construction						
Finance						
Operations						
Maintenance						

Key: **Public** **Private**

Table 2-1: PPP components of bus rapid transit project (taking Lagos BRT-Lite as an example)

39 The risk allocation matrix covers not only direct risks, also indirect risks that exist outside the ambit of project activities but nevertheless remain a potential cause for concern to stakeholders. In addition, revenue risk⁴ was added to the framework as a main differentiator between gross-cost and net-cost contracting approaches.

	Government (national or local)	IFI	DFI	Commercial Bank	Private Investment Fund	Bus Manufacturer	Operator	Other
Planning Risk								
Design & Procurement Risk								
Construction Risk								
Revenue Risk								
Operational Risk								
Macroeconomic risk								
Political and Social risk								
Environmental risk								

Key: **Public** **Private**

Table 2-2: Risk allocation of bus rapid transit project (taking Accra Quality Bus Scheme as an example)

⁴ Revenue risks emerge when demand levels are lower than anticipated, and/or when fare levels are not set at—or do not rise to—the level predicted.

3 | Identification of Schemes

Key Chapter Takeaway

The commercial and financial landscape of BRTs in SSA is complex, owing to multistakeholder involvement in financing and funding. The main observations are as following:

- International Financial Institutions often support the design and development of the schemes, and extend concessional finance to support capital costs of scheme construction;
- National or local governments will shoulder the borrowing, providing cofinancing from public funds and in some cases investing in vehicle fleet; and
- Climate funds provide grant or concessional funding to support scheme development costs and construction.
- The private sector:
 - Private sector investment is typically in the form of vehicle fleet investment by operators, commonly through credit extended by commercial banks via loan or export credit guarantee.
 - Fleet manufacturers do not often provide direct investment to the BRT projects, but often take responsibility for fleet maintenance. In some cases, they lease their vehicles through a leasing contract with the government and bus operators.
 - Paratransit operators either merge as a cooperative or an operating enterprise, or establish a joint venture with international operators, to participate in the BRT investment. Such investment is often in fleet procurement and operation, using the tariff revenue for loan repayment.

The financial and commercial risks that materialize for the private sector in the BRTs in SSA are often caused by cost overrun, lower-than-expected ridership, and under-managed fare collection. These risks in some cases are contractually transferred to the government through such arrangements as gross-cost contracts, but this will require government to have sufficient fiscal and technical capacity accordingly. In the case of net-cost contracts, private sector actors would bear such risks; however, if these are not managed soundly, there is a high likelihood of default to their financiers and termination of service.

In SSA, other types of urban transport projects (such as for light rail, cable car, conventional bus or bus terminal) have also involved private sector investment.

3.1 Case Study Review

40 The case study primarily focuses on SSA BRTs that are under operation to reveal how private sector participation has been materialized and what are the investors involved. To further identify the possible schemes and investors with potential interest, the case review expands its scope to some SSA BRTs in pipeline and other urban transport projects in SSA.

41 In the region, several BRT schemes have been delivered to date, operating in the following locations:

- Nigeria: BRT-Lite⁵ and Line 2 Ikorodu Extension;
- South Africa: Johannesburg, Cape Town, Port Elizabeth, Durban, and Rustenburg;⁶
- Tanzania: UDART BRT System in Dar es Salaam; and
- Ghana: Quality Bus Services (QBS)⁷ operating along the Adenta and Amasaman corridors in Accra.

42 A further BRT scheme is currently under construction in Dakar. In Addis Ababa, construction of a BRT line is due to commence; meanwhile, a construction contract has recently been awarded for the first BRT line in Nairobi. Many other cities across the region are working on plans for BRT systems at various stages of development (indicated in figure 3-1).

⁵ A BRT lite system is similar to a BRT system except that it does not meet the extensive specifications of a BRT. Often, a BRT lite does not have a dedicated bus lane running along the entirety of the BRT corridor.

⁶ This represents the schemes which the SA government defines as being BRT ([Source: Department of Transport, Republic of South Africa](#)) although beyond Johannesburg and Cape Town, there may be debate about whether the subsequent four schemes meet the definition.

⁷ Note that although the Accra QBS corridors are often referred to as BRT, they are more accurately identified as QBS, as they lack infrastructure on the scale that normally meets the definition of BRT.

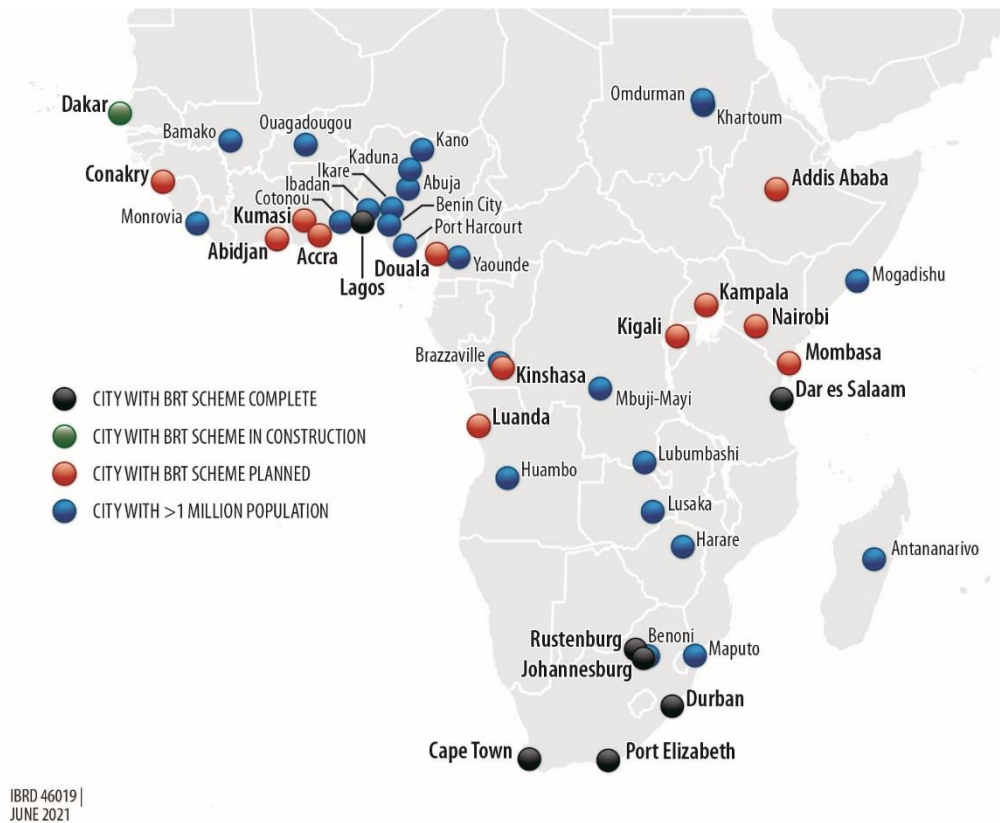


Figure 3-1: BRT Schemes in Sub-Saharan Africa

3.2 SSA BRT Schemes

43 The financing arrangements for the identified schemes below were considered in chronological order of implementation date.

3.2.1 Lagos BRT-Lite and Line 2

44 When implemented in 2009, Lagos BRT-Lite was Africa’s first bus rapid transit system. BRT-Lite was delivered under the wider support of the Lagos Urban Transport Program (LUTP, 2002–2010) .⁸ While the BRT infrastructure was funded solely by the state government, the LUTP program included support that covered setting up the urban transport authority LAMATA—and associated capacity building—as well as the design of infrastructure for the entire system. The project cost increased from an estimated US\$135m to a final cost of US\$265m.

45 The allocation of funding for the project was as follows:

- A concessional loan to Lagos State Government of US\$150m by the International Development Association (IDA) (in two tranches: US\$100m in 2002 and a further US\$50m in 2007);

⁸ IEG, 2016, Project Performance Assessment Report-Lagos Urban Transport Project, accessed via the [link](#).

- A borrower contribution from Lagos State Government of US\$100.4m. This contribution consisted of counterpart funds and also proceeds from a transport fund established by Lagos State and capitalized by revenues from license fees, bus concessions and road user charges; and
- A windfall foreign exchange gain of US\$15.4m (this accounts for the remainder of project expenditure).⁹

46 Because the remit of the LUTP extends well beyond the BRT system, it is not easy to disentangle the financing for the BRT project component alone. The infrastructure and facilities were financed directly from Lagos State general revenue through LAMATA at an estimated cost of US\$36m for BRT construction and service lane improvement.¹⁰ Meanwhile, the World Bank supported financing of feasibility studies, project design, and institutional capacity building.



Source: [LAMATA](#)

Figure 3-2: Lagos BRT-Lite Bus Rapid Transit Project

47 The private investment component took the form of existing paratransit (community transport) operator involvement, with the transport union establishing a specifically to operate the new services. The cooperative was a wholly owned subsidiary of the Lagos State Council of NURTW, with control vested in the approximately 50 members who subscribed for equity at launch.¹¹

48 The procurement of the required fleet for BRT operations consisted of the following:

⁹ During the period of the LUTP, the Nigerian Naira experienced a 30% devaluation, contributing to windfall gains in the project budget. [ibid.](#)

¹⁰World Bank, 2011, Implementation Completion and Results Report-Lagos Urban Transport Project, accessed via [the link](#).

¹¹ Kumar Ajay, Zimmerman Sam, Agarwar O.P., 2012, The Soft Side of BRT: Lessons from Five Developing Cities, World Bank, accessed via [the link](#).

- Procurement of 100 thirteen-meter buses at an estimated US\$100,000 each—total investment US\$10m; and
- Lease of a further 120 buses from LAGBUS, the state-owned operator—estimated value US\$12m.

49 Financing of 100 vehicles proved challenging, with commercial banks reluctant to extend finance, owing to negative past experiences. Ultimately, the bus manufacturer made an offer, with the support of an Export Credit Agency, that included a deferred payment over two years if a local bank would underwrite the counterparty risk. A local commercial bank agreed to underwrite this risk, requiring personal collateral guarantees from the senior officers of NURTW amounting to no more than 10 percent of the total transaction value.¹¹

50 The local commercial bank also acted as the ticket distributor and revenue collection agent for the system. When the manufacturer financing did not materialize, the bank was willing to extend the loan to refinance the fleet based on the security of having an initial lien on revenue collected from bus fares. The structure of the cooperative also ensured participating operators took collective liability for individual defaults, providing greater assurance to the bank.¹² Ultimately, the loan from the commercial bank was paid off in just two years, proving the viability of the bus franchise scheme to other potential lenders.

51 Vehicle maintenance was outsourced to the vehicle supplier who also took responsibility for the construction and operation of the depot.¹¹

PPP Structure

52 The table below presents the PPP structure for Lagos BRT-Lite with the allocation of responsibility for each component of the system between the public and private sector:

	<i>Lane infrastructure</i>	<i>Signaling and traffic lights</i>	<i>Terminals and stations</i>	<i>Depots and workshops</i>	<i>Rolling stock</i>	<i>Project-specific fare collection system</i>
<i>Planning</i>						
<i>Design and procurement</i>						
<i>Construction</i>						
<i>Finance</i>						
<i>Operations</i>						
<i>Maintenance</i>						

¹²Mobereola Dayo, 2009, Lagos Bus Rapid Transit: Africa’s First BRT Scheme, SSATP Discussion Paper No. 9, World Bank, accessed via [the link](#).

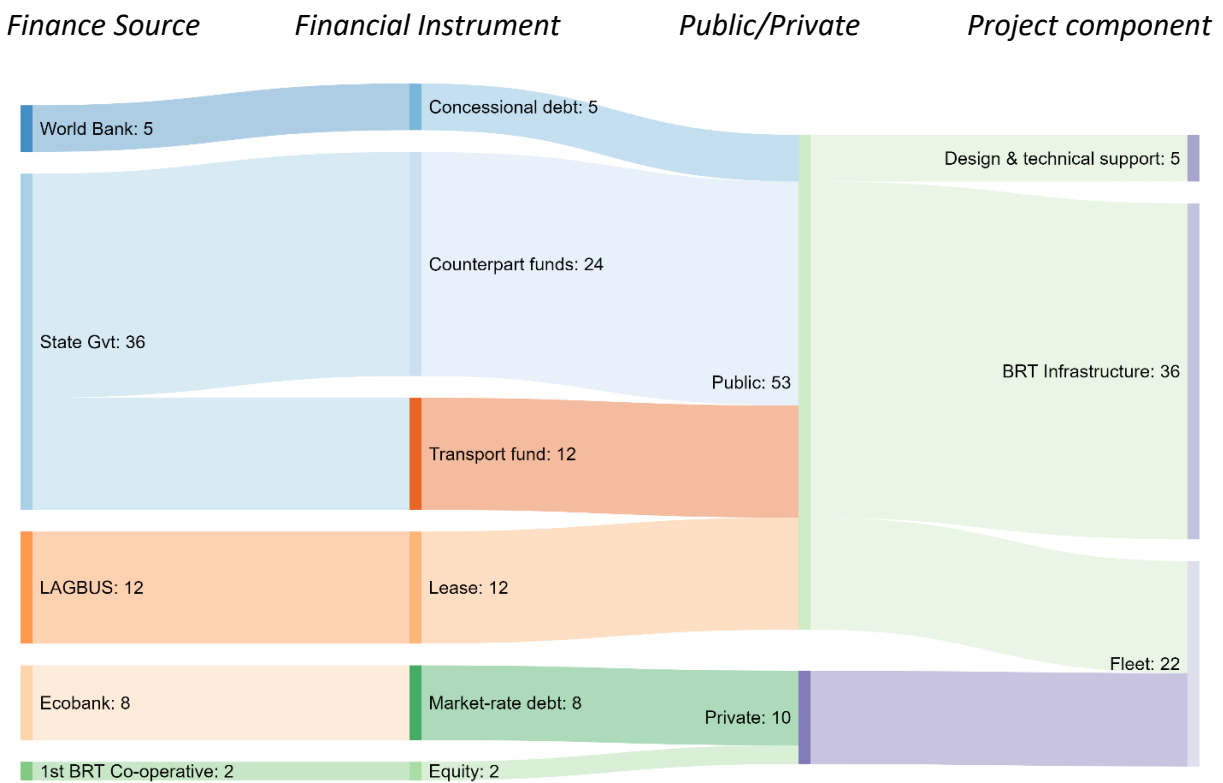
Key: **Public** **Private**

Table 3-1: The components of Lagos BRT-Lite Bus Rapid Transit Project

53 Lagos State Government, through LAMATA, took responsibility for the delivery, maintenance and operation of the BRT infrastructure, with the exception of the depot, which was built and operated by the vehicle manufacturer. The vehicle manufacturer provided the vehicles, and supported their financing at the initial stage, while the private sector operator provided some equity for procurement of the vehicles, and was responsible for their operation. The local commercial bank provided the fare collection system and later supported vehicle refinancing.

Financing arrangements – BRT-Lite

54 As indicated earlier, disaggregating the funding by component for the LUTP is challenging. A best estimate of the flow of investment funding for the BRT system is shown in the figure below:



* Values in US\$m
Source: CPCS and ITP

Figure 3-3: Financing Flows of Lagos BRT-Lite Bus Rapid Transit Project

Financing Profile – Lagos BRT Line 2 Ikorodu Extension

55 The Lagos BRT Line 2 extension from Mile 12 to Ikorodu opened in 2015. This corridor offers greater levels of segregation and more substantial passenger facing infrastructure over its length of 22km (14 miles). The extension was delivered under LUTP2, a US\$325m project financed as follows:

- International Development Association (IDA) – US\$138.7m
- Agence Française de Développement (AFD) – US\$100m
- Borrower cofinancing from Lagos State Government – US\$35m
- Global Environment Facility (GEF) – US\$4.5m

56 The outturn BRT infrastructure capital cost of the extension was US\$226m,¹³ equating to 10.4m per km, as compared to US\$1.7m per km for Lagos BRT-Lite.

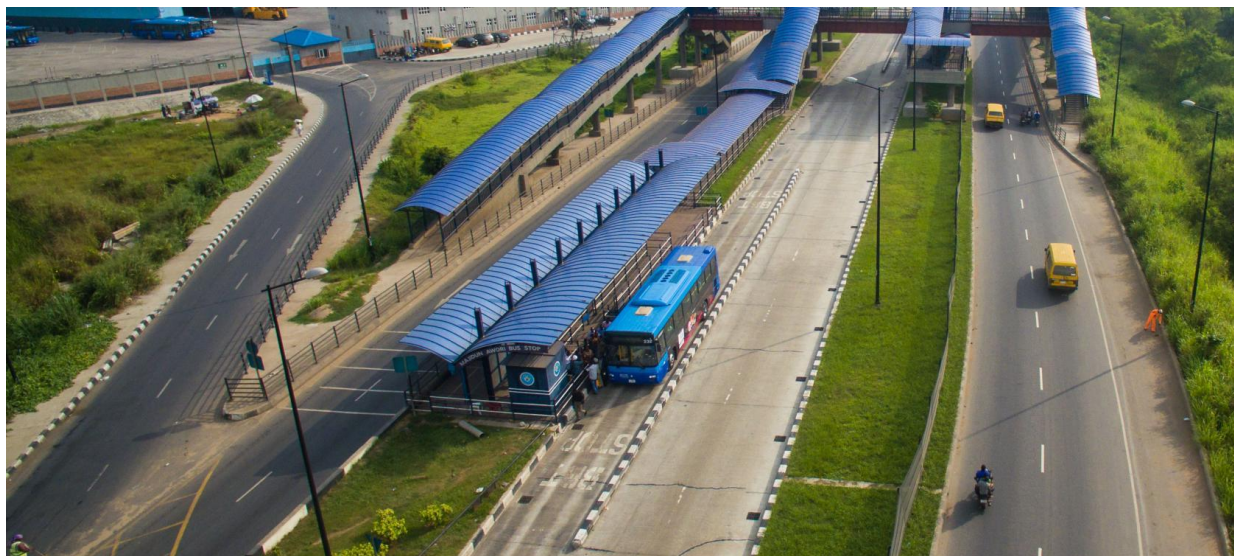


Figure 3-4: Lagos BRT Line 2 Ikorodu Extension

57 Following poor performance by the cooperative operating BRT-Lite, and in anticipation of the opening of the extension, a tender was issued for qualified and capable private investors to operate the BRT system consisting of both Line 1 and 2. The successful operator would be required to provide a bus fleet of 434 vehicles upon commencement of operations. A commercial bank provided the letter of credit (LC) facility needed to purchase the buses, at an estimated cost of US\$120,000 per bus.

58 The terms of the LC were as follows:¹⁴

- US\$47.3m LC facility;
- 2-year tenor; and
- Repayment in four staggered instalments.

¹³ IEG, 2018, Implementation Completion Report Review: Lagos Urban Transport Program-II, accessed via [the link](#)

¹⁴ Source: Global Credit Rating Co. Accessed via [the link](#)

59 In addition, the operator made use of a shareholder loan¹⁵ to assist in fleet purchase. This loan had the following terms:

- US\$5.5m shareholder loan;
- 10-year tenor; and
- 8 percent interest per annum.

60 Delays in commencement of operation and adverse (non-hedged) foreign exchange movements led to the operator being unable to service the LC. The default terms meant that once the commercial bank had made the required payments to the bus manufacturer, the LC was then converted into Naira-denominated bankers’ acceptances and term loans.

61 A further loan to the operator from another local commercial bank in 2017 for further fleet acquisition was in part used to refinance existing exposure and reduce debt costs. The terms of this loan were as follows:

- Three-year tenor;
- 12 percent interest; and
- Loan and accrued interest guaranteed by the commercial bank.

62 With much of its debt obligations denominated in USD, and operating revenues generated in Naira, the significant devaluation of the Naira seriously undermined the operator’s financial position. In an effort to restructure its debt obligations, it established a special purpose vehicle (SPV) to issue securities and raise funds under a N100bn Medium Term Infrastructure Bond Programme. This BRT Securitisation SPV PLC has recently issued a N16.5bn (US\$42m) fixed-rate bond on the FMDQ Securities Exchange to assist in refinancing its operating assets.

Risk Allocation

63 Lagos BRT is one of the few BRT systems worldwide in which operations are delivered under a net-cost contract with no public subsidy—that is to say, the private operator takes the revenue risk to deliver services with no public support. The allocation of the main identified risks between public and private entities are shown below.

	Government (national or local)	IFI	DFI	Commercial Bank	Private Investment Fund	Bus Manufacturer	Operator	Other
<i>Planning Risk</i>								
<i>Design & Procurement Risk</i>								

¹⁵ Primero had just two shareholders as of 2019: Fola Tinebu, founder (and Managing Director) and Francis C. Obi. [Ibid.](#)

Construction Risk								
Revenue Risk								
Operational Risk								
Macroeconomic risk								
Political and Social risk								
Environmental risk								

Key: **Public** **Private**

Table 3-2: Risk Allocation of Lagos BRT-Lite Bus Rapid Transit Project

64 Implementation risk was carried by the Lagos State Government through the regulatory agency.

65 Revenue risk is principally carried by the operator—originally the Cooperative SPV and presently a formal operator. This risk however extends to the private financing institutions that face the risk of operator default. The bus manufacturer faced minimal risk, on account of the contractual arrangements and LC commercial banks. Some element of revenue risk is also considered to be held by Lagos State Government, because it is regarded as highly likely that LSG would step in to shore up operations in the event of complete failure of the operator due to insufficient revenue.

66 The manufacturer supported maintenance through contract and therefore faced some operational risk. However, the main operational risk is carried by the operator, and as seen in the failure of the original cooperative, poor maintenance and the resulting lack of vehicle availability represents a major operational risk.

Key Lessons from Lagos BRT experience

67 Under the right conditions, which for Lagos included high demand, built on the superior efficiency offered by bus priority transport, and high prevailing fares, the city has demonstrated the potential for profitable private sector involvement in BRT system delivery and the willingness of commercial lenders to offer support.

68 Operational risk, in particular related to the inadequate maintenance of vehicles, represents a key risk to commercial sustainability for the private operator.

69 The requirement to finance a full fleet of vehicles represents a significant burden for the private operator, with loan repayments impacting cashflows in the early period of operation.

70 Where credit is denominated in foreign currency, foreign currency exposure can severely impact the financial position of a private investor.

3.2.2 South African BRT Schemes

71 Since the first BRT schemes were implemented in Johannesburg and Cape Town in preparation for the 2010 FIFA World Cup, further phases have been added in these cities and a further two South African cities now have operational BRT schemes. We focus on the two earliest and largest schemes.

Johannesburg

72 The Rea Vaya BRT system was launched in August 2009 operating a limited service, which was supplemented with new routes and a network of feeder services in 2010, and then further expanded to serve periphery townships in 2013.

73 The Rea Vaya system now has 43.5km of trunk corridors featuring segregated right of way, off board payment, level boarding (suitable, for example, for wheelchairs) at large stations, and a combination of articulated and regular buses serving the trunk corridors, with additional buses serving feeder routes. The cost of construction of Phase 1A of the network was \$14.2m per km.¹¹

74 Funding for the capital expenditure of Phase 1A was provided by the South African national government, principally through the Public Transport Network Grant (PTNG) to the city.¹⁶ Additionally, grant funding was provided through the German Development Cooperation Agency and the Global Environment Fund (GEF).

75 The city provides:¹⁷

- the BRT infrastructure, including the depots; and
- the fare collection equipment and all of the intelligent transport systems.

76 Under contract, the private sector provides the following:

- operation of the bus services;
- operation of the fare collection system; and
- ticket inspection, cleaning and security at stations.

77 The impacted operators (taxi and minibus) were encouraged to participate in the operation of the system. Extensive negotiations led to agreement with the operators and the formation of the new BRT operating group, with an SPV, set up with the assistance of a commercial bank in anticipation of the operator involvement.

78 The commercial bank also supported the city in engaging with potential financing sources, provided payment guarantees to the bus supplier, provided working capital and pre-funding for the SPV and ultimately secured financing for the fleet procurement via the an Export Credit Agency (ECA). The vehicles procured for the system were manufactured in Brazil. The vehicles were owned by the new SPV, although the terms and arrangements of the vehicle purchase were established in advance of the final operating agreement, by the City of Johannesburg.

¹⁶ The Public Transport Network Grant is a conditional grant. Funds flow directly from South Africa's National Treasury to the municipality in tranches attached to milestones stipulated in the municipality's business plan for its BRT system. (Source: Fan,Hongye; Beukes,Edward Andrew, 2021. Enhancing Financial Sustainability and Commercial Viability of Bus Rapid Transits (BRTs) in Sub Saharan Africa (SSA) : The Factor Analysis Report (English). Washington, D.C. : World Bank Group, accessed via [the link](#).)

¹⁷ Allen, Heather , 2013, Africa's First Full Rapid Bus System : the Rea Vaya Bus System in Johannesburg, Republic of South Africa, accessed via [the link](#)

79 The financing arrangements of the Brazilian BNDES loan were as follows:

- A loan of US\$40m (plus a \$14.2m debt service reserve funding loan)¹⁸ was extended to the SPV for the purchase of the 143 buses required for phase 1A at a cost of R0.4bn (US\$280,000 per vehicle);¹⁹
- The loan term was 11.5 years with 18-month capital repayment holiday, at a highly competitive rate of 3.2% fixed—2% less than originally expected, and below the pricing of SA Sovereign USD and Euro bonds; and
- The financing was raised for the SPV despite it having, at that point, no shareholders, equity or guarantors.

80 The initial BRT operator, was managed by existing bus operators from Metrobus and the Greater Johannesburg Regional Taxi Council (PUTCO). By 2011, a new private operating company had been created from a partnership between the existing minibus operators and one of the operators from the Bogotá Transmilenio system.

81 The new operator took over the operation of Phase 1 A, contracted under a gross cost¹⁹ contract where the city pays a per km fee for operation of the system.

82 The PPP structure for the Johannesburg BRT scheme is summarized in the matrix below:

	<i>Lane infrastructure</i>	<i>Signaling and traffic lights</i>	<i>Terminals and stations</i>	<i>Depots and workshops</i>	<i>Rolling stock</i>	<i>Project-specific fare collection system</i>
<i>Planning</i>	Public	Public	Public	Public	Public	Public
<i>Design and procurement</i>	Public	Public	Public	Public	Private	Private
<i>Construction</i>	Public	Public	Public	Public	Private	Private
<i>Finance</i>	Public	Public	Public	Public	Private	Private
<i>Operations</i>	Public	Public	Public	Public	Private	Private
<i>Maintenance</i>	Public	Public	Public	Public	Private	Private

Key: Public Private

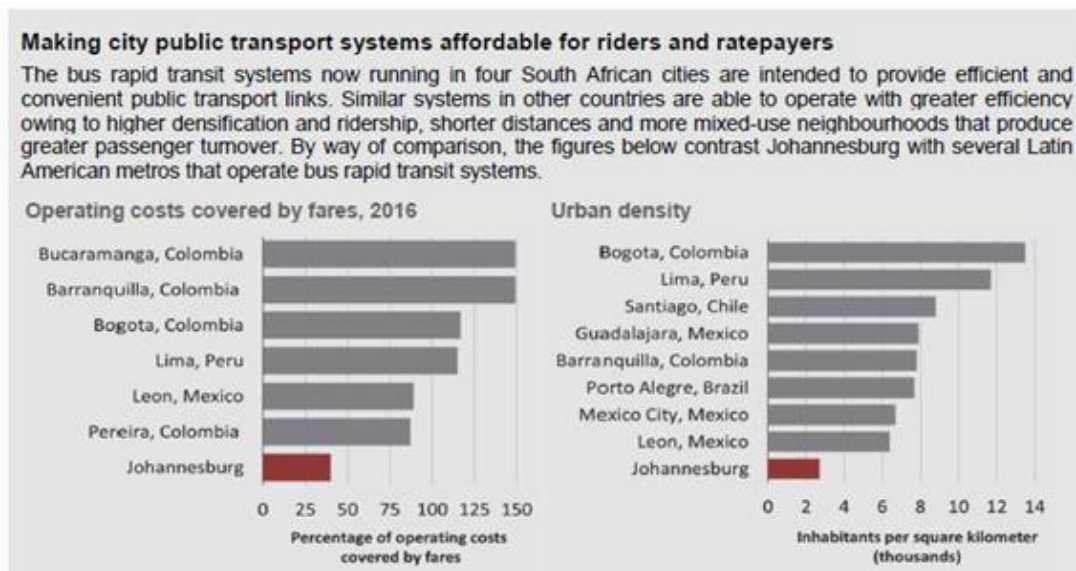
Table 3-3: The PPP components of Johannesburg BRT Project

¹⁸ Global Trade Review, 2011, accessed via [the link](#)

¹⁹ BNDES, 2010, BNDES finances exports of buses for the World Cup, accessed via [the link](#)

83 Since commencement of operations, major financial challenges have been experienced. Ridership has been lower than anticipated, and while operational subsidies were not anticipated, they have become essential to continuing operation as the farebox recovery ratio has been less than 40 percent of operating costs (see Figure 3-5).²⁰

84 There is a range of reasons for the poor commercial performance of this project. These include the adoption of the Latin American BRT model in a city far less dense than those which launched the early BRT schemes such as Bogotá and Curitiba. This standard of BRT features high cost infrastructure and vehicles, justifiable only with high levels of patronage. The high contractual costs negotiated with the impacted operators also weigh heavily on ongoing system costs and therefore subsidy requirements.



