

Global Agenda

Accelerating Infrastructure Delivery New Evidence from International Financial Institutions

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Context and Objectives of the Report

The needs for infrastructure in urban areas are vast. In the face of sustained urbanization across a majority of emerging market countries, many experts estimate that some 75% of all infrastructure investments will be needed in urban and peri-urban environments over the next 40 years. Governments, bilateral donors and international financial institutions (IFIs) are increasingly conscious of this vast challenge. Indeed, with many countries continuing to face economic headwinds in the aftermath of the global financial crisis, the importance of infrastructure to spur and sustain economic activity is now established at the G20. The response from the G20 has been consistent and sustained.

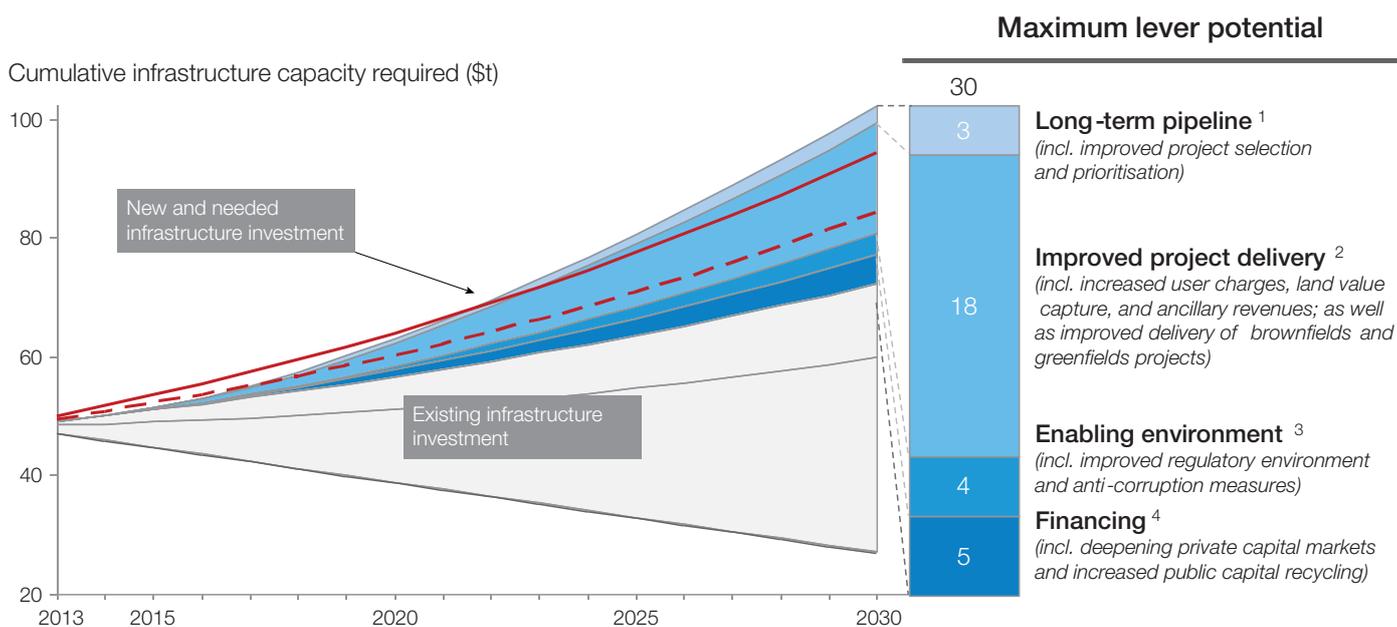
- G20 efforts to promote infrastructure have led to a capital increase of \$100 billion across the main IFIs in 2009.
- At the G20 Seoul meeting in 2010, a high-level panel recommended a review of the Multilateral Development Bank policy framework for infrastructure, incorporating a more explicit recognition of the sector's role in boosting growth.
- The joint publication by the MDB (Asian Development Bank, African Development Bank, European Bank for Reconstruction and Development, European Investment Bank, Islamic Development Bank and the World Bank Group), *Infrastructure Action Plan 2012 Report*, recommended to the G20 (Group of Twenty major economies) an increase in the supply of bankable projects in recognition of the fact that the pipeline of projects must be made broader to achieve higher levels of investment in the sector.
- At the St Petersburg meeting in 2013, the Partnership for Growth and Jobs report of the G20 and its business leaders, the B20, set out a major recommendation to stimulate private investment in infrastructure to increase the number of well-structured projects.
- Finally, the current Australian B20 Leadership Group's infrastructure and investment task force states that the existing gap between the need for infrastructure investment globally and the ability to deliver on that need is mostly explained by the lack of proper project preparation and other institutional support (see figure 1).

Infrastructure is an important driver of economic competitiveness in the present globalized investment landscape. Yet the divergence between the need for infrastructure and the ability of governments to deliver continues to widen, creating a bottleneck for growth and diversification. These gaps have widened in certain developed markets owing to limits imposed by public indebtedness and, in emerging markets, by the underestimation of the growing need for infrastructure due to population growth and urbanization. In both cases, more effective delivery mechanisms are needed.

To enable public- and private-sector decision-makers, including those in emerging markets in Africa, Asia, Latin America and Eastern Europe to accelerate the delivery of infrastructure, the World Economic Forum's Global Agenda Council on Infrastructure is seeking to learn from the successful recent experience of IFIs by identifying the drivers of success, chief among them the prospect of strong economic and financial returns from projects.¹ These

Figure 1: Cumulative Infrastructure Capacity Required

Source: The infrastructure and investment task force office of the B20 Australia 2014.



1 Based on bottom-up estimates of the benefits of improved project selection and prioritization (McKinsey and BCG analysis). 2. Estimates of increased revenue potential of user charges, land value capture and ancillary revenue (African Infrastructure Country Diagnostic, IEA, World Economic Forum and BCG analysis) and cost efficiencies from best practice capacity utilization, maintenance planning and demand management of brownfield infrastructure assets and streamlined delivery of greenfields projects (McKinsey, World Economic Forum and BCG analysis). 3. Based on improving all countries' regulatory environment to current best practice (World Bank and BCG analysis) 4. Based on increasing depth of national financial markets to world top best practice (World Bank and BCG analysis); and estimates of "privatize-able" share of current government non-financial assets (Infrastructure Australia, *The Economist*, OECD and BCG analysis).

Lessons are derived from a broad spectrum of international experience over the past 20 years, primarily in the water and urban transport sectors. The IFIs represented are the European Bank for Reconstruction and Development (EBRD), the Asian Development Bank (ADB) and the International Finance Corporation (IFC). In the view of the Forum's Global Agenda Council on Infrastructure, these experiences are broadly applicable to many emerging market countries across various infrastructure sectors.

This paper focuses on the lessons of IFI experience in three areas:

- Funding and financing of infrastructure projects
- Project preparation
- Innovative funding approaches

In a nutshell, the review summarized in this paper shows that all successful infrastructure projects have three things in common:

- *They all have a strong underlying business case.* A good project generates both economic and financial returns through sufficient lasting demand for the new or refurbished infrastructure in areas in which that infrastructure has a significant positive impact on the well-being of economic actors.
- *They are all supported by a strong financing and contractual structure.* All are built on robust project finance structures that achieve bankability, legal enforceability and environmental compliance while helping to expand the capacity of institutions to regulate, monitor and evaluate projects.

- *They can all depend on sustainable funding sources.* The diversity of experiences shows that creativity and adaptability are often essential. Funding may come either from user charges alone or in combination with predictable, stable and creditworthy public sector support.

Obviously, paying for infrastructure is a vexing issue in both developed countries and emerging markets, and can be a tough political challenge. Yet the search for funding must be a top priority for the public and private sectors alike if infrastructure investment is to accelerate and economies are to continue to grow. The bankability of infrastructure projects enhanced by new revenue sources and supported by enforceable contracts designed to match local institutional capacity is what will accelerate their delivery.

This paper is organized as follows:

- **Section 1** shows how the proper array of incentives in contract design stimulates the effective use of the "user pays" principle in project finance.
- **Section 2** highlights the importance of project preparation in ensuring the sustainability of projects.
- **Section 3** illustrates the importance of creativity in project funding by discussing how capturing a share of the value added by infrastructure projects can help generate revenue in a fair and efficient way across a broad range of projects.
- **Section 4** provides conclusions.

