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Maximizing Revenue for Funding Infrastructure

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On this page: Find the context of and the need for Innovative Revenues for Infrastructure as conventional approaches to funding public infrastructure are not bringing in sufficient revenue. Check the [Innovative Revenues for Infrastructure](#) section or visit the [Content Outline](#).

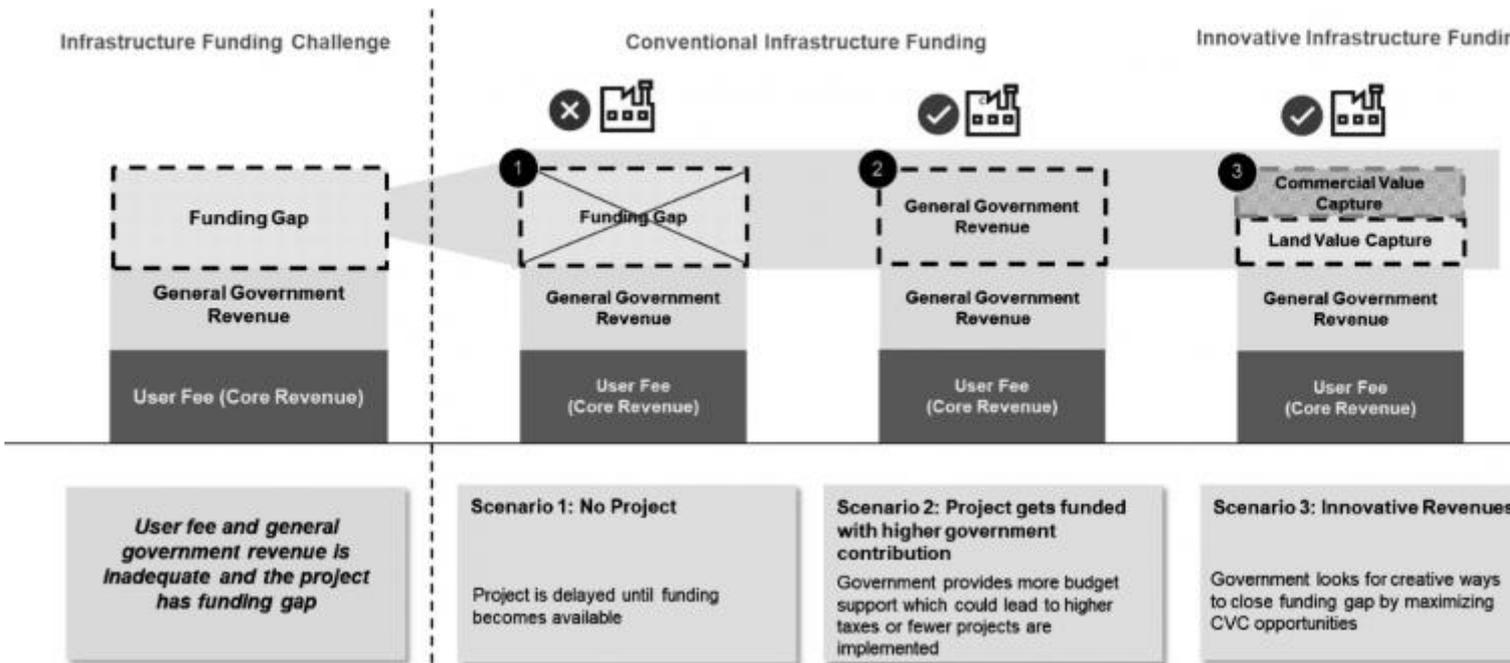
Governments usually lay the burden of payments for infrastructure services on a narrow range of users with shortfalls funded by governments. Governments tend to look for revenues from infrastructure project users (e.g. water consumers, drivers, or light rail transit (LRT) passengers). If users cannot afford (or will not pay) tariffs or fees that are high enough to fund the infrastructure in question, the government makes up the difference through capital contributions for construction or availability payments during operations. This narrow focus misses various sources of funding (revenue) for infrastructure.

Conventional approaches to funding public infrastructure are not bringing in sufficient revenue. As illustrated in [Figure 1](#), with tightening fiscal space in developing countries, revenues from user fees or tariffs (or core project revenue) and government funding (from general tax collection and other sources) are not sufficient to fund growing infrastructure gaps. Absent increased revenues, more infrastructure investment

will require a larger allocation of Government budget (potentially funded by increased taxes and fees) and/or increased fiscal liabilities.

Alternatively, governments are looking for creative ways to pay for public infrastructure, including through Land Value Capture (LVC)¹ or Commercial Value Capture (CVC)². LVC involves mobilizing some of the land value increases resulting from actions other than the landowner's, such as public investments in infrastructure or administrative changes in land use norms and regulations, for the benefit of the community at large. CVC involves mobilizing additional revenues through related commercial activities³. Box 1 notes the successful experience of Hong Kong metro, where CVC and LVC provide major contributions to funding public urban transport services.

Figure 1: Conventional vs. Innovative Infrastructure Funding



LVC has significant potential for providing alternative funding for infrastructure. The concepts surrounding and implementation of LVC is the subject of extensive analysis and literature.⁴ CVC is far less extensively considered, and therefore will be the primary focus of the Guidelines.