Source: World Bank, National Treasury and Statistics South Africa

Figure 3-5: Cost recovery of Johannesburg BRT System

85 The risk matrix relating to the Johannesburg scheme is summarized below:

²⁰ National Treasury, Republic of South Africa, 2017, Budget Review, accessed via [the link](#)

	Government (national or local)	IFI	DFI	Commercial Bank	Private Investment Fund	Bus Manufacturer	Operator	Other
<i>Planning Risk</i>								
<i>Design & Procurement Risk</i>								
<i>Construction Risk</i>								
<i>Revenue Risk</i>								
<i>Operational Risk</i>								
<i>Macroeconomic risk</i>								
<i>Political and Social risk</i>								
<i>Environmental risk</i>								

Key: Public Private

Table 3-4: Risk Allocation of Rea Veya Bus Rapid Transit Scheme

86 Under the gross-cost contract, the revenue risk is held by the municipality. The operator bears the risk of delivery of operations, although in view of the scale of investment the municipality may again be considered likely to step in and support the resolution of operational issues if this threatens service delivery.

Cape Town

87 Cape Town launched MyCiTi in time to serve visitors to the World Cup in 2010. The system was expanded in 2014. The system also uses a mixed fleet of articulated, standard 12m and smaller 9m buses, with cashless fare payment with its *myconnect* smartcard.

88 As in Johannesburg, the national government provided funding for implementation and private minibus operators were encouraged to form operating companies to participate in operation of the system. Different private entities were responsible for operation, security, maintenance, monitoring and other necessary activities, placing a significant burden on the municipality in managing the different contracts. The system faces many of the same financial challenges as those affecting its Johannesburg counterpart, and indeed the cost of operations of the Cape Town system far exceeds that of Johannesburg,²¹ again necessitating significant public subsidy.

²¹ Henkel, Andrea. Hugging, Hanna. Programme for Sustainable Urban Mobility South Africa, accessed via [the link](#)

89 The vehicles for MyCiTi were procured through grant funding from central government. The municipality has not yet followed up its previously expressed intention to support the procurement of electric vehicles to operate within the system.

Key Lessons from the South African Schemes

90 The experience of the South African Schemes demonstrates that prevailing demand, system design and operating contracts can lead to high ongoing subsidies borne by the municipality.

91 Incorporating existing operators into the system is desirable from a social acceptance perspective, but it can result in a high cost of operations.

92 The structuring of gross-cost contracting can increase confidence for investors to support private operators in vehicle procurement. Under the Johannesburg gross-cost contract, the operator payments made by the city for operation of the system include a base payment which is unrelated to the outturn operated mileage. This component is sufficient to cover the amortization for the buses, and therefore provides confidence to the credit provider that the vehicle loan will be repaid.

3.2.3 Dar es Salaam BRT, Tanzania

93 Dar es Salaam BRT is the most recent system delivered in Sub-Saharan Africa and the first BRT system in East Africa. Phase 1 of the BRT system is a 21km corridor with five terminals, 27 stations, seven feeder routes and three connector stations. The phase 1 commenced partial operation in May 2016. There are plans for future extensions, with six phases²² in total.

94 The phase-1 BRT scheme was developed under the Second Central Transport Corridor Project. This featured the following financing²³:

- IDA – \$298m (including a further US\$100m due to cost overruns);
- Private Commercial Sources – estimated US\$42.2m for buses and fare collection, and
- Borrower/recipient cofinancing from the Government of Tanzania – US\$10.3m.

95 The Dar Rapid Transit Agency (DART) manages the system, entered into a direct contract with a service provider that would serve 30 percent to 40 percent of the Phase 1 demand as interim operations, following an order from Parliament. When entering the operation contract, the interim operation provider was a subsidiary of the privatized former public transport operator, with majority shareholding by the private sector. The interim contract had a set duration and exit/cancellation clauses subject to completion of a competitive process of bus operator. However, the shareholding structure of the interim operator has recently changed from the private sector to the public sector.

²² Funding has been secured for Phase 2, 3 and 4, with the African Development Bank agreeing to fund US\$141m for Phase 2, and a World Bank IDA loan of US\$425m allocated for Phases 3 and 4.

²³ World Bank, 2017 Implementation Completion and Result Report: Tanzania Second Central Transport Corridor Project, accessed via [the link](#)

96 The public sector provides and manages the BRT infrastructure and associated supporting infrastructure through DART, charging the private sector for access. The private sector operator supplies and manages buses, fare collection and fund management, with the support of a commercial bank for debt financing. The private sector operates 39 large trunk buses and 140 small feeder buses. Table 3-5 indicates the PPP structure.

	Lane infrastructure	Signaling and traffic lights	Terminals and stations	Depots and workshops	Rolling stock	Project-specific fare collection system
Planning	Public	Public	Public	Public	Public	Public
Design and procurement	Public	Public	Public	Public	Private	Private
Construction	Public	Public	Public	Public	Private	Private
Finance	Public	Public	Public	Public	Private	Private
Operations	Public	Public	Public	Public	Private	Private
Maintenance	Public	Public	Public	Public	Private	Private

Key: Public Private

Table 3-5: Responsibility Allocation between public and private

97 Under the planned operational model, DART would procure the private operator on a net-cost basis, charging an access fee for the operator to use the BRT infrastructure, and the private sector holds the revenue risk. The operator has faced hurdles in meeting its financial commitments. Revenues have been impacted by regular flooding which has damaged infrastructure and buses, leading to a fall of up to 30 percent of expected daily revenues during floods. Table 3-6 indicates the risk allocation between public and private sectors under the interim operation contract.

	Government (national or local)	IFI	DFI	Commercial Bank	Private Investment Fund	Bus Manufacturer	Operator	Other
Planning Risk	Public	Public						
Design & Construction Risk	Public	Public						
Construction Risk	Public	Public						
Revenue Risk	Public						Private	

<i>Operational Risk</i>								
<i>Macroeconomic risk</i>								
<i>Political and Social risk</i>								
<i>Environmental risk</i>								

Key: Public Private

98 DART intended to appoint a second operator, to enable full Phase 1 operations by supplementing the number of buses and easing the present capacity constraints. It also planned on selecting a fare collector and fund manager through a competitive process. The tender of BRT bus operator failed due to receipt of non-compliant bids in which the preferred bidder required to be compensated using gross cost rather than the Government preferred net cost basis. The selection process for supply and operation of fare collection and ITS went to award stage but the Government canceled it. The tender for fund manager was processed and contracted.

99 Overall, the bidding processes have suffered lengthy delays. These delays were mostly a result of the resistance by the interim service provider through court injunctions and reluctance by the Government to the process when it became the majority shareholder of the operator.

100 In January 2020, a re-tendering process was initiated with the issuance of RFQs for which 21 investors expressed interest (10 international and 11 local), out of which four were selected in the short-list issued in June 2020. This high response rate to the RFQs suggests that despite the delayed bidding, investors were still interested in the project.

Key Lessons from Dar es Salaam BRT Project

101 While the Dar es Salaam BRT has been highly commended for its positive impact on urban mobility, there have been some financial challenges to implementation, from both public and private investment perspectives.

102 The integration of incumbent operators in Dar es Salaam has been challenging. There are about 7,000 minibuses with annual license with high turnover and with average of 2 buses per owner.

103 The public sector contributed to the delays of the full BRT operationalization by resisting the completion of the bidding process for a private operator .

3.2.4 Accra Quality Bus Corridors

104 A pilot Bus Rapid Transit corridor in Accra was originally planned for implementation on the Graphic Road/Winneba Road corridor to the west of Accra city centre, to be deployed by 2012.²⁴ A range of challenges beset the design and implementation phase, including challenges

²⁴ Ekoe, Edmund, 2017, "The Bus Rapid Transit Project in Accra, Ghana", accessed via [the link](#)

in establishing a regulatory body, project management issues and significant cost overruns in the delivery of the first components of the supporting infrastructure. Consequently, the Government opted for Quality Bus Services serving the north of Accra—along the Adenta and Amasaman corridors.

105 IFI funds were reallocated to the delivery of ‘light-touch’ priority infrastructure along the two identified corridors, and to capacity building of the Greater Accra Passenger Transport Executive (GAPTE) to regulate the service provision along the corridor which would be operated by the existing paratransit unions.

106 A bus manufacturer was selected to supply 245 buses and also to design and build the QBS infrastructure which included stations, terminal and depot. The value of the contract signed with the Ghana Ministry of Finance for vehicle provision and supporting infrastructure is not in the public domain.

107 However, based on the selected specification, it was estimated that the vehicles delivered had cost roughly US\$250,000 each, much higher than the cost upon which the preliminary business case was based.

108 Construction of the terminals and infrastructure progressed on both corridors, with operations commencing initially in 2016 on the Amasaman corridor.²⁵ Operations on this corridor were divided into three individual routes, overlapping in places but broadly serving different travel markets and therefore not in direct competition. Operation of these routes was offered to be shared between the three main transport unions active in Accra.

109 The contract with the bus manufacturer was held by the Government, through the Ministry of Finance. The intention was that each of the operator unions would pay a lease payment for the use of the vehicles which would repay the vehicle purchase costs. The ministry passed the responsibility for the collection of lease payments, and the burden of the loan repayment, to GAPTE as the regulatory agency of the system.

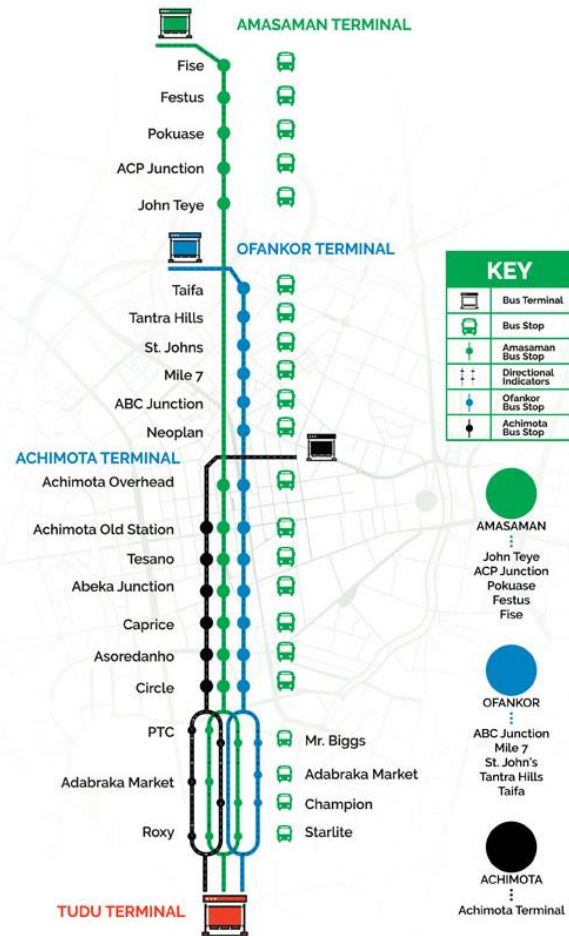


Figure 3-6: Ayalolo QBS Routes on Amasaman Corridor ¹

²⁵ Nkrumah, A.G., Asuming, O.P., Telli, Henry., 2019. The Effects of the Introduction of A Bus Rapid Transit System On Commuter Choices In Ghana. Accessed via [the link](#)

110 Demand for the services upon commencement was lower than envisaged, due in part to the very limited bus priority ultimately delivered, and the insistence on use of smartcard ticketing, which was resisted by many travellers. Consequently, the farebox revenues were not sufficient for the operators to make the necessary loan repayments. The burden of the revenue risk therefore falls to GAPTE and ultimately to the Government .

111 The risk allocation resulting from the arrangements of the Accra QBS is shown in the table below. In supplying the supporting infrastructure as well as the vehicles, the bus manufacturer bore risks during the design, planning and construction that are not usually borne by the vehicle manufacturer²⁶.

	Government (national or local)	IFI	DFI	Commercial Bank	Private Investment Fund	Bus Manufacturer	Operator	Other
<i>Planning Risk</i>	Public	Public				Private		
<i>Design & Construction Risk</i>	Public	Public				Private		
<i>Construction Risk</i>	Public	Public				Private		
<i>Revenue Risk</i>	Public							
<i>Operational Risk</i>	Public						Private	
<i>Macroeconomic risk</i>	Public	Public						
<i>Political and Social risk</i>	Public							
<i>Environmental risk</i>	Public							

Key: Public Private

Table 3-6: Risk Allocation of Accra Quality Bus Service Project

Key Lessons from Accra QBS

112 The Accra QBS scheme demonstrates that bus manufacturer involvement can extend beyond provision of the bus fleet to include supporting infrastructure.

113 The procurement of vehicles by the public scheme promotor (in this case the Government) may alleviate the financial hurdle to the private sector of upfront investment in fleet procurement. However, this transfers the following risk to the public sector:

²⁶ Design, planning and construction risks are typically borne by the public sector, IFIs, contractors or SPVs of a fully-integrated scheme. The risks borne by bus manufacturers are typically associated with the finance and O&M phases of BRT projects.

* procurement risk – for example investing in unsuitable vehicles for the operating environment or taking procurement decisions relating to the quality and cost of vehicles which the private sector would never have taken;

* revenue risk – even under a net-cost contract in which the operator holds the revenue risk and bears the burden of meeting vehicle lease payments, ultimately if ridership falls significantly short of expectation, the operator will choose to step away from its vehicle lease commitments, leaving the public sector with the burden of the vehicle fleet cost; and

* operational risk – again, if operational performance is poor, the operator may opt to ‘hand back the keys’, leaving the public sector bearing the burden not only of the fleet cost but the failed service provision on the corridor.

3.2.5 Nairobi BRT, Kenya

114 As shown in Figure 3.1, there are a number of BRT schemes in preparation. We select one of the schemes which is in the final stages of development, and follow recent events relating to the desired involvement of private sector investors.

115 Nairobi has plans for five BRT lines. The Nduvo or ‘elephant’ line will be the first line to be implemented. The financing of this line remains to be determined but financing for the wider network has been pledged by European agencies including the EIB (loan of up to US\$110m), the EU (US\$50m grant) and AFD (loan of up to US\$60m).²⁷ The Korean Import Export Bank is providing a loan of K Sh 6.38bn (US\$60m) to support the outer ring road BRT lines.²⁸

116 The first line forms part of a Nationally Appropriate Mitigation Action (NAMA) which aims to provide sustainable transport and deliver carbon mitigation to assist in meeting greenhouse gas reduction targets.

117 Nairobi Metropolitan Area Transport Authority (NAMATA) has been established as the regulatory body which will oversee the implementation of the BRT network and regulate operations which are to be delivered by private sector operators.

118 According to the Institute for Transportation and Development Policy (ITDP), which is assisting in the development of the system design, the overall investment cost for delivery of the BRT network is estimated to require K Sh 100bn (US\$930m). When all lines of the system are fully operational, they are expected to require 950 vehicles.

119 The Government of Kenya was recently reported to have backtracked on plans to procure the buses for the system, due to budgetary constraints, now giving preference to a PPP arrangement with the private sector.²⁹ It had earlier agreed to procure 64 buses from South

²⁷ Herblin, David., 2019. European Lenders To Give Kenya 200 Million Euros for Bus System. accessed via [the link](#)

²⁸ Gakweli, Mwakaneno., 2019. European Lenders to Give KSh 23B for Kenya’s BRT System. accessed via [the link](#)

²⁹ Okoth, Edwin., 2020. Kenya Woos Private Sector for Nairobi’s Long-Awaited Rapid Transport Project. accessed via [the link](#)

Africa, but then altered its position—in response to a local backlash—to procure half of the fleet from local manufacturers.

120 It is hoped that a consortium of public transport sector operators will purchase the buses, which the government expects to cost US\$16.4m (US\$250,000 per bus), under regulations set by Nairobi Metropolitan Area Transport Authority (NAMATA).

121 Private sector operators may however opt to procure much cheaper buses, with locally built units available at around US\$100,000 per bus.

122 From the information available, it is understood that the private sector investors/operators have not yet been chosen.

Key Lessons from Nairobi BRT

123 Where the government takes an involvement in vehicle procurement, the choice of manufacturer may become a political issue.

124 Private sector investment decisions relating to fleet procurement may be very different to those taken by the public sector.

3.2.6 BRT Case Study Scheme Summary

125 The specification and performance of the case study BRT schemes vary widely. While care should be taken in trying to make direct comparison between differing schemes, implemented in very different environments, a broad overview of the operating characteristics of the schemes may be drawn from some headline scheme statistics. These are shown in the table³⁰ below, alongside demographic information relating to the city of implementation.

Case Study	City Population	Population Density (residents per sq km)	Corridor Length	Cost per km	No. of Buses	Daily Ridership
Lagos BRT-Lite	12.55m	13,800	22km	\$1.7m	220	200,000
Lagos BRT-Line 2	12.55m	13,800	13.5km		484	unknown
Rea Vaya BRT	7.96m	3,100	57km	\$14.2m	277	55,000
MyCiTi BRT	4.0m	1,500			unknown	75,000
Dar es Salaam BRT	3.92m	6,900	21km	Ph1: \$6.35m	140	200,000

³⁰ Data sources including: [GLA, UK, 2014](#); Thiberge, P.N., 2015. Lagos’ Bus Rapid Transit System: Decongesting and Depolluting Mega-Cities. Accessed via [the link](#); Reavaya, 2021. To Date, Rea Vaya Has A Fleet of 277 Buses and the Phase 1C Bus Fleet will number between 240 to 260 Buses. Accessed via [the link](#); Venter, Irma, 2018, SA Rethinks its Bus Rapid Transit, accessed via [the link](#) ; African Development Bank, 2015. Tanzania Dar Es Salaam Bus Rapid Transit System Project-Phase 2 Appraisal Report. Accessed via [the link](#) ; Kalugendo, Fanuel., 2020. The Transformation of Dar Rapid Transit (DART) System Towards Scoot-Free Buses. accessed via [the link](#); Sowah, A.M., 2019. Dedicated Lanes for Aayalolo Underway, and GAPTE, 2017. GAMA 2020 Public Transport Vision. Accessed via [the link](#)

				Ph2: \$7.8m		
Accra QBS	4.22m	4,300	n/a	unknow n	150	9,000
Nairobi BRT	4.65m	8,400	n/a	n/a	n/a	n/a

Table 3-7: Headline Statistics for the Case Study BRT Schemes

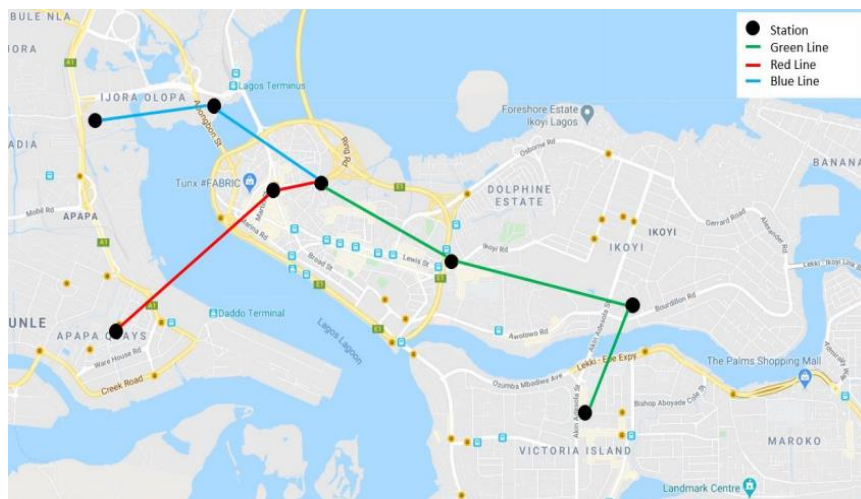
3.3 Investment Schemes of other Urban Transport Modes in SSA

126 Beyond BRT schemes, there are a wide range of examples of private investor involvement in urban transport schemes in SSA. A review of these case studies provides information on the private investors involved in a sector very similar to that of BRT in SSA and who could therefore become a potential investor in future BRT projects in SSA. The following are relevant examples:

3.3.1 Lagos Cable Transit System

127 Lagos Cable Transit System is a mass transit scheme presently under development which aims to alleviate the transport challenges experienced in accessing the Central Business District on Lagos Island. The cable transit project is a private promoted project. The concept has been under development since 2013 and is now included within the Lagos Transport Masterplan.

128 It consists of a US\$275million transport project to develop a 12.85 km network of cable cars serving the metropolis of Lagos and connecting Lagos Island with both the mainland and Victoria Island, using proprietary technology.



Source: AfDb and CIF³¹

Figure 3-7: Lagos Cable Transit System Map

³¹ AfDb and CIF, Clean Technology Fund, Lagos Cable Car Project, dated March 2020
 Accessed via [the link](#)

129 Supported by local private investment, Ropeways has financed the preparatory development of the system including feasibility studies, detailed design, legal work and land acquisition. The private sponsor has engaged with potential lenders and also applied to the Clean Development Mechanism for carbon credits upon scheme implementation.

130 The private lending arm of the African Development Bank acted as lead financier for a consortium of lenders. The latest information on project financing includes the following:³²

- Project cost has increased to US\$294m for the delivery of just one of the three lines within the system plan;
- Lagos State Government has agreed to sign a Passenger Revenue Shortfall Guarantee to support project bankability and assist in bringing the project to financial close;
- **The African Development Bank** is offering a senior loan of US\$50m;
- **The Clean Technology Fund** is offering a concessional loan of US\$20m;
- **Africa Finance Corporation** is offering a senior loan of US\$56m;
- **JICA** is offering a senior loan of US\$59m; and
- Shareholder equity would cover the remaining US\$109m.

131 The anticipated risk allocation based on the present arrangements is summarized in the matrix below.

	Government (national or local)	IFI	DFI	Commercial Bank	Private Investment Fund	Cable Transit System Manufacturer	Operator	Other
<i>Planning Risk</i>								
<i>Design & Procurement Risk</i>								
<i>Construction Risk</i>								
<i>Revenue Risk</i>								
<i>Operational Risk</i>								
<i>Macroeconomic risk</i>								
<i>Political and Social risk</i>								
<i>Environmental risk</i>								

Key: Public Private

Table 3-8: Risk Allocation of Lagos Cable Transit Scheme

³² Ibid.

132 While the private promotor has borne the risks for the planning and design phases, the consortium of private lenders, including DFIs, will share the risk during the construction phase. Upon operation, a private operator will be contracted to operate the service and be responsible for delivering this contract. Revenue risk will be borne by the private investor consortium, but backed up by the government due to the passenger shortfall revenue guarantee. Thus, these parties will also face the indirect risks to the project, and the potential impact on operations and on cashflows of the system.

Key Lessons from the Lagos Cable Transit System

133 In certain cases, the private sector may be able to develop innovative transport solutions to local mobility challenges.

134 However, the economics of major urban transport systems rarely provide sufficient financial returns to cover operating costs as well as initial capital investment. Therefore, the ability to achieve a privately promoted bankable urban transport project remains limited to highly specific circumstances, or requires public support in some form.

135 The private investor has not only taken on the burden of scheme development, but, as is typical for DFI investment, has also been required to finance the lender due diligence. This further increases the private investor risk when promoting a scheme.

136 As is seen in many major infrastructure projects, both public and privately promoted, cost overruns at the design and construction stages represent a significant risk to investors.

137 Provision of government-backed minimum revenue guarantees can serve to greatly mitigate private investor risk and therefore increase investor appetite, increasing the likelihood of achieving a bankable project. However, the implications of this transfer of risk must be thoroughly understood by the government before it reaches a decision on it.

3.3.2 Freetown Bus Transport Reform Project

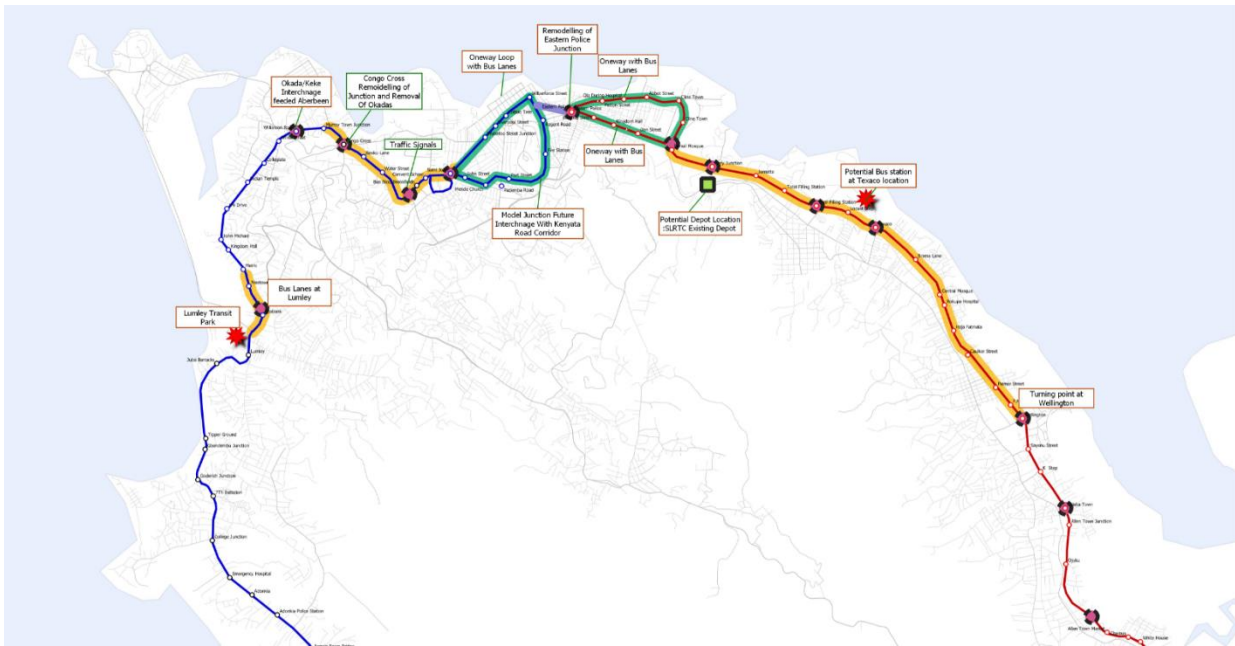
138 The Freetown Integrated and Resilient Urban Mobility Project³³ aims to improve the quality of public transport, address climate resilience and enhance institutional capacity in the transport sector.

139 The US\$52m project is funded as follows:

- IDA grant – US\$50m; and
- Borrower counterpart funding – US\$2m.

140 A key component of the project is the modernization and professionalization of public transport services, including the informal private operators. To this end, the project is exploring the potential business models in which private operators will participate in the management of two pilot corridors, and provision of service, as shown in the figure below.

³³ World Bank, 2021. Integrated and Resilient Urban Mobility Project. Accessed via [the link](#)



Source: ITP

Figure 3 8: Freetown Bus Improvement Pilot Corridors with Supporting Infrastructure

141 As part of the feasibility study, the nature of operator investment in the existing operations was explored, and the potential for private investment by operators and by financing entities examined. The key findings are summarized below:

- Existing operators have limited ability to make significant investment in new vehicle fleet under the present circumstances. Most operators have used their own private capital to increase fleet size over time, without accessing financing from external sources, due to eligibility and cost barriers.
- Local commercial banks, while active in lending in the private vehicle sector, have been reluctant to lend to public transport operators. Reasons include:
 1. Low creditworthiness and lack of collateral of the private operators.
 2. Lack of transparency of cashflows in public transport operations. Most bus operators hire out their vehicles to drivers and crew for a daily fee. Therefore, even the operator does not have transparent information relating to the scale of daily fare revenues generated.
 3. The typical lending tenor of 2–3 years maximum is much shorter than the life of the vehicle, making the capital repayment very high for the initial operating period.

142 The Africa Finance Corporation (AFC) conducted a scoping analysis of the local commercial lending sector, meeting with bank representatives to explore mechanisms by which local commercial bank risk could be mitigated through cofinancing arrangements with AFC.

Key Lessons from Freetown Bus Transport Reform Project

143 Incumbent public transport operators in Freetown and many African cities face significant challenges in accessing financing necessary for major investment in vehicle fleet, such as that required for commencement of new operations on a quality bus corridor or a BRT system.

144 Private commercial lenders are typically averse to lending to the sector, and the terms of finance, even if available, are usually not appropriate for financially viable investment in vehicle fleet due to short tenor and high rates of interest.

145 There are however measures which can be taken which may reduce risk for private lenders and make access to finance more achievable. These include:

- * bringing transparency to cashflows within the transport sector by the adoption of formalized ticketing systems (whether paper-based, smart card or other auditable approach);

- * formation of cooperative groups or companies by local operators, providing a legal entity which can enter into loan contracts, and featuring shared risk between members to reduce the potential risk of default by individual members; and

- * working with DFIs to develop a blended finance solution which shares risk.

3.3.3 Addis Ababa Light Rail

146 Addis Ababa has the first light railway system in Sub-Saharan Africa. Opened in 2015, the first line runs for 18km (11 miles) from the industrial areas to the south into the city centre.

147 The project cost of US\$475m was 85% financed by the **Export-Import Bank of China**,³⁴ through a loan agreement signed between the Governments of Ethiopia and China. The terms of the loan were as follows:³⁵

- Libor plus 2.6%; and
- 3-year grace period, 23-year maturity.

148 The system was built by the China Railway Eryuan Engineering Group. The system is operated and maintained by Shenzhen Metro Group and China Railway Engineering Corporation under a US\$116m five-year contract.³⁶

3.3.4 Koudougou bus station PPP project, Burkina Faso

149 The Koudougou bus station project commenced in 2005, and entails the building of a new city/intercity bus station. The project was partly funded by the Swiss Embassy Cooperation Office and the Swiss consular section, and promoted by the local Koudougou government.

150 Private bus operators were invited to invest in the project under a PPP framework. The overall cost of the project was 447,467,699 FCFA (roughly US\$ 800,000).

