Public Private Partnerships: Urban Transport Projects

Comprehensive Financial Solutions for City Resilience Conference

City Resilience Program

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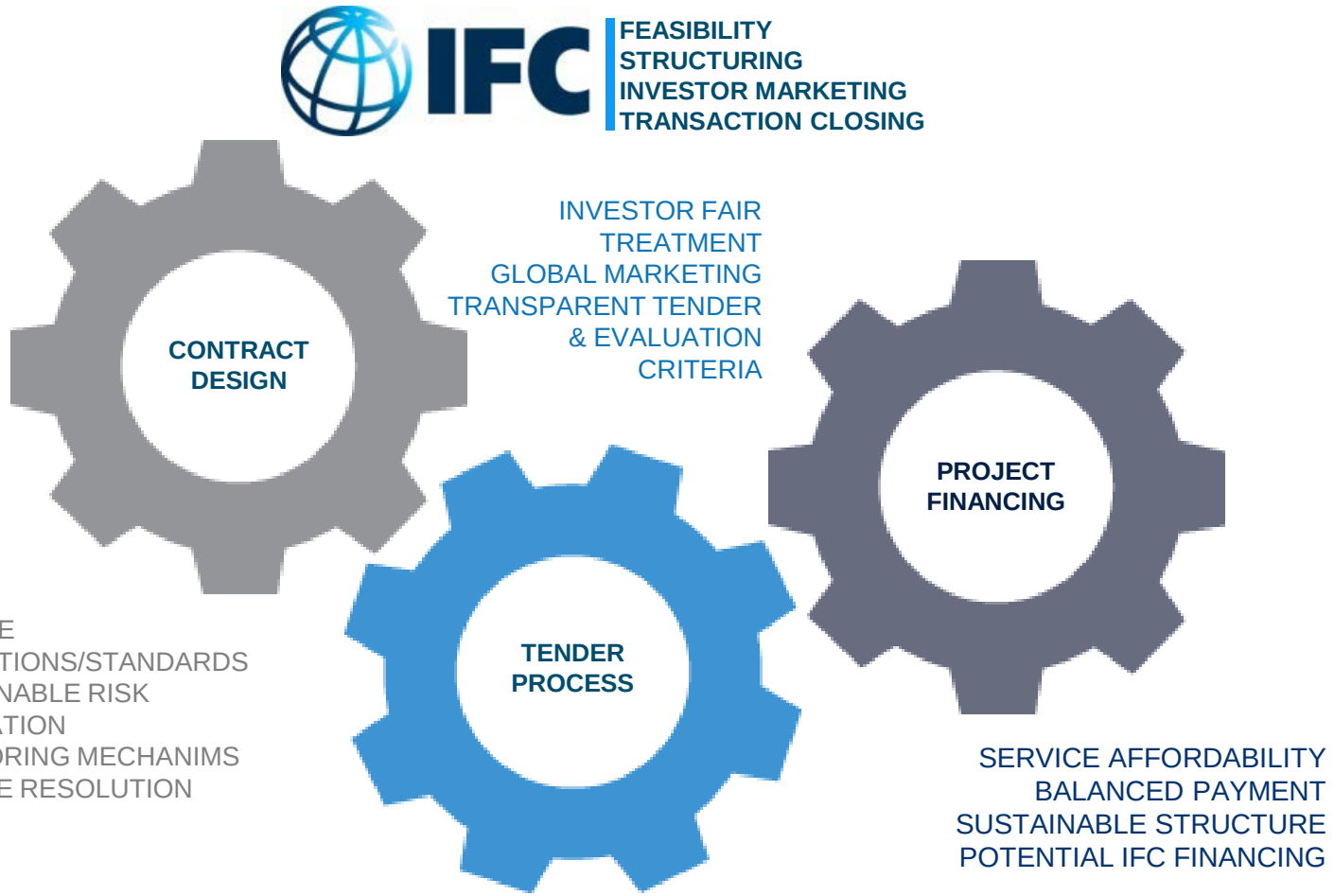
IFC: PPP Transaction Advisory Services