1. Getting the Right Funding



What accounts for the chronic shortage of funding for infrastructure and the resulting rationing of access to financing for the sector? Two key factors drive the shortage. The first is the failure to adopt and implement the principle that users should pay for infrastructure services whenever politically feasible. The second is poor project preparation, often owing to a variety of institutional challenges that need to be addressed throughout the project cycle. International financial institutions (IFIs) have been quite successful at getting around both problems by building the right mix of incentives into the initial contracts that underpin infrastructure projects.

Funding and financing

Although they are often treated as synonyms, infrastructure *funding* and infrastructure *financing* are in fact two separate components of the investment picture. Infrastructure *funding* refers, broadly, to revenue sources, often collected over a span of many years, which are used to pay the costs of providing infrastructure services. The most common sources of infrastructure funding are:

- *General purpose tax revenues.* Tax revenues for infrastructure can be raised from many sources.
- *Revenues from user charges.* User charges are typically tied directly to the cost of producing the service for which the fee is charged. This source of funding is limited, however, to those forms of infrastructure (such as toll roads) and related services that are amenable to the collection of user charges.
- *Other charges or fees dedicated to infrastructure.* Revenue from a variety of charges and fees can be applied to infrastructure funding, such as fuel surtaxes and vehicle registration fees.

Infrastructure financing, by contrast, turns these revenue sources into capital that can be used today to build or make improvements in infrastructure. (The distinction is illustrated in box 1.) Only if a project can demonstrate reasonable predictability in funding sources for both capital expenditures and for operations and maintenance (O&M) can issues such as financing and delivery be tackled successfully. In other words, unless infrastructure funding issue is addressed, the financing options will continue to be limited.

Decisions about the proper sources of infrastructure funding are critical elements in the conception and on-time delivery of sustainable infrastructure systems. Without predictable revenue sources, the broader benefits of a project can never be realized. Yet, achieving secure and sustainable funding sources is often a challenge. This is mainly because infrastructure competes with other social and economic priorities for public resources. But it is also a challenge because political priorities can change fast, and infrastructure funding often requires a long-term commitment (to maintenance, for example). Moreover, when users are asked to contribute to the funding of investments through user charges, infrastructure competes for space in household budgets.

Box 1: Funding vs Financing: Electricity Market Reform in the United Kingdom

Source: Darryl Murphy, KPMG Europe, Middle East, and Africa.

A good example of the importance of the distinction between funding and financing constraints in a market is available in the United Kingdom (UK), which is in the process of undertaking major changes to its electricity industry through the mechanism of electricity market reform (EMR).

The UK must invest about £110 billion (\$182 billion) in low-carbon energy generation to meet EU targets on carbon emissions. EMR creates a mechanism to support investment through a feed-in tariff structured as a contract for difference (CfD) between the private sector developers as investors and the public sector. The CfD will create revenue stability for low-carbon generation (renewables and nuclear) through a long-term contract, making up the difference between the market price and an estimate of the long-term price needed to support an investment, known as the strike price.

The key to EMR's CfD is that the revenue support triggered when the market price is lower than the strike price will be levied against consumers. Hence the funding will flow from the user and not the government.

But although the EMR addresses the funding concern, it does not fully address the financing question. While an investor or financier will be concerned with the long-term revenue stability of a project, which will be supported through EMR, the mechanism does not address the construction and delivery risks of the underlying projects. Those risks are considerable for a range of projects under the EMR, particularly new nuclear and offshore wind plants. The additional steps that may be required to solve the financing issues have been addressed through initiatives such as the Green Investment Bank and the UK Guarantee Scheme (UKGS), which are being used to support access to the credit market across the whole infrastructure sector. Recently, the government announced that the UKGS will be used to support the new nuclear plant at Hinkley Point.

Developers will still need to provide capital for projects. In other words, the £110 billion investment required by the UK's EU commitments will have to be financed by developers and the debt markets. This remains a huge challenge and, as noted, the EMR will not be enough on its own to solve this issue. While large amounts of infrastructure investment capital are readily available for operational energy infrastructure, the appetite for development risk remains limited. Much of the burden will fall on European utility developers. These companies are increasingly looking to attract infrastructure fund capital into projects at earlier stages, often based on limited transfer of development and construction risk. This trend will need to expand further if the total investment challenge is to be met.

The role of the end consumer in funding infrastructure is growing in importance. As consumers will increasingly be called upon to bear the costs of the services they enjoy, governments must be clear in articulating the benefits of infrastructure investment to the public.

This is not news. What may be news to some is that new ideas to generate revenue are needed because two key sources have failed. First, the easy option of funding through general tax revenues (so-called clandestine funding) has been largely exhausted in most countries. Second, public-private partnerships (PPPs), which acknowledged the exhaustion of clandestine funding and were designed to circumvent it, have not delivered as much as initially expected, precisely because they, too, have had an inadequate funding basis. When there is no public sector funding available for an infrastructure asset, touting PPPs as a saviour and panacea sets up a false premise. Without a credible and strong mechanism to deliver payments (such as fares and other user charges, government payments or a combination of the two, plus other payment enhancement mechanisms), private developers and financiers cannot engage.²

Under constrained fiscal conditions, experience shows that accelerated infrastructure delivery will ultimately depend on the increased application of the “user pays” principle to complement government funding. Just as necessary are enforceable contractual arrangements between the public sector and operators to guarantee application of this principle. User charges, of course, are fees tied directly to the cost of producing the service for which the fees are charged, although they may be linked to other goals as well. Owners and operators alike use them to raise revenue. Typically, the owner may be the government (at any level), a government-owned utility, a government-regulated utility or the private sector. User charges may be set high enough to recover all costs, or they may cover only a portion of operations (for example, if some segments of the user population are unable to pay for even a subsistence level of service).

Fairness and awareness of the social dimensions of the user-pays principle are critical for the political sustainability of programmes that depend on the principle. Yet social concerns are easier to build into user fees than some of their critics often assume. For example, the revenue they generate may come from a variety of charges and fees quite directly related to the infrastructure developed and yet be used to sponsor related social activities. Vehicle registration fees can be applied to roads, and development impact fees may help pay for schools, roads and water service.

In many cases, however, it is also important to recognize that even though the user-pays principle is the anchor for successful funding, the identification of complementary revenue sources generated by the positive by-products of infrastructure development may well be both necessary and desirable. Conversely, identification of such complementary sources need not and should not preclude reliance on affordable user charges.

Local or regional taxation offers many possible sources of revenue that may be derived from or intended for infrastructure, including property (or real estate) taxes and taxes on the sale of goods and services. (Even if all or part of a tax-generated revenue stream is dedicated



to specific purposes such as a road fund, the charge is still considered a tax if the revenue *source* can be used for general purposes.) So-called value capture strategies offer one of the most promising ways of improving the financing of infrastructure projects. Such strategies can be used by governments to recoup a portion of the increase in property value that result from infrastructure development. Tax revenues in such cases are sequestered (for example, they may be placed in escrow) and are used as dedicated funding sources to finance the debt incurred for infrastructure project capital investments. The third part of this paper discusses value-capture techniques and their application.

Illustration: Successful EBRD experiences with water and urban transport

One of the IFIs, EBRD, has achieved notable successes in the water and urban transport sectors in emerging markets through sub-sovereign direct lending underpinned by solid funding arrangements, successfully adapting financial and institutional instruments to improve creditworthiness within an off-balance sheet project funding structure. EBRD has also managed to get the incentives right in contracts by using a two-pronged strategy based on a public-service contract (PSC) complemented and reinforced by a project support agreement (PSA) in the case of water, and a municipal support agreement (MSA) in the case of urban transport.³

This new approach has made it possible to shrink the project cycle from almost 50 months to less than 36 months. Project preparation, from the mandate letter to the signature sanctioning the loan, now usually occurs in less than one year, and project implementation, from signature to full disbursement of the loan, occurs in less than three years. Most PSCs now have the following duration:

- Water: 10-15 years
- Bus: 8-10 years
- Rail: up to 20 years

Background

EBRD's participation in municipal finance in its regions of operation has been significant.⁴ Having begun in 1994, it has grown steadily since 2008 with the onset of the financial crisis and through the ensuing recessionary period. Since its founding in 1991, EBRD has invested more than €75 billion (\$102 billion) of its own funds in projects having a total value of €220 billion (\$301 billion). As such, it is the largest investor in the region. A good indicator of EBRD's ability to mobilize additional funding for its projects is that since the start of its operations, for every €1 the EBRD invests, €3 are mobilized.