³⁴ Centerforpublicimpact, 2020. Light Rail Transit in Addis Ababa. Accessed via [the link](#)

³⁵ AidData, 2017. Global Chinese Official Finance Dataset, Version 1.0. Accessed via [the link](#)

³⁶ Barrow, Keith., 2015. Addis Ababa opens first light rail line. Accessed via [the link](#)

151 The Passenger Transport companies provided investment for the construction of the terminal with the strategic partners co-financing for the other stations. The transport operators—both bus and freight operators—were allocated space within the terminal in proportion to their investments (precise sums not known).

Key lessons from the Koudougou bus station PPP project

152 The project shows that private sector investment in bus terminals is achievable under a PPP structure within the regional African context.

4 | Identification of Private Investors

153 Table 4-1 summarizes the characteristics and activities of present investors and investors with potential interest, identified through the desktop review of the cases on BRTs and other urban transport projects in SSA.

154 For each private investor, the nature of involvement in BRT projects in SSA and worldwide is examined by CPCS and ITP according to public available sources, alongside the wider activities relating to investment in sub-Saharan Africa.

Investor Name	Investor Category	BRT experience	SSA Experience	Portfolio	Investor operations	Markets of operation
IFC	DFI/IFI	Rio, Mexico City, Cartagena, Istanbul, Buenos Aires	Yes, significant	More than US\$5bn in Africa	Private finance arm of World Bank Group.	Global
Proparco	IFI	Cartagena	Yes, significant	Energy and Transport, Agro-Industry, Water, Health, Education, Vocational Training	Subsidiary of AFD promoting sustainable economic, social and environmental development through private sector investment	Africa + Colombia
AFC	IFI	None	Yes, significant	Power, airports, bridge building, ports, advisory roles	Pan-African multilateral development bank seeking to remedy infrastructure deficit	Africa
Meridiam	Investment Fund	Dakar BRT	Yes, significant. Meridiam Infrastructure Africa Fund	Renewable power, transport, health, education and environment	Global investor and asset manager	Global
InfraCo Africa	Investment Fund	None	Yes, Africa is their sole market	Agri-infrastructure, energy, social, transport, water, sewerage, sanitation	Part of Private Infrastructure Development Group, managed as private company. Focuses on early stage project development funding.	Africa

AIIM	Investment Fund	None	Yes, significant	Power, toll roads, ports, airports, telecoms.	Focus on private equity infrastructure funds.	Africa
Carlyle Group	Investment Fund	None	Yes, but low presence. New SSA team and Carlyle Sub-Saharan Africa Fund.	Consumer goods, logistics, agribusiness and energy.	US private equity, financial services and management corporation.	Global. Looking to develop activity in SSA.
Macquarie Infrastructure	Investment Fund	None	Yes, but low presence.	Roads, airports, power, telecom, rail, ports.	US-based company that owns, operates and invests in infrastructure.	Europe and North America
HSBC	Commercial	Mexico City, Rio, Panama City, Curitiba.	Yes, but low presence.	Transport, energy, water and telecoms.	Global commercial bank	Global
Ecobank	Commercial	Lagos BRT lite and Lagos BRT	Yes, significant	Assets, vehicles	Pan African commercial bank	Africa and Middle East
Scania	Vehicle Manufacturer	Mexico City, Bogotá, Accra, Changzhou, Johannesburg, Mexico City	Yes, medium presence.	Transport	Swedish bus manufacturer. Leading manufacturer of BRT vehicles.	Global
Ashok Leyland	Vehicle Manufacturer	Lagos	Yes, significant.	Intercity buses, city buses, commercial buses	Indian automobile company. Market leader in bus and truck industries	Global
BYD	Vehicle Manufacturer	Kuala Lumpur	Yes, but low presence.	Intercity buses, city buses, commercial vehicles	Chinese bus manufacturer; leader in battery electric buses	Asia, Americas and Europe
Golden Dragon	Vehicle Manufacturer	Dar es Salaam	Yes, significant.	Intercity buses, city buses, commercial vehicles, BRT	Chinese joint venture developing and selling light vans and large buses	Global
Daimler	Vehicle Manufacturer	Bogotá, Istanbul, Nantes, Mexico City.	Yes	Intercity buses, city buses, commercial buses, BRT vehicles.	One of world's leading manufacturers of cars and trucks.	Global
Marcopolo	Vehicle Manufacturer	Belo Horizonte, Guatemala City, Cape Town,	Yes, significant. Manufacturing capability in South Africa.	Intercity buses, city buses, commercial buses, BRT vehicles.	Brazilian bus and coach manufacturer.	Global

		Johannesburg, Port Eliza.				
Caio	Vehicle Manufacturer	Sao Paulo	No	Intercity buses, city buses, commercial buses, BRT vehicles.	Brazilian bus body manufacturer.	Latin America
Volvo	Vehicle Manufacturer	Bogotá, Cali, Cape Town, Islamabad, Leon, Mexico City, Santiago, Curitiba.	Medium presence	Intercity buses, city buses, commercial buses, BRT vehicles.	Leading Swedish bus manufacturer.	Global
Transdev	Operator	Bogotá, Nantes, Rouen, Ile-de- France, Chalon-sur- Saône.	No	Operations in BRT and bus networks.	French transport operator in bus networks, BRT systems and LRT systems.	Mostly Europe
Primerio	Operator	Lagos	Nigeria only	Operating BRT and bus network in Nigeria.	Company formed specifically to operate BRT services in Lagos.	Lagos only

Table 4-1: Summary of Investors Identified in Case Review

5 | Key Findings

Key Chapter Takeaway

The case studies confirmed that the public and private sectors each have key roles in the successful execution of BRT projects and that if those roles are not fulfilled or well allocated, risks do materialize. The public and private sectors also face unique challenges in the execution of the project, and these vary depending upon its characteristics.

The challenges faced by the governments include:

- Developing sufficient capacity within government to avoid bottlenecks in planning, implementation and operations;
- Ensuring appropriate scheme definition reflective of local financial and institutional constraints;
- Structuring the project to enable effective allocation of risks between public and private sectors; and
- Taking a lead in the procurement of vehicles with due regard for the downstream financial implications of ensuring the operational characteristics of the chosen vehicles.

IFIs played a key role in the development of almost all BRT projects. Their challenges include:

- Unsatisfactory management of planning and implementation risks;
- Difficulties managing the counterparts and ensuring sufficient government engagement within the scheme development process;
- Insufficient recognition of local constraints and context when developing the project structure and guiding government agencies towards the appropriate scheme definition; and
- Insufficient understanding of the contextual differences in SSA compared to Latin America, including urban spatial patterns and traveler priorities.

On the private sector side, some of the main challenges for commercial banks include:

- Typical lending terms within the SSA context mismatched with the requirements for fleet investment;
- Aversion to lending to exiting transport operating sector (often following past experience of default);
- Preference to finance small pilot lending projects to allow the risk and profitability to be assessed before extending further lending. This conflicts with the high initial investment requirement for commencement of BRT operations; and
- Skeptical view of political commitment to urban mobility projects.

Key Chapter Takeaway

The key challenges for local operators are:

- A fragmented operating sector with large numbers of small-scale operators;
- Informal operators typically do not meet creditworthiness criteria to access commercial finance; and
- Operators often lack the technical capability to manage and operate formalized services and therefore may require capacity building.

Some of the challenges which may be identified as being faced by manufacturers who may potentially consider investment in schemes include:

- High import duties on imported vehicles and parts, unless these are waived under the terms of the publicly promoted project; and
- Challenging environments in which to establish workshops and to train local staff in the operation and maintenance of vehicles.

The main challenges for developers seem to be:

- Absence of a strong regulatory framework within which private developers are required to meet wider social responsibilities relating to mobility in the urban realm;
- Uncertainty about the potential scale of return; and
- Hesitancy about promoting public transport in a cultural context where car ownership is seen as a measure of success.

5.1 Role of Public Sector

5.1.1 Role of government

155 Government involvement is seen to play a critical role in the delivery of BRT and urban transport schemes, including for privately promoted projects.

156 The role of the government, whether at the national, state or municipal level, has been seen within the range of case studies to include the following:

- Financing of infrastructure;
- Regulatory role;
- Government-backed guarantees to private financiers;
- Support for procurement of vehicles;
- Export Guarantees (through DFI or national export bank); and
- Defining: 1) legal and regulatory framework; and 2) transport strategy and urban transport masterplan within which private investors can participate with confidence.

Key challenges identified

157 The case studies have identified challenges faced by the public sector in the effective delivery of schemes. Some of the key areas in which the government role in scheme financing and delivery may be seen to have had shortcomings are summarized below:

- Ensuring appropriate scheme definition reflective of local financial and institutional constraints;
- Structuring the project to enable effective allocation of risks between public and private sector;
- Taking a lead in the procurement of vehicles without paying due consideration to the downstream financial implications or ensuring the operational characteristics of the chosen vehicles; and
- A lack of capacity within government tending to result in a bottleneck in planning, implementation and operations.

5.1.2 Role of IFIs

158 International Financial Institutions have played a key role in the development of almost all of the identified case study schemes. The role IFIs have played include the following:

- Sharing of international experience and best practices;
- Scheme definition and development;
- Grant funding of scheme feasibility, development and capacity building;
- Concessional financing to governments for infrastructure; and
- Concessional finance to governments to support vehicle fleet procurement.

Key challenges identified

159 A critical appraisal of project delivery is needed, to assess the following shortcomings:

- Unsatisfactory management of planning and implementation risks;
- Difficulties managing the counterparts and ensuring sufficient government engagement within the scheme development process;
- Insufficient recognition of local constraints and context when developing the project structure and guiding government agencies towards the appropriate scheme definition; and
- Insufficient understanding of the contextual differences in SSA compared to Latin America, including urban spatial patterns and traveler priorities.

5.1.3 Investment Funds – Public

160 There have been no identified examples of sovereign wealth funds actively investing in BRT projects in SSA or indeed other urban transport projects. The reasons for this are not known, but perhaps include:

- Lack of mechanism to engage in investment in specific urban transport investments, compared to the more mature channels for investment in renewable energy, for example, or major infrastructure bonds;
- Insufficient returns in the urban transport sector by comparison with alternative investments; and
- Higher perceived risk of investment, particularly in the African context in which urban transport is in some cases poorly regulated and cashflows are not transparent.

161 **Climate finance on BRT.** Climate finance refers to various form of financing either public or private, or both, that seeks to support mitigation and adaptation actions that will address climate change. One outcome of the case studies is the observation that climate financing often played a role in the financing mechanism adopted for urban transport scheme delivery, in general to the benefit of the public sector.

Climate Funds

Climate finance has generally represented only a small component of the overall financing of schemes, typically less than 10 percent of capital investment cost. The contribution typically featured as part of a blended financing mechanism, enabling the leveraging of wider cofinancing. This has often taken the form of grant funding for enabling activities such as feasibility studies, capacity building or M&E.

The Global Environment Facility (GEF) has been most active in the support of urban mobility projects in Sub-Saharan Africa. However, other funds have been more active in other regions and offer potential as a financing channel for future SSA schemes. These include the Clean Technology Fund and the Green Climate Fund.

Carbon Finance

* There has been limited success in tapping into emission trading schemes, not just in SSA but for urban transport schemes worldwide. It has proven difficult to meet the project accreditation and M&E requirements. Only small amounts have been generated by schemes which were successful (such as Mexico City BRT);

* The largest carbon trading schemes (CDM and JI) are in their twilight period, and it is unclear how they will be replaced; and

* The World Bank carbon finance scheme is presently looking to develop a financing window specifically for the transport sector. The nature of this financing channel has not yet been determined.

Climate Bonds

* Climate Bonds³⁷ can be issued by public bodies (such as the municipal ‘Green Bond’ issued by the City of Johannesburg for the extension of BRT infrastructure) or by the private sector including commercial banks. This represents a rapidly growing area of opportunity for financing of transport infrastructure. The value of climate bonds issued internationally now far exceeds that of official development assistance support and the portfolio of the largest climate funds (see figure below):

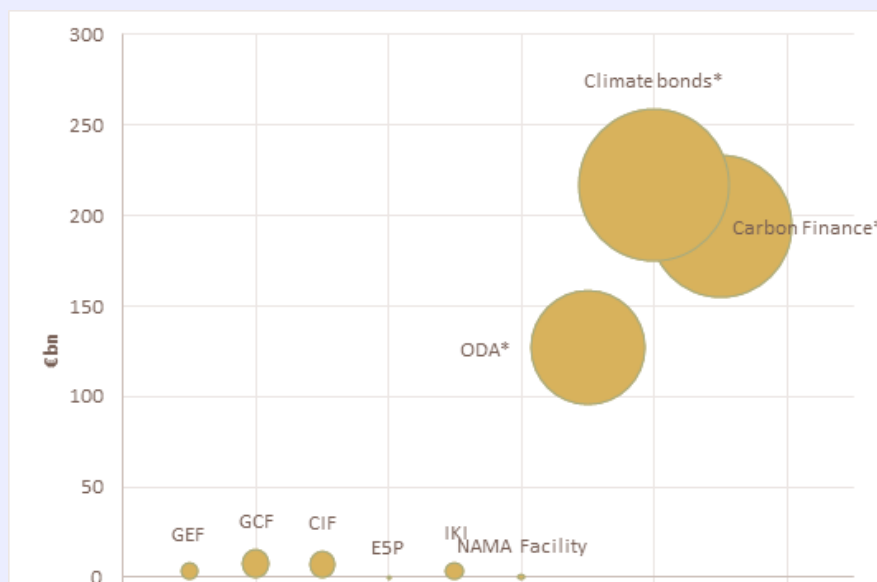


Figure 5-1: Financing streams by portfolio size

Source: Authors' estimates based on climate fund databases, Climate Bonds Initiative,³⁸ Refinitiv³⁹

* 2019 climate bond and carbon market size shown against climate fund capitalization and 2018 Net Overseas Development Assistance (ODA) flows to demonstrate relative scale (as indicated by bubble size and position on y-axis)

Key Challenges

While BRT schemes are typically considered to be eligible for financing under climate fund criteria, the largest climate fund by portfolio size, the Green Climate Fund (GCF), will not consider financing of schemes in which operations rely on fossil fuel, and therefore will not support schemes which use diesel, or even alternatively fuelled vehicles nonetheless classed as fossil fuelled, such as CNG or LPG vehicles.

162 The financing landscape relating to climate finance is changing rapidly. There are aspirations to increase the scale of finance available to green projects, and the challenge in accessing finance for transport schemes in particular has been recognized as a major shortcoming of the present arrangements. However, there is uncertainty about the future capitalization of the funds which have been most active in the transport sector (GEF and CTF)

³⁷ Climate bonds (also known as green bonds) are fixed income instruments which have positive environmental and/or climate benefits.

³⁸ Fatin, Leena., 2019. Green Bond Market Summary. Accessed via [the link](#)

³⁹ Refinitiv, 2019. Carbon Market Year in Review, Record high value of carbon markets. Accessed via [the link](#)

and it therefore remains unclear how future channels of climate finance might be leveraged for transport schemes.

5.2 Role of Private Sector

5.2.1 Development Finance Institutions (DFIs)

163 Development Finance Institutions have not been actively involved in financing BRT schemes or other urban transport schemes, because infrastructure investment is more typically financed through sovereign loans extended by the public lending arm of the IFI.

164 There is however evidence to show that DFIs are actively seeking opportunities to support other private investors in lending for projects related to urban transport, as seen in the example of IFC's desire to support commercial bank lending to bus operators in Freetown, Sierra Leone.

165 DFIs may offer private financing in the following ways:

- Market-rate loans to the private sector for investment in socially beneficial projects such as urban transport initiatives; and
- Cofinancing with other private financing institutions to share risk and to increase the bankability of projects.

166 Clearly various barriers have kept DFIs out of active involvement in the private financing aspect of BRT schemes or other urban transport projects. But these barriers are not yet well understood, and were therefore explored further at the interview stage, during which any or all of the following explanations were discussed:

- DFIs may not have the detailed local understanding of the market, of the private sector investment requirements and of the risks (by contrast with the insights of the locally operating commercial banks);
- The organizations' regulatory/governance requirements (such as terms of eligibility for finance, due diligence, anti-corruption processes) may present a hurdle to investment; and
- DFIs will also typically require the prospective private borrower to finance independent due diligence studies (as with commercial banks) thereby increasing the cost of investment.

5.2.2 Investment Funds – Private

167 Recent statements by a growing number of private investment funds indicate a recognition of the importance of investing sustainably, and many funds are significantly increasing investment in low-carbon initiatives. Support for sustainable urban transport, as one of the fastest growing areas of carbon emissions, would therefore seem naturally to align with these investment objectives. However, to date, there has been little evidence from the case studies of significant investment activity in the urban transport sphere from private investment funds. The reasons may align with those identified for the public investment funds. However, this will be an area which requires more investigation within the investor interviews.

5.2.3 Commercial Banks

168 A number of commercial banks have been instrumental in the delivery of BRT schemes in SSA and other urban transport schemes. Commercial bank activities have included the following:

- Export Credit Intermediary;
- Letter of Credit (LC) to support fleet procurement;
- Commercial lending to private sector operators for fleet investment;
- Management of ticketing and revenue collection; and
- Intermediary agency in revenue distribution.

169 A common theme in most case studies in which commercial banks have played a role in BRT scheme financing is the requirement by the bank to take some control over the revenues generated by the operations. The importance of transparency of cashflows, and the positioning of the bank as primary creditor, with the ability to fully cover loan payments from ticket revenues before distribution, appear to be pivotal to commercial bank involvement.

Key Challenges

170 Based on the lessons learned from the case studies, the following key challenges relating to private commercial bank involvement in urban transport schemes were identified:

- Typical lending terms within the SSA context mismatched with the requirements for fleet investment:
 - Short tenor (typically up to three years maximum)
 - Preference for lending in local currency
 - Onerous down payment requirements and chattel/security conditions;
- Aversion to lending to exiting transport operating sector (often following past experience of default);
- Preference to finance small pilot lending projects to allow the risk and profitability to be assessed before extending further lending. This conflicts with the high initial investment requirement for commencement of BRT operations; and
- Skeptical view of sustained political commitment to urban mobility projects.

5.2.4 Local Operators

171 In most case studies, local operators (often informal/paratransit operators or operator unions) have been given the opportunity to participate in BRT schemes as preferred bidder initially. The role of local operators as private sector investors in the scheme implementation typically featured:

- Formation of cooperatives or operating companies;

- Fleet investment, often with a small equity component and a commercial loan or lease arrangement; and
- Depot equipping and operation.

Key Challenges

172 While there have been some successful examples of local operators participating in the operation of schemes, there have also been some major challenges experienced. These in part reflect the characteristic nature of many local operators, namely:

- The operating sector is fragmented, with large numbers of small-scale operators;
- Informal operators typically lack creditworthiness criteria to access commercial finance; and
- Operators often lack the technical capability to manage and operate formalized services and therefore may require capacity building to enable them to effectively deliver the desired standards of service.

173 Even when operators have been able to deliver efficient and professional services, they have also been met with external challenges to the viability of their operations, including:

- The negative cashflows which are almost certain to be generated where significant upfront investment in a large fleet is required, as for most BRT operations. This represents a significant financial barrier for prospective BRT operators; and
- External risks such as flooding, infrastructure failure, or political discontent (which has sometimes resulted in the burning of buses) have impacted operations; such risks generally lie far beyond the control of the operator.

5.2.5 International Operators

174 Few case studies included evidence of international operators entering the market to offer services. This was despite active attempts by some schemes to seek capable operator groups to participate in service delivery.

175 Some of the reasons for this lack of activity by international operators may include:

- A lack of sufficient knowledge of the local public transport sector on which to base potential investment and participation decisions;
- An aversion to investment in new geographic locations based on uncertainties over political, regulatory, institutional and economic risks; and
- A perception (whether real or otherwise) of a strong local antipathy towards 'outside' entities establishing operations within the sector.

5.2.6 Manufacturers

176 Vehicle manufacturers participating in the SSA BRT schemes were from Europe, China and India. There was evidence of local manufacture of some of these international brands,

including manufacturing plants in South Africa. In Kenya, the supplier of Mercedes buses had indicated an intention to set up a local assembly plant to supply the BRT buses for Nairobi.

177 While vehicle manufacturers are involved in some form in every BRT scheme, activities undertaken by manufacturers have in some cases extended beyond the manufacture and supply of vehicles for the system, in the following ways:

- Vehicle finance through manufacturer's financial arm;
- Fleet maintenance contract; and
- Design and construction of supporting facilities—depot, bus priority infrastructure, stations and terminals.

178 Some of the challenges faced by manufacturers who may potentially consider investment in schemes include:

- High import duties on imported vehicles and parts, unless these are waived under the terms of the publicly promoted project; and
- Challenging environments in which to establish workshops and to train local staff in the operation and maintenance of vehicles.

5.2.7 Private developers

179 Private developers have been identified as promising private sector investors on the basis of their role in various schemes worldwide (in the Philippines in particular). However, the case studies and review of activity show:

- Limited private developer involvement to date in BRT in SSA;
- Little evidence of private developer initiative in developing of urban transport schemes in SSA; but
- Some evidence of private developer involvement in the promotion of BRT schemes in other parts of the world (for example the Philippines, where private developers have taken the lead in developing and privately promoting schemes in Manila).

Key challenges

180 Some of the main contributory challenges here may include:

- Lack of a strong regulatory framework within which private developers are required to meet wider social responsibilities relating to urban mobility;
- Doubts about the potential scale of return; and
- Possible fears of promoting public transport as a mainstay of development in a cultural context where car ownership is a widespread aspiration and mark of success.

5.2.8 Materialization of Risk

181 The review of the case studies identifies experience of the outturn risks actually encountered during project implementation or operation. These are summarized in the table

5-1 in which the numbers refer to notes [(1)-(18)] explaining o the risks that materialized for each BRT project.

Lagos BRT-Lite

(1) Planning of Lagos BRT was undertaken very rapidly, with only 15 months from project conception to operation.¹² To achieve this delivery time, the usual design process of feasibility study followed by detailed design and construction was discarded in favor of construction based on feasibility stage designs. This meant that the location of utilities and other geographic challenges were handled at speed during construction, rather than at the design stage. The implementation therefore had to adapt to whatever was feasible within the construction period.

(2) Maintenance of the BRT vehicles has been a significant challenge for Lagos BRT, with poor maintenance resulting in a significant reduction in available vehicle fleet in the early years of operation. Maintenance challenges were also faced on the public sector side, with failures in the BRT infrastructure which negatively impacted BRT vehicle activity and also repeated damage to bus stops caused by impact from heavy goods vehicles.

(3) Although Lagos BRT has been operated by local operators since launch of the service in 2008, this has not prevented a social backlash. There have been a number of incidents of reported damage to vehicles, mainly as retribution for accidents occurring on the BRT lanes. These include Lagos soldiers burning 10 BRT buses and Okada (motorcycle taxi) operators rampaging and causing vehicle damage.

Lagos BRT Line 2

(4) Financing of BRT vehicles has been a significant issue for the new operator. This has mainly been due to the significant devaluation of the naira, with USD denominated loans needing to be repaid through naira denominated revenue stream.

Reya Veya BRT

(5) The planning of the Rea Veya BRT system was strongly driven by the requirements for the 2010 World Cup. The desire to demonstrate a world-class transport service while also needing to serve the very low-density structure of the city arguably result in a system design that met neither the mobility needs of the townships nor those of car-owning commuters.

(6) System demand has fallen far short of initial forecasts, leading to lower than anticipated revenues for the city.

(7) The system design—with heavy infrastructure, high quality vehicles and traffic management and fare collection (ITS) systems—has arguably locked in high operating costs, compounded by the hard deadline of the World Cup, which constrained negotiations with the local operators, and ultimately led to a generous contractual arrangement with the displaced taxi operators. In combination with the low revenues, this has led to low levels of farebox recovery.

(8) The introduction of BRT was strongly resisted by existing public transport operators in Johannesburg, with taxi strikes, protests and riots marring the introduction of operations in 2010. This culminated in the fatal shootings of BRT project supporters and commuters.

MyCiTi BRT

(9) The design and planning of MyCiTi BRT shared common influences with the Rea Veya system in terms of serving World Cup spectators. Ongoing operational costs have been found to be even higher than Rea Veya's, with low levels of ridership for such a highly specified system.

(10) MyCiTi ridership, while the highest for a BRT system in South Africa, remains well below initial forecasts, which in combination with high operating costs has led to low levels of farebox recovery.

DART BRT

(11) The DART BRT interim operator, has faced financial hurdles in the short period since operations commenced and has requested a rethink of the business model on which the DART BRT system is sustained.⁴⁰ System profitability has fallen far short of expectations, due in part to lower than forecast ridership and impact from flood risks on operations.

(12) Construction of the BRT in Dar es Salaam experienced delay and caused disruption to traffic and to travellers during this period. The delays caused to all highway travelers should form part of the ex post impact assessment and scheme evaluation.

(13) While the BRT system has delivered a lot of time savings for travelers, concerns have been raised about the affordability of poorer travelers, due to the relatively higher fare level than minibuses, and the regulation of the cheaper travel alternatives along the corridor.⁴¹

(14) Flooding of the BRT runningway caused damage to BRT vehicles and undermined financial performance of the operation.⁴⁰

Accra QBS

(15) The infrastructure delivered to support Accra QBS involved compromises and deviation from the initial designs. This was due in large part to political aversion to taking road space from other vehicles. The resulting minimalist priority could not offer meaningful time savings for the buses, which when left to compete with existing paratransit, led to lower than predicted ridership.

(16) The Ministry of Finance led the procurement of buses, with delivery of infrastructure as part of the procurement contract. It was anticipated that the operator would repay the cost of the buses through operating revenues; however, with lower than predicted ridership, and the high cost of the vehicles, the repayments could not be met. The Government of Ghana bears the burden of the failed vehicle repayments.

(17) As mentioned previously, the ridership of the system fell far short of expectations. In addition, the smartcard ticketing system has not been functional.⁴²

⁴⁰ Thecitizen, 2018. Udart boss: Rethink revenues model. Accessed via [the link](#)

⁴¹ SOAS, 2019. Dar es Salaam's new rapid bus system won international acclaim – but it excludes the poor. Accessed via [the link](#)

⁴² Nkrumah, A.G., Asuming, O.P., Telli, Henry., 2019. The effects of the introduction of a bus rapid transit system on commuter choices in Ghana. access via [the link](#)

Nairobi BRT

(18) Although still at the design stage, development of the six BRT lines has faced planning challenges. Disjointed planning between the consultants developing the different lines, and disagreements with respect to the appropriate style of BRT have hampered progress. NAMATA, the transport authority, has an important role to play in the development of a coordinated and integrated network if a successful BRT network is to be delivered.

Investors						Issues identified (Risks that have materialized – see overleaf for description of risk)									
Case Study	Country	Government	IFI/DFI	Commercial Bank	Private Investor	Planning	Design	Finance	Construction	Revenue	Operations	Maintenance	Macro-economic	Political & Social	Environmental & Natural disaster
Lagos BRT-Lite	Nigeria	Lagos State Gvt,	WB	Yes	Yes	(1)	(1)		(1)			(2)		(3)	
Lagos BRT-Line 2	Nigeria	Lagos State Gvt, Lagbus	WB, AfD, GEF	Yes	Yes			(4)					(4)		
Rea Vaya BRT	South Africa	National Gvt, City of Johannesburg	GIZ, GEF	Yes	Yes	(5)	(5)			(6)	(7)			(8)	
MyCITi BRT	South Africa	National Gvt, City of Cape Town	GIZ		Yes	(9)	(9)			(10)					
Dar es Salaam BRT	Tanzania	Government of Tanzania	AfDB, WB	Yes	Yes			(11)	(12)					(13)	(14)
Accra QBS	Ghana	Government of Ghana	WB, AfD, GEF		Yes		(15)	(16)			(17)				
Nairobi BRT	Kenya	Government of Kenya	EIB, Korean Import Export Bank, TBD		TBD	(18)									

Key: Public, Private, Public & Private

Table 5-1: Summary of investors and risks that materialized during project execution

5.2.9 Summary of the Private Sector’s Participation in BRTs

182 The various characteristics of different BRT schemes tend to influence the operational experience post-delivery and the risks that actually materialize. The various schemes also reflect different PPP structures, with a resulting influence on outturn performance. The pattern of risk allocation determines the contractual model for BRT PPPs. In some cases the gross-cost contract model is adopted to incentivize private capital mobilization, offering guaranteed availability payment without carrying demand risks. Elsewhere, the net-cost model is adopted to reduce fiscal stress for the government, handing control over tariff revenue to the private sector—with bearing demand risks. In yet other cases, the contract is a hybrid of the two models. When revenue risks are allocated to the government, fare collection should be kept out of the operator’s remit, to preclude a conflict of interest. When revenue risk is allocated to the private sector, the integration of fare collection and operation may quite justifiably prove preferable.

183 In addition to existing PPP schemes in SSA BRT, there are three alternative models⁴³ for BRT system delivery in which the private sector takes on some components of system delivery and operation, namely:

- Option 1: Private finance and operation of the buses;
- Option 2: Private finance and operation of the buses with separate contracts for fleet provision and operations; and
- Option 3: Private finance of both infrastructure and buses (unbundled contracts).

184 The table below shows the allocation of responsibilities entailed by these options, in contradistinction to the ‘business as usual’ scenario.