Specialize in advising public sector on the introduction of private sector participation in the delivery of infrastructure services



IFC PPP Advisory

- Advisor to government clients to prepare infrastructure projects for implementation as PPP's
- IFC takes full accountability for due diligence, preparation of structuring options and assists clients in carrying out competitive tender process/negotiated deal
- IFC also manages contracting in of external consultants such as technical, legal and E&S to support due diligence and tendering phases of project
- Fee-based services

- PPPs in all Infrastructure Sectors:
  - transport, energy, health and education, water and sanitation, and telecommunications sectors
- Our Staff are Transaction Specialists
  - Experienced in key elements of PPP transactions and sector expertise
- We undertake pioneering transactions
  - First, difficult, political, reform-based, innovative

Cities Face Vast & Growing Infrastructure Needs



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Harnessing the Private Sector

PPPs present Cities with a tool to harness private sector capital, expertise and innovation to deliver key public services

Source: McKinsey

What is a PPP?

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What is a PPP?

Preparation

Process

Partnership

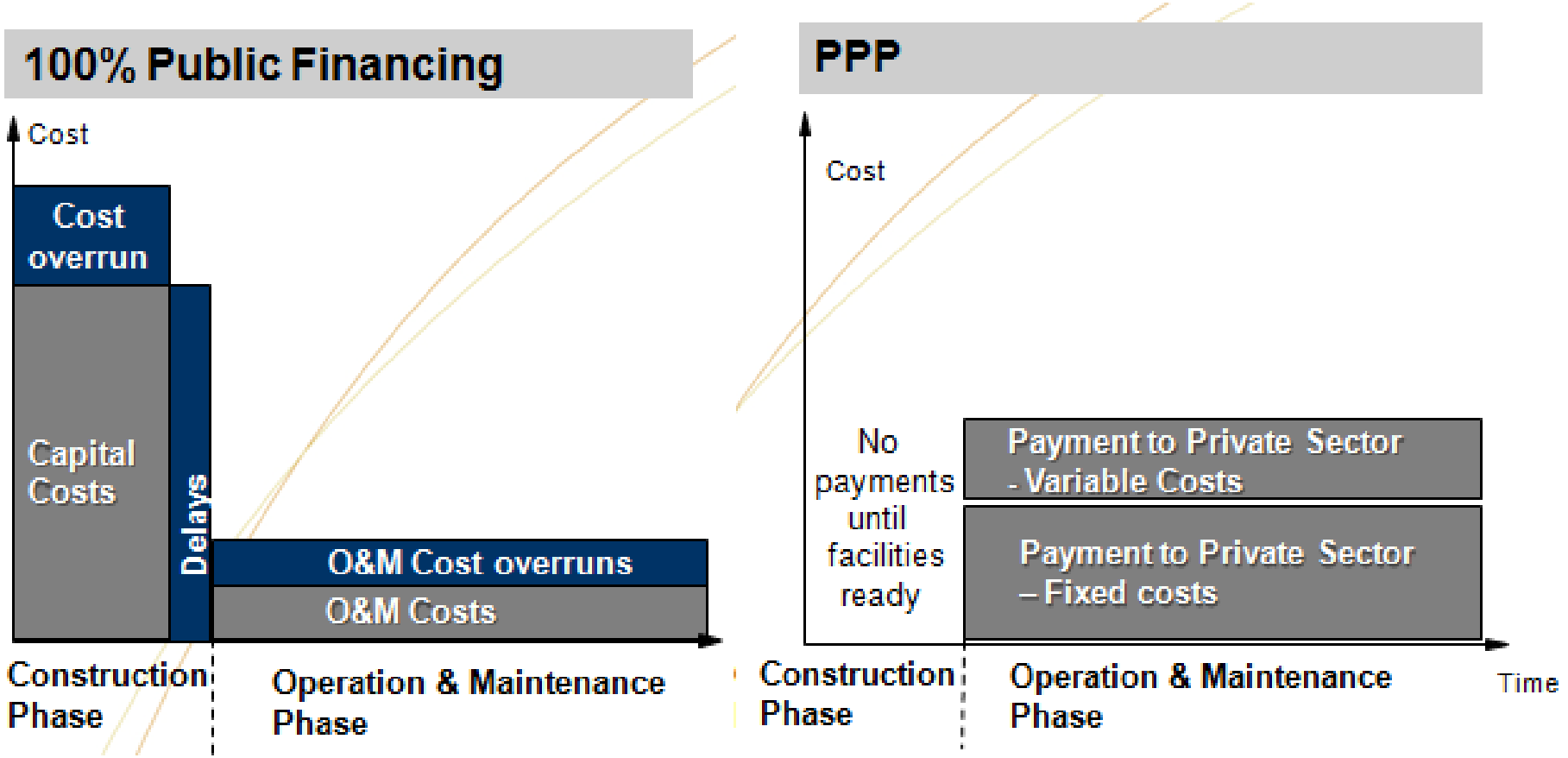
PPP Benefits

- ✓ Single procurement processes
- ✓ Stronger incentive framework to minimize construction delays
- ✓ Single accountability point for the treatment performance
- ✓ Investor responsible for cost overruns, delays and operating performance
- ✓ Investor responsible for ensuring that operating costs and maintenance are funded

PPPs: How are they different to traditional procurement?

Traditional delivery. Public entity procures an asset.

Alternative delivery. Public entity procures a service.



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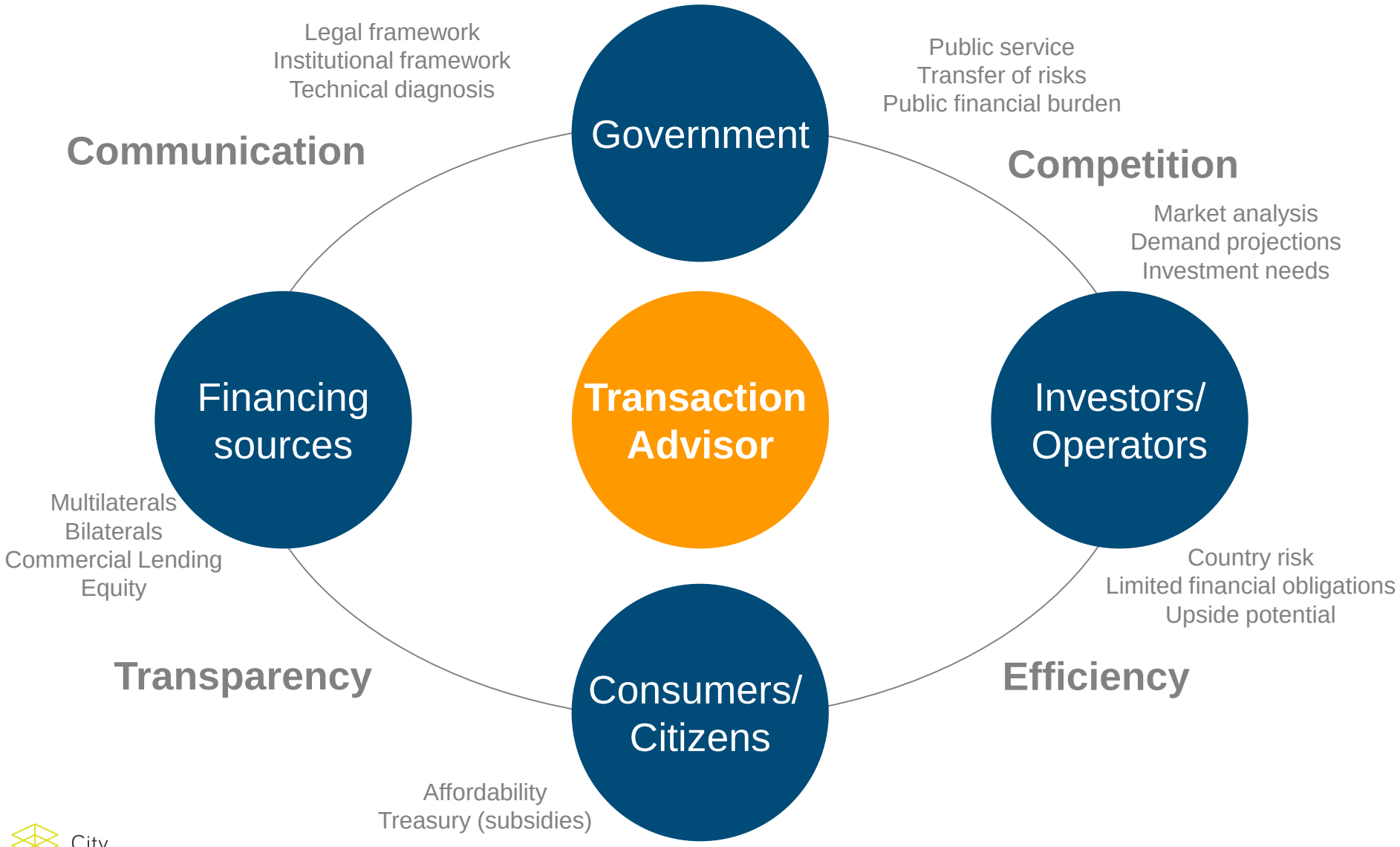
PPPs: Balance of Stakeholders