To date, EBRD has financed more than 300 projects in the municipal sector, with 55% of all financing made at the sub-sovereign level, and another 20% raised from the private sector in the form of debt and equity in PPP arrangements or privatizations.

The non-sovereign nature of EBRD's business model stands in contrast to traditional sovereign IFI or bilateral lending in this area. Within the municipal sector, EBRD channels its funding for water and wastewater treatment systems, urban transport, district heating and solid waste management through its Municipal and Environmental Infrastructure Team, which is made up of some 60 professional bankers and sector experts. EBRD's municipal lending programme, totalling some €4.5 billion to date, has also enjoyed significant additional external co-financing.

This additional co-financing comes in the form of:

- B-loans from commercial banks, for a total of €1.5 billion to date
- EU grant financing for capital expenditures, totalling €3.5 billion to date
- Other IFI financing which has totalled €1.1 billion to date

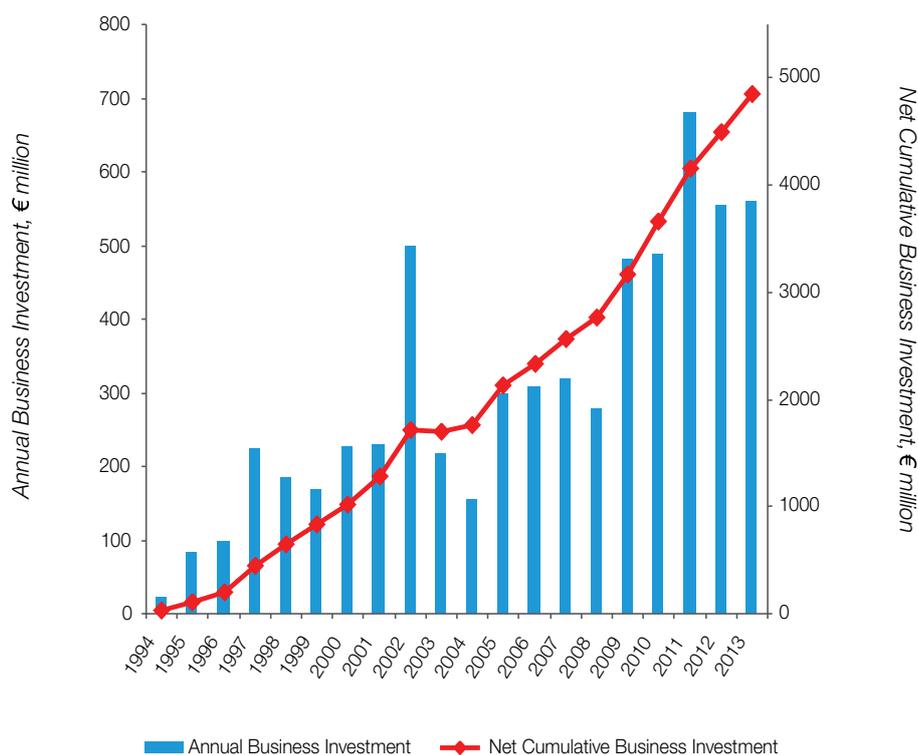
Thus, in all, EBRD municipal sector financing has resulted in €6.1 billion in additional co-financing.

EBRD's approach is to enhance the efficiency of its clients and promote a commercialized focus in its projects. The aim of this focus is to create additional revenue generation on the part of clients. For example, improvements in service quality (like new trams or buses, or more reliable water supply) both increase revenues by boosting demand and allow municipal utilities to raise tariff levels over time. The management tools supported by EBRD, such as financial operational performance improvement programmes (FOPIPs), and the use of PSCs also serve to improve the financial position of EBRD's municipal clients.⁵

By generating more income, clients gain additional financial capacity for further investments. A representative sample of municipal infrastructure projects shows that 10 years after full implementation of an EBRD project, revenue was on average 90% higher in real terms. With leverage, this additional capital capacity can be considered a "systemic uplift" in self-funding capability, as it can be multiples of the incremental revenue gained using basic financial leveraging (figure 2). As will be shown below, it can therefore be argued that EBRD's involvement has significantly improved the financial ability of its municipal clients to self-finance investments.

Despite the added credit risk of non-sovereign and private PPP lending, the non-performing loan ratio of the EBRD portfolio stands at just over 1%. This lending record has been accomplished in challenging environments, where only some of EBRD's countries of operation have investment grade ratings at the sovereign level (BBB for Kazakhstan and Russia as per Standard & Poor's), a situation that generally makes sub-sovereign lending by IFIs difficult. Globally, this level of performance is congruent

Figure 2: Cumulative Growth of EBRD Financing for Municipal Infrastructure



with research done by Moody's, the credit rating agency, which has shown that project finance is a resilient class that is equivalent, from a credit-performance standpoint, to specialized corporate lending.

In their study of 4,067 projects – which account for some 53.6% of all project finance transactions that originated globally during a 28-year period from 1 January 1983 to 31 December 2011 – Moody's concluded that the ultimate recovery rates for project finance bank loans are similar to ultimate recovery rates for senior secured corporate bank loans.⁶

The case of water

Solid funding approaches, as discussed above, have enabled EBRD, backed by a significant technical support component, to apply several financial and institutional instruments to improve the creditworthiness of any given project within an off-balance-sheet project-finance structure.

EBRD has used the PSC, backed by a PSA, in the majority of its water operations. Despite the difficult starting positions of client companies, the approach has proven resilient over time. It is important to note that EBRD-funded projects are typically the first time a water company has been exposed to direct off-balance-sheet financing, with all of the financial responsibilities that such financing entails. The projects therefore carry a demonstration effect, as well as the hope that they will be transformative for the client companies, even when the investments are small (see box 2).



Box 2: Project Preparation and Implementation Timelines: Putting It All Together in the Water Sector

A typical water and wastewater project takes 8-12 months to prepare from the point that EBRD is mandated by the client to prepare and carry out due diligence until loan signing. The average implementation period, as measured by the time from loan signature to full disbursement of all loan proceeds is 24-36 months. During this disbursement period, a range of technical cooperation activities are prepared and implemented.

In sum, EBRD's experience has been that for water and wastewater projects, clients obtain the full benefit from of EBRD's involvement within three years, on average.

EBRD has developed the approach described above over 18 years and has refined the way it analyses, prepares and implements projects in the water and wastewater sectors. While complex from a regulatory standpoint and challenging owing to the loss-making position of almost all water utilities, the sector represents an area of growing demand that can be approached successfully. Having established a sound planning and regulatory foundation, the PSC+PSA approach – accompanied by significant technical support during implementation – has proved robust.

The EBRD's experience in this sector carries lessons for other IFIs, having shown how to manage sub-sovereign risk while financing a function critical to any thriving city.

The PSC is a contractual arrangement between the service provider and the municipality (as owner) that clarifies the commitments, rights and obligations of all parties involved (city, company and users). A well-crafted PSC should include clearly defined long-term performance targets specifying the operational, technical and financial performance indicators. EBRD is not a signatory to the PSC.

EBRD is using the PSC approach with all of its municipal clients, including those outside of the European Union (EU). In fact, some 50% of all PSC-based projects have been implemented in non-EU countries, including Russia and the countries of Central Asia and the Caucasus. The PSCs have been adapted to fit local legal contexts, administrative rules and prevailing national budget codes.

In the water sector, the duration of the PSC is typically 10-15 years – ideally, two to three years longer than the period for repayment of the bank's investment, in order to ensure a sufficient "tail" to guarantee productive operations beyond the loan payback period. The contract aims to create a stable and predictable operational framework for the company, operational independence, predictable procedures and management autonomy over revenue streams. It also strengthens accountability and incentives through well-defined performance targets.