	Business as Usual	MFD Option 1	MFD Option 2	MFD Option 3
Fund Infrastructure	Government			Infrastructure company
Fund rolling stock	Government	Bus operator	Fleet provider	
Cover cost of operations	Government /sometimes private	Bus / ticket and fare operator	Fleet provider / ticket and fare operator	
Land acquisition	Government			
Planning permits & approvals	Government body			
Set tariffs and service standards	Regulator			

⁴³ World Bank, 2019, Maximizing Finance for Development in Transport, from Concept to Investment, Report # Pitchcock

Design and Build	Government			
Operate	Government /sometimes private	Bus operator / ticket and fare operator		
Employ Staff	Government /sometimes private	Bus operator / ticket and fare operator		
Monitoring	Regulator or other government body			
Maintain	Government	Bus operator (rolling stock)	Fleet provider (rolling stock)	Bus operator and infrastructure company
	Government (infrastructure)			

Key: Public Private

Source: World Bank, 2019, Maximizing Finance for Development in Transport, from Concept to Investment, Report # Pitchbook

Table 5-2: Roles in Project Structure of BRT Schemes

185 While the case studies have demonstrated some increased involvement of the private sector by comparison with the ‘business as usual’ scenario presented above, the alternative scenarios define areas in which private sector involvement can be further leveraged.



Part 2 – Market Analysis Report

1 | Introduction

186 Part 2 of this report presents the analysis of the market and stakeholder engagement. It is divided into the following seven sections:

- Introduction;
- General presentation of the consultation process and response rates from different categories of investors to the questionnaires and interviews;
- Presentation of the respondents' profile in terms of their financing preferences, BRT experience, and overall appetite for BRTs;
- Presentation of the preferences and risks related to PPP schemes in BRTs based on investor feedback;
- Analysis of the type and severity of risks perceived by different types of investors;
- Concise summary of the findings on the investors' perspective on BRTs based on the market analysis and consultations; and
- Recommendations to improve the development of financially viable BRT projects with the participation of the private sector.

2 | Overview of the Consultation Process and Response Rates

187 The aim of this section is to provide an overview of the results obtained from the consultation process. It provides information and statistics on the investors who responded to the questionnaire and participated in the live interviews.

188 The investor categories are the same as those defined in Part 1 and are as follows:

- International/Development Finance
- Operator
- Institutions (IFI/DFI)
- Vehicle manufacturer
- Private investment fund
- Other (contractors, systems suppliers and others)
- Public investment fund
- Commercial bank

2.1 Initial engagement

189 Investors were contacted to elicit their interest in participating in this market analysis study. In order to maximize the response rate, investors were given the flexibility to decide on the date and time for a live consultation. As such, some of the interviews were scheduled very promptly (that is, for the following day), while others were held one or two weeks later.

190 The majority of investors who expressed an interest did complete the questionnaire and/or the live consultation steps of the process. However, a few declared initial agreement but subsequently failed to respond to invitations.

2.2 Number and categories of respondents to the online survey

191 Overall, 17 investors (that is, 17 companies) completed the questionnaire, plus three additional representatives from a single company, yielding a total of 20 responses.

192 The breakdown of participants by category of investors is as follows:

- Private investment fund: five responses ;
- IFI/DFI: four responses;
- Operator: three responses;
- Other: another three responses;
- Commercial bank: one response; and
- Vehicle Manufacturer: one response.

2.3 Number and categories of interviewees for virtual consultation

193 A total of 25 virtual consultations were conducted. This figure includes follow-up consultations with all 20 respondents who had completed the online questionnaire and an additional five consultations with investors who did not complete the questionnaire.

194 The breakdown of consultations according to category of investor is as follows:

- Private investment fund: six responses;
- IFI/DFI: five responses;
- Other: another three responses;
- Operator: four responses;
- Vehicle Manufacturer: four responses;
- Public investment fund: two responses; and
- Commercial bank: one response.

195 This breakdown shows that consultations with representatives of all the key categories of investors were conducted at least once. Although it would be desirable to consult with a greater number of investors in each category to ensure that the sample of observations is representative of a larger population, these consultations provide useful information, as they inform of the perspectives of specific investors who could be investing in future BRT projects.

3 | The Respondents: Roles and Interests

Key Chapter Takeaways

The typical investment preferences of respondents were as follows:

- Equity internal rate of return (IRR): a majority sought a range from 11% to 20%, with a preferred hurdle rate between 16% to 20%.
- Gearing: 40% of respondents expected 70 to 79% debt, but 30% also indicated that they were receptive to different gearing scenarios depending on the context.
- Capital value: half of respondents indicated that they sought to invest in projects with a capital value less than US\$500m. The other half stated that they did not seek a specific size of capital investment.
- No pattern of preference was observed regarding equity IRR, gearing and capital value targets among the different categories of investors.

Investors who responded and had experience with BRT had mixed impressions on the outcome of the project: 30% had a somewhat positive experience, 46% had a neutral or mixed experience, and 23% had a negative experience. The negative experiences were mostly among IFIs/DFIs.

The majority (84%) of respondents had experience in urban transit projects in LRTs/tramways, metros, cable car, bus restructuring and paratransit. Their experience was mostly in SSA (56%) but also in Europe, North America, South America, Asia and the Middle East.

Overall, respondents expressed their interest in future opportunities (whether they had participated in BRT projects or not), but 28% of respondents specifically recognized that they considered it to be a risky venture.

Their interest was mostly in the financing element of BRT, which is not unexpected, given that most respondents are financiers. However, concomitant interest was expressed in the design-construction, operations and maintenance elements.

Investment funds are mostly interested in equity financing. IFIs/DFIs are interested in all financing instruments. Operators are mostly interested in loans, sovereign financing and grants.

The main stakeholders offering investors' opinions are public authorities (78% of responses), IFI/DFIs (44% of responses) and credit/political risk insurance providers (44% of responses).

Investors perceive that land value capture (LVC) could be a source of additional funding in the future. However, they do not take it into consideration in the initial financing of BRT projects. They see it as too risky to plan for land value and real estate valuation.

196 This section analyzes the results of the survey questionnaires and follow-up interviews. It seeks to offer an understanding of broad patterns of investors’ appetite and views on risks related to BRT projects. It also strives to define patterns and expectations that differ among the investor categories.

3.1 Investors’ general investment preferences

197 The first section of the questionnaire asks questions about investors’ typical investment preferences and profile. The purpose of this profiling introduction was to garner information on key target metrics of different investors—for projects in general unrelated to BRTs.

198 As part of the profile definition, three specific characteristics were investigated:

- What is the range of equity internal rate they typically seek?
- What is the typical gearing of projects they invest in?
- What is the size of capital value they seek to invest in?

Equity internal rate sought

199 Responses on the typical equity internal rate of return (IRR) sought by investors are as follows:

Response Choices	Number of Responses	% of Total Responses (n=20)
0-5%	1	5%
6-10%	0	0%
11-15%	6	30%
16-20%	9	45%
21-25%	0	0%
Other	4	20%

Source: CPCS Analysis 2020

Table 3-1 Typical Equity IRR Expected by Investors

200 As the table shows, 75% of respondents expect the IRR to be between 11% and 20%—with a preference for 16% to 20%. In addition, 20% of respondents indicated that they did not have a specific target IRR, as they clarified in their elaboration of the “other” response. No specific pattern was observed in terms of category of investor, except insofar that private investment funds select an IRR range of 16% to 20%.

Typical gearing of projects

201 The typical gearing expected is as follows:

Response Choices	Number of Responses	% of Total Responses (n=20)
60-69% debt	4	20%
70-79% debt	8	40%
80-89% debt	1	5%
90-100% debt	0	0%
Other	7	35%

Source: CPCS Analysis 2020

Table 3-2 Typical Gearing Expected by Investors

202 This table suggests that a large number of respondents aim for a debt-to-equity ratio between 70% and 79%—followed by a ratio of 60% to 69%. It should be noted that more than a third of the investors selected “other” to reflect their receptivity to a variety of possible gearings based on the risks of the project, partnership and internal bank structure. A variety of responses was also noted within each investor category.

Size of capital value sought

203 Responses regarding the typical size of capital investment associated with transport projects are provided in the table below.

Response Choices	Number of Responses	% of Total Responses (n=20)
Under \$250 million	6	30%
\$251-\$500 million	4	20%
\$501-\$750 million	0	0%
\$751-\$1,000 million	0	0%
Other	10	50%

Source: CPCS Analysis 2020

Table 3-3 Typical Capital Value of Transport Projects Considered by Investors

204 Although 30% and 20% of investors respectively responded that they typically invest in transport projects of less than \$250m or between \$251m and \$500m, the majority of investors (50%) claimed that they did not target a specific range of capital value. An analysis of responses at the investor category level did not reveal any uniform pattern of preference.

3.2 Investors’ experience of BRTs

205 This section presents investors’ experience in previous BRTs based on questionnaire responses.

Experience of BRT projects

206 The questionnaire identified that 70% of the 20 respondents had participated in BRT projects. Their portfolio of experience includes BRT projects in Sub-Saharan African (Ghana, Ivory Coast, Senegal, South Africa, and Tanzania) and other geographic areas (Australia, Colombia, Costa Rica, France, Mexico, and Turkey).

Elements of Focus in BRT Projects

207 Responses presented below show the specific elements and activities that respondents focused on in prior BRT projects. Respondents were invited to select multiple elements as applicable.

Response Choices	Number of Responses	% of Total Responses (n=12)
Design/Build	3	25%
Operate	6	50%
Maintain	6	50%
Finance	8	67%

Source: CPCS Analysis 2020

Table 3-4 Typical Focus Element of BRT Project

208 According to these responses, companies mostly focus on finance, which is not exclusive of other roles. Indeed, respondents with experience in BRT also focus on roles related to operation and maintenance (O&M). A focus on the design-build stages was less common. It should be noted that the main focus elements depend on investor categories. Only investment funds and commercial banks focus on the financing elements of projects; no operator or vehicle manufacturer mentioned does. Conversely, the latter category tends to participate in the O&M elements. There was no observation of a uniform preference among IFIs/DFIs.

209 Respondents with BRT experience also indicated their company’s focus regarding the components of a BRT project, as shown in Table 3-5.

Response Choices	Number of Responses	% of Total Responses (n=11)
Vehicles	9	82%
ITS/Ticketing	7	66%
Routes/Dedicated Roads	4	36%
Stations/Terminals	4	36%
Depot	3	27%

Source: CPCS Analysis 2020

Table 3-5 Typical Focus Component of BRT Project

210 A focus on vehicles followed by the ITS/Ticketing system were predominant. At least one investor from each category (except vehicle manufacturers) expressed a focus on the ITS system (among other components). Similarly, at least one investor from each category—without exception—indicated that vehicles were a focus for their company in BRT projects. Only IFIs/DFIs and one operator expressed a focus on routes, dedicated roads and depots.

Financing Products Used in BRTs

211 Investors who had participated in BRT projects shared information about the financing products they had used, as summarized below. Respondents could select multiple answers as needed to reflect the spectrum of products used.

Response Choices	Number of Responses	% of Total Responses (n=13)
Loans or other debt instruments to private entities	7	54%
Equity Investment	6	46%
Other	3	23%
We did not participate in financing	2	15%
Sovereign financing	1	8%
Guarantees or insurance	1	8%
Grants or subsidies	1	8%

Source: CPCS Analysis 2020

Table 3-6 Financing Produced Used in BRT Projects

212 Overall, respondents predominantly used loans as a financing product, followed by equity investment. A small number of investors indicated that they used guarantees, grants or sovereign financing. Loans were cited by IFIs/DFIs, commercial banks and operators, whereas equity investment was cited by IFIs/DFIs, investment funds, vehicle manufacturers and operators.

Overall experience with BRT Projects

213 The overall experience of investors who had participated in BRT projects is presented in Table 3-7.

Response Choices	Number of Responses	% of Total Responses (n=13)
It was very successful from our standpoint	2	15%
It was somewhat successful from our standpoint	2	15%
Neutral	3	23%
We had mixed results	3	23%
It was not a very positive outcome	3	23%
It was a really bad experience for our organization	0	0%

Source: CPCS Analysis 2020

Table 3-7 Overall Experience with BRT Projects

214 Of the 13 investors who responded, four (30%) had a somewhat or very successful BRT experience. Six of them (46%) had a neutral experience or mixed results. Finally, three of them had an experience they described as not very positive. However, none had a really poor experience.

215 Two operators, one private investment fund and one investor from the “other” category (a control systems supplier) provided positive feedback. At least one investor from each category gave neutral or mixed feedback. IFIs/DFIs and a private investment fund provided negative feedback.

3.3 Investors’ experience with other Urban Transit Projects

216 Sixteen of 19 respondents (or 84%) indicated that their organization had experience with other urban transit projects, which comprise the following modes:

- Metro: 5 responses;
- Others (mix of LRT/tramway, metro and cable car projects): 5 responses, which were selected by respondents who wanted to select multiple responses;
- LRT/tramway: 2 responses;
- Cable car: 2 responses;
- Bus restructuring: 1 response; and
- Paratransit: 1 response.

217 As a follow-up question on urban transit projects, the geographic areas of the urban transit projects of experience are presented in the table below.

Response Choices	Number of Responses	% of Total Responses (n=16)
Sub-Saharan Africa (SSA)	9	56%
South America	6	6%
Europe	5	5%
Asia	5	5%
North America	4	4%
Middle-East and North America (MENA)	4	4%

Source: CPCS Analysis 2020

Table 3-8 Geographic Areas of Experience of Other Urban Transit Projects

218 Table 3-8 shows that the respondents have relevant experience in urban transit projects in SSA. It also shows that they are global actors with experience in other geographic areas.

3.4 Investors' interest in future BRT Projects

219 One section of the questionnaire enquired about investors' interest in future BRT projects. Information collected from this section is presented below.

Investors' interest in Future BRT projects

Response Choices	Number of Responses	% of Total Responses (n=18)
We have no interest	0	0%
We are open to the idea, but view it as a risky venture	5	28%
We have not considered it yet, and/or don't know much about it, but we would consider it	0	0%
We are already involved in such projects and are interested in future opportunities	8	44%
We have not participated in such projects but we are interested in future opportunities	5	28%
We don't have a firm opinion	0	0%

Source: CPCS Analysis 2020

Table 3-9 Investor's Interest in Future BRT Projects

220 Of the 18 investors who responded, including those who had not participated in BRT projects, eight indicated interest in future BRT opportunities. Ten indicated that they would consider BRT projects even if they regarded them as risky and/or had not previously participated in BRT projects. No investor selected the “no interest” option. This can be attributed to the fact that investors who participated in the study were naturally interested in its outcome (others with no interest having already excluded themselves).

221 Respondents also provided information regarding the specific elements of a BRT project that are of interest, as summarized below.

Response Choices	Number of Responses	% of Total Responses (n=18)
Routes	12	71%
Vehicles	12	71%
Stations/Terminals	11	65%
ITS/Ticketing	10	59%
Depot	9	53%

Source: CPCS Analysis 2020

Table 3-10 Components of Interest in Future BRT projects

Response Choices	Number of Responses	% of Total Responses (n=18)
Design/Build	7	39%
Operate	7	39%
Maintain	7	39%
Finance	11	61%

Source: CPCS Analysis 2020

Table 3-11 Elements of Interest in Future BRT projects

222 According to these results, financing is the element of greatest interest to investors—followed equally by design/build, operate and maintain. In terms of assets and activities of a BRT project, investors are predominantly interested in routes and vehicles, followed by stations/terminals, ITS and depots. It should be noted that a finer analysis of these results shows significant variations within investor categories. Although at least one investor from each category shared an interest in several of these elements and components, there is no clear pattern of preference that captures the spectrum of investors.

223 Additionally, a comparison of the results in **Error! Reference source not found.** with those in Table 3-4 and Table 3-5 reveals that investors are increasingly interested in diverse elements and components in BRT projects.

Financing Products of Interest for Future BRT Projects

224 When asked which financing products were of interest to their organization for future BRT projects, the 18 investors who responded chose the following products.

Response Choices	Number of Responses	% of Total Responses (n=18)
Loans or other debt instruments to private equities	12	67%
Equity investment	11	61%
Sovereign financing	6	33%
Grants or subsidies	6	33%
We do not participate in financing	2	11%

Source: CPCS Analysis 2020

Table 3-12 Financing Products of Interest for Future BRT projects

225 A finer analysis of these broad results shows that there is a pattern of preference depending on the investor category. While investment funds are only interested in equity, IFIs/DFIs are generally interested in all financing products. Commercial banks are interested in all products except equity; operators are interested in loans, sovereign financing and grants. They are divided on equity investment.

Key Stakeholders needed to submit a proposal

226 As part of the survey, investors were asked which stakeholders’ engagement in BRT projects they perceived as critical to their decision to participate. They could select multiple stakeholders as applicable. Their answers are summarized below.

Response Choices	Number of Responses	% of Total Responses (n=18)
Public authorities or sovereign funds	14	78%
International institutions or credit agencies	8	44%
International commercial banks	1	6%
Local commercial banks	3	17%
Private funds	4	22%
Credit and political risk insurance providers	8	44%

Source: CPCS Analysis 2020

Table 3-13 Key Stakeholders’ Involvement

227 A vast majority (78%) of respondents indicated that the participation of public authorities and sovereign funds was critical. The second most important group of key stakeholders includes IFIs and credit/political risks insurance providers, each attracting 44% of responses. At the category level, commercial banks and investment funds tend to seek the participation of IFIs/DFIs and credit/political risk insurance providers. There is, however, no pattern among operators, whose preferences vary.

Monetization of Land-Value Capture

228 Investors were asked if they considered monetization of land value capture as a significant funding source of BRT projects in SSA. Their responses were as follows:

- Yes: 3 responses;
- Potentially: 6 responses;
- No: 8 responses.

229 During discussions, investors elaborated on their response. They indicated that they perceive land value capture as a potential source of additional funding in the future. However, they do not take it into consideration during the initial financing of BRT projects. They believe that it is too risky to plan for land value and real estate valuation increasing over time, given the significant uncertainty regarding ridership behavior, which tends to impact land use and value. The benefit of land value capture is viewed as a financial opportunity to be monitored. As the

project evolves over time, and additional certainty is gained on ridership and the net impact on real estate development and valuation, the extent of the benefits emerges.

3.5 Investors' Perception of Influential Factors for Successful BRTs

230 In the online survey, investors were asked about their opinion on key elements contributing to the success of BRTs which means being viable and attractive to them. Respondents could provide multiple answers depending their understanding of success. One can assume that different categories of investors had a different definition of success. For instance, a financier might have interpreted it as a project that enables the loan to be repaid, whereas an operator might have defined it as a project with sufficient revenue to cover costs. The objective of this question was to determine the investors' perceptions

231 Following their response to this initial question, the results provided in Table 3-14 and Table 3-15.

Response Choices	Most Influential (Rank=1) Number of Responses	Most Influential (Rank=1) % of Total Responses (n=20)	Most Influential (Rank=2) Number of Responses	Most Influential (Rank=2) % of Total Responses (n=20)
Supporting enabling environment (laws and regulations)	8	47%	4	24%
Selection of an appropriate transport mode	4	24%	8	47%
Appropriate selection of fleet	3	18%	5	29%
A sufficient level of demand and the right fares	11	65%	2	12%
A sound integration of incumbent operators	6	35%	4	24%
A well-structured PPP scheme	7	41%	4	24%
The good performance of operations	4	24%	4	24%
No opinion	0	0%	0	0%

Source: CPCS Analysis 2020

Table 3-14 Most Influential Enablers of Successful BRTs

232 A review of the responses ranked first revealed that the majority of investors considered sufficient demand and level of fares to be the main reasons for the success of a BRT project. When combining the number of responses ranked first and second, four reasons emerge as indicators of past success:

- Supportive enabling environment (laws and regulations);
- Appropriate transport mode selected;
- Sufficient demand, with the right fares; and
- Well-structured PPP scheme.

233 When asked what contributed to unsuccessful projects, respondents identified reasons presented in Table 3-15.

Response Choices	Most Influential (Rank=1) Number of Responses	Most Influential (Rank=1) % of Total Responses (n=20)	Most Influential (Rank=2) Number of Responses	Most Influential (Rank=2) % of Total Responses (n=20)
An inappropriate enabling environment (laws and regulations)	9	56%	0	0%
A transport mode inappropriate to needs and/or context	4	25%	6	38%
Unsuitable PPP scheme and poor project structuring	8	47%	3	18%
Inadequate infrastructure	5	31%	4	25%
Opposition from incumbent operators	6	38%	4	25%
Inadequate fleet specifications	2	13%	3	19%
Insufficient level of demand	7	44%	4	25%
Farebox recovery ratio too low	6	38%	5	31%
Poor performance of operations	6	38%	5	31%

Source: CPCS Analysis 2020

Table 3-15 Most Influential Reasons for Unsuccessful BRTs

234 An analysis of the responses suggests that the majority of respondents identified an inappropriate enabling environment as the main reason why some BRT projects failed. After analyzing the responses associated with the top two reasons for unsuccessful projects, five trends appear to contribute to this outcome:

- Unsuitable PPP scheme and poor project structuring;
- Opposition from incumbent operators;
- Insufficient level of demand;
- Farebox recovery ratio too low; and
- Poor performance of operations.

4 | Investors' Perspectives on PPP Structures and Financing Schemes

Key Chapter Takeaways

Consultations confirmed interest in two main PPP schemes for BRT projects in SSA:

- The “operation-centered” structure: the private partner takes responsibility for the provision and O&M of the fleet, ITS and fare collection system; and the public authority is in charge of the infrastructure delivery and maintenance; and
- The “fully integrated” PPP scheme: the private partner is responsible for the infrastructure design, construction and maintenance, as well as the provision of all operational services and associated equipment.

Investment funds prefer the fully integrated scheme, as it gives them control over the entire life cycle of the project and assures them of the efficient integration of all the project components. However, they recognize that private funding of infrastructure will not make the project financially viable and prefer public funding for the construction of infrastructure.

Operators do not see themselves as investors in BRT. Instead, their interest lies in the O&M contract for the service under a PPP scheme, preferably with the Special Project Company (SPC). They are also not keen on acquiring the fleet.

Regarding financing mechanisms, the following broad preferences were observed across investor categories:

- Public funds (from cities or central government) are needed for project development and infrastructure delivery; and
- Private financing can be raised for the bus fleet and operations equipment through a combination of equity, debt and insurance/guarantees products.

Other key points shared by investors include:

- The involvement of IFIs/DFIs remains essential both for the provision of financing (concessional sovereign lending and project debt) and credit enhancement products (political risk insurance in particular);
- It is critical to the project's financial viability that:
 - The public authority take responsibility for financing the infrastructure, even in the “fully integrated” PPP scheme;
 - The financing be structured in a manner that minimizes reliance on long-term financial support from public authorities for the operations; and
 - There are guarantees available to mitigate political risks.
- There is limited availability of lenders interested in supporting debt financing of BRT projects. The options include loans from multi- or bilateral development agencies, which also provide funding as credit enhancement products, the involvement of ECAs and loans on occasion from international commercial banks.

235 One of the main objectives of the market consultation was to establish which PPP structures are favored by investors for the implementation of BRTs in SSA. The analysis focused on whether common response patterns could be observed across investor categories.

4.1 Investors' perspectives on PPP Structures

236 In general, the structures of PPP schemes focus on:

- Which roles, responsibilities, and risks are allocated to the private parties and public authorities respectively;
- How these functions are bundled or divided into multiple schemes; and
- Who bears the responsibility for financing the required investments for these functions and bears the associated risk.

237 These features also apply to the different PPP structures that can be developed for BRT projects in SSA.

Two main PPP schemes

238 During the consultation, two main schemes for BRT projects were identified and discussed:

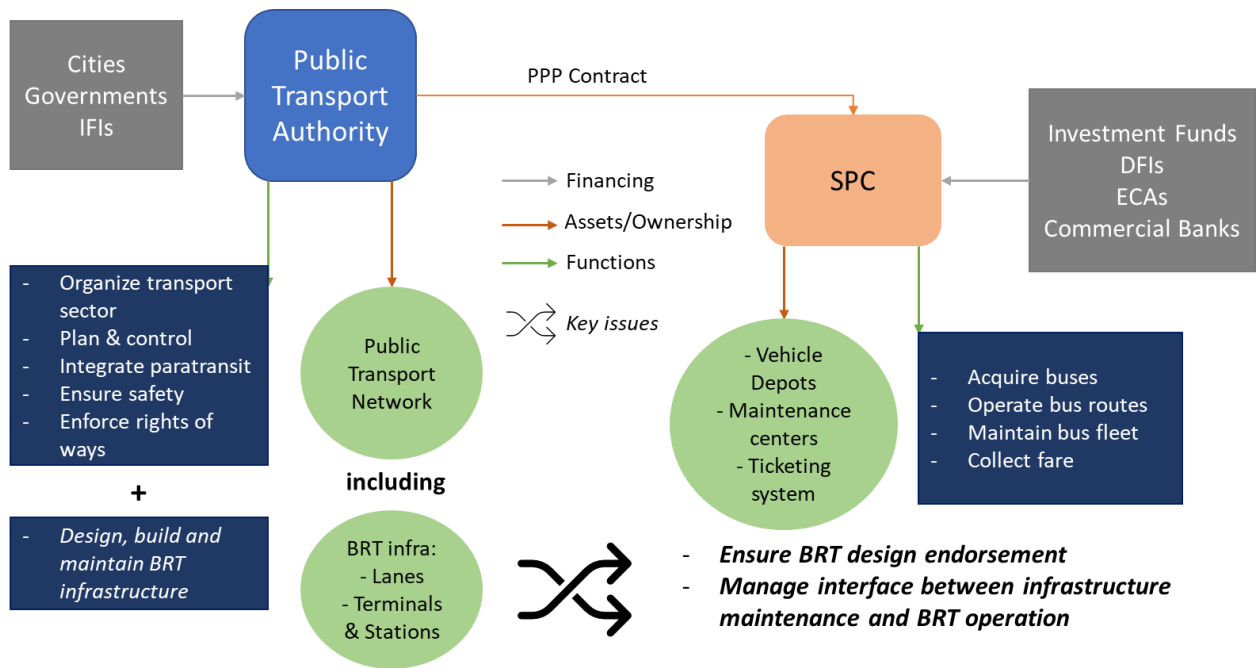
- The “operation-centered” structure in which a private party takes responsibility for provision of the fleet and operation of bus routes while the public authority remains in charge of infrastructure delivery and maintenance; and
- The “fully integrated” PPP scheme that brings together infrastructure design, construction and maintenance, as well as the provision of all operational services and associated equipment.

239 In the “fully integrated scheme,” the private partner designs, builds and maintains the BRT infrastructure. The main issue is the financing of BRT infrastructure, which remains the responsibility of the public authority, because operational revenues are usually not sufficient to cover it.

240 In the “operation-centered” structure, the public authority is responsible for the design, build, finance and maintenance of the infrastructure. The most critical issues are the endorsement of BRT design by the private partner and the interface between maintenance of the infrastructure and operations. The private partner is responsible for the financing and O&M of the fleet, ITS and the fare collection system.

241 The diagrams below provide an overview of stakeholder functions, asset ownership, and the main sources of finance under each PPP structure. They also highlight the key issues for implementation in each case. These figures were developed on the basis of the Consultant's experience of PPP structures combined with investors' views of the different models.

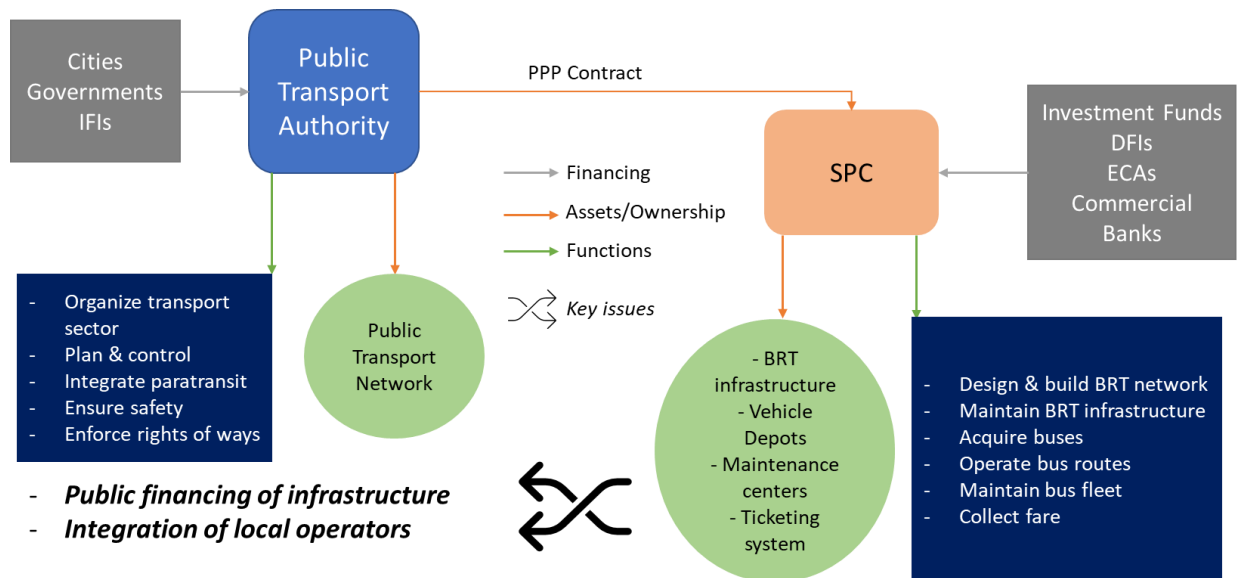
Operation-centered PPP structure



Source: CPCS

Figure 4-1 Operation-Centered PPP Structure

Fully integrated PPP scheme



Source: CPCS

Figure 4-2 Fully integrated PPP Structure

242 The following sections present the variety of perspectives by investor category for each PPP structure.

Investment funds' perspective

243 Investment funds hold a favorable view of long-term PPP schemes and investing in corporations specifically set up for the construction and operation of infrastructure projects. Therefore, they are the investors with the strongest and most consistent views on the relevant PPP schemes for BRT projects.