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Developing a PPP Pipeline

1. Establish project **need** and **viability**
2. What's in it for the private sector?
3. Optimal allocation of project risks
4. Will it deliver Value for Money and best use of resources?

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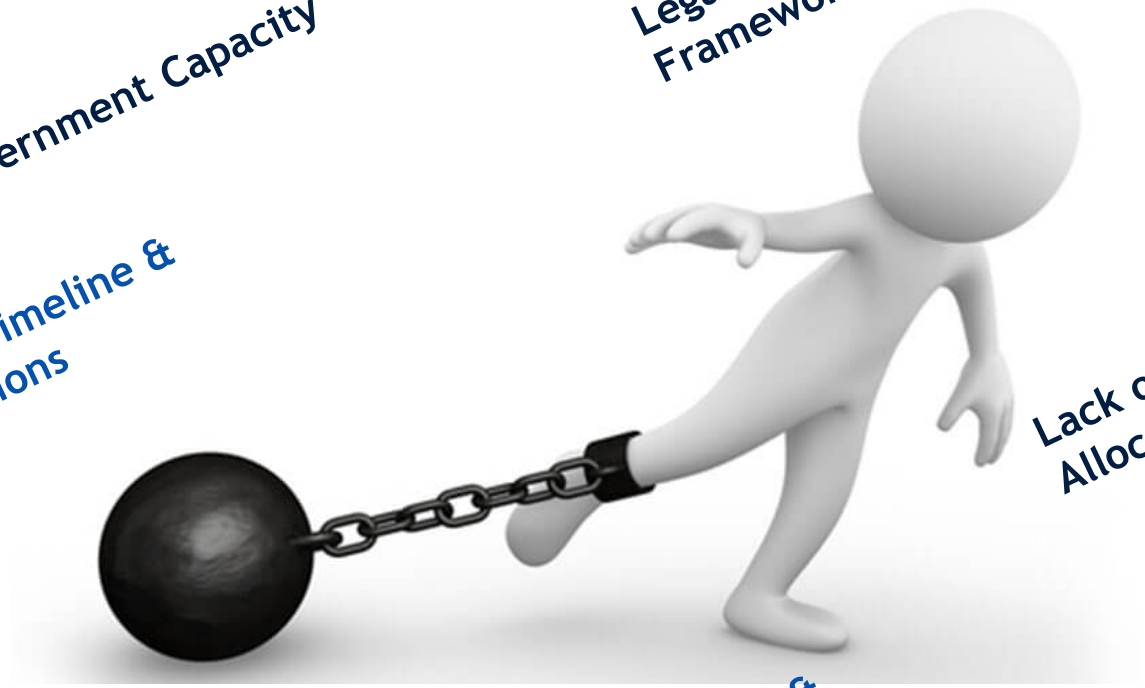
Key Constraints to PPPs



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PPP Prerequisites

Project Selection is Key: Projects must be <u>Bankable, Demonstrable, Simple</u>

- ✓ Technical Analysis – Is it possible?
- ✓ Financial & Economic Analysis – How much will it cost & does it make sense?
- ✓ Social & Environmental Analysis – What are likely impacts (positive & negative) on people and environment?
- ✓ Legal Analysis – What is the legal basis for implementation & operation?