Chief among the owner's rights are approving business plans, investment programmes and tariff adjustments in a timely manner, and their main obligations are to not interfere in daily operations, including staffing and personnel issues. The company's rights and obligations include implementation of the business plan, as well as delivering, metering, billing and collecting payments for water services. The company annually updates its business plan, investment programmes, tariff proposals and progress reports.

The major attributes of PSCs are summarized in box 3.

Box 3: Attributes of a Typical PSC in the Water Sector

- "All-in" compensation for services delivered – all operations and management (O&M), depreciation of assets, any new capex programme planned over the lifetime of the PSC, and finance costs
- A definition of the operational parameters and the performance targets to be met, including the quality of water and treated wastewater
- A definition of the tariff regime and arrangements for billing and collection
- The benchmarking of costs to deliver the operational plan, with inputs such as labour, energy, materials, depreciation and capital costs
- The establishment of an indexation basis over the life of the PSC for variable costs (such as labour, consumer prices and energy costs)
- A definition of the duration of the PSC, linked to the life of the asset to be financed
- A defined payment formula
- A description of the municipality's obligations to provide quality service
- Inclusion of standard contractual clauses pertaining to supervision, auditing, invoicing and payments, contractual amendments, force majeure, dispute resolution and termination
- Technical appendices pertaining to the service and operations plan; equipment requirements; performance indicators; penalties for poor performance; tariff plan; and a formula for indexing compensation levels over time



The PSA is a contractual agreement between EBRD and the relevant government authorities – in this case, the municipal owners of the water companies, who are EBRD's borrowers. This agreement includes a general commitment to support the project and to facilitate key decisions (such as tariff adjustments) and cooperation. In particular, the PSA includes an obligation to provide necessary financial backing to the water and wastewater company to cover all economically justified costs not covered by the current level of water tariffs. If the tariff does not cover the full costs of operations and the financial obligations of the company, and if the municipal government is unwilling (or unable for social or political reasons) to increase the tariff, the PSA commits the government to cover the resulting financial revenue shortfall.

The PSA does not require the owner to finance costs that are not economically justified or that should be recovered through diligent collection of water bills. Hence, the PSA prevents the owner from paying for inefficiencies of the company not related to its real cost of operations.

It is important to note that the PSA does not entail an explicit municipal guarantee to repay EBRD on behalf of the borrower. However, because PSCs are structured in a robust manner, with built-in performance standards and supported by EBRD-funded technical cooperation during implementation, the PSA acts as a strong risk mitigator that helps lower the overall risk profile of the project. In this way, the PSA is a robust credit-enhancement tool.

The main benefits of the PSC + PSA structure are summarized in table 1.

Table 1: Principal Benefits of the PSC+PSA Structure in the Water Sector

| Stakeholder | Public Service Contract (PSC) | Project Support Agreement (PSA) |
|--|---|---|
| Owner | Allows owner to monitor against agreed performance targets | Provides quasi-guarantee of tariff shortfall payments from municipal government |
| | Spells out penalties and remedies for failure to provide required quality | Allows for subsidy rationalization as utilities become stronger |
| | Reduces budgetary burden | Gives reasonable foresight into tariff requirements over five-year horizon |
| | Shifts emphasis away from controlling input toward monitoring efficiency improvements and output | Put disciplinary pressure on operating company |
| Parent company (if applicable under a national/regional holding structure) | Holds company accountable to agreed targets | Guarantees tariff shortfall payments made to parent company to be passed through to company and allows for predictable and sustainable revenue stream |
| | Spells out penalties and remedies for failure to provide required quality | |
| | Shifts emphasis away from controlling input to monitoring efficiency improvements and output | |
| | Allows company to focus on operational efficiency without undue political influence | |
| Company | Allows company to focus on operational efficiency | Guarantees tariff shortfall payments to company and allows for predictable and sustainable revenue stream |
| | Guarantees tariff shortfall payments to company and allows for predictable and sustainable revenue stream (backed by PSA) | |
| | Safeguards company against any unnecessary cash outflows outside normal scope of business | |

By focusing on individual, locally-managed water systems, the PSC+PSA approach fosters decentralization. In this regard, it has broad international applicability. In Latin America, for example, many water systems are still managed centrally through holding companies and their regional or local subsidiaries. As a first step toward local ownership and improved management, the local subsidiaries could “contract” with the central holding company (or the associated ministry) using a PSC, which would put in place certain operational performance standards for the local managers in exchange for budgetary subsidies. As the local subsidiaries improve their management capabilities, ever more local control would be encouraged until the water utilities could pass to full municipal ownership. Further institutional consolidation could lead eventually to sub-sovereign funding by IFIs and commercial banks as B-lenders – the process EBRD’s countries have followed over the past 15 years. With the correct strategy, IFIs and governments can reduce centralized control as well as obligations to finance what are naturally local public services.

A good illustration of the payoffs of the PSC+PSA approach is provided by the Romanian experience, which has since been replicated elsewhere in Eastern Europe. EBRD began to invest in the Romanian water sector in 1994, beginning with the cities of Brasov, Iasi and Timisoara, three secondary cities of about 300,000 people that together represent about 6% of the national population. Since then the bank has made successive loans to water utilities, often together with commercial lenders. The increase in revenues over the 18-year period has been very significant, averaging 480% in real US dollar terms.

Taking the first three cities as a base and extrapolating the results achieved over the 20 Romanian cities with which EBRD has engaged, the revenue can be estimated to have grown from approximately \$300 million in 1994 to \$1.4 billion by 2011 in real terms. Some \$900 million more was collected by the country’s water operators in 2011 than in 1994. That revenue growth was based on sustained tariff rate increases well above inflation in order to allow for full cost recovery (including depreciation and all financing charges).

As a matter of principle, the tariff increases were instituted in connection with civil works to modernize the underlying infrastructure. In the original projects of the mid-1990s in Brasov, Iasi and Timisoara, the tariff increases were covenanted in the loan documentation to increase by 100%, 50% and 50%, respectively, in the first three years following loan signing. This unorthodox approach was accompanied by a strong public relations initiative whereby the companies and local political leaders informed water customers that the civil works under the roads and at the water plants needed to be paid for primarily by users, and that the works would result in improved service. When the quality indeed improved substantially (water had been available only three hours per day in the early 1990s, and was of poor quality), the utility companies gained users’ trust.

Water rates have continued to grow. Today’s average tariff of nearly \$1.50 per cubic metre represents a 900% increase in real terms and yet remains well within affordability constraints (defined as less than 5% of disposable household income). Many companies are now running healthy cash surpluses. Using a conservative financial gearing ratio of 3:1, the water sector as a whole is able to

make additional self-financed investments of \$3 billion. This level of self-financing capability is the ultimate test for any IFI with a true development aim. The litmus test is whether, following a series of projects in the sector, the country's own operators can create sufficient internal funding capacity to complete the modernization of the sector. Other benefits of achieving self-sufficiency in water services are described in box 4.

Box 4: The Positive By-products of a Successful Effort to Achieve Self-sufficiency in Water Services

Although achieving financial autonomy is already quite an efficiency, some of the by-products of the project design and of the positive incentives generated by this design deserve mention. Four such important payoffs are highlighted here:

Water and wastewater systems provide an ideal platform for energy efficiency initiatives. Energy costs have increased considerably over the last decade. This has impacted the operational costs of water utilities, as energy usually accounts for more than 25% of total operational costs in a well-managed water company. For example, on average, in Romanian water companies, electricity accounted for 40% of operational costs in 2000, a clear sign that EBRD's involvement with input cost efficiencies has paid dividends.

Mainstreaming of higher standards. Several EBRD countries have joined or are in the process of joining the European Union. As part of the process, a series of regulations and directives must be implemented and translated into national legislation. Romanian water and wastewater projects must meet the requirements of applicable European directives. EBRD has been able to extend the higher standards in the sector across the EBRD region, including into Central Asia and the Caucasus, by focusing not on externally imposed standards but on the underlying business case for improving quality standards. Once clients understand that users will be willing to pay more for products and services of higher quality, the argument for improved standards is much more convincingly made.

Sustainable water management has a direct impact on water scarcity and climate resilience. Water is becoming a scarce commodity. Water conservation initiatives and efficient management techniques are needed to secure good-quality water provision to EBRD's countries of operations.