244 While investment funds shared an interest in both PPP schemes they also indicated a preference for the “fully integrated” PPP. This scheme enhances their control over the overall project life cycle through the integration of infrastructure design and delivery with operations.

245 For the “operation-centered” structure, they mentioned the importance for the private operator of validating the infrastructure design and construction. They also stressed the requirement to manage the interface between bus operations and roads maintenance—in practice, to make sure that infrastructure maintenance is conducted without interfering with the BRT operations.

246 For both schemes, they are of the opinion that the public authority should be responsible for:⁴⁴

- land acquisitions and relocation of displaced population (if required);
- delivery and protection of rights of ways;
- integration of incumbent operators in the BRT project; and
- management of competition during the operational phase.

247 They also stressed that the financial viability of the project requires public funding for the infrastructure. Private financing can be raised for vehicles and operations equipment. If buses are imported from countries with Export Credit Agencies (ECA) willing to cover political risks, the financing could be arranged by commercial banks backed by the bus manufacturer’s country ECA. If these conditions are not met, then the IFIs/DFIs would need to be heavily involved in providing finance. Therefore, the project’s compliance with the IFI/DFI’s environmental and social governance (ESG) performance standards is particularly important for them. Finally, they insist that a financial structure that does not rely on public sector payments in the long term is critical to the project’s financial sustainability. Typical financing schemes are reviewed further in chapter 4.2 below.

Operators' Perspective

248 Operators echoed the infrastructure funds’ views on the preferred PPP schemes. However, given their relatively thin operating margin, their business model consists of operating through an O&M contract based on performance, preferably through an SPC, instead of investing in the SPC’s capital.

249 They are also not interested in fleet acquisition for a BRT project, and they do not perceive any viable leasing options, given the absence of significant residual value for the

⁴⁴ Additional information on investors’ perceptions of risks related to resettlement, rights of way, and incumbent operators’ integration is provided in Chapter 5.

vehicles at contract termination (even if such an event occurs earlier than contractually scheduled).

250 For O&M contracts, some operators stressed the importance of developing projects in which operation revenues can cover operating costs to avoid dependence on the public sector for payment in the long-term.

251 They are comfortable taking on performance risks if they are associated with the infrastructure design and definition of bus specifications. They also expect any interface risk with contractors (for infrastructure commissioning), bus manufacturers (for fleet provision in accordance with specifications) or public authorities (for protection of rights of way) to be managed through comprehensive contractual provisions and operational procedures. They are, however, reluctant to take on traffic risks, which they believe should be borne by the public sector or by the investors in the SPC.

Vehicle Manufacturers' perspective

252 Vehicle manufacturers did not seem to favor one PPP structure over the other. Their prime interest is to have a buyer for the acquisition of their products. They confirmed there is no finance lease available for conventional diesel buses. However, electric bus manufacturers are currently working on leasing solutions for batteries, as they have a longer life cycle than other vehicle parts and could potentially be reused for different purposes, such as storage for solar power.

IFIs/DFIs' perspective

253 IFIs and DFIs did not express any specific preference for a particular PPP scheme. One IFI specifically indicated that risks vary significantly on a project basis and therefore the selection of PPP schemes should be customized to address these different risks. Another IFI indicated they were interested in a scheme that would enable them to participate in the financing of infrastructure only. Finally, an IFI revealed an interest in schemes that would enable them to finance the infrastructure and/or the vehicles.

4.2 Investors' perspectives on BRT financing schemes

254 Views on BRT financing structures are consistent across investment funds, development banks and commercial banks. According to the responses from all investor categories, a typical financing scheme for BRT infrastructure, bus fleet, and operations equipment should involve:

- Public funds (from municipal or central government) potentially backed by IFIs for project development and infrastructure delivery; and
- Private financing for the bus fleet and operations equipment through a combination of equity, debt and insurance/guarantees products.

255 Equity can be mainly provided by infrastructure funds through their shareholding in the SPC. Project debt can be provided by DFIs (defined as private lending arms of multi- or bilateral IFIs) and/or commercial banks. Often, international commercial banks have arranged vehicle financing with political risk insurance from export credit agencies supporting manufacturers' exports (. Locally, the banks taking project risks have been keen to take control of fare collection.

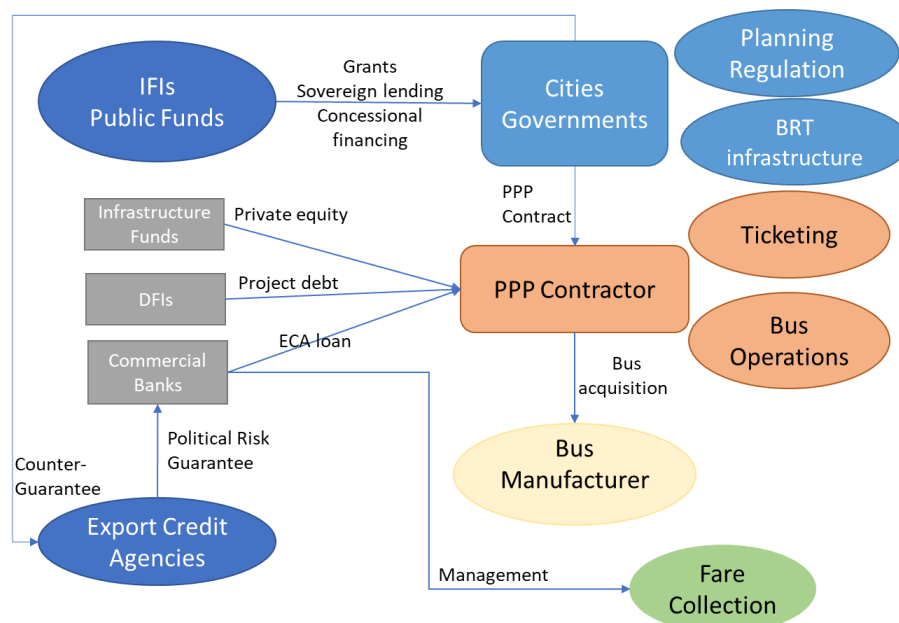
256 The investors interviewed stressed that for BRTs in SSA:

- The support of IFIs/DFIs will often be needed for the provision of funds (concessional sovereign lending and project debt) and credit enhancement products (political risk insurance in particular); and
- It is critical to the project’s financial viability that:
 - The required investment for the infrastructure be largely met by the public authority even in the “fully integrated” PPP scheme;
 - The financing be structured to minimize reliance on long-term financial support from public authorities for the operations; and
 - Guarantees be available to mitigate political risks.

257 It should be noted that the potential financiers for BRT projects in SSA are relatively few. Apart from the multi- or bilateral development agencies, which provide funding as credit enhancement products, the involvement of ECAs and international commercial banks is limited.⁴⁵ Therefore, the availability of financing outside of the DFIs is restricted.

258 Some investors referred to the potential to leverage climate finance to support the acquisition of electric buses. This refers to various forms of public and/or private financing supporting climate change mitigation and adaptation change. This financing source is outlined in Part 1 (see Focus on Climate Finance for BRT in section 5.1.3).

259 The diagram below represents the typical sources and flows for financing a BRT PPP project:



Source CPCS

Figure 4-3 Typical Sources and Flows of BRT Financing

5 | Investors' Assessment of Risks in BRT Projects

Key Chapter Takeaways

The integration and management of incumbent operators was viewed as a high risk by 88% of investors surveyed; the related risk of competition from incumbents was estimated to be high by 63% of respondents. Investors recommend this risk be addressed as early as possible in the project design stage, along with the need to: provide compensation where appropriate; involve incumbents in the provision of the new service; and minimize the negative socioeconomic impacts due to lost jobs. Investors made the following specific suggestions to address this risk: offer compensation for routes that will be rendered obsolete by the new service, and provide the opportunity to bid or participate in delivery of the new service upon commissioning. Informal sector incumbents can also be offered compensation if displaced by the new BRT service, or integrated into the workforce that operates the new service via bespoke training programs and initiatives

Fare levels, fare adjustment and fare affordability were viewed as high risks by 88% and 75% of investors surveyed. Ideally, fare levels must simultaneously support project feasibility and be affordable to users, although investors recognize that sometimes it is not possible to achieve this dual objective. The proposed mitigating strategies include minimum revenue guarantee mechanisms, possibly funded through waiving VAT or fuel surcharges.

Government subsidy risk and public authorities' default were both rated as high risks by 88% of investors surveyed. The recommended mitigation strategies include securing political risk insurance and providing capacity building to public authorities. Some private investors indicated they might choose not to become involved with a particular public counterparty, should they view it as untrustworthy.

Demand risk was rated as a high risk by 75% of investors surveyed. Investors recommended mitigations strategies such as: revenue guarantees, and effective mitigation of incumbent operator integration and potential competition.

Institutional capacity and overall project planning were viewed as a high risk by 75% of investors surveyed. Their proposed mitigation of this risk involves capacity building of public entities and the securing of more binding public sector commitments in relevant contracts. The key topics at capacity building events could include: management of complex projects; engagement of communities; and role of the public sector throughout the BRT life cycle.

Land and public infrastructure availability and the adequacy of BRT network design were rated as high risks by 75% and 60% of investors respectively. They recommended that several measures be taken to mitigate these risks, including customizing the network design to meet the specific physical attributes of the city, anticipating and minimizing expropriation requirements at the design stage and designing for a practical travel experience for users.

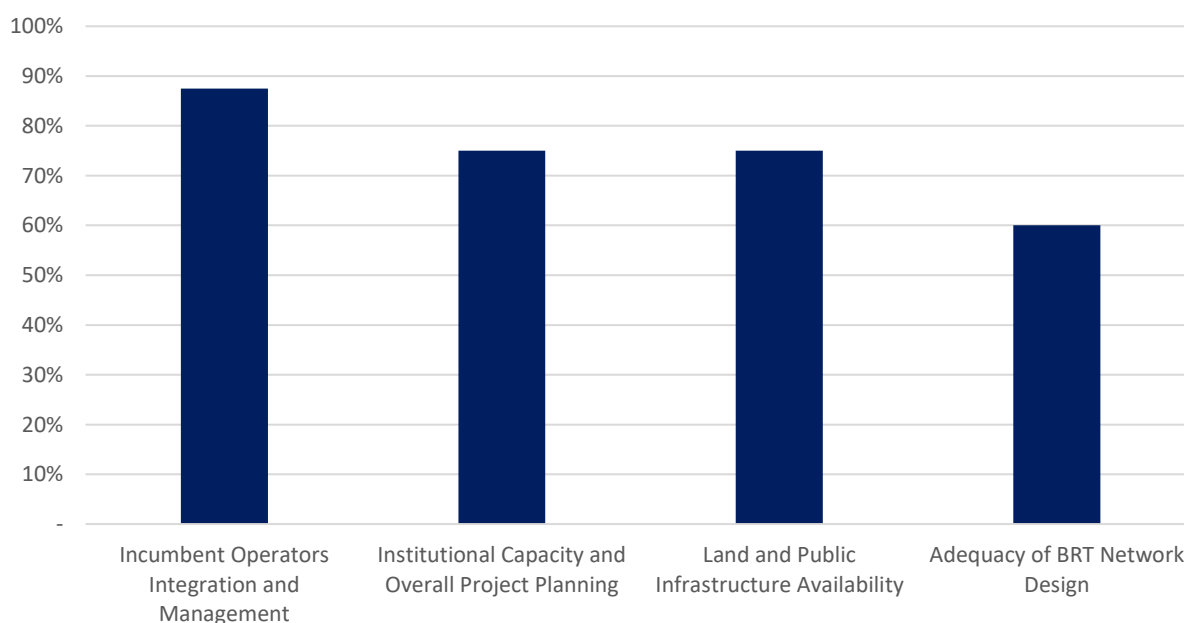
The stability and convertibility of local currency were rated as a high risk by 69% of investors surveyed. Mitigations strategies include partial local currency financing and exploring the willingness of development financial institutions to underwrite first loss insurance to a local currency instrument.

260 This section presents and analyzes the investor survey responses and investor consultations regarding key risks to investing and participating in SSA BRT projects. The approach is focused on the following risk categories in line with the previous working papers: development; construction; operations and maintenance; environmental and social; political, legal, and financial. The consultations demonstrated that specific risks from different categories have important interdependencies or underlying dynamics. These are discussed in a separate subsection at the end of this chapter.

261 Investors were asked to provide a risk rating on a scale from 1 to 5, where a rating of 1 represents the lowest risk and a rating of 5 represents the highest risk. In the analyses that follow, a high risk is considered to have a risk rating of 4 or 5.

5.1 Risks related to project development

262 In the questionnaire, investors identified three main risks related to project development: the integration of incumbent operators, the lack of adequate institutional capacity and difficulties regarding the availability of land and other public infrastructure. They also viewed the adequacy of BRT network design, permits and licensing and contract structure and procurement processes as high risk, but to a lesser extent than the first three variables. A few investors considered the adequacy of vehicle specifications to be a high risk. These results are presented in Figure 5-1.



Source: CPCS analysis of investor survey data

Figure 5-1: Percentage of survey respondents identifying development risks as high, n=16

263 Additional information on the investors’ perspectives on each of these risks is provided below.

Incumbent Operators: Integration and Management

264 A majority of respondents (88%) to the questionnaire indicated that the integration and management of the incumbent operators entailed a high risk with respect to BRT projects in SSA. This view was shared equally by all categories of investors. Consultations with investors further revealed that the integration of incumbent operators from the earliest stages of a BRT project is viewed as critical to project success.

265 Investors recognize that incumbent operators that either operate formally (such as licensed companies providing a bus service) or informally (unlicensed and unregulated services such as minibuses or taxis) serve a critical function in their area. Users are typically well-accustomed to the role of incumbents in the transportation ecosystem, and the operators of incumbent services rely on their custom. Due to these factors, incumbents represent critical stakeholders in any urban transit project. According to investors, incumbents must be properly compensated or integrated into the structuring of the contract in a manner that enables them to continue to earn a living.

266 Investors provided four main reasons why including incumbents in the project design and preparation process is important from their perspective:

- **Mitigation of process-related disruptions or obstacles at the design and preparation stages.** Incumbents who believe that their interests are not being duly considered and addressed may be more likely to create problems for project sponsors in the early stages through legal challenges or the use of local political capital to derail the project.
- **Mitigation of downstream competitive forces.** If incumbents are not included in a BRT project, they could continue their operations and create direct competition to the new BRT service. As users are accustomed to the nature and pricing of the service that incumbents provide, the latter would benefit from an inherent competitive advantage and negatively impact the anticipated levels of demand for the BRT project.
- **Mitigation of downstream security risks.** Incumbents who believe that they have been treated unjustly or were insufficiently compensated may engage in destructive activity towards fixed infrastructure assets, vehicles or service participants (users, drivers, and others).
- **Mitigation of higher-level socio-economic risk.** A failure to address incumbent concerns or provide them with the means to earn a living could lead to negative socioeconomic impacts for affected persons and businesses.

267 In order to address this risk, investors recommend engaging incumbents as early as possible in the project and arriving at a set of mutually beneficial solutions. Concerns identified by incumbents must be taken seriously and addressed directly. Some relevant suggestions by investors include: offering compensation for routes that will be rendered obsolete by the new service, as well as the opportunity to bid or participate in delivery of the new service upon commissioning. Informal sector incumbents can also be offered compensation if displaced by the new BRT service, or integrated into the workforce that operates the new service via bespoke training programs and initiatives. Incumbents can benefit from educational campaigns and programs offered on specific factors that maintain passenger demand and financial profitability, such as the provision of safe, clean, reliable and easy-to-use services.

Institutional Capacity and Overall Project Planning

268 Institutional capacity and overall project planning were identified as high risks by 75% of survey respondents. While operators and IFIs/DFIs perceived these issues as high risk, only 33% of private investment funds shared this opinion. Although investors recognized that their expertise was expected in specific areas of the project, they stressed the importance of the public sector's capacity and skills to help deliver BRT projects. However, public sector partners in SSA (such as municipal authorities, regional authorities, federal authorities, and transportation regulators) are viewed by many investors as lacking the necessary skills to support a trusted partnership for long-term, complex projects. There are concerns about their inability to accomplish assigned functions—such as community engagement—which are key to the success of BRTs. For investors, because BRT projects are linked to local issues and to the day-to-day lives of citizens, only the public sector authority can address elements of public stakeholder engagement.

269 Concerns were also shared about the public sector foregoing their responsibilities upon operational commissioning and leaving the private sector without support during the O&M phase of the project. To protect themselves against the risk of having essential support functions revoked by public participants, investors indicated that they are increasingly contemplating conducting rigorous due diligence on the strength of public partners prior to committing to projects. They would also like to write more binding public sector commitments into relevant contracts.

Land and Public Infrastructure Availability and Adequacy of BRT Network Design

270 The availability of land and public infrastructure and the adequacy of BRT network design were rated as high risks by 75% and 60% of respondents respectively in the questionnaire. Of the responses received, 75% of public transport operators, 83% of IFIs/DFIs, and 67% of private investment funds rated land and public infrastructure availability as a high risk. In comparative terms, 50% of public transport operators, 100% of international financial institutions and 0% of private investment funds rated adequacy of BRT network design as a high risk.

271 Follow-up discussions revealed that investors see these risks as a single interwoven consideration, because the availability of land and public infrastructure required for successful BRT implementation is dependent in large part on the adequacy of the BRT network design itself. The observations and mitigation strategies for these risks proposed by investors are presented below.

Customize the design to meet the specific physical attributes and constraints of the city

272 Newly developed African cities can more easily incorporate advancements in transportation technology and optimize city design for urban movement, whereas older African cities are often hobbled with an urban layout that is incompatible with modern transportation requirements. Designing a BRT network in cities not optimized for urban movement can be complex. Roads are typically narrow with curvatures not conducive to dedicated lanes, closed systems or increased bus traffic. Because of these physical limitations, land availability for both trunk routes and feeder routes can be an issue.

273 Several investors indicated that BRT network designs must be tailored to the city in which the project is implemented. They also indicated that applying a general design—or a configuration that proved successful in another city—may result in an inadequate and unsuccessful BRT project (as has been observed in some cases in SSA).

Design to anticipate and minimize expropriation and resettlement risks

274 According to investors, an optimal network design also considers the degree to which expropriation and resettlement risk impacts a project and how best to mitigate these risks. An inadequate design could result in land availability requirements that are simply unrealistic in terms of the numbers of people impacted by land acquisition activities. Under such circumstances, resettlement and compensation expenses could drastically and unexpectedly increase, potentially jeopardizing the project’s financial and political viability. Additional information on expropriation and resettlement risks is provided in Section 5.2.

Design for an easy and intuitive travel experience

275 Investors stated that network design and the manner in which it interfaces with existing public infrastructure can directly affect ridership and demand levels, in particular when it comes to integrating different routes and modes of travel. In their view, users of transportation services generally prefer services that offer an easy and intuitive travel experience. BRT networks that are poorly integrated with well-established and well-used public infrastructure may be unable to attract sufficient numbers of passengers or sustain the demand levels required for ongoing project viability. If the station infrastructure and routes are not designed to facilitate route transfers, ridership can suffer a “transfer penalty” whereby users are unaccustomed to transferring from one route to another and would simply prefer to pay for a point-to-point service.

276 In summary, network design and land/infrastructure availability are fundamental to project design for investors. They recommend that these aspects be considered with two key stakeholders in mind—the inhabitants of the land in the project area and the end users of the BRT service itself. They recognize that it is never straightforward to balance the costs and impacts of land requirements with designing a network that facilitates user adoption. However, they view the rigour and diligence with which these aspects are addressed at project inception as necessary to mitigate significant downstream risks and maximize the potential for successful outcomes.

Contracting Structure and Procurement Process

277 Contracting structure and procurement process was rated as a high risk by 56% of survey respondents overall. Some variation was observed among the different categories of investors, as 75% of public transport operators assessed this risk as high, compared to 50% for IFIs/DFIs and 33% for investment funds.

Procurement process

278 Several parties pointed out a risk in SSA related to lengthy procurement processes due to the lack of capacity to manage relatively complex projects. Several investors also mentioned numerous delays and interruptions, often caused by conflicts of interest among public entities.

This was especially the case for BRT projects, which involve and impact local labor forces to a greater degree compared to other infrastructure projects.

Contracting structure

279 Investors generally found that public partners can be difficult counterparties with which to negotiate, because they tend to seek an allocation of risks and revenue mechanisms deemed unbalanced and favoring the public authority. In addition, investors recommend that the public sector adopt a long-term perspective on BRT projects (similar to that of financiers) and adjust its expectations accordingly.

280 They also believe that contracts should be structured such that traffic and demand risk are properly allocated between private and public partners. They require transparent procedures for adjusting fares based on realistic operating processes and contingencies.

281 Finally, they would like the contract structure to incentivize the public sector's support beyond project preparation, procurement and delivery. Indeed, they attribute the failure of many projects to the public sector's lack of engagement after service commissioning.

Contract performance

282 Investors recommended the inclusion of unambiguous performance measurements and stipulations regarding quality of service calibrated to the operating environment in question (thus key performance indicators for BRT services in a well-developed city would not be uniformly applied in the same manner in a less developed city).

Adequacy of Rolling Stock Specifications

283 Although only 44% of respondents rated the adequacy of rolling stock specifications as a high risk in the questionnaire, consultations with vehicle manufacturers and operators revealed that this issue is more significant than the survey results would suggest.

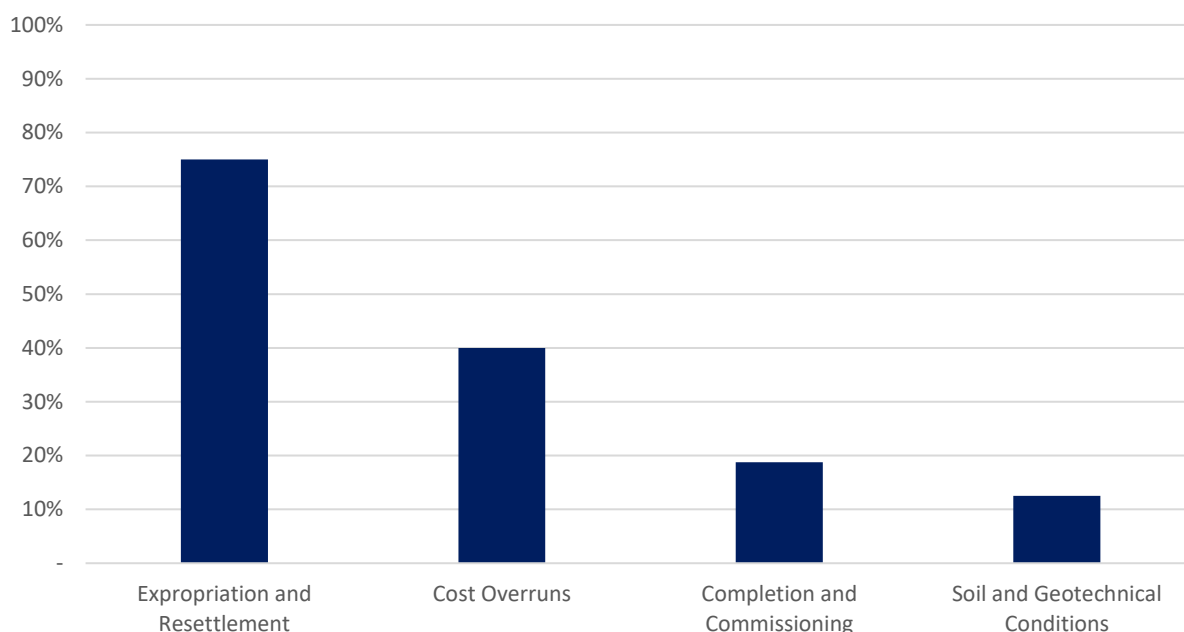
284 During discussions, investors emphasized ensuring the rolling stock specifications are appropriate for the BRT system as part of service and network design. While high capacity, articulated units may be appropriate for closed trunk routes, they may be unsuitable for feeder routes with weaker pavement (road surface) design or narrow widths. Similarly, procuring a fleet of high-floored buses that require boarding platforms at height may necessitate infrastructure unsuitable for the city in question.

285 They also stated that the fuel source for rolling stock should be carefully considered at project design, as it directly impacts rolling stock specification risk. Procuring appropriate reserves of common fossil fuels, such as gasoline and diesel, may be a problematic issue for certain cities. The same can be said for providing a reliable, stable and affordable power supply for an electric fleet. The rolling stock fleet and its fuel source should be viewed as part of a total transit solution for the city in question.

286 Decision-making regarding rolling stock specifications should be considered at the network design phase to ensure that the appropriate rolling stock is procured for the total systemic solution and within the constraints of the agreed infrastructure budget.

5.2 Risks related to project construction

287 A ranking of construction risks by the percentage of survey respondents who rated them as high is presented in Figure 5-2. The only high risk identified by survey respondents is that of expropriation and resettlement. Cost overruns, completion and commissioning and soil and geotechnical conditions were not viewed as high risks by survey respondents.



Source: CPCS analysis of investor survey data

Figure 5-2: Percentage of survey respondents identifying construction risks as high, n=16

Expropriation and Resettlement

288 The risks related to expropriation and resettlement were rated as high by 75% of survey respondents. Of the responses received in the questionnaire, 75% of public transport operators, 100% of international financial institutions and 67% of private investment funds rated this risk as high. Consultations showed that this issue is viewed as a critical risk and should be carefully addressed at the project design phase. Note that this risk is dynamically linked to the risk of land and public infrastructure availability and has been discussed in that context in Section 5.1.

289 For investors, a BRT network should be designed with the intent to minimize the need for expropriating land and resettling its inhabitants. Wherever possible, the construction of new corridors or the expansion of existing thoroughfares that do not interfere with existing settlements is preferable. Conversely, a network design that requires upgrading or retrofitting of infrastructure in populated areas served—nearby settlements—can create land acquisition and resettlement issues. Addressing this project element as early as possible can mitigate this risk significantly during project construction. Nevertheless, it is not uncommon for expropriation and resettlement to be required in African transit projects due to the encroachment of dwellings and small businesses on the shoulders of roads.

290 In the event of significant amounts of expropriation and resettlement in a BRT project, investors recommend addressing at least three considerations as early as possible and

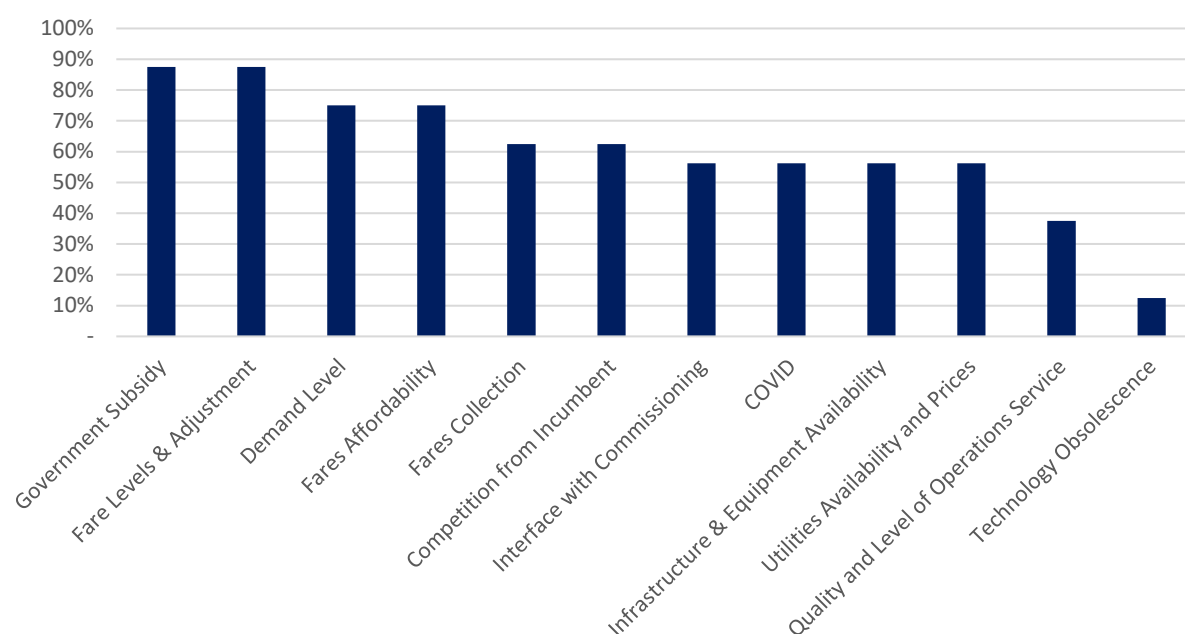
continually reassessing them throughout the project design, preparation and construction stages:

- **Ethical practices.** A major risk is the extent to which project sponsors can follow ethical practices in properly compensating and resettling populations affected by BRT projects. In emerging markets such as SSA, IFC's Equator principles and performance standards are generally viewed as the gold standard for planning and implementing such activities. However, misaligned priorities can violate these principles and standards and result in the unethical treatment of affected populations. The assessment of a project's ability to meet or exceed the Equator principles should be conducted early in the process and as often as required to mitigate the risks.
- **Political will.** Disrupting the lives of affected populations, whether settled legally or not, can create a backlash and render a project politically difficult for sitting administrations to champion. Public and private partners must work together to conduct appropriate community outreach to arrive at solutions that will reduce the likelihood of the project becoming politically unpopular, or associated political upheaval.
- **Financial cost of land acquisition and resettlement.** Depending on the magnitude and nature of affected populations, the financial costs of land acquisition and resettlement can be significant. Further, it is not uncommon for initial estimates of costs to be underestimated, resulting in unexpected additional expenses once resettlement activities begin. In some cases, once a project is announced, the cost of relevant land can become prohibitively expensive as speculative activity in the local real estate market increases. As soon as the decision to acquire land and resettle affected populations is taken, the process of community engagement and public education about the project must be carefully managed, in order to minimize the associated costs.