PPP Considerations

Identify Suitable Projects

Stable Public Policy

Conducive Legal & Institutional Environment

Output Based Standards

Market Investment Opportunities

Transparent Process

Higher Transaction & Capital Costs

Contract Management

Loss of Control

Complex & Longer Preparation

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Urban Rail PPP's

Key Features & Main Approaches

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LRT & Metro PPP's: Introduction

- Cities around the world **increasingly using rail transit – LRT & Metros – to solve urban transportation problems**

- PPP model to **leverage both public and private resources and expertise**

- While roles and responsibilities of private and public sector partners may vary, **government's overall governance role and responsibilities do not change**

- **PPPs** can serve as a model for delivering public services and infrastructure, **are not a substitute for effective governance**

- **Government remains responsible for delivering services** and projects in a manner **that serves the public interest**, regardless of the chosen method of procurement.

Numerous Models for LRT PPP's

PPP models for urban rail and metros can range from **full system concessions** where private sector takes design, construction and operation risk to just **outsourcing of O&M**

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4 Main Approaches for LRT PPP's

- #1 – **private sector is responsible for all aspects of the project** (civil works, electro-mechanical (E&M), rolling stock and O&M)
- #2 – **private sector is responsible for E&M, rolling stock and O&M**, where **government finances and builds the civil works** through traditional public procurement process
- #3 – **private sector is responsible for O&M and rolling stock**, where **government finances and builds the civil works and E&M**
- #4 – **private sector is only responsible for O&M**, where **government finances and builds the civil works, E&M and rolling stock**

4 Main Approaches for LRT PPP's

- **Pros & cons to each approach** as well as hybrids
- External factors such as **delivery capacity & risk appetite** of government, availability of funding, and **market appetite of private sector** will dictate which approach makes sense in a given context
- Under all of the above PPP approaches, **government is usually responsible for procurement and delivery of right of way (ROW)**
- Government will also usually be responsible for any **material adverse government actions** (MAGA) that impact the project, and **any other risk that cannot be quantified or mitigated**
- PPP agreement (normally a **Concession Agreement) will set out agreed risk allocation**

Duration of LRT PPPs

- Approach 1 - **LRT & metro concessions contracts with 20-30 year duration**

- In PPPs **where private sector is only responsible for providing rolling stock and/or E&M** (Approaches 2 & 3), market practice is also to provide a somewhat longer contract term (**typically 10-15 years**)

- For O&M PPP (Approach 4 above), duration not tied to debt repayment terms or return on investment. **Duration should allow sufficient time to develop O&M company, testing and commissioning** (approximately 12-24 months), & time for **full operations** (minimum of 5-7 years)

Farebox

- Farebox is a function of **number of people projected to use the system** on a daily basis, and the **fare that they are required to pay**
- **Fare structure and strategy** for a LRT or metro system is normally the **responsibility of government**
- Requires the input of **experts experienced in the field of designing fare structures and strategy**
- A **willingness to pay survey** is often the first step in establishing the basis for a LRT and metro fare strategy, followed by **detailed demand and farebox revenue models**

Farebox

- Fare charged to users is **not reflective of the full cost** (i.e. amortization of CAPEX plus O&M costs) of providing LRT or metro service.
- A fare level aimed to recoup **full cost of service would likely be too high for most users to afford**
- LRT and metro systems can usually only **aim for a farebox that covers ongoing O&M costs of the system** and hopefully some level of future renewals to the system
- It is also best practice for the fare to be **automatically adjusted for inflation**

Commercial Revenues

- **Supplementary revenue streams from related commercial businesses** within the system and from **commercial real estate development** on station or depot lands
- **Commercial revenues can reach 20-25% in a successful case** particularly where there is transit oriented development potential
- **MTR system in Hong Kong derives a significant portion of its revenues (more than 35% in 2014**) from related commercial and real estate activities.
- Most mass transit lines see **commercial revenues in the 5% to 10% range** (i.e. the vast majority of revenues still originate from the farebox).