Corporatization and regionalization improve management of water and wastewater services. In Romania, management of water and wastewater companies has been moved to the local level. The change has created a sense of ownership and the willingness to collaborate to create self-sustaining and accountable operations. Further development has allowed for regionalization, which has improved companies' performance and generated tangible economic benefits. This project approach as encouraged proactive and transparent benchmarking between companies.

The case of urban transport

EBRD's lending for urban transport began in earnest in 2001, with most projects in Central Europe.⁷ As in the case of the water sector, an inadequate legal framework, a low level of local revenue and extremely low fare-box ratios (a legacy of the Soviet model of providing cheap free transport services) led the first generation of projects to be structured as sovereign loans or, in some cases, sovereign-guaranteed loans. However, EBRD moved toward sub-sovereign lending structures once the legal and financial situation of the municipalities improved – again, as in the case of water. In several countries, EBRD was a key proponent, on the policy dialogue front, of the economic principle of subsidiarity and local ownership of municipal services.

Since then, EBRD has financed more than 60 urban transport projects throughout the region for a total of €1.4 billion – about 25% of all municipal infrastructure projects financed by the bank. With an average size of €20 million, the urban transport projects range from €5 million for small-scale ticketing systems to €150 million for large metro projects.

In its urban transport sector investments, EBRD seeks to achieve a balanced set of travel alternatives for users, the creation of stable revenues and finances, the development of robust regulatory approaches (with a focus on the modernization of infrastructure) and the promotion of efficient service delivery. The loan process internalizes the main drivers of effectiveness in the sector, among them modal choice, congestion, adaptability to changing conditions and the relevance of the transport system as a source of revenue.

Urban public transport has a unique ability to provide high-quality alternatives to the car. Rather than simplistic planning notions of banning cars from major cities, planners and urban decision-makers now understand that providing choices to users should be the guiding principle. The importance of quality alternatives should be underlined: If motorists are forced out of their cars (for example, by heavy congestion or high parking charges) and offered no reliable, high-quality alternatives, they will mount political opposition.



Increased choice also means planning scalable investment (in terms of network and capacity) to minimize congestion given those choices. Cities across the EBRD region are still no more than halfway down the path to full motorization. Levels vary between countries across the region, but the average EBRD country has car-ownership rates of approximately 250 per 1,000 population, far from the EU average of nearly 500 per 1,000 population. But Russia is today the fastest-growing market for new cars in all of Europe, so the time to act is now. As cities grow and motorize, urban transport systems can be upgraded and expanded to respond to growth in demand. New or improved urban rail systems and cleaner public transport fleets improve air quality, cut time lost due to congestion, increase property values and contribute to carbon emissions reduction. The introduction of intelligent transmit systems can help manage traffic conditions and promote public transport on busy corridors.

From a funding perspective, what is often forgotten is that investments in public transport generate revenue that increases with the economic growth induced by the investment. Nearly all public transport systems require some level of public support owing to the heavy upfront capital requirements. However, when planned, managed and coordinated efficiently, such systems can collect significant revenues from fares and other sources (such as joint development of commercial retail spaces at stations, advertisements, etc.). Projects can be structured in a commercialized manner from the start, with a built-in possibility of attracting private-sector participation.

Because competition can raise issues of coordination, service quality and safety, assessing the urban transport market and regulatory framework (and, if necessary, developing it) is an essential part of the sustainability of projects in the sector. EBRD faces several common weaknesses when it engages in the sector for the first time in a given country. Following the collapse of the Soviet planning model in 1991, formal public transport underwent major changes and funding sources were drastically reduced. Into this vacuum, low-quality, low-capacity minibuses began to replace formal, higher-capacity public transport across the region, with little to no planning or regulatory controls. This phenomenon grew throughout the 1990s, partly out of necessity owing to the collapse of public funding mechanisms, and partly out of the desire of a new generation of policy-makers to allow the private sector to grow. Although minibus services have a role to play as feeders, by the early 2000s the ill-effects of uncontrolled minibus transport became apparent in the form of over-supply and, at times, unsafe operations. Moreover, with congestion mounting, most major cities in the region have begun to reinvest in municipal transport (including electric trams, trolleybuses, buses and heavy rail), while also tendering out formal bus services to private operators.

Given these conditions, EBRD is typically approached by a municipal public transport company with weak management and an obsolete asset base: 20-year-old bus fleets and 40-year-old tram fleets are not uncommon, with tram

maintenance depots not modernized since the 1960s and 1970s. Additional issues relate to chronic overstaffing, another legacy of the state planning era, when specific job targets were forced on operators. Most ticketing systems are still based on cash and coins, with the attendant cash leakages. Finally, operators are almost always loss-making, owing to low fare levels, the proliferation of free or substantially reduced fares for some passenger categories (pensioners, students, war veterans, etc.) and falling demand due to run-down fleets and growing private motorization.

On an operational level, EBRD's sub-sovereign direct lending approach focuses on introducing structural, regulatory and institutional innovations in the way urban transport projects are financed, promoting a modal shift to clean public transport and fostering technology improvements. Backed by significant technical support (discussed in more detail below), EBRD has successfully applied financial and institutional instruments to improve creditworthiness of many projects having an off-balance-sheet financial structure. As with water, the principal instrument is the PSC, which is backed by an MSA (municipal support agreement), an instrument developed specifically by EBRD for this market. EBRD has used the PSC+MSA approach with more than 40 urban transport projects in the last 10 years. It has proven to be a robust structuring tool.

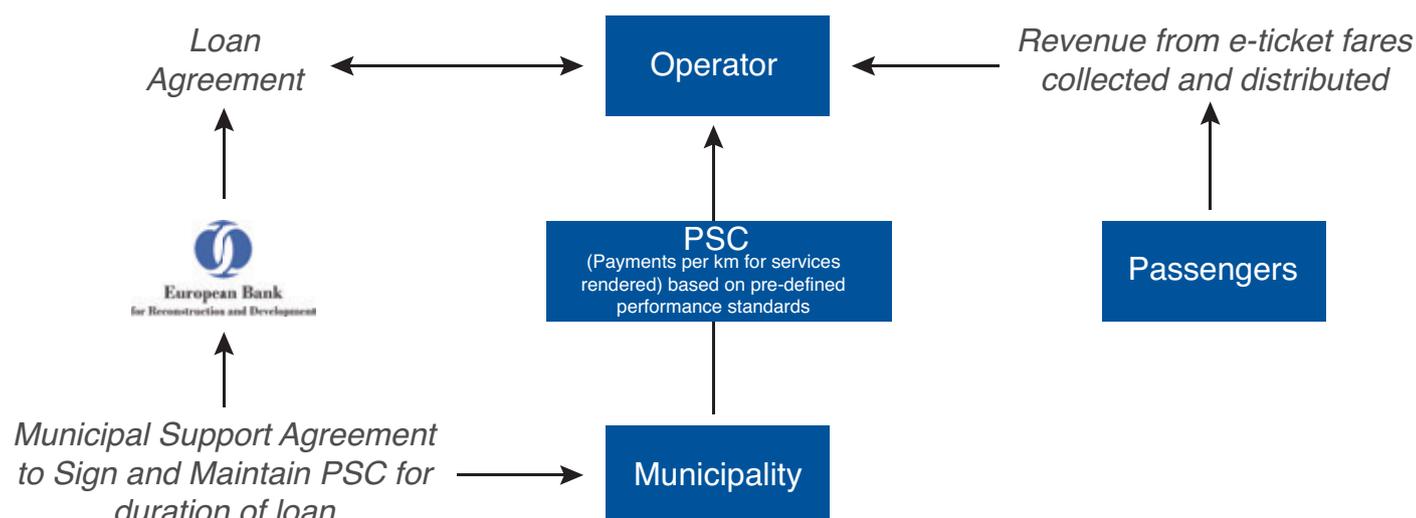
A PSC is a multi-year contract between the public sector (usually a municipality) and its public transport operator. The duration for bus-based PSCs is typically 5-10 years, while urban rail PSCs can extend up to 20 years. Just as in the water sector, a PSC should have a sufficient "tail" beyond the loan tenor.