5.3 Risks related to Operations and Maintenance

291 A ranking of Operations and Maintenance risks by the percentage of survey respondents who rated them as high is presented in Figure 5-3. Risks rated as high by more than 70% of survey respondents are government subsidy, fare levels, demand levels and the affordability of fares. Risks rated as high by 50–60% of respondents include risks related to fare collection, incumbent competition, interface at commissioning, the pandemic, infrastructure and equipment availability and the availability and pricing of utilities. Survey respondents generally

did not view the quality and level of service or technological obsolescence as high risks.



Source: CPCS analysis of investor survey data

Figure 5-3: Percentage of survey respondents identifying Operations and Maintenance risks as high, n=16

Government Subsidy

292 The counterparty risk associated with government subsidy obligations was rated as high by 88% of survey respondents. This perception was shared among the different categories of investors; 100% of public transport operators, 83% of international financial institutions and 100% of private investment funds rated this risk as high. Many investors acknowledged that a negative perception exists in the broader market with regard to engaging municipal, regional and federal governments in SSA as counterparties for subsidies in a BRT PPP transaction. Some international operators emphasized that they would strongly prefer to contract with a private party—typically an SPC constituted for a PPP contract and capitalized by infrastructure funds—enabling them to avoid a direct financial arrangement with a local public authority.

293 Generally speaking, urban transit projects require some level of operational subsidy⁴⁶ to maintain service levels and strengthen the equity return profile to the point where private institutions are interested in participating in the project. Investors stated that, apart from conducting appropriate due diligence, there is very little they can do to compel a government to provide contractually agreed subsidization if it chooses not to for any reason.

294 Given the heightened complexity and the set of risks associated with BRT and urban transit projects, private partners value reliable public partners. They recommend that future

⁴⁶ Hoyos Guerrero, Alejandro; Lopez Dodero, Abel. 2021. Public-Private Partnerships in Urban Bus Systems : An Analytical Framework for Project Identification and Preparation. International Development in Focus;. Washington, DC: World Bank. © World Bank. Accessed via [the link](#)

capacity building with relevant government entities in SSA include a module on the reliability of the public sector.

Fare Levels & Adjustment and Fare Affordability

295 Risks related to adequate fare levels with a clear adjustment mechanism, and fare affordability, were rated as high by 88% and 75% of survey respondents respectively. Of the responses received, 75% of public transport operators, 83% of international financial institutions and 100% of private investment funds rated fare levels and adjustment as a high risk. By contrast, 50% of public transport operators, 83% of international financial institutions and 67% of private investment funds rated fare affordability as a high risk. Follow-up discussions with investors revealed that they see these two risks as closely interrelated aspects that should be assessed together. Their observations and recommendations for the combined risks are presented below.

296 The revenue forecasts for any urban transit project must be based on affordable fare levels for the users. According to investors, an appropriate analysis should be conducted to understand the fares that users pay for existing transportation services and what services are offered. In the event that comparable services do not exist in the city in question, appropriate benchmarks should be studied, and user surveys should be conducted to develop affordable fare levels. Investors are concerned that low public acceptance of fare levels and affordability issues will impact demand levels, which could jeopardize the project.

297 Investors also indicated that capping fare levels, through regulation or contractual provision, is a risk to be addressed at the due diligence/feasibility and contract negotiation stages. Any entity bearing revenue risk should collaborate with the public authority to understand the implications of any regulatory controls governing the adjustment of fare levels. Further, such entities should write reasonable and appropriate mechanisms into relevant agreements that account for the operational, financial and political realities of socially sensitive issues, such as adjustments to urban transit fares.

298 According to investors, governing authorities can only adjust fare levels one to three times per decade to avoid political and social opposition. This limits the ability to adjust fares as needed during a contract term. Political context and political capital are therefore significant considerations when considering fare levels and adjustment. For investors, a strong PPP agreement would ideally include a minimum revenue guarantee (MRG) mechanism, under which the fare level and demand risk borne by concessionaires would enjoy downside protection. However, paying out funds from public coffers under a minimum revenue guarantee may be politically unpopular. Creative solutions, such as waiving VAT or fuel surcharge payments from the concessionaire to the government, offer potential solutions for meeting MRGs without creating a political risk for administrations. MRGs can serve to de-risk the initial years of a BRT project and ensure that the internal rate of return or investment hurdle rate of the private partner is achieved.

299 However, even in situations where partners collaborate in developing robust fare strategies, predicted revenues may be insufficient to offset capital and/or operating costs and thus ensure that the project is viable. In such cases, fare levels should not be altered to the point where they are no longer affordable to users, as this solution is not sustainable. Although all avenues should be meticulously explored in search of a solution, it is possible that certain BRT

projects are simply found not to be financially viable. At this juncture, the best risk mitigation measure would be to either halt or restructure the project significantly.

Demand Level

300 Demand level was rated as a high risk by 75% of survey respondents. Of the responses received, 75% of public transport operators, 67% of international financial institutions and 67% of private investment funds rated this risk as high.

301 Investors believe optimism bias in the traffic operations prepared by third party consultants is a key issue in urban transit project preparation. In addition, their perception is that consultants used in this capacity are sometimes experts in toll road traffic forecasting, which is not the same as forecasting urban transit passenger flows. The result is that the demand forecasts employed for project financing purposes could be unusually high, paving the way for projects that subsequently prove to be financially unviable. Other risks that directly or indirectly influence passenger demand include fare levels and affordability, network design, fare collection and competition from incumbents.

302 Users of public transport services do not evaluate their transit options any differently from the way they assess other services they purchase—that is, on the basis of price and quality of the service on offer. Therefore, investors are concerned that if fare levels of the new transit service are prohibitively high—for the degree of safety, comfort, speed and convenience—passengers will continue to use other transit options. Investors also stated that the system used to collect fares can affect ridership. Therefore, they recommend selecting a collection system appropriate to the context; for example, they believe that a cash-based payment system may discourage people from using the service due to concerns about robbery.

303 Finally, investors indicated that competition from incumbents can prevent BRT services from capturing the requisite market share needed to achieve financial feasibility. Incumbents can undercut BRT fares and/or compete on speed, thereby retaining market share and undercutting ridership estimates. Further, incumbents can illegally use dedicated BRT infrastructure not properly closed or secured, which creates operational and quality issues for the BRT service.

304 Overall, investors view demand risk in BRT and urban transit projects as multi-faceted and complex—even in cities where informal transportation service providers do not exist. Therefore, carefully considering the nuances and complexities of the transportation context in question at the earliest possible stage is essential to project success. All related risks must be identified, and their dynamic interaction with demand risk must be properly understood. Only then can demand risk be effectively mitigated and allocated to project stakeholders. As with fare level adjustment, mitigation measures suggested for demand level risk include MRGs, where the mechanism for meeting this obligation is through the waiver of VAT and fuel surcharge payment as a first mechanism of relief—followed only by direct payments from public coffers when necessary.

Fare Collection

305 Fare collection was rated by 63% of survey respondents as high risk. Of the responses received, 50% of public transport operators, 50% of international financial institutions, and 67% of private investment funds rated this risk as high. The ability to collect fares and avoid fare

evasion is a key element of any urban transit system and one that must be considered from project inception to maximize the potential for successful financial outcomes.

306 The investors consulted agreed that fare payment systems should be both cashless and compatible with both customer-facing infrastructure (that is, “front-end” systems such as payment options, interfaces and accessibility at terminals, on buses or in local stores) and accounting and fund management infrastructure (that is, “back-end” systems such as reporting, commercial banking, and so forth). Investors think that many consumers in SSA use mobile phone applications and services for their banking needs. Mobile banking and finance are generally more secure than cash transactions. In some cases, transit fares can represent a significant portion of an individual’s monthly earnings, so carrying cash to use transit can discourage ridership. Investors encourage payment mechanisms for BRT and urban transit in SSA to dovetail with prevailing customs and standards of payment and banking in the city in question.

307 One stakeholder in ticketing systems suggested that local commercial banks could be logical partners for the development and operation of both front-end and back-end fare collection and fund management systems. These institutions know the habits and preferences of their customers, many of whom are and have likely played a main role in the development of existing customer-facing payment and banking systems. Including commercial banks in the process of front-end system design as consultants could optimize the user experience and lessen the risk of poor demand realization. Further, involving commercial banks in the back-end process design could facilitate reporting and fund management processes for the private partner.

308 Finally, investors recommended attention to fare collection as early as possible, including at the system design stage. They also advised that a BRT service should have a closed system with a public side and a “paid” side, to which users only gain access once they have paid the fare.

Competition from Incumbent

309 Competition from incumbent operators was identified as a high risk by 63% of survey respondents. Of the responses received, 75% of public transport operators, 50% of international financial institutions and 100% of private investment funds concurred. Competition from incumbents is intimately linked to the integration (or otherwise) of incumbents in project development, as previously discussed in Section 5.1. This section focuses on the risk of incumbent competition upon commissioning and operation.

310 Investors deem competition from incumbents to be a serious risk that can erode ridership. If improperly integrated and included in project design and preparation, incumbents can continue to operate on the margins with much lower upfront or sustaining capital requirements. Incumbents can then pass these savings on to users, undercutting BRT fares and allowing them to retain or even increase their market share. If the BRT network design does not provide for dedicated and closed lanes with priority signaling at intersections, incumbents can use the bus lane or create transit bottlenecks at intersections, thereby contributing to degraded service quality and eventually ridership.

311 Mitigation is best achieved at project design and development, such that the influence of incumbents on future ridership is minimized and system design is optimized to provide for a seamless, reliable and safe user experience via a closed system.

Utilities Availability and Pricing

312 The availability of utilities and their pricing was rated as a high risk by 56% of survey respondents. Of the responses received, 50% of public transport operators, 67% of international financial institutions and 33% of private investment funds concurred. Investors deem the stability, reliability and security of energy sources for station infrastructure as well as rolling stock to be a key operational risk. They recommend addressing the risk at the system design stage, when the appropriate total solution is being developed for the city or locale in question.

313 Investors view technological advancements in electric batteries and buses (EV) as encouraging. However, they also believe that EV solutions alone may not be viable in some SSA cities. Security and reliability of power supply is an ongoing concern in many SSA nations, and imposing additional requirements on the grid to power a fleet of electric buses may not be viable without auxiliary investment in power generation and transmission infrastructure (which itself can be significant). Investors added that power pricing could change unpredictably and adversely affect financial viability in unstable or unregulated power markets.

314 Finally, investors recommended carefully considering the choice of energy source at the project design stage, ensuring that the appropriate rolling stock and supplies of fuel or power are in place, and accurately developing related operating costs. These elements are a critical component of a total solution for a city's transit needs and should not be considered in isolation from other project elements or prescribed without due diligence and analysis.

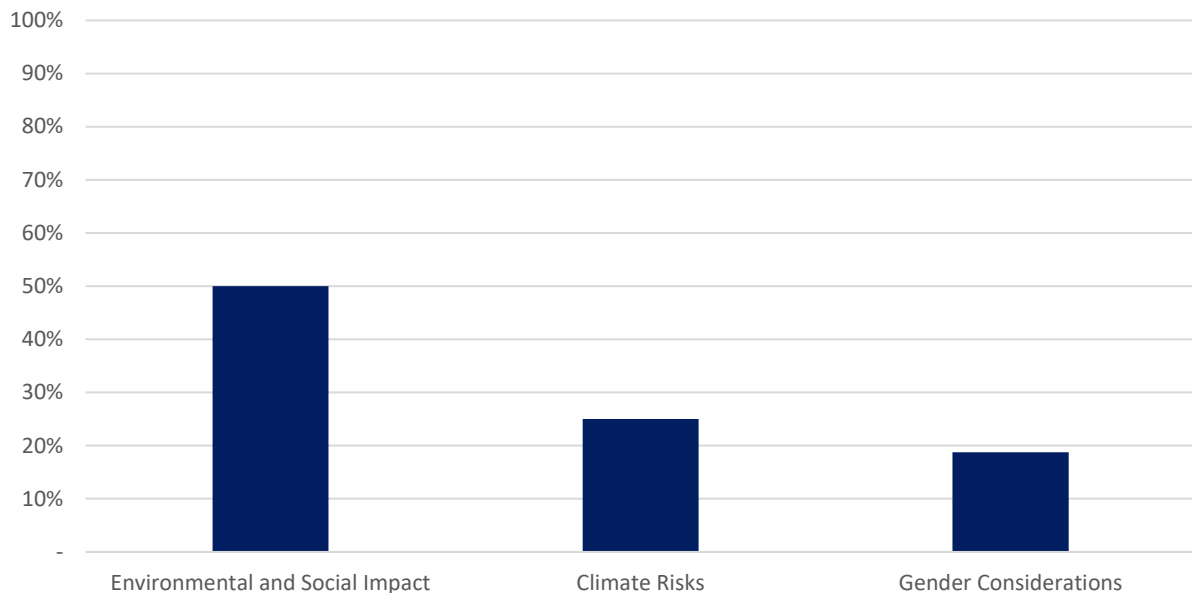
COVID-19

315 COVID risk was rated as a high risk by 56% of survey respondents. Of the responses received, 75% of public transport operators, 33% of international financial institutions, and 33% of private investment funds rated this risk as high. For investors, the prevailing view is that the uncertainty associated with COVID is significant, and that existing urban transit projects will suffer in the short to medium term via reduced ridership levels. Projects in development are likely viewed as riskier due to the pandemic, even if they are scheduled to be commissioned in the future when COVID will potentially no longer be a concern.

316 In addition, they are concerned about a reduced ridership after COVID on urban transit projects, as habits have changed in response to the pandemic (for example, more people are working from home). If these changes remain permanent, urban transit ridership volumes could suffer indefinitely. Conversely, for the vast numbers of people who cannot work from home, the new habits could accelerate the adoption of new technologies that public transit passengers could use on a daily basis. In particular, it could stimulate cashless payment mechanism. On balance, investors' sentiment towards COVID risk is centered around uncertainty around ridership levels and a reluctance to take the corresponding revenue risk.

5.4 Environmental & Social risks

317 A ranking of environmental and social risks by the percentage of survey respondents who rated them as high is presented below.



Source: CPCS analysis of investor survey data

Figure 5-4: Percentage of survey respondents identifying environmental and social risks as high, n=16

Environmental and Social Impact

318 Environmental and social impact risk was rated as high by 50% of survey respondents. Of the responses received, 75% of public transport operators, 50% of international financial institutions, and 33% of private investment funds rated this risk as high. However, investors did not demonstrate much interest in discussing this risk during the consultations. When they did, they mostly focused on the social risks associated with the new transit systems, and their effects on everyday citizens as well as on incumbent operators. Some investors stated that the totality of the transit solution should, on balance, improve the lives of citizens. Social risks of new BRT systems include additional congestion and negative impacts on existing residential zones due to poor system design, as well as adverse impacts on the livelihoods of incumbent operators who have been improperly integrated and managed. Generally, investors viewed environmental and social risks as an aggregation of other risks discussed in this document.

Climate Risks

319 Climate risks were rated as a high risk by 25% of survey respondents. Of the responses received, 25% of public transport operators, 17% of international financial institutions, and 33% of private investment funds rated this risk as high. Discussions regarding climate risk were centered around the choice of fuel for rolling stock in the context of providing the right solution for the city in question.

320 Investors with a focus on climate risk discussed the concept of well-to-wheel emissions reductions and how prescribing a fuel source for a particular city before analyzing the implications and feasibility is viewed as a major problem in delivering climate-friendly BRT projects. For example, implementing an electrified solution in a city where large-scale power is supplied by fossil fuel generation facilities may not be better than implementing a diesel-powered solution. In such cases, dedicated generation assets and mini-grids may need to be

scoped into the project to achieve emissions reductions objectives. This, however, could impair the financial viability of the project.

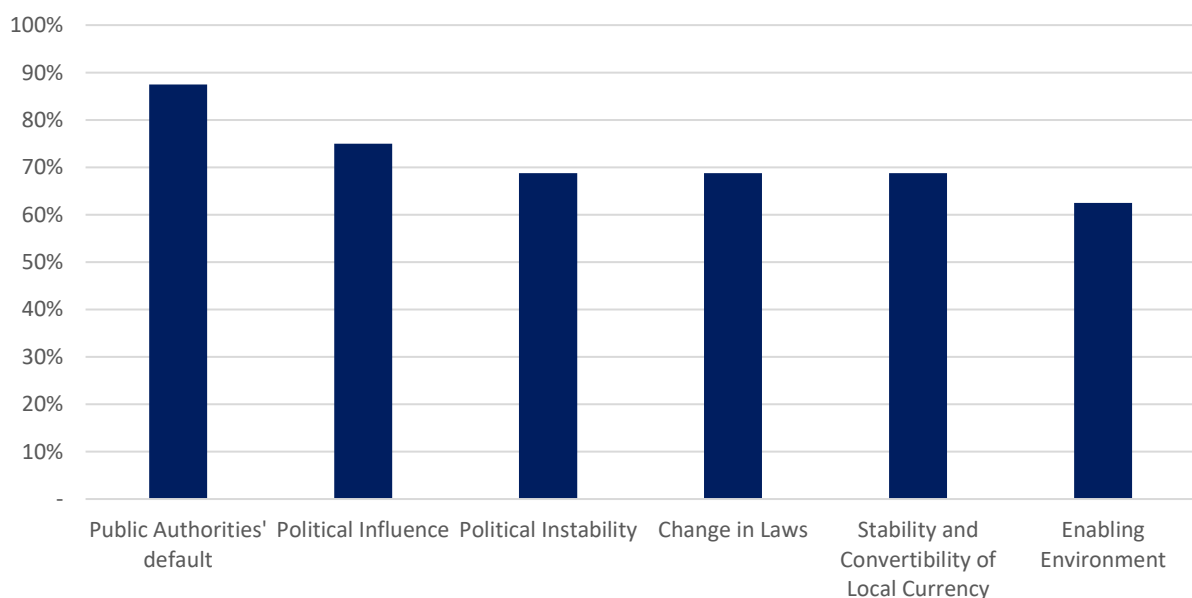
321 Some investors who prioritized climate risk believe that the totality of a city’s characteristics, risks and constraints should be studied prior to making binding decisions about BRT fuel sources. They also view BRT projects as a potential avenue for capitalizing on opportunities to address multiple problems in a given city. For instance, many cities in SSA have waste management problems, and the possibility of converting waste into biofuel for use in BRT or other transit applications could be an opportunity worth further consideration. Overall, investors believe that climate risk should be addressed in a holistic fashion that contributes to a comprehensive solution for both transit and non-transit related problems.

322 Some IFIs/DFIs noted that the strategic orientation of their organizations prioritizes climate change. Some require projects financed by them to comply with provisions of the Paris Agreement. In these cases, the relevant organizations have internal tools that allow them to determine if a project under evaluation for financing is addressing climate change or mitigating climate impact. Urban mobility projects such as BRTs are of interest to such organizations, since urban mobility projects have an impact on climate change.

Gender Considerations

323 Gender considerations were rated by 19 percent of investors as a high risk. Investors commented that implementing gender-friendly designs such as closed systems with ample security would discourage gender-specific crime and allow users who identify as female to feel safer, thereby encouraging their use of the system. Furthermore, investors noted that the integration of incumbent operators through the establishment of formal labor forces for BRT projects would offer opportunities to provide technical training to women. This would contribute to workforce diversification and empowerment.

5.5 Political, legal, and financial risks



Source: CPCS analysis of investor survey data

Figure 5-5: Percentage of survey respondents identifying Political, Legal, and Financial risks as high, n=16

Public Authorities' Default

324 Public authorities' default was rated as a high risk by 88% of survey respondents. Of the responses received, 75% of public transport operators, 100% of international financial institutions and 100% of private investment rated this risk as high. Closely linked to the government subsidy risk, the risk that authorities will default on project level financing commitments is related to the reputational concerns about municipal, regional and federal authorities (previously discussed). Investors are generally wary of the creditworthiness and counterparty risk of public authorities in SSA. Even with political risk insurance, investors are reluctant to commit time, effort and funds towards the advancement of a project with a high risk of public partner default. This risk is even greater in financially unviable projects, such as BRT or urban transit projects.

325 Potential mitigating measures include targeted capacity building with relevant government institutions that emphasizes meeting financial obligations, building reputational capital and achieving robust credit histories. Restructuring and modernizing processes within the relevant public authorities could improve their handling of public projects and strengthen their reputations in the eyes of private investors.

Political Influence

326 Political influence was rated as a high risk by 75% of survey respondents. Of the responses received, 50% of public transport operators, 83% of international financial institutions and 100% of private investment funds rated this risk as high. Investors recognize that in developing economies, formal and informal groups can wield significant political influence. In particular, incumbent operators of transportation services can represent a major political risk to the approval of BRT projects. Investors believe that improperly managed incumbents at project design and preparation stages can disrupt and impede project approval and delivery. This risk can be mitigated to some extent by developing a comprehensive management and integration plan. As such, key stakeholders should be involved in the process as early as possible to address their concerns (rather than antagonizing them as a "problem" that needs to be dealt with). If incumbents are made to understand how they can benefit from a BRT project, they will be less likely to disrupt it.

Political Instability and Change in Laws

327 The risks of political instability and changes in laws were both rated as high by 69% of survey respondents. Of the responses received, 50% of public transport operators, 67% of international financial institutions, and 67% of private investment funds rated political instability to be a high risk. By contrast, 50% of public transport operators, 83% of international financial institutions and 33% of private investment funds rated change in laws as a high risk.

328 Consultations showed that investors need to be confident that their investment in a project is adequately protected from political instability or changes in law and regulations through some combination of contractual provisions, sound project structuring and/or political risk insurance.

Stability and Convertibility of Local Currency

329 The stability and convertibility of local currency is viewed as a high risk by 69% of survey respondents. Of the responses received, 50% of public transport operators, 67% of international financial institutions and 100% of private investment funds rated this risk as high. Many of the infrastructural components required in BRT projects are not manufactured in SSA and must be imported. These components are typically priced in USD, Euros or GBP, while project revenues are typically denominated in local currencies.

330 Local currencies in SSA can exhibit considerable volatility in international foreign exchange markets. This creates an immediate risk to capital investment in currencies from a developed market. While some countries in SSA have local currencies pegged to developed market currencies (for example, the Euro), others present notable currency fluctuation issues. Though pegged currency economies are not without risks,⁴⁷ investors view the capital markets in such countries to be deeper than in those without a pegged currency. The former offers longer term debt instruments denominated in local currencies.

331 In countries that do not peg currencies, foreign currency markets trading in their local currencies often do not write securities that extend beyond two or three years. This is far too short for longer-lived projects, such as BRT and urban transit projects. In these countries, it is recommended that currency exposure in the capital structure be reduced in the first place by financing a proportion of the capital structure with local currency. However, investors noted that each case is different; there is no one effective solution for mitigating this risk. To secure domestic capital for financing purposes, certain credit enhancements must be made available to these local currency instruments. For example, if an IFI/DFI would be willing to underwrite first loss insurance to a local currency instrument, then domestic capital could be effectively mobilized to provide local currency financing to a SPC delivering a BRT project.

332 Overall, currency risk is viewed as significant by private investors, and it often remains difficult to mitigate in SSA. Consultations revealed that if IFIs/DFIs could support the mitigation of this risk, other private investors may be more willing to participate in BRT projects.

Enabling Environment

333 The enabling environment was viewed as a high risk by 63% of survey respondents. Of the responses received, 75% of public transport operators, 100% of international financial institutions, and 100% of private investment funds rated this risk as high. This risk category is a major focus of the due diligence they conduct in any circumstance. Elements typically considered include rule of law, central bank policies and relevant regulatory frameworks. Many countries in SSA are viewed to be relatively weak in these areas. A suggested area of improvement could entail capacity building, with public authorities focusing on maintaining rules and regulations, and resolving commercial disputes through reliable and transparent processes to enhance investors' confidence in partnering with public authorities.

⁴⁷ Notably, the requirement to hold significant foreign exchange reserves to defend against inflationary pressures and the potential for significant devaluation.

5.6 Investors' Perspective on the SSA and BRT Markets

334 In the questionnaire and the live discussions, investors were invited to share their opinion on whether risks were more prevalent in the SSA market than in other markets, and if they were different for the BRT market as opposed to other urban transit projects.

Risks more prevalent in SSA compared to other markets

335 In the questionnaire, out of the 17 investors who responded to the question, 12 investors indicated that they indeed perceived the SSA market as riskier than other geographic areas. These 12 investors included companies based in SSA, and companies based in other geographic areas with experience in SSA as well as in other regions. The majority of respondents had a previous BRT or urban transit experience in SSA. All investment funds who responded to the question indicated that the SSA market was riskier than other markets. Opinions were divided for the other categories of investors.

336 Some investors elaborated on the response and specified which risks were more significant in SSA. These risks are presented below by order of increasing recurrence of the response:

- Country/political instability;
- Change in laws/regulations;
- Foreign exchange currency/convertibility risk;
- Incumbents remain unintegrated in mass transit operations; and
- Subsidy risk.

337 Five investors responded that there was no difference between the SSA market and other areas. The live consultations confirmed the different opinions on the risk level of SSA.

BRT risks versus risks for other urban transit projects

338 Similarly, investors were asked if they perceived BRT projects as riskier than other urban transit projects. Eleven investors responded to this question specifically in the online survey; of these, a majority indicated that there was no difference between BRT and other urban transit projects.

339 Investors who responded that risks were more pronounced in BRT projects than in other urban transit projects gave the following reasons:

- The difficulty of planning, designing and constructing a dedicated lane for BRTs in busy urban networks;
- The complexity of interacting within a broader public transport system;
- Conflict with minibus taxi operators and incumbents;
- Political risks, as politicians tend to intervene more in bus systems, as opposed to metro systems, under the assumption it is easier to replace operators or adjust fares; and
- Metros are larger and more stable projects than BRT projects.

340 One investor indicated that BRTs were actually less risky during execution than other urban transit projects given the less complex physical infrastructure to be built compared to other urban transit projects (such as LRT or metro).

6 | Key Overarching Findings

Key Chapter Takeaways

The main investors identified in the finance landscape analysis of the BRTs commissioned in SSA were commercial banks and IFIs/DFIs. Consultations conducted as part of this study confirmed the significance of IFIs/DFIs but also revealed interest on the part of other actors within the ecosystem.

Investment funds investing in African infrastructure expressed a keen interest in participating in the development of BRT networks in the main cities of Sub-Saharan Africa under PPP schemes. Commercial banks, on the other hand, did not convey a similar interest. This seems to be a result of the sensitivity to the perceived political risks of these projects in SSA.

Investment funds favor PPP structures that integrate infrastructure construction, fleet provision and bus operation, but they also recognize that the project's financial viability requires significant public funding for BRT infrastructure.

International operators are also cautious in their approach to this market and appear reluctant to take on traffic risk or acquire rolling stock. Their preference is to participate in BRTs through O&M contracts.

Bus manufacturers stress the scarcity of financing for their products in this region. The typical scheme, in which financing is provided based on ECA support, is rarely observed in the region.

6.1 Key Findings on the current financing landscape

502 The initial market assessment of the financing landscape in SSA demonstrated the recurrent participation of several actors in BRT financing in SSA. It also identified the challenges faced by each of these players, as summarized in the following table:

Stakeholder	Challenges	Business line/ Opportunities
IFIs	<ul style="list-style-type: none"> • Challenges in management of planning and implementation risks. • Difficulties in managing stakeholder engagement within the scheme development process. • Local constraints and context when developing the project structure and guiding government agencies towards the appropriate scheme definition. 	<ul style="list-style-type: none"> • Sharing of international experience and best practices. • Scheme definition and development. • Grant funding of scheme feasibility, development and capacity building. • Concessional financing to governments for infrastructure. • Concessional finance to governments to support vehicle fleet procurement.
Investment funds – Public	<ul style="list-style-type: none"> • Lacking the effective mechanism to invest in urban transport. • Potentially insufficient returns or higher perceived risk to urban transport investment in SSA. 	<ul style="list-style-type: none"> • Fully integrated scheme of BRT PPP with government and project guarantee may attract investment funds for the large scale of investment.
DFIs	<ul style="list-style-type: none"> • May lack local knowledge/market understanding. • Governance issues may present hurdles to investment in public transport operating sector. 	<ul style="list-style-type: none"> • Market rate loans to private sector. • Cofinancing with other financing institutions to share risk and support project viability.
Private Investment Funds	<ul style="list-style-type: none"> • Challenges may be similar to those identified for public investment funds. 	<ul style="list-style-type: none"> • A fully integrated PPP scheme with adequate guarantees could induce investment funds to participate on the considerable scale needed.
Commercial Banks	<ul style="list-style-type: none"> • Typical lending terms within the SSA context mismatched with the requirements for fleet investment: 	<ul style="list-style-type: none"> • Export Credit Intermediary. • Letter of Credit (LC) to support fleet procurement.