While CVC offers an exciting opportunity for infrastructure development, commercial activities and the revenues associated with them are inherently risky. Project Owners need to be aware that optimism bias and over-reliance on commercial revenues can also result in project delays or failure. In case of Hyderabad metro (Box 2), heavy reliance on CVC revenues (real estate driven) in a public urban transport project led to financial challenges, projected demand growth and footfalls were not achieved and therefore CVC under-delivered.

See case studies below:

Box 1: CVC successfully helped increase funding for mass transit in Hong Kong⁵

Case Study: [Hong Kong Mass Transit Railway](#)

CVC contribution: The mass transit railway in Hong Kong is highly efficient without government subsidy. The Hong Kong Mass Transit Railway Corporation (MTRC), a government-owned corporation, is responsible for providing metro services. Real-estate development has provided an important contribution to MTRC's strong financial performance. MTRC purchases the development rights, for 50 years from the public administration, "to construct property above railway stations and depots, and land adjacent to the railway." Subsequently, the MTRC publicly tenders these development rights to private developers, with an additional land premium that takes into account the added value from the intended railway expansion. The private developers are responsible for the construction and commercialization of the residential and commercial properties that they develop. Revenues generated by the residential and commercial properties are shared between MTRC and the private developers.

Impact: MTRC is widely regarded as the gold standard for transit management worldwide. MTRC generated around USD 11 billion between 1998 – 2013. The project helped reduce the burden of public transportation investment on the Hong Kong government's fiscal position.

Challenges: The MTRC model is not easy to replicate due to unique characteristics of the city such as scarcity of land and very high traffic volume (4.5 million passengers per day).

Box 2: High reliance on commercial revenue and sharp drop in demand led to financial struggle for private urban transport operator ⁶

Case study: [Hyderabad Metro Rail](#)

CVC contribution: The project was developed as a Design Build Finance Operate Transfer (DBFOT) public-private partnership (PPP) with a five-year construction period, 30-year operation period, and a 25-year potential extension. As part of the project agreement, the concessionaire had the right to develop 1.7 million square metres of land, such as the airspace above metro stations and terminals, integrating metro stations with intermodal transport connections and office, retail, and other services. In addition, 30% of the land at its three depots was allowed to be commercially developed. The commercial developments were to be used to generate rental revenue and not to be sold. 45% of project revenues were to be generated through these development activities, 5% from advertising and miscellaneous sources (e.g. parking), with the balance through passenger fares.

Impact: Using non-fare revenue sources from commercial development opportunities reduces reliance on public subsidies. The Hyderabad project received the award for the best urban mass transit project by the Indian Government in 2018 and improved transportation quality in the city.

Challenges: Low ridership impacted on project revenue and the project company's ability to invest in commercial development as well as core services (planned transit network). Recently, the project has suffered huge losses due to low ridership, partly due to Covid-19, and received soft loans from the government to help reduce the debt burden. The government has also allowed the project company to monetize some of the land parcels handed over as part of the concession agreement to increase earning.⁷

Footnote 1: [Module 16 – Harnessing Land Value Capture of the World Bank Municipal PPP Framework.](#)

Footnote 2: The concept of Commercial Value Capture was introduced in [Module 17 – Capturing Commercial Value of the World Bank Municipal PPP Framework.](#)

Footnote 3: The concept of Commercial Value Capture was introduced in [Module 17 – Capturing Commercial Value of the World Bank Municipal PPP Framework](#).

Footnote 4: World Bank, Finding Innovative Sources of Revenues for Infrastructure (2022), Financing Transit-Oriented Development with Land Value, Flood Protection and Land Value Creation (2015), Unlocking Land Values for Urban Infrastructure Finance (2021): International Experience (2013), [The Municipal Public-Private Partnership Framework – Module 16: Harnessing Land Value Capture](#) (2019)

Footnote 5: See [Hong Kong Mass Transit Railway Corporation, Hong Kong SAR, China](#) from [Project Summaries Part 1 Municipal Public-Private Partnership Framework](#).

Footnote 6: [Hyderabad Metro Rail - Hyderabad Metro Rail - Improving Delivery Models](#).

Footnote 7: [Rs 3000 crore govt loan for Metro to recover from loss in Hyderabad](#).

Related Content

- [How innovative revenues for infrastructure can fundamentally reshape infrastructure funding](#)

Additional Resources

- [Asset Recycling Projects](#)
- [Finance Structures for PPP](#)

The [Guidelines on Innovative Revenues for Infrastructure \(IRI\)](#) is intended to be a living document and will be reviewed at regular intervals. They have not been prepared with any specific transaction in mind and are meant to serve only as general guidance. It is therefore critical that the Guidelines be reviewed and adapted for specific transactions.

To find more, visit the [Innovative Revenues for Infrastructure](#) section and the [Content Outline](#), or [Download the Full Report](#). For [feedback](#) on the content of this section of the website or suggestions for links or materials that could be included, please contact the Public-Private Partnership Resource Center at ppp@worldbank.org.