The PSC in urban transport is a commonly used regulatory tool in the European Union, the preparation and implementation of which has been regulated within the EU since the end of 2009 under EU Regulation 1370/2007. In essence (and in opposition to old-style subsidization), the PSC defines clearly how the public sector will set its level of compensation to the transport company in exchange for operational services delivered by the operator.

With the requirement to adopt PSCs, the EU, concerned with competition policy, attempts to mitigate against the possibility that the public sector, in the absence of any clearly defined methodology for providing compensation, may provide an unfair advantage to incumbent operators to the detriment of potential private operators, which would amount to a form of state aid that is disavowed under Article 86 of the Treaty of the European Commission. Regulation 1370/2007 provides a method, based on the PSC, to ensure that public bodies avoid overcompensation of incumbent operators.

The basic PSC arrangement in urban transport is illustrated in figure 3.

Figure 3: The Basics of PSCs in the Urban Transport Sector



EBRD is using the PSC approach outside the EU, with some 40% of all PSC-based projects (17 to date) having been implemented in non-EU countries – Armenia, Georgia, Kazakhstan, Moldova, Russia, Tajikistan and Ukraine. PSCs in these countries have been adapted to local practices and rules. For example, in Almaty, Kazakhstan, EBRD disbursed a loan for the municipal operator, AET, for 200 new low-emission buses burning clean natural gas. In order for a PSC to be concluded with AET, the public transport regulator needed to first run a tender to select the operator for specific routes of the public transport network. Following the award of the routes to AET, a PSC, backed by an MSA, set the baseline compensation level to AET from the public sector on a cost-per-kilometre basis, indexed over time. However, given the prevailing budgetary code restricting the commitment of any public support (subsidies) to AET on a purely annual basis, the PSC signed in Almaty contains a specific renewal clause that states that the contract will be extended for additional years upon satisfactory performance of the operator, according to pre-established performance indicators. If the contract is not extended because of the operator’s non-performance, the PSC has clauses that effectively allow the municipality to reassign the PSC to another operator – provisions that are equivalent to the lender’s step-in rights common in PPP arrangements.

Although these restrictions do represent a certain degree of risk for EBRD (owing to local budget rules), the bank ultimately finds comfort in the willingness of the Almaty municipality, as manifested in the MSA, to stand by its commitment to the PSC for the full duration of EBRD’s loan payback period. Thus, despite shortcomings in the legal and administrative framework, essential creditworthiness is still achieved.

The obligation of the municipality to make full support payments, according to a clear and unambiguous compensation formula, to cover the difference between tariff revenues and all-inclusive operational costs is central to the PSC. This is in most cases a so-called “gross-cost”

formula that sets an initial all-in cost per kilometre (km) of operations, where demand or revenue risk is assumed by the public sector. The fact that PSCs are typically calculated on the basis of gross costs across the entire system raises the issue of cross-subsidies between routes that generate higher revenue and those that witness low volumes. While the form of the PSC can be standardized across countries and cities, the actual determination of the precise level of costs (and therefore compensation per kilometre) for the operator is quite specific to each individual case. Other features of the typical PSC in the urban transport sector are detailed in box 5.

EBRD’s broad experience with PSCs shows significant improvements in companies’ productivity and operational efficiency, which helps reduce the demand for public subsidies. A project in Kaunas, Lithuania, increased the fare-box recovery ratio from 30% in 2004 to more than 80% by 2010. Cost containment under the PSC helped reduce real operational expenditures by more than a third over the same period. In Arad, Romania, fare-box recovery rose to more than 70% from less than 50%, due in part to a 35% improvement in labour productivity. In Lviv, Ukraine, staff productivity improved by 25% in less than two years. Finally, in Almaty, the cost per kilometre of delivering services decreased by 15% following introduction of a PSC regime with strong cost controls and a focus on results.

Smart card-based ticketing has had an equally positive effect on the sector’s finances. In Kaunas, an e-ticketing system increased revenue collection by 17%. In Belgrade, the figure was 14% and in Riga, approximately 15%. In the case of Belgrade, given the size of the public transport system, the additional revenue amounts to nearly €20 million per year, compared with a total cost of less than €15 million for the e-ticketing system.

Other advantages of PSCs for municipalities and operators are listed in table 2.

Table 2: Advantages of PSCs for Municipalities and Operators

Municipalities

- Operators are paid only for quality-controlled services, creating a tangible incentive to focus on operational efficiency and deliver the plan as stated in the PSC.
- Penalties and remedies for failure induce the operator to provide services of the required quality.
- Budget forecasting is simplified by linking payments to the PSC payment formula, allowing for a more predictable level of long-term support to the public transport system, which is usually one of the largest municipal budget outlays.

Operators

- The operator enjoys stable revenues over many years in accordance with the PSC's contractual formula (similar to the availability payment stream used commonly in transport PPPs).
- Public payments are based only on delivered services under an agreed operational plan and compliance with specified performance indicators. Again, this is similar to the PPP approach.
- The risk of fluctuation in passenger demand is transferred to the city. Given the competition that public transport operators face and their inability to determine fares, the gross-cost approach used in nearly all PSCs is appropriate.
- An annual indexation formula linked to key cost inputs provides the assurance of increasing compensation.

Box 5: Typical PSC Provisions Unique to the Urban Transport Sector

- “All-in” compensation for services delivered – all O&M, depreciation of assets, any new capex programme planned over the lifetime of the PSC, and finance costs
- Operational plan: route structure, timetables and operational kilometres to be delivered by operator
- Tariff regime and arrangements for ticketing collection
- Benchmarking of costs to deliver operational plan
- Establishment of indexation basis for variable costs over life period of PSC
- Duration of PSC, linked to life of asset to be financed
- Description of vehicle types, safety goals, service quality and key performance indicators
- Payment formula where operator retains fare revenue: net payment /km = opex (operational expenditure) costs + asset depreciation + financial costs – fare revenue – other compensation paid by city/state for social category passengers
- Payment formula where operator's revenues are collected by third-party ticketing agent that passes revenue to city or its transport authority: gross payment /km = opex costs + asset depreciation + financial costs – other compensation from city/state for social category passengers
- Description of municipality's obligations to provide transport infrastructure and traffic control measures in good condition
- Standard contractual clauses pertaining to supervision, auditing, invoicing and payments, contractual amendments, force majeure, dispute resolution and termination
- Technical appendices related to service and operations, vehicle requirements, service quality indicators (such as percentage of operational plan executed, availability of fleet, safety and customer satisfaction), penalties for poor performance, tariffs, and indexation formula specifying compensation levels over time



Given the institutional difficulties and the operational and managerial weaknesses of many clients when they first begin to work with the bank, EBRD typically provides a comprehensive package of institutional and regulatory support to both municipalities and operators in the sector. This comes in the form of technical cooperation carried out by expert consultants and provided thanks to grants from donor countries administered through EBRD. The average amount of money approved for technical cooperation for an urban transport project is approximately €500,000, 2.5% of the average EBRD loan size of €20 million.⁸ Put differently, EBRD's technical support, supplied primarily through donors, enables the bank's clients to carry out €40 in capital investments for every €1 in technical cooperation provided.

The technical support provided with EBRD financing includes a combination of the following, with the specific package of support varying from project to project:

- Urban transport sector strategies
- Feasibility studies and conceptual designs
- Environmental and social impact assessment
- Strategic environmental assessment
- Tender preparation and procurement support
- Development of the PSC
- Corporate development (business plan, management information system, benchmarking of efficiency and costs, twinning arrangements)
- Regulatory development (tariff planning, e-ticketing development, PSC monitoring)
- Procurement and implementation support

This final form of technical support is particularly important as it often yields long-term institutional benefits for the client, especially when the contract for the delivery of the new infrastructure asset includes a multi-year commitment by the builder/supplier to provide ongoing operations and maintenance services, which is becoming a common characteristic of EBRD-financed projects.

While urban transport projects vary in complexity, a typical project takes an average of six months to prepare from the point that EBRD is mandated by the client to perform due diligence until the loan document is signed. The average implementation period, measured from the time the loan is signed to full disbursement of all proceeds, is 24 months. During this disbursement period, the programme of technical support is prepared and delivered. Therefore, for urban transport projects, EBRD's experience has been that clients obtain full benefit from the bank's involvement within three years, on average.