	<ul style="list-style-type: none"> ○ Short tenor (typically up to 3 years maximum) ○ Preference for lending in local currency ○ Onerous down payment requirements and hazardous chattel security conditions <ul style="list-style-type: none"> ● Aversion to lending to existing transport operating sector (often following past experience of default). ● Preference to finance small pilot lending projects to allow the risk and profitability to be assessed before extending further lending. This conflicts with the high initial investment requirement for commencement of BRT operations. ● Skepticism regarding sustained political commitment to urban mobility projects. 	<ul style="list-style-type: none"> ● Commercial lending to private sector operators for fleet investment. ● Management of ticketing and revenue collection. <p>Intermediary agency in revenue distribution.</p>
Operators	<p>Local Operators:</p> <ul style="list-style-type: none"> ▪ Fragmented operating sector with large numbers of small-scale operators. ▪ Informal operators typically lack creditworthiness criteria to access commercial finance. <ul style="list-style-type: none"> ● Operators often lack the technical capability to manage and operate formalized services and therefore may require capacity building to enable them to effectively deliver the desired standards of service. 	<ul style="list-style-type: none"> ● Local Operators: <ul style="list-style-type: none"> a) Formation of cooperatives or operating companies; b) Fleet investment – often with small equity component and commercial loan or lease arrangement; and c) Depot equipping and operation.
	<ul style="list-style-type: none"> ● Local bias and insufficient political support. 	<ul style="list-style-type: none"> ● International Operators:

	<ul style="list-style-type: none"> • Lack of knowledge of local operating environment. • Perceived risk of operations in certain countries. 	Partnership with local operators to form a joint venture for operating the BRT service.
Bus Manufacturers	<ul style="list-style-type: none"> • High import duties on imported vehicles and parts, unless these are waived under the terms of the publicly promoted project. • Challenging environments in which to establish workshops and to train local staff in the operation and maintenance of vehicles. 	<ul style="list-style-type: none"> • Vehicle finance through manufacturer financial arm (often with support of Export Credit). • Fleet maintenance contract. <p>Design and construction of supporting facilities--depot, bus priority infrastructure, stations and terminals.</p>
Other	<ul style="list-style-type: none"> • Lack of strong regulatory framework enabling the business operation. • Doubts about the potential scale of return. 	<ul style="list-style-type: none"> • Terminal/depot development opportunities for land developers.

Table 6-1 Summary of Actors and Associated Challenges in Commissioned BRTs in SSA

6.2 Investors' appetite for BRTs

341 Consultations held with a variety of stakeholders reveal that the main investors most likely to invest in BRTs are private investment funds and IFIs/DFIs. The appetite for participation by commercial banks and operators currently appears to be limited.

A timid response from commercial banks

342 Commercial banks were a notable element of the initial financing landscape analysis of the BRT projects commissioned in SSA. However, their responsiveness to the invitation to this consultation was very limited. This could suggest a limited interest in future BRT projects or a lack of understanding of the opportunities BRT projects could generate.

343 Information collected indicates that commercial banks are wary of assuming political and demand risks. In addition, they are keen on controlling the ticketing system to be able to monitor actual revenue generation when they do invest in BRTs.

The appetite of private investment funds (in principle, at least)

344 Contrary to commercial banks, private investment funds were keen to contribute to this exercise. The consultation confirmed that they see BRT projects in major African capitals as real opportunities.

345 However, they need to leverage their capital investment to achieve their targeted profitability (that is, raise a relatively large amount of debt to complement their equity). As commercial banks have little appetite for political and demand risk, this remains difficult. In addition, they described the significant challenges they face with BRTs. These include the relatively low expected financial returns in urban transport projects, combined with a higher perceived risk of investment (in comparison to other infrastructure investment in the African context).

IFIs and DFIs

346 Although many IFIs and DFIs are keen to contribute to future BRT opportunities, some expressed a hesitation as a result of difficulties encountered on previous BRT projects. The IFIs and DFIs with an interest in future BRT projects recognize the risks related to foreign exchange, politics, and institutional capacity, and would like to seek strategies to mitigate them.

The cautious interest of international operators

347 Although international operators have not been involved in BRTs in SSA to date, they were very responsive to the consultation invitations and expressed an interest in future BRTs in SSA. Some of them expressed a particular interest in the upcoming BRTs in Dakar and Abidjan.

348 The consultation confirmed that operators are reluctant to work in regions where the political and institutional framework is potentially unstable and the local public transport sector undeveloped and not formally organized. In addition, similarly to export credit agencies and commercial banks, international operators expressed concerns about political risks in SSA. Their other major preoccupation is the integration of local practices and workforces into the newly implemented BRT network. Paradoxically, they stress that the lack of local capacity—and competition—for bus operation and maintenance is more of a threat than an opportunity. They

are reluctant to invest required resources to start new operations, knowing that they will not be able to rely on the local market (at least at the beginning) to support them.

349 Importantly, operators are not comfortable with taking on traffic risk, and they are not interested in acquiring rolling stock (although they did it in specific cases). They consider entering this market on the basis of performance contracts signed with the SPC constituted within the PPP framework and capitalized by financial sponsors—preferably private.

6.3 Key Observations and Recommendations from the Private Sector

350 During the consultation, investors and stakeholders also shared insight on key elements of a BRT development that warrant attention and that, if properly addressed, would render participation far more attractive.

Importance of public authorities' roles and actions

351 All investors stressed the primary importance of the public stakeholders' active role across the project life cycle and the specific challenges of BRT projects. They believe that local public authorities are responsible for identifying the BRT trunk roads and feeder routes in accordance with passenger needs. They are also responsible for identifying the social impacts of project implementation and managing it (for instance, through expropriation, population displacement and resettlement).

352 The public sector is also primarily responsible for organizing the integration of local operators within the BRT operations, or at least setting up an institutional framework enabling the proper inclusion of incumbent operators—formal or informal. This is one of the most important issues to be addressed. Finally, the public sector should devise an affordable tariff scheme, forecast the financial sustainability of the commercial operations and identify and pay for any viability funding gap.

353 Investors also indicated that the public authorities have to manage the required procurements for the delivery of BRT components and, during the operational phase, ensure adherence to the tariff setup, network safety and rights of way.

Sensitivity to development and political risks

354 The main concerns of potential investors include: the integration of existing operators; the institutional capacity to plan, design and manage the project; and the availability of land and associated expropriation or resettlement.

355 Investors are concerned about issues related to traffic risk and fare affordability. Even more important are concerns about the payment of potential government subsidies and the mechanism for fare adjustment. This, again, reflects the sensitivity to political risks in general.

Support from IFIs

356 The consultations revealed the need for IFIs/DFIs to be involved in the preparation and financing of BRT projects in SSA, continuing to:

- Provide technical assistance and grant funding to the definition and development of relevant schemes as well as contribute to the capacity building of public authorities;
- Possibly provide concessional financing to governments; and

- Provide project financing and credit enhancement products through their dedicated arms for the rolling stock and operations investment.

357 However, reference was also made to the minimum standards of IFIs, which tend to push up project costs to meet relatively high specifications.

Primacy of local considerations

358 BRT projects are public infrastructure aiming to serve a large urban population. Therefore, investors believe that they must be integrated into the urban fabric in a manner that elegantly accommodates its geometry and complexity. This applies to any other mode of public transport mode, but for BRT projects it is particularly crucial. This urban fabric includes existing road networks—serving industrial and social activities—that heavily influence present and future population movements.

359 They stress that making the relevant choice for a BRT network requires an understanding of city dynamics in terms of population movements, cultural habits and growth. It also entails anticipating the impact of the new infrastructure on how people move and their everyday activities. This is especially relevant in the African context.

Electric versus diesel

360 In a context of increasing pressure on all stakeholders (both public and private), to contribute to the development of sustainable infrastructure to minimize climate risk, there is no consensus among investors on the preferred bus option between electric and diesel. While the bus manufacturers consulted promoted their technology, operators and finance providers offered different opinions. Some recommended the development of electric buses in Africa to pursue sustainability goals and to tap into climate finance sources. Others viewed the initial investment costs as too high, in view of the deficit in power production and the steep learning curve in prospect to maintain and operate electric buses.

361 Some investors also indicated that the initial acquisition cost of electric buses is twice that of diesel buses; to render the proposition attractive, the cost difference must therefore be recovered through energy savings over the life cycle of the bus.

Scarcity of available financing

362 The market analysis has also confirmed that the financing sources and products available for BRT projects in the developing countries have been relatively limited.

Infrastructure delivery

363 Investors were in agreement that most if not all BRT infrastructure should continue to be financed by the public authority; achieving commercially viable operations which cover fleet investment is already a challenge.

Fleet provision

364 In some cases, buses have been financed by private operators, which have been able to arrange the required financing from local commercial and development banks (such as DBSA in South Africa and BNDES in Brazil). In other cases, international manufacturers have been able

to help raise finance through the assistance of the home country export credit agency to cover political risks.

365 Commercial banks, development banks and the export credit agency which contributed to the consultation shared contrasting insights on their experience delivering private financing for BRT vehicles and operations. The challenges are mainly derived from a lack of sustainable political support and default.

366 Consultations also revealed that the actors in the BRT financing space are limited, with active export credit agencies mainly from Sweden, Germany and China. In addition to private commercial banks, a limited number of local banks have been involved in operational schemes alongside the development banks.

367 In terms of financing products, the main instrument for the private operator is project debt; the issuer eventually benefits from political risk coverage through an export credit agency or a direct guarantee from the government.

368 Despite the potential advantages of leasing, there has been no evidence of a suitable leasing solution for bus financing in the SSA context. This is explained by the rapid depreciation of buses, compounded by a BRT system design that relies on buses unsuited to other systems. Therefore, extensively customized buses have no residual value at the start of operations. Another consideration raised by investors was the cost of insurance, with default policies excluding cover for damage caused by public unrest or strikes (one operator mentioned that it was subject to negotiation).

369 In fact, manufacturers consistently indicated that the main challenge from their perspective is financing the rolling stock. One manufacturer of electric buses stated that they were trying to develop and implement leasing solutions for the bus batteries to ease the financing of their production.

370 In summary, investors indicated that private project companies responsible for rolling stock acquisition and operation equipment have few financing solutions through PPP arrangements. Some exceptions were cited, notably instances when the development banks and ECAs covered for the political risks and support was given to national bus manufacturers.

7 | Recommendations for Successful BRT Projects with Private Sector Participation

Key Chapter Takeaways

The private sector's input is key to better develop financially viable BRTs. Nonetheless, the public sector's policy objectives and interests—and passengers' preferences and problems, which may conflict with those of the private sector—also warrant close attention. Recommendations to enhance the likelihood of success of BRTs include: improve the enabling environment; dedicate the time and effort needed in upstream planning activities; design BRT to fit local needs and ensure alignment with cost considerations; explore the full range of financing options available for rolling stock and equipment; and maintain the public sector's support during the O&M phase. The public sector and IFI/DFIs can help de-risk BRT projects.

Many investors view the SSA market as particularly risky, compared to other geographic markets, because of:

- Design that needs to be customized to match the restrictions imposed by the geometry of some older African cities;
- Lengthy contractual processes often impacted by conflicting interests; and
- Insufficient institutional capacity and skills;

Some emerging practices related to financing and guarantees should be further explored to improve financing instruments; explore alternatives to tariff adjustments; and explore other contributions from IFIs to de-risk projects for investors.

Key recommendations/actions for IFIs/DFIs include:

- Assist public sector with capacity building;
- Continue to provide Technical Assistance services to public sector;
- Continue to provide concessional lending; insurance against political risks; underwriting of first loss insurance to local currency; and
- Assess readiness and competitiveness of products for BRT private financing through debt and credit enhancing instruments.

7.1 Limitations to the private sector perspective

371 The previous sections of this report presented how investors viewed the risks, opportunities and key elements of BRT projects. Although this input is key to better mitigate risks and develop BRT projects more attractive to investors, it only reflects the private sector's perspective. This may not encompass all relevant perspectives for the success of BRT projects.

372 Indeed, the private sector is only one segment of the larger BRT ecosystem, which also includes passengers (key beneficiaries) and the public sector (the key driver). Although investors mentioned the importance of accommodating customer experience, they also stressed the importance of some components of the BRT which may not be in accordance with customers' preferences. As such, several investors stressed having enhanced visibility of—and transparency on—actual ridership and revenue generation. To that end, they recommended implementing and managing a cashless fare collection system (which should in principle generate a flawless audit trail). However, accounts from previous BRT projects report that the performance of cashless systems was sometimes poor (as in Accra), because passengers were not comfortable with it. It is therefore advisable to pay due attention while preparing BRT projects to any divergence between the preferences of investors and passengers, in order to reconcile them wherever possible at the outset.

373 Similarly, it is also important to recognize that the private and public sectors have different objectives and constraints when developing BRT projects. If the private sector typically seeks to deliver a contract with a defined scope of work in a financially viable manner, the public sector seeks to provide what is arguably a public good (urban mobility) in a much larger undertaking of complementary public services. Because of these differences, it may not be possible or desirable to address the private sector's preferences if they conflict with the public sector's preferences and mandates (as constrained by the pressures to which it is subject).

374 This situation could occur when choosing between electric buses and diesel buses. A city could be committed to transitioning to fossil fuel-free energy sources and may therefore require electric buses, even if these are not the investors' preference.

375 Conflict between the public and private sectors may also arise during the selection of a PPP scheme. Although the private sector indicated its preference for an integrated scheme, this should not necessarily be implemented for all BRT projects. Depending on the public sector's institutional capacity, and the broader picture of a city's development and fiscal capacity, it may be more desirable for some cities to only seek the private sector's expertise in the operations and management phases, and not in the initial design and construction phases. An operation-centered PPP scheme might therefore be more beneficial to the city in some circumstances. The following table presents the strengths and weaknesses of each PPP scheme for consideration and use by the public sector when selecting a PPP scheme.

	Strengths	Weaknesses	Public sector's role	Comments
Fully-integrated	<p>Full integration of all elements of BRT for a more effective and higher quality service; no interface issue.</p> <p>Investors (funds) are keen on this scheme, giving them better control over the various components of the project. This option is attractive to the private sector. Overall project execution may be faster, given the fewer public procurement steps.</p>	<p>Requires further early planning to determine performance expectations and requirements for public service so the resulting transportation service is adapted to public needs. Otherwise design may not fit into the larger picture of development of the city. Requires additional interaction with private sector during design to minimize environmental and societal impacts.</p>	<p>Planning; definition of performance indicators; stakeholder engagement; integration of incumbents; resettlement; expropriation; review and validation of design and environmental and social impact analyses (ESIAs); financing of infrastructure; possibly subsidies; possibly maintenance of infrastructure; and oversight of and support to SPC during PPP contract.</p>	<p>Public sector will be less involved in the operation-centered scheme, but its role will remain significant with a large effort upfront and assistance throughout the PPP.</p>
Operation-Centered	<p>Public sector keeps control over design to ensure it fits in overall development of city for public service.</p>	<p>Not as attractive to the private sector, which sees risks due to more complex interfaces.</p>	<p>Planning; design; (ESIAs); stakeholder engagement; integration of incumbents; resettlement; expropriation; financing of infrastructure; maintenance of infrastructure; and oversight of and support to SPC during PPP contract.</p>	<p>Public sector and/or IFIs/DFIs to finance infrastructure; public sector to maintain responsibility over public stakeholder engagement including incumbent; resettlement; the pivotal issue of maintenance/operation. Rolling stock may or may not be funded by public sector in this scheme.</p>

Figure 7-1 Strength and weaknesses of PPP Schemes

7.2 Recommendations for the development of a successful BRT project attractive to the private sector

376 A set of recommendations has been developed to help make BRT projects attractive to the private sector while improving their likelihood of success in SSA. These recommendations draw on best practices of transport project development in SSA to deliver high-quality public transit services. They draw from the lessons learned from the SSA case studies, and consultations conducted with the private sector. Some of the recommendations proposed below confirm observations and assumptions made in the *Factor Analysis Report*⁴⁸ and *PPP in Urban Systems: Analytical Framework*⁴⁹ by the WB. Sometimes investors' insights neatly reinforce the recommendations; elsewhere, contrasting perspectives emerge.

Set up an adequate enabling environment:

- Ensure that there is clear political will, with common objectives at all levels (local and central government) to deliver a proven BRT project.
- Ensure that the institutional and political setup is supported by a clear, comprehensive and stable legal and regulatory framework. Changing regulations are seen as a serious risk for investors.
- Ensure that there is a dedicated and well-capacitated public transport authority with clear roles and responsibilities for project development and management, avoiding multiple agencies or parallel authorities. This will mitigate conflicts of interest between agencies and will streamline the delivery of the project.
- Ensure that public officials in charge of project development and implementation are effectively and durably interested in its success.
- Ensure that the institutional and regulatory framework is geared towards enabling profitable operations to the extent possible. This will also require political will to balance the public interest with the expected rate of return requirements of the private sector.
- Understand the need for the public sector to be credible and trustworthy, because the private sector may conduct due diligence on the public sector and weigh the relative merits of comparable projects around the globe. The public sector's decisions can result in increased reputational risk in investors' eyes: this can increase the overall project cost and prompt them to turn instead to less risky projects in other markets.

⁴⁸ Fan, Hongye; Beukes, Edward Andrew, 2021. Enhancing Financial Sustainability and Commercial Viability of Bus Rapid Transits (BRTs) in Sub Saharan Africa (SSA) : The Factor Analysis Report (English). Washington, D.C. : World Bank Group, accessed via [the link](#)

⁴⁹ Hoyos Guerrero, Alejandro; Lopez Doderer, Abel. 2021. Public-Private Partnerships in Urban Bus Systems : An Analytical Framework for Project Identification and Preparation. International Development in Focus;. Washington, DC: World Bank. © World Bank. Accessed via [the link](#)

Conduct Thorough Planning and Project Preparation

- Gain a clear understanding of urban mobility objectives, as envisaged by the broader city/metropolitan development plan perspective.
- Conduct thorough pre-feasibility and feasibility studies to:
 - Identify the optimal public transit solution; other solutions (bus restructuring, LRT, metro) could be more desirable than the BRT approach;
 - Assess environmental/social impacts including expropriations and resettlement needs;
 - Determine the right corridor(s): find out the optimal route(s) which ensure a substantial level of traffic and minimize disruption to other activities. It is best to start with one good corridor, rather than several with inconsistent usage;
 - Establish unbiased and robust long-term demand forecasts based on a comprehensive traffic study with realistic sensitivity testing to clearly identify the potential financial implications of traffic shortfalls;⁵⁰
 - Assess willingness to pay and acceptable methods of payment by users (cash or cashless);
 - Assess feasibility of electric buses based on a larger context that includes the city's policy on climate change, availability and cost of electricity and the investment cost of electric buses. The possibility of easier access to financing (climate financing) should also be assessed, as well as the possibility, in specific contexts, of leasing the rolling stock;
 - Determine the budget needed for infrastructure, systems, buses, resettlement and expropriation; and
 - Determine if the project will need subsidies and, if so, the order of magnitude under consideration here.
- Take time to identify, consult and engage with all stakeholders, including existing operators and users.
- Consult with incumbent operators and seek best mechanisms to integrate them in project.
- Ensure that the proposed project is aligned with the political ability and willingness to provide the required ongoing subsidy support. If not, review and reconsider the scheme specifications. Please see additional information in the financing section below.
- Undertake a qualitative and quantitative PPP options analysis and decide on the preferred PPP scheme: fully integrated or operation-centered scheme.
 - Structure a PPP scheme that will attract experienced and credible operators, identify project risk and private sector risk appetite and determine risk allocation accordingly, in particular with regard to design and demand.

⁵⁰ The previously cited *WB Analytical Framework* evidenced similar issues, with some assumptions made in the development of forecasts for projects in Mexico and Colombia, resulting in an underestimation of the true sensitivity of users on the viability of the project.

- Recognize the private sector's need for financial profitability and sustainability and integrate them at the design and feasibility stage.

Produce a design that accounts for the local environment, operations and financial viability:

- Customize the design to meet the specific physical attributes and constraints of the city. A BRT that works well elsewhere may not succeed here.
- Design an easy and intuitive travel experience that considers cultural habits of travel and preferences.
- Design to minimize expropriation and resettlement risks.
- Ensure compatibility of rolling stock and operational equipment with infrastructure, and consistency, at conception stage, of specifications for infrastructure, bus fleet and operation equipment, so as to lay the foundations for excellent services.
- Limit customization of buses as far as possible so as to avoid decreasing their residual value for other applications.
- Select the right level of sophistication for the context. Costly buses and ticketing systems may not be suitable for the expected customer experience or may exceed what passengers are willing to pay. At the same time, they increase capital and maintenance costs, which lessens the financial viability of projects. This has been a repeated source of difficulty in BRTs commissioned to date.
- Ensure that aspirations for scheme specification and service levels are aligned with the willingness of the city/authority to subsidize higher levels of service. If no subsidy is offered, the scheme specification must be carefully defined to ensure commercial viability without support.

Enhance the Contract and Procurement Process

- Endeavor to keep the procurement process on track with a realistic timeline—fully transparent, and as short as possible—to maintain private investors' interest and appetite.
- Structure tariffs so that they are both affordable and consistent with the quality of services. Set fares or operator reimbursement at a level which recovers both operational costs and provision for fleet renewal to the extent possible (unfortunately, prevailing fare levels are often at unsustainable levels in an attempt to support investment in fleet renewal or quality improvement).
- To enhance attractiveness, enable commercial banks to have control over the fare collection system. If fares are not collected by the private sector, an independent fare collection agency should be set up; it must be independent from political interference and trusted by the operator and regulatory agency.
- Set up a fare adjustment mechanism that allows for clear and transparent calculation of any tariff increase. This should be based on changes in cost of services. Adopt creative approaches to anticipate public antipathy toward tariff adjustments; likewise compensate the private sector through waivers of taxes or other mechanisms that offer leeway.

- The selection of the PPP scheme depends on the context, and no single PPP scheme is adapted to each BRT.

Be creative with Financing Sources and Mechanisms; De-risk wherever possible

- In general, equity financing is available from investment funds which have an appetite for these projects, but debt financing is limited in terms of actors and instruments.
- For infrastructure, anticipate the need for public or IFI/DFI financing:
 - IFI/DFI financing may have requirements that can increase infrastructure costs.
 - If public financing, ensure fiscal capacity to deliver it.
- For rolling stock, there are several options for acquisition and financing:
 - Acquisition can be achieved by an SPC, some of the SPC's partners, or the public sector.
 - Operators prefer not to invest in rolling stock, but have nevertheless done it in several instances. They prefer to contract via an SPC, as opposed to the public sector.
 - Financing is one of the main considerations and challenges of BRT projects, as the sources and instruments of funding are limited.

Additional options are available for electric buses through climate financing instruments. Considerations are also given to leasing of electric buses whose batteries hold a significant residual value.

New financing models should be explored to enable local participation and support the involvement of wider private sector investors, for whom the high initial investment costs of the rolling stock may act as a barrier to participation.

- Public subsidies:
 - Minimize the subsidy approach, as investors do not trust the public sector's ability to pay subsidies. Ensure the sustainability of the required fiscal support;
 - Identify public funding sources (fuel taxes, parking charges) and set up funds to manage their capture and distribution with possible oversight/guarantee from IFI.
- De-risk for investors to the extent possible:
 - Manage local currency risk: mitigation strategies include partial local currency financing (largely through IFI/DFI support) and exploring the willingness of DFIs to underwrite first loss insurance to a local currency instrument.
 - Manage political risk: continued assistance is required from insurance providers or WB to cover political risks.
 - De-risking can be accomplished by contributions from the public sector (provisions to waive VAT/fuel surcharges) and/or by IFIs/DFIs (guarantees).

- Investors do not take land value capture (LVC) into consideration in their investment assessment. They see LVC as an opportunity to be considered and leveraged during operations but not as a variable taken into account during the initial investment decision-making process.

Key Role of the Public Sector during Operation and Maintenance:

- The participation of the public sector in this phase remains key for a successful BRT project.
- The public sector's responsibilities in that phase are to:
 - Ensure incumbents are not continuing to compete with new BRT operator;
 - Help address potential difficulties with stakeholders;
 - Ensure effective regulatory protection and enforce the right to operate as agreed under contract;
 - Ensure timely infrastructure maintenance activities in coordination with SPC to avoid conflict between operations and maintenance activities; and
 - Act on tariff adjustments in a timely manner as specified in the contract.

Investors' Perspectives Specific to the SSA Market

377 Many of the recommendations above apply to urban transit projects and BRT projects in general. However, according to the information collected during the interviews, some of the elements make the SSA market riskier to investors and therefore require specific attention from the public entities. These elements are the following:

- Design: SSA cities need to customize BRT concepts in line with the geometric restrictions associated with the urban layout, especially in older cities.
- Contractual processes: they take too long and are severely impacted by conflicts of interests between the various public entities.
- Institutional capacity and skills: from the point of view of investors, public counterparts lack skills to define and manage complex contracts. There is also a lack of skills to manage the stakeholder engagement process and integration, and the absence of public sector participation subsequent to commissioning. Investors are considering conducting due diligence on the public sector's capacity prior to investing in projects.
- Regulatory changes and political interference: investors are concerned about the change of regulations, laws and rules during the term of the contract. In their view, there is in SSA a higher tendency to experience regulatory changes and political interference in BRT projects than in other geographic areas.
- Local currency risk: some SSA currencies are volatile and there are few instruments to enable investors to reduce exposure to them. To mitigate this risk, investors are seeking the support of IFIs/DFIs or some form of reconciliation between revenue collection in local currency and funding in international currency.

Emerging Practices to be Further Explored

378 Through the completion of this market analysis, several emerging practices were identified that could potentially improve the financial viability of BRT projects.

- Improve financing mechanisms: waive or reduce import duties on vehicles and parts to lower the initial investment cost associated with the acquisition of the rolling stock.
 - Explore merging financing instruments;
 - Climate financing for electric buses;
 - Leasing of batteries for electric buses; and
 - Leasing of “standard” diesel buses (not customized) by cities financed by IFIs.
- Explore alternative approaches to tariff adjustments that are politically and socially difficult to implement: waive fuel surcharges and VAT, as a mechanism to alleviate costs for the private sector.
- Explore additional contributions from IFIs/DFIs to provide additional guarantees for private investors:
 - Oversight/guarantee of BRT fund for subsidies;
 - Help partial local currency financing and explore willingness of DFIs to underwrite first loss insurance to a local currency instrument; and
 - Help finance rolling stock leased to SPC and public sector.

7.3 Key recommendations/actions for IFIs/DFIs

379 The market analysis confirmed that IFIs/DFIs have a key role to play in the development and delivery of successful BRT projects. In general, the private sector views the participation of IFIs/DFIs as some measure of reassurance that a project is being properly developed with guarantees and funding. There were, however, also reports of investors viewing some IFIs’ or DFIs’ minimum standards as raising project costs. Some recommendations are provided below to further leverage this critical position of IFIs/DFIs in BRT development:

- Conduct additional analysis and research on topics identified as possible facilitators of BRT projects in this project. These topics include:
 - Fleet acquisition by the public sector: examples, strengths and weaknesses, costs and benefits;
 - Identification of specific BRT profiles and recommendations of associated PPP structures;
 - Identification of best financing mechanisms based on specific BRT profiles;
 - Climate financing for alternate energy buses: extent, characteristics, costs and benefits; and
 - Incumbent operators: identification of best practices to integrate them in BRT projects for specific BRT profiles.

- Continue to provide technical assistance for:
 - The completion of thorough upstream analyses (pre-feasibility, feasibility analyses with robust ridership forecasts and assessment of resettlement/expropriation risks), analysis of PPP options and final recommendations;
 - The definition of relevant and financially sustainable system design; and
 - The expansion of urban transport project funding mechanisms, including:
 - the development of ring-fenced funds dedicated to project funding
 - the establishment of debt and contingent liability management systems
- Provide capacity building to public entities with a focus on:
 - Their role throughout the project, including after commissioning: the risks they create based on their actions or inaction (private sector likely to undertake its due diligence);
 - Minimizing resettlement/expropriation, commissioning unbiased and robust demand forecasts;
 - Stable and consistent rules and regulations;
 - The integration and management of incumbent operators early in the process. Explain investors' perspective and the various reasons why this element is a serious risk for them. Provide options to be considered for incumbent management (compensation; opportunity to participate in bid or delivery of service; opportunity to be part of the workforce; and training programs);
 - Achieving the right balance of design sophistication and service level with the project's financial viability and the public sector's ability to pay subsidies;
 - Understanding the investors' perspective on key risks in BRTs in SSA; and
 - The preparation, procurement, and management of PPP delivery schemes.
- Continue to provide concessional lending to public entities for BRT projects for project definition, design and execution.
- Continue to provide insurance against political risks.
- Consider underwriting first loss insurance to a local currency instrument to help mitigate risk associated with convertibility of local currency.
- Assess the readiness and competitiveness of the products on offer for BRT private financing in terms of debt, equity and credit enhancement instruments, which have been seen as increasing costs.



Appendices



Appendix A: Categories and Database of Existing and Potential Investors in BRTs in SSA

A1. Framework for Analysis

Key Chapter Takeaway

A three-pronged approach was adopted by this market review study for the identification of potential private investors for future BRT schemes in SSA.

Firstly, the key actors involved in the delivery of operational BRT schemes in SSA were identified, and their involvement defined.

Secondly, those active in investing in other types of urban transport projects in SSA were considered, before widening the scope of investigation to investors in urban transport projects in the rest of the world.

380 The analysis of investors' involvement in BRT and urban transport schemes focuses on the following aspects of private investor participation:

- The structure of the PPP arrangement for project delivery;
- The scale and nature of the investment made; and
- The allocation of responsibilities and risks within the delivery framework.