Need for Government Support

- For **greenfield LRT and metro systems**, due to difficulty in predicting human behavior and optimism bias, the **level of actual ridership and its growth rate (and corresponding farebox) has been lower (and in some cases much lower) than projected**

- Farebox and commercial revenues are normally **not sufficient to cover the full cost of the system**

- As a result, most LRT and metro PPPs are implemented with a **high degree of government funding** (construction milestone payments, viability funding gap payments (VGF), annual or periodic availability payments, shadow fare mechanisms and/or combinations)

Need for Government Support

- **Large government funding requirement does not mean that private sector financing cannot be utilized**

- **Credible government funding mechanism to supplement farebox and commercial revenues can allow the entire (or a large portion of) capital costs of the project to be financed by the private sector** through a combination of equity and debt financing

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Approach #1

- **Delivery and integration risk for the entire system plus O&M risk is transferred to the private sector**

- **Full responsibility for ensuring the system is fit-for-purpose and meets operational requirements** specified in the concession agreement.

- PPP agreement will **define minimum performance standards and specifications for the system**, and leave it to the concessionaire to design and deliver a system on time and within budget that meets the pre-agreed specifications.

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Approach #1

- **Primary government responsibility** under Approach 1 is **timely delivery of ROW**
- **Failure of the government** to deliver ROW on time will result in time **extensions for the concessionaire and may result in compensation**
- **Pros of Approach 1** - **fully leveraging private sectors ability to deliver complex infrastructure projects on time and transferring risk of any construction and/or procurement cost overruns** to private sector

Approach #1

- Government **also benefits from private sector expertise and incentives for O&M**, and because private sector has designed and built system, government does not need to provide any operations related warranties

- **Design will usually look to minimize lifecycle costs to ensure efficient O&M of the system and minimize renewals** over the long term

- **Primary drawback** of Approach 1 is that **transfer of most risks** to private sector comes with a **cost in the form of a higher required equity return**

Approach #1

- In addition to farebox, **government can provide funding for the CAPEX through VGF,** payments linked to **construction milestones, an annual availability payment**, or a combination of these
- If the farebox is given to the concessionaire, then the government will also need to define a **fare adjustment regime** in the concession agreement
- **Annual increase linked to inflation, or a shadow fare mechanism** where government pays difference between actual fare and fare needed to make project financially viable
- **Farebox is retained by government, then all payments** to concessionaire (except for commercial revenues) will need to **come from government**

Approach #2

- Similar to Approach 1 except government will be responsible for **delivery of civil works components of the project** (usually elevated viaduct, tunnels (if underground), stations and depot) through traditional public procurement

- Since design and construction of civil works represents a large component of total project cost, delivery of this component by government **reduces the amount of funding government will need to provide concessionaire** (i.e. it can substitute for a VGF)

- **Primary benefit** to government of this approach is to **leverage government's lower cost of capital (or a bilateral source of funding)** to deliver a large part of LRT or metro project without additional cost of private sector's required returns

Approach #2

- **Main drawback** for government of this approach is that it assumes **risk of any delays and cost overruns for delivery** of all civil works for project
- **Provide warranties to the concessionaire** for design and performance of the civil works component of project
- **Such warranties** can usually be **“back to back”** with warranties provided by government’s **EPC contractor**
- **Requisite expertise to manage delivery of a large and complex infrastructure project**, and there will need to be frequent coordination meetings with concessionaire to ensure compatibility of civil works with E&M, rolling stock and O&M

Approach #3

- **Same as Approach 2 except government is taking on even further responsibility** by delivering the E&M as well as all civil works
- **Further reduce amount of project cost that needs to be financed by concessionaire**
- **Increasing government's delivery risk** (delays and costs overruns) and **warranties to be provided** to concessionaire