EBRD's approach has been adapted to many different local and national circumstances and has proven to be robust, providing an example of how urban transport projects can be funded at the sub-sovereign level using off-balance-sheet structures.

Complementing EBRD's experience with municipal projects in the water and urban transport sectors of Eastern Europe, IFC's work in the African power sector highlights the challenge of working in countries where regulation is weak and political risk is high (see box 6 in the next section).

2. Accelerating Project Preparation and Development



The main challenge in the infrastructure arena has been to structure and deliver bankable and sustainable projects. In other words, the public sector's chronic difficulty in creating a long-term framework for planning, preparing and implementing the delivery of infrastructure has been the most visible bottleneck in the search for funding. But this difficulty is itself anchored in the limited ability of the public sector in many countries to deal with the contractual, institutional and technical dimensions of project preparation. This challenge comes on top of the difficult political context in which infrastructure reforms and projects must be implemented.

In many countries, infrastructure services are perceived as entitlements that should be subsidized rather than self-financed. Building a consensus to support high-profile projects or reforms that induce countries to distance themselves from these traditional views requires more preparation than most government agencies are used to and are trained to take on. The design of an infrastructure project that will depend on private co-financing tends to involve multiple actors, all with overlapping but different agendas, time horizons, constraints and degrees of commitment. It also involves contracts of various types, starting with procurement and ending with the need to manage the degree of recourse that lenders will have. In many emerging economies, the ability to define a vision, to design implementation strategies and to stick to plans has proven to be a recurrent challenge in an industry in which long-term commitments are particularly important.

This difficulty affects the pace of public infrastructure projects and often precludes the development of complex PPPs. Deals are slow to be signed, and the number and size of those deals are quite often well below expectations or promises. This topic has been well researched, and it is clear that without IFIs and bilateral financial institutions – with their ability to act as independent referees or arbitrators in the tensions between the various actors – many infrastructure projects in emerging markets will never get off the ground or be completed. The internal processes that drive project preparation in IFIs are useful in this regard because they bring structure. They force the adoption of preparation strategies that include incentives to get deals done in a sustainable way, as illustrated in the following examples.

The guiding principles of the facilities used in IFIs are quite general and are not necessarily IFI-specific in key dimensions. In all cases, the project gets a boost through donor coordination, which brings additionality and value for money. These facilities give banks a forum in which to share experience with their peers, allowing them to focus on their comparative advantage and helping them coordinate efforts with other IFIs to ensure a harmonized approach to procurement, environmental requirements and other rules. At the same time, they generally ensure some complementarity between the investments and corresponding regional, national and local strategies in the beneficiary country. Where these contributions have been applied, the IFIs together have been able to achieve targeted reforms and promote policy dialogue while meeting the underlying infrastructure investment requirements.



The harmonized approach is facilitated when one IFI takes a lead role in all investments that are co-financed and where those investments are additionally supported by the IFI facilities. In such cases, the lead IFI guides the process of project structuring and ensures smooth implementation. The same result has been achieved through close cooperation and agreement with donors on numerous projects in which the lead IFI takes responsibility for project implementation, using its procurement, approval and monitoring procedures as the basis for all contracts signed under the project. This is possible because most donors and IFIs have similar policies in place.

The availability of financing for technical support that these facilities have made possible has been crucial for the successful development of infrastructure projects. Often national, regional or municipal authorities do not have easy access to expert advisors because they lack the funds or are not experienced enough to procure their services. IFI facilities play a crucial role in funding appropriate assistance to cover all relevant aspects of project design (including market studies, as well as technical, financial, legal, commercial and environmental studies) at every stage of the project cycle – from project identification to financial closing. Project appraisal and feasibility studies covering key aspects are often a precondition for the successful development of projects. Project implementation tasks, which target activities related to institution building, for example, benefit the client directly and advance transition objectives while mitigating implementation and financial risks.

All major IFI have successful experiences with preparation that can be replicated in similar contexts. A few such experiences of three IFIs – EBRD, ADB and IFC – are described below.

The experience in EBRD countries

EBRD has taken a gradual approach to financing municipal infrastructure and services, bringing clients to the point of being able to access commercial funds in the market. It has successfully achieved this by offering a broad range of financing instruments whilst supporting financing, where appropriate, through the use of technical cooperation and investment grants.

EBRD designs and implements projects that exert high transition impact by building capacity and enabling clients to provide services that consumers want and are willing to pay for. Environmental and social issues are also central to project design. However, where the costs of such investments are higher than the local population can afford – because of a legacy or an external requirement to meet higher standards such as EU norms – EBRD works with donors to obtain grant funding. Over the years, EBRD has considerably increased its cooperation with donor-funded instruments and facilities as a way to support its municipal financing effort. Three examples follow.

Northern Dimension Environmental Partnership

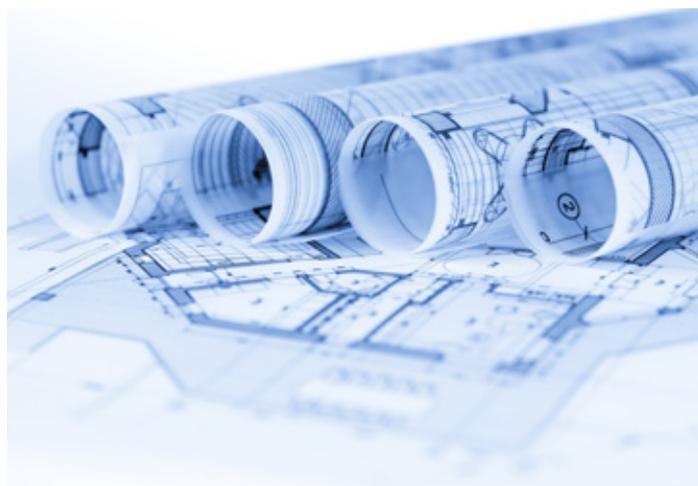
Facilities such as the Northern Dimension Environmental Partnership (NDEP), established in 2002, have been developed as a response to calls from the international community, in particular Russia and Belarus, for concerted action to tackle some of the most pressing environmental problems in the Northern Dimension Area, which covers the Baltic and Barents Seas region. NDEP's objective has been to promote coordination among beneficiary countries, donors and IFIs to mobilize resources and expertise to create optimal financing structures that combine loans, grants and local budget funding to implement priority projects. Through a pipeline of environmental projects in water and wastewater treatment, management of municipal and agricultural waste, energy efficiency and safety projects for spent nuclear fuel and radioactive waste management, the NDEP is enabling IFIs to deliver real environmental benefits in the area. The collaboration involves 13 partners and a commitment of €342 million.

Neighbourhood Investment Facility (NIF)

This is a financial mechanism established in 2006 by the European Union to match, over the long term, loans from eligible European IFIs with European Community grants and direct contributions from member states. Recognizing that financing and implementing large infrastructure projects requires considerable financial resources, NIF has created a partnership that pools various EU grant resources and uses them to leverage loans. To receive a grant from NIF, a project must be financed, and preferably co-financed, by a European IFI. NIF contributions to a project take several forms, including investment co-financing, technical cooperation and risk capital operations. Those contributions are specifically aimed at the development of the local private sector, such as co-investments with local intermediaries, investments in microfinance institutions taking stakes in private equity funds, and guarantees. The collaboration has 12 partners and represents a commitment of €815 million.

Eastern Europe Energy Efficiency and Environment Partnership (E5P)

E5P is a grant facility established in 2010 by international donors to co-finance investments, initially in the Ukrainian municipal sector. The purpose of E5P is mid-term delivery of coordinated and effective international financial support that combines grant contributions with IFI loans to focus predominantly on demand-side energy efficiency improvements that will bring significant environmental benefits. The successful start of this cooperation between IFIs and donors in Ukraine has led E5P partners to approve the expansion of the initiative to other Eastern Partnership countries – Armenia, Azerbaijan, Georgia and Moldova. The collaboration has 12 partners and a commitment of €93 million.



The experience in ADB countries

ADB offers two important and very efficient experiences that deserve replication in similar contexts: the Cities Development Initiative for Asia (CDIA) and the Project Design and Monitoring Facility (PDMF) in the Philippines. Other examples of ADB's experience with the project development facility used in PDMF are presented in Annex 1. Detailed information on the PPP Centre and PDMF is provided in Annex 2.