A1.1. Identification of financing entities

381 The investors were identified through the review of BRT projects and other urban transport projects in SSA and relevant fields in other regions. The following approaches were adopted to identify active investors in the field of urban transport:

- review the investors and main actors who have played a key role in the delivery of the implemented SSA BRT schemes to date, and also those actively involved in the current development of pipeline projects;
- identify investors involved in supporting urban transport projects in SSA beyond BRT schemes. This includes support for other mass-transit projects such as light rail transit (LRT), urban bus initiatives, support for the informal sector, and wider urban mobility projects such as demand management (parking, toll roads), urban freight or Intelligent Transport Systems (ITS) (that is, traffic management systems, fare collection, and so forth); and
- look beyond SSA to investors actively engaged in urban mobility initiatives elsewhere in the world.

382 For the purpose of this study, investor groups are categorized into the following groups:

- International Financial Institutions (IFIs) – The IFIs including multilateral development banks (MDBs) such as the World Bank (WB), African Development Bank (AfDB), the sub-regional MDBs such as the East African Development Bank (EADB) and also the bilateral development banks and agencies such as the French Development Agency (AFD), China

Development Bank (CDB) and Exim Bank of China. These owners and shareholders are typically national governments, with capitalization supported by public funds. Since they typically lend directly to governments, IFIs support the development of BRT projects through sovereign lending.

- Development Finance Institutions (DFIs) – DFIs are specialized development organizations which invest in private sector projects which promote social goals such as job creation and sustainable development. We include here organizations such as the International Finance Corporation (IFC), the sister organization to the World Bank, and the private sector lending arms of other MDBs. National development banks also fall under this category, for example the Development Bank of South Africa (DBSA).
- Commercial Banks – these are private lending institutions, which may be national or international.
- Public Investment Funds – investment funds which manage and invest public money on behalf of a government; these include sovereign wealth funds.
- Private Investment Funds – funds which invest private money on projects with the aim of generating returns for the private investors.
- Bus/BRT operators – prospective BRT system operators, which may include the local public transport operators or international operating companies. The operator may be private or publicly owned.
- Bus manufacturers – vehicle manufacturers and suppliers.
- Other entities – such as private developers, construction companies or integrated technological service providers motivated to invest in BRT schemes in order to benefit from linked or associated contracts.

A1.2 Analysis of PPP Structure

383 For each of the identified BRT or urban transport case studies, after identifying the active parties involved in delivery of the scheme, the allocation of roles and responsibilities within the delivery structure were considered.

384 A simple matrix was adopted to define the allocation of responsibility for project delivery and operation between public and private entities, adapted from the World Bank *Analytical Framework of Public-Private Partnerships in Urban Bus Systems* (World Bank, 2019).

385 An example PPP responsibility matrix is shown below:

	Lane infrastructure	Signaling and traffic lights	Terminals and stations	Depots and workshops	Rolling stock	Project-specific fare collection system
Planning	Public	Public	Public	Public	Public	Public
Design and procurement	Public	Public	Public	Public	Private	Private
Construction	Public	Public	Public	Public	Private	Private
Finance	Public	Public	Public	Public	Private	Private
Operations	Public	Public	Public	Private	Private	Private
Maintenance	Public	Public	Public	Private	Private	Private

Key: **Public** **Private**

Table A0-1: PPP components of bus rapid transit project (example: Lagos BRT-Lite)

386 Under each of the main BRT project components, the allocation of responsibilities between the public and private sector are identified and shown based on the color coding indicated in the key.

A1.3 Breakdown of investment value by component and financing entity

387 After establishing the structure of the PPP arrangement, the scale and nature of the investment made by each actor is identified, including where the data is available, and the terms of finance.

388 In some cases, the project financing is difficult to separate from wider investment. For example, in the case of BRT delivered as part of a road widening/rehabilitation program or where BRT is a component of a broader urban transport project. In this case, best estimates were made of the financing directly related to the BRT scheme.

389 Where possible, the channeling of finance is presented by BRT component. For each scheme we have aimed to split investment:

- By investing entity;
- By type of financing instrument (grant, concessional debt, market-rate debt, equity, export credit, and so forth);
- By public or private investment (note that lending to government is classified as public investment); and
- By BRT (or urban transport scheme) project component (such as infrastructure, design & technical support, fleet investment).

A1.4 Analysis of Risk Allocation

390 To inform the forthcoming private investor interviews, it was important to explore the allocation of risk in the identified case studies, to establish which risks private investors had

been willing to take on, and to identify any patterns in investor appetite under different risk allocation structures. Risk may be expected to broadly align with allocated responsibilities, but experience shows that in some cases risks may extend to multiple parties—for example in the case of operator failure, whereby the public sector may deem it unavoidable to step in and take on the risks which should have been borne by the private operator.

391 A range of different risk elements were identified within the previous input of documentation to the study. After reviewing them, the following risk components were identified as being of relevance to the relationship between public and private entities within the delivery of BRT under a PPP. The risk matrix draws on the structure determined in the *Public-Private Partnerships in Urban Bus Systems: An Analytical Framework*. This includes not only the direct risk elements relating to the activities identified in the PPP framework, but also indirect project risks which sit outside of project activities, and can present a risk to project stakeholders. Indirect project risks include:

- Macroeconomic risks (including significant currency fluctuation);
- Political and social risks (political challenges from incumbent operators, social disorder, acts of terrorism); and
- Environmental risks (extreme weather events including flooding and storms).

392 In addition to the broad categories of risk identified within the analytical framework, we have opted to include a specific risk element which has particular importance in the allocation of risk between public and private parties in the contracting of BRT services, and a main differentiator between gross-cost and net-cost contracting approaches:

- Revenue Risk (including risk that demand levels are lower than anticipated, and/or fare levels are not set at—or do not rise to—the level predicted).

393 Again, a simple matrix is adopted to effectively capture the allocation of risk between the various parties, which in many cases may be borne by multiple actors if the risk is realized. An example is shown below.

	Government (national or local)	IFI	DFI	Commercial Bank	Private Investment Fund	Bus Manufacturer	Operator	Other
<i>Planning Risk</i>								
<i>Design & Procurement Risk</i>								
<i>Construction Risk</i>								
<i>Revenue Risk</i>								
<i>Operational Risk</i>								
<i>Macroeconomic risk</i>								
<i>Political and Social risk</i>								
<i>Environmental risk</i>								

Key: **Public** **Private**

Table A0-2: Risk allocation of bus rapid transit project (example: Accra Quality Bus Scheme)

394 The matrix identifies which entity (or entities) bear each risk burden, and whether this risk is held by the public or private sector, based on the risk allocation observed in the implemented schemes. For the schemes still under development, we provide an indication of the likely risk allocation where sufficient information on the likely role of different actors is available from desk-based review.

395 Following the evaluation of the project implementation in the case studies, the summary chapter of Part 1 of this report presents risks that actually materialized during execution of the project.

on using the experience gained in Lagos.

A2 Investor Categories

396 The aim of this section is to present the rationale behind the proposed categories of investors.

A3.1 Initial Categories of Investors

397 An initial categorization of investors generated two levels of differentiation (or filtering). The first level was based on the geographic experience, and transport type experience, respectively of the various investors. Its breakdown was as follows:

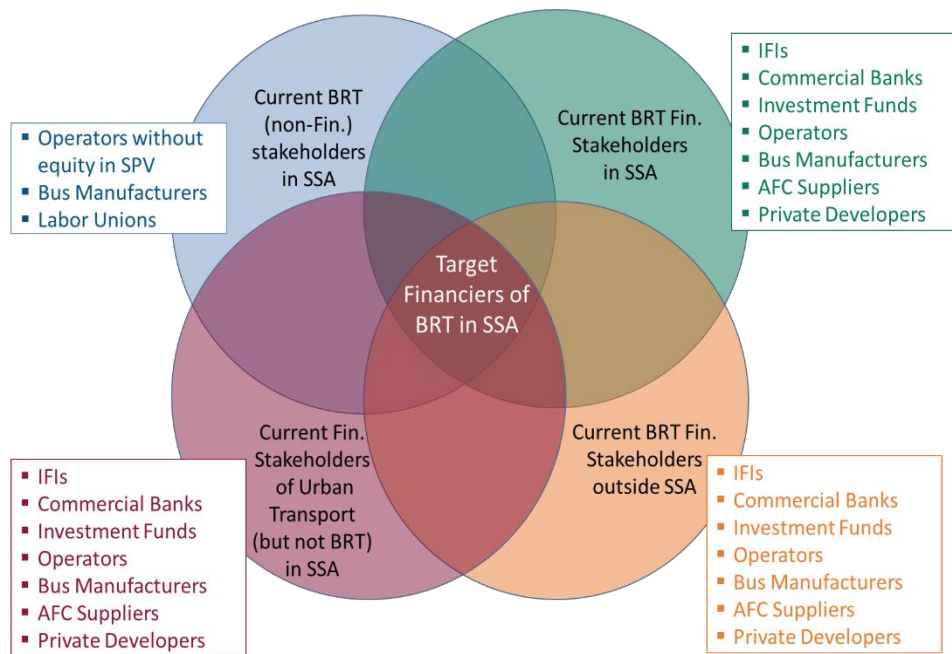
- Current BRT Financing Stakeholders in SSA;
- Current BRT Financing Stakeholders outside SSA;
- Current Financing Stakeholders in Urban Transport (but not BRT) in SSA; and
- Current BRT Stakeholders (but not financing) in SSA.

398 The second level of categorization brought in the character of investment company or organization as follows:

- International Financial Institutions (IFIs);
- Commercial Banks;
- Investment Funds;
- Operators;
- Bus Manufacturers;
- Automated Fare Collection (AFC) companies;
- Developers;
- Operators without equity in SPV; and
- Labor Unions.

399 This two-level categorization sought to capture a wide variety of existing and potential investors to consult. This would in turn enable the researchers to collect an extended spectrum of perspectives from different investors involved in various stages of the PPP development process, with their respective views on BRT financing.

400 The diagram below shows the initial approach to categorization of stakeholders.



Source: CPCS, 2020

Figure A0-1: Initial Categories of Investors

401 As the project progressed, it appeared that it was important to engage local investors to the extent possible. It was then proposed that investment funds be subdivided as follows:

- Local investment funds (private): private funds located in Africa;
- International investment funds (private): international funds that have an activity dedicated to investing in Africa; and
- State-owned (sovereign) investment funds: sovereign wealth funds which could include national pension funds.

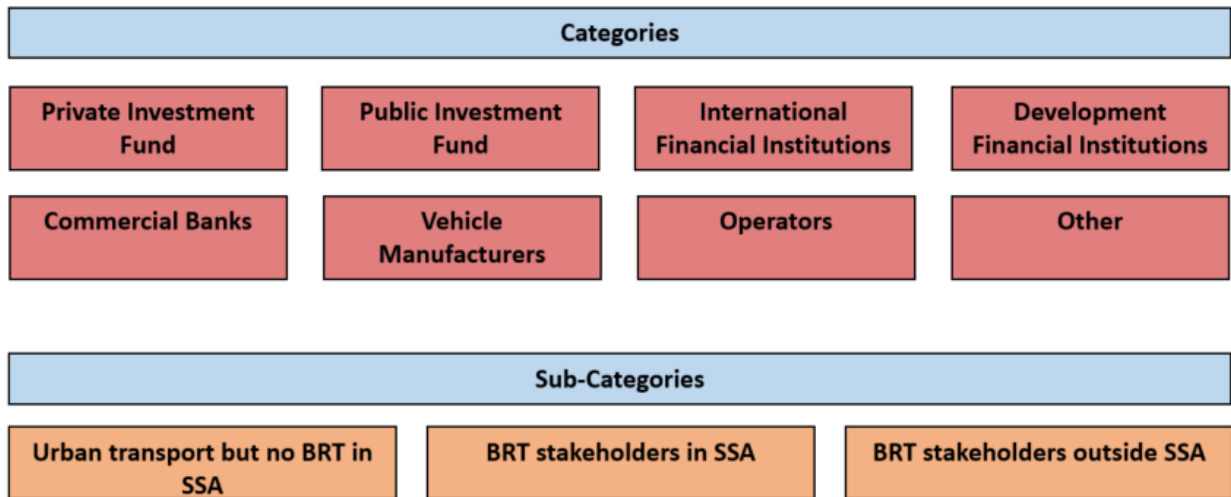
402 This hierarchical breakdown of categories and subcategories guided the team’s search for relevant investors during the early weeks of this analysis. As the assessment progressed, it also appeared that the previous categorization of investor could be further adjusted to reflect the reality of the investor’s market observed. Additional information on the proposed changes is provided in the section below.

A3.2 Updated Categories of Investors

403 Significant lessons were learned while developing the Landscape Assessment of Part 1 and the additional research conducted on potential investors in BRTs. These prompted the project team to make the following four adjustments to the investor categorization schema:

- *Reverse the order of Categories and Subcategories:* thus what was a main tier category becomes a subcategory, and what was a subcategory becomes a category. The team found it more natural to refer to the nature of investment companies (investment fund, commercial banks, etc.) rather than their geographic/transport experience portfolio. On that basis, it was decided to reverse the first and second tier categorization of investors.
- *Reduce the number of Subcategories to three for simplicity:* efforts were made to simplify the geographic/transport mode breakdown to reduce it from the initial four to the following three:
 - BRT stakeholders in SSA
 - BRT stakeholders outside SSA
 - Urban Transport stakeholders (but not in BRT) in SSA
- Add the “Other” category to capture companies that are less involved in the risk management aspect of BRT projects. For example, a construction company (e.g. Megawide) and technological integrated transportation solutions (e.g. QUIPUX).
- Remove the “AFC suppliers” and “labor unions” as subcategories. Although the AFC suppliers initially seemed to be a potential source of investment, similar to that of bus manufacturers, it appeared from the team’s initial research that other investors, such as commercial banks were keen on maintaining control over the ticketing and revenue collection system, so as to maintain visibility on fare revenue and decrease the risk associated with revenue. It was therefore decided to eliminate the AFC suppliers from the list so as not to jeopardize the appetite of other investors.
- With regard to unions, the analysis conducted in the Part 1 Landscape assessment revealed that relevant unions were related to operator or driver unions, which could grow into cooperatives as new operators of the BRT system. Because of this close connection between unions and operations, the labor union was removed as a stand-alone subcategory and instead included in the Operators subcategory.

404 The updated categorization of investors is represented graphically in the figure below.



Source: CPCS, 2020

Figure A0-2: Updated Categories of Stakeholders

405 As the categories and subcategories shown above are used throughout the project, their nomenclature is clarified in the figure below. This standard nomenclature ensures a common understanding of investor types throughout the project.

Description		Notes
Categories		
IFIs	IFIs include the multilateral and bilateral development banks and other international and national development agencies, whose shareholders are national governments.	IFIs typically provide technical assistance, grant funding, and concessional financing to governments for transport projects. They are essential financiers to bridge the funding gap that BRTs usually face in project development.
DFIs	DFIs are typically the private sector arms of the IFIs.	They provide financing to private parties for development projects and therefore are key parties to promote private financing of transport projects in SSA.
Private Investment Funds	These are funds that invest private money on projects with the aim of generating returns for the private investors.	As such, private infrastructure funds often seek projects that have predictable and steady cash flows with risks that can be hedged. BRTs are complex projects and it is important to identify which risks are not acceptable to the private sector.
Public Investment Funds	Public Funds include national development funds (sovereign funds) and other dedicated multilateral funds.	While sovereign funds tend to operate at arm's length from the government, as both public entities and investors, these funds often have better access and more influence with domestic government entities, compared to other investors. Some have mandates to invest in domestic projects and could have a risk profile suitable for investment in a BRT project.
Commercial Banks	Commercial Banks include all private lending institutions.	They provide lending for fleet investments and in some cases act as an intermediary agency for revenue distribution and managing ticket/revenue collection.
Operators	Operators include fleet management firms, bus drivers, and storage depot management.	The role of an operator can include activities such as fleet procurement/maintenance, depot equipping and operation, in addition to operation of the bus network itself. This category includes labor unions.
Bus Manufacturers	Manufacturers of conventional buses and electric buses.	Bus manufacturers have an incentive to see BRTs succeed in SSA (compared to other modes) as it provides more opportunities to grow their business.
Other	Entities such as private developers, construction companies and technological integrated solution firms benefit from contracts that stem from BRT projects.	This group also provides innovative solutions to implementing projects which may make BRTs more viable. This category is a "catch-all" for the stakeholders that do not fit into the above categories.
Subcategories		
Urban transport but no BRT in SSA	Entities that invest or are involved in urban transportation projects but do not have a BRT project in SSA in their portfolio.	In some cases, a stakeholder may not yet have investments in urban transport, but does actively consider them.
BRT stakeholders in SSA	Entities that are involved in BRT planning, operating, financing in SSA.	
BRT stakeholders outside SSA	Entities that are involved in BRT planning, operating, and financing but are not focused in SSA.	

Source: CPCS, 2020

Table A3-1: Updated Categories of Stakeholders



Appendix B: Market Analysis Methodology and Questionnaire

B1 General Approach

406 This section presents the general approach followed to sound out the market. It first describes six principles for effective engagement. These enabled the project team to hold fruitful consultations with stakeholders on several assignments around the world. It then presents the five steps that comprise the outreach approach adopted (Figure B1.1).

B1.1 Stakeholder Engagement

407 Stakeholder engagement is often key to the successful outcome of infrastructure projects. Similarly, that holds true for this project, as it seeks a direct understanding of the investor's perspective on BRT. The best way to collect relevant information is an effective consultation. Through surveys, the objectives will be to:

- Identify the investor's concerns and overall perception of BRT projects;
- Identify key risks from the investor's perspective with regard to BRT development and/or operation;
- Define the current appetite for investment and risk tolerance of different categories of investor with regard to BRT projects; and
- Determine the risk mitigation actions or scenarios that would foster a sufficient level of confidence for investors to participate in BRT projects in SSA.

Principles of Effective One-on-One Engagement

408 The following six principles inform the stakeholder engagement approach, which has proven successful for dozens of similar engagements around the world. These guiding principles foster high stakeholder response rates and help capture an appropriate level of feedback.

- 1) **Keep it simple.** Stakeholders typically have limited availability, and this heightens the importance of clearly identifying what is requested from them, and what value they provide. Interview materials should be clear, succinct and targeted. Verbose background documents typically deter interest and diminish response rates.
- 2) **Ask open-ended questions.** This best practice precludes suggesting responses to interviewees. It removes bias from a stakeholder's response.



- 3) **Be flexible with arranging consultation times/approaches.** Allow stakeholders to identify the preferred date and time from a flexible range of options (in person, by phone or other means) in the near future. Due to COVID-19, CPCS will respect any organizational guidelines stakeholders may be subject to.
- 4) **Systematic follow-up to encourage participation.** Once first contact has been made, use a systematic and well-documented approach to follow up by phone or email. This maintains momentum, illustrates professionalism and increases participation rates.
- 5) **Build on stakeholder knowledge/contacts.** During consultations, tap into stakeholder knowledge by asking them if they are aware of any additional sources of information or individuals who could bring additional value to the study. Identify key gatekeepers and influencers, and work with them to enroll other relevant stakeholders into the process.
- 6) **Show appreciation to stakeholders.** Where possible, try to identify ways that stakeholders can benefit from their collaboration. For example, this could be a commitment to present study findings to the stakeholders' broader group.

B1.2 Investor Outreach Approach

409 The approach used for investor outreach and securing interview participation consisted of the following five steps:



Figure B0-1: Investor Outreach Approach

410 The first step of this approach was an initial contact by phone or email that aims at:

- explaining the purpose of the market sounding exercise to the identified investors;
- confirming that the individual identified as representing an investor company has relevant knowledge and the authority to respond on the company's behalf; and
- asking for their participation in the two-component consultation process.

411 During this phase, the benefit of their participation was stressed, as their input could contribute to a structuring of BRT projects that would be more attractive and viable from their point of view.

412 After investors responded to the initial outreach, the online questionnaire was sent to them and a meeting time at their convenience was set for a 30 to 45 minute discussion. All discussions would take place virtually. Investors were also informed of the possible attendance at the interview by World Bank Group representatives. A record of the various outreach attempts and the scheduling was maintained in a consultation tracker.

B2 Questionnaire and interviews

413 In order to achieve the objectives of the consultation, a methodology was developed to assess the level of investor awareness, knowledge and risk perceptions of BRT in SSA. It consisted of two essential components: a questionnaire and a follow-up live discussion between investors and the project team. The rationale and details for each of these components are presented below.

B2.1 Questionnaire

414 A questionnaire was prepared to quickly capture as much information as possible from investors.

B2.1.1 Questionnaire format

415 The questionnaire required a maximum of 15 to 20 minutes to complete so as to retain investors' interest and focus. Open-ended questions were asked in line with the best practices previously discussed. In order to improve response rates, the questionnaire primarily relied on multiple-choice options, as experience shows that questions asking for written responses tend to be ignored by respondents.

416 The survey was delivered via an easy-to-use, reliable and secure online platform accessible remotely by all interviewees. Participants who committed to an interview were sent a link to complete the survey, and their unique responses were logged and made available for review by interviewers and others.

B2.1.2 Questionnaire content

417 The survey material was organized as follows:

- Investors' profile;
- Investors' experience and appetite for BRT/urban transit projects;
- Investors' preferences of PPP schemes in BRT projects; and
- Investors' perception of risks associated with BRT projects.

418 Additional information regarding the rationale and questions associated with each of the four above sections is provided below.

Investors' profile

419 The first section of the questionnaire sought to understand the investors' profile—the type of projects in which they typically invest, and the type of investment metrics in which they participate. Although the name of the investor was requested in the questionnaire so as to trace their answers before the live consultation, it was kept confidential in the final report. Confidentiality is important, not least because it encourages honest responses; investors were assured of this confidentiality in the questionnaire.

420 Questions asked included:

- The category of investment company that best describes their activity;
- The range of equity internal rate they typically seek;
- The typical gearing of projects they invest in; and
- The size of capital value they seek to invest in.

421 This portion of the questionnaire sought to gather holistic information that helps in understanding the investor's overall ability and willingness to take investment risks.

Investors' experience and appetite for BRT/Urban transit projects

422 This segment of the survey posed several questions about the respondent's experience with investing or participating in BRT and other urban transit projects both in SSA and globally.

423 Examples of the type of information solicited include the following:

- level of experience with BRT and urban transit projects;
- financing vehicles preferred;
- BRT/urban transit project components of investment interest;
- critical stakeholders without whom the participant would not invest in a BRT/urban transit project; and
- high-level impressions regarding specific urban transit projects in SSA ("successful" versus "unsuccessful", and reasons for the choice).

424 Conceptually, this survey segment served three purposes: (1) to ease a transition into subsequent segments requiring more thinking; (2) to gauge the respondent's general thoughts, views and depth of knowledge on transportation infrastructure investments (BRT in particular) and the African market; and (3) to later determine if and how risk perception on BRT correlates with investors' experience and appetite.

Preferences in PPP schemes for BRT projects

425 This survey segment asked a participant to rate a set of investment scenarios, structures and schemes based on their organization's general risk tolerance and appetite.

582 A list of investment structures used in both BRT and other urban transportation infrastructure projects worldwide was presented to the survey respondent for their consideration. Examples of these schemes include the following:

- Design-Build-Finance-Operate-Maintain (DBFOM) on infrastructure, fleet and operations;
- Design-Build (DB) on infrastructure, Design-Finance-Operate-Maintain (DFOM) on fleet and operations together; and
- Separated Design-Finance-Operate-Maintain (DFOM) on fleet and operations.

583 For each scheme, the survey respondent had the option to indicate their preference: i) with traffic risk transferred to the private sector, ii) without traffic risk transferred to the private sector or, iii) both. Therefore, up to six preferred investment schemes could be selected, along

with an option to specify any other structures not listed in the survey. Questions were also asked about their views and expectations regarding land value capture, as a potential source of funding for BRT projects.

584 Responses to this survey segment allowed the interviewer to explore these investment scheme preferences more deeply with each participant in subsequent discussions.

Investors' assessment of risks related to BRT projects

585 This segment of the questionnaire sought to identify the significance and severity of a variety of risks perceived by investors across the BRT PPP life cycle. The category of risks proposed herein builds on the same broad categories of risks defined in the World Bank *Public-Private Partnerships in Urban Bus Systems: an Analytical Framework* (July 2019; also used in Working Paper 1 of this study).

586 Using the same standardized categories of risk facilitates the comparison of risks as defined in a PPP design concept (juxtaposing those shown in the Part 1 Landscape assessment and those perceived by investors in the consultations). The risk categories are the following:

- **Development (planning, design and contracting before construction):** includes integration/compensation of incumbent operators, adequacy of network design and contracting and procurement;
- **Construction:** includes cost overruns, expropriation and resettlement and completion and commissioning delays;
- **Operation and maintenance:** includes demand, fare affordability and the government's ability to service subsidization requirements;
- **Environmental & social:** includes environmental and social impacts, gender considerations and climate risks; and
- **Political, legal, and financial:** includes the overall enabling environment, political influence, foreign exchange risk and political stability among other subcategories of risks.

587 Interviewees were asked to rate specific risks within these broad categories in situations in which those risks are not mitigated. Ratings were on a scale of 1 to 5, where 1 represents a very low risk and 5 represents a very high risk. Additional information on the levels of risks and risk ratings is provided in the table below.

Risk rating	Risk assessment
1	Risk is usually low and/or straightforwardly manageable, so that it can in principle be allocated to the private sector.
2	Risk could in principle be allocated to the private sector but is usually sufficiently significant to require some mitigation from the public sector.
3	Risk is usually significant and it should be shared between the private sector and public sector.
4	Risk is deemed significant and should be allocated primarily to the public sector although the private sector could shoulder some minor part of it.

5	Risk is usually too significant to be allocated to the private sector; risk should be fully borne by the public sector and potentially backed further by international institutions (for example, political risk).
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Table B0-1: Risk rating scheme

588 Finally, investors were asked if they perceived a difference in risks in urban transit projects—based on the geography of the project or on the specific mode being contemplated. More precisely, they were asked whether:

- They perceived additional risks in the SSA market as opposed to other geographic areas; and whether
- They perceived additional risks for BRT projects compared to other urban transport projects.

B2.2 Interview

589 The project team anticipated that interviews would be conducted following the submission of survey responses, but with the understanding that some that some investors might not fill out the questionnaire in its entirety. The objective of the live interview was therefore dual. First, it was to discuss questions from the questionnaire that investors did not answer. Second, it would further probe investors’ responses, especially in terms of their risk profile with respect to BRT projects. For instance, the consultation sought to understand: why participants perceived certain risks as they did; what would either discourage or encourage their participation in a BRT or urban transit project in SSA; and what mitigating considerations should be accommodated to de-risk BRT projects and render them more attractive.

590 An objective of the interviews was not to exceed 30 minutes in duration, out of respect for the investors’ time. However, depending on investors’ interest and willingness to share information, longer discussions could be accommodated.

591 The primary preparatory tool for each discussion was the survey response of the participant being interviewed. Prior to each interview, the interviewer reviewed the survey response in detail and identified key themes, items and risks to be discussed in more depth. Furthermore, prior to engaging with interviewees, the interviewer conducted some high-level research on their organization to better understand the investment context and their mandate.

592 During the discussions, the interviewers prompted the interviewees with open-ended questions to elaborate on questionnaire responses, while giving consideration to the interviewee’s area of expertise. For instance, a particular interviewee with greater expertise in respect to governance risks and the rate of governance-related risks might be more inclined to talk about these topics. To orient the discussion, and as a reminder of key information to be obtained, interviewers also had a list of questions to draw from. The list of questions is provided in Appendix B4.

593 Ultimately, the interviews aimed to obtain as much insight as possible from each participant. Together with the survey responses, the interviews fostered a robust understanding of common considerations and concerns surrounding BRT development and investment in SSA.

B2.3 Pilot Test

594 In order to validate the proposed discussion guide, a focused pilot test was conducted with a trusted investor with more than 10 years of experience working on the origination, transaction structuring, due diligence, feasibility, delivery and operation of African infrastructure projects. This individual (referred to above as the Consultant) had personally evaluated two African BRT projects and had worked with both public and private investors on behalf of an investment fund.

595 The tester provided comprehensive and actionable feedback regarding the consultation process and content. As a result, several elements were modified to both improve the flow and content of the envisioned discussions with investors.

Interview questions

597 During this subsequent phase of the consultation, we seek a better understanding of investors' responses, especially the reasons and rationale behind their questionnaire answers. We investigate the following topics through follow-up questions (shown below). The exact questions to be asked will be determined on the basis of review of the responses to the questionnaire.

- 1) Investor's positioning towards BRT project:
 - o What is the investor's experience in BRT?
 - o What drives the investor's interest in BRT?
 - o What makes BRT projects different from other urban transit modes in their opinion?
- 2) Investor's positioning towards SSA:
 - o What is the investor's experience in SSA?
 - o What drives the investor's appetite for projects in SSA market, if applicable?
 - o What makes the SSA market different from other geographic markets in terms of opportunities?
- 3) Investor's appreciation of SSA BRT project risks:
 - o What is the investor's perception of BRT project risks in general and when compared with other urban transit mode?
 - o What makes the SSA market different from other geographic markets in terms of risks?
 - o What are the five prime risks for BRT implementation in SSA and the relevant associated mitigation measures?
- 4) Investor's views and preferences on PPP/PSP schemes for BRT project in SSA:
 - o What are the relevant PPP models for BRT projects? Explain why, and what is the most suitable model, if any?
 - o What makes the SSA market different from other geographic markets in terms of PPP structuring?
- 5) Investor's views and preferences on investment schemes and private financing for BRT project in SSA:
 - o Which BRT project component(s) can be in principle appropriate for private financing? Why?

- o Which BRT project component(s) should in principle be financed by public sources? Why?
- o Which are the relevant private financing sources and structures for BRT project?
- o What makes the SSA market different from other geographic markets in terms of financing schemes?



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