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Approach #4

- **Full responsibility and cost for delivering all components of project rests with government**, and concessionaire is **only responsible for O&M**
- **Rely entirely on government (or bilateral) funding** and eliminate need for any private financing
- **Government fully responsible for all delivery risk (delays and costs overruns)**, and government must provide a **full set of warranties to** concessionaire

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Approach #4

- **O&M PPP's farebox risk is fully retained by government** and O&M concessionaire is paid for delivery of pre-agreed service schedule
- Commonly used remuneration approaches for O&M PPPs are: **(i) Production Fee per Train/km; (ii) Fixed Availability Payment; and (iii) Cost plus**
- **Incentivized to operate the LRT or metro in the most efficient manner**, and provides government with flexibility to adjust service delivery levels to meet changes to passenger demands
- **Important for a greenfield system** in a city with no prior rail mass transit system where there is historical data on ridership growth

BRT PPP'S

Key Features & Main Approaches

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Bus Rapid Transit (BRT)

- Bus Rapid Transit (BRT) is a bus based mass transit system
- It strives to replicate the performance and passenger experience of rail based mass transit systems
  - Comfortable, predictable and cost effective mobility
- Key technical features:
  - Exclusive right of way bus lanes
  - Enclosed stations
  - Quick boarding and alighting
  - Real time passenger information
  - Pre-board fare collection

BRT PPP FEATURES

Typical BRT PPP Structure

- Public entity is responsible for planning and control aspects and for providing infrastructure (busways and stations)
- Operations and fare collection are provided by private companies through concession contracts

However, contractual arrangements with private operators vary

- In Curitiba and some other Latin American BRT systems, a monopoly of the former bus operators was allowed to take control of the new business
- In Bogota, the new services were competitively tendered to four separate operating companies

BRT PPP Features - 2

- As a policy decision, contracts with private operators were structured to **insulate operators from the demand risk**
- BRT operators are paid per km in Curitiba and Bogota which means they are **paid a certain amount regardless of demand**
- Private control over operations **shields the system somewhat from the political** process
- **Bogota**
  - Profits from the BRT system cannot be diverted directly to other public funds.
  - City government gets only about 4% of the farebox revenue
  - Allowed to reduce passenger fare but operators then have to be compensated
  - Private operators are consequently protected against arbitrary tariff changes by government

Other BRT Considerations

- **Involvement of former operators** in planning process and offering them opportunity to be a part of new system
- **Finances for infrastructure development**. Latin American cases, financial resources came from fuel tax, local city revenues, credit from global and regional lending institutions such the World Bank, Inter-American Development Bank and CAF, and grants by the federal governments
- **To encourage modal shift from private cars to BRT**, Bogota's local administration launched a structural change in public transport conditions with a view to reduce use of motorized transport
  - Measures included constructing pedestrian walkways and bikeways, imposing vehicle restrictions in peak periods, raising parking prices, and imposing day-long automobile bans.
  - Proper urban planning, compatible with the new BRT systems, is another contributing factor

Conclusion

Conclusion

- Purpose of a PPP for LRT and metro projects is to **efficiently leverage the expertise of private sector to deliver a complex project**
- **PPPs do not immunize them from all risks on the project** - a tool to package a combination of tasks and allocate them to a private sector consortium better placed to manage them
- For LRT and metro projects, PPPs can be an **effective way of transferring the substantial challenge** of integrating civil works, engineering equipment & systems, rolling stock, and O&M and preventative and lifecycle maintenance for the project, and aligning these matters towards a singular goal of achieving a reliable and punctual service for an efficient price[1]

1 Making light rail work PPP challenges and solutions, Norton Rose Fulbright, May 2015

Conclusion

- **PPP will not create a financially viable project** when project is intrinsically financially unviable.

- When sum of **farebox revenue and commercial revenues is not sufficient** to cover the cost of financing the CAPEX and covering O&M costs plus renewals for the project, **some form of government funding within the payment structure is required**

- As a result of the lack of success of many demand-risk rail sector projects in previous years, **most LRT and metro PPP schemes are now procured on an availability basis**[1]

1 Making light rail work PPP challenges and solutions, Norton Rose Fulbright, May 2015

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THANK YOU

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