Cities Development Initiative for Asia (CDIA)

CDIA was established in February 2007 as a joint initiative involving ADB, the governments of Austria, Germany, Spain, Sweden and Switzerland, the Nordic Development Fund, and the Shanghai Municipal Government, with additional funding from Germany's KfW. Since then, under ADB's overall coordination and administration, CDIA has become an international partnership. It began with modest funding in 2007, but by the end of 2013, it had attracted more than \$39 million in multilateral funding. Since May 2013 alone, the initiative has raised funding worth \$24 million.

CDIA is a flagship project developed by ADB with financial support from development partners to help medium-sized cities in the Asia and Pacific region bridge the gap between their development plans and implementation of their infrastructure investments. It uses a demand-driven approach to support the identification and development

of urban infrastructure investment projects within the framework of existing city development plans that emphasize one or more of the following impact areas: (i) urban environmental improvement, (ii) urban poverty reduction, (iii) climate change mitigation and adaptation, and (iv) improved governance.

While urban planning has improved across the region, many cities in the Asia-Pacific region often lack the institutional capacity to (i) undertake adequate infrastructure investment financing and structuring for bankable projects, and (ii) effectively manage the programming and prioritization of these strategic investments. Therefore, a gap exists between strategic development plans, which typically present a wish list of projects, and the requirements of financiers for well-formulated infrastructure projects.

Many city governments in the region also lack the necessary funding to deliver the critical infrastructure needed to make them nationally or globally competitive. With its emphasis on project preparation and “linkage to finance,” CDIA is a unique initiative, one entirely focused on preparing and developing urban infrastructure projects for financing.

Through a demand-driven approach, CDIA helps cities implement their development strategies. In particular it focuses on four key pillars:

- Infrastructure investment programming and prioritization
- Pre-feasibility studies
- Linking of cities to finance
- City-level capacity development

As of October 2013, 83 project financing structures have been initiated in 55 Asian cities in 14 countries.⁹ Of these, 58 have already been completed and 26 have been linked to a financial source for downstream project implementation. A sample of successful PFSs includes: the Pakse

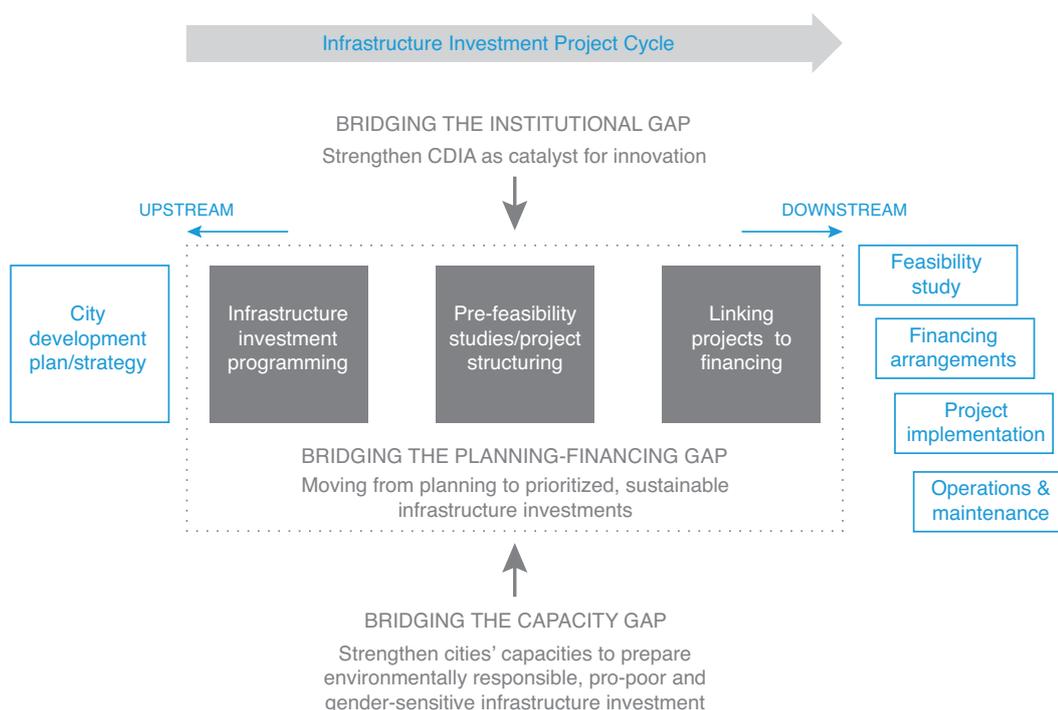
Urban Environmental Project (Laos People’s Democratic Republic, \$35 million) for solid waste management, green infrastructure and sewerage/drainage system improvement, all supported by an ADB loan; the Khulna Pro-Poor and Green Urban Transport Project (Bangladesh, \$14 million), which has received KfW financing; Metro Iloilo-Guimaras CBD Revitalization (Philippines, \$30 million), which is being implemented through a PPP; and the Cochin Integrated Urban Transport Project (India, \$90 million).

CDIA’s distinctive niche is in bridging the planning-financing gap for urban infrastructure projects, as shown in figure 4.

Philippines Project Design and Monitoring Facility

The Philippines Project Design and Monitoring Facility was established in 2011 with funding support of \$45 million, of which about half was administered by ADB on behalf of the governments of Australia and Canada. The full case study appears as Annex 1 of this paper. The PDMF board has approved 27 proposals for PPP project preparation. For 17 projects, transaction advisors have been hired. The pipeline of PPP projects swelled from 11 in November 2010 to 45 in September 2013. Contracts for two toll roads and two education projects have been awarded, with a total estimated investment to date of \$1 billion. Five PPP projects for a total of \$1.4 billion are at the bidding stage. The largest PPP project (for extension, operation and maintenance of line 1 of Metro Manila’s light rail transit system at a cost of \$1.37 billion) is presently being rebid. Another five projects worth \$2.3 billion are at the approval stage. Thirty projects are under conceptualization or preparation by the implementing agencies and the PPP Centre, and 50 other PPP projects are expected to be prepared by 2016. In sum, a robust pipeline of high-quality PPP projects has emerged, raising the likelihood that the country’s PPP programme will be sustainable.

Figure 4: Bridging the Institutional Gap in the Infrastructure Investment Project Cycle



The IFC experience

IFC has long experience in preparing complex projects (box 6 describes one of its earliest experiences in Africa in support of the Azito power projects). One of its most interesting experiences is the Global Infrastructure Project Development Fund (“IFC InfraVentures”), established in 2008 to address the dearth of bankable infrastructure projects and the lack of adequate funding for project preparation – two critical constraints to infrastructure development in emerging markets, particularly in the least developed countries. Project preparation encompasses a wide range of activities that must take place before a project will be of interest to potential financiers. These include institutional, legal, social, environmental, financial, regulatory and engineering work that is needed to take a project from concept to financial closure, with clear identification and allocation of risks.

IFC InfraVentures, which has a funding allocation of \$150 million, is one of the responses being implemented by the World Bank Group. IFC InfraVentures focuses on private sector-led project development and covers the later phases of project preparation. IFC support involves:

- Providing risk capital to fund the early stages of the development of infrastructure projects through a variety of financial instruments, generally through joint development agreements (JDAs) structured as cost-sharing pacts
- Allocating a team of experienced IFC professionals to act as co-developers and lead project development activities such as financial and legal structuring; environmental, social and other impact assessments; and raising capital right through the project’s financial closure

IFC InfraVentures is one of the few IFI-funded project development vehicles that not only provides financial support but allocates significant staff time to support private developers in moving infrastructure projects to the financing phase. This enables IFC InfraVentures to leverage the convening power of the World Bank Group and IFC’s credibility with governments, as well as to provide political risk mitigation, including through the use of appropriate World Bank Group risk-mitigation instruments. This goes a long way to make projects bankable, shore up the project-development process, and reduce the time to financial closure.

Since its creation, IFC InfraVentures has committed \$54.1 million to support the development of 25 infrastructure projects. These include (i) a series of solar and wind power projects in Sub-Saharan Africa with an installed capacity in excess of 350 megawatts (MW); (ii) a 216MW hydroelectric project in Nepal; (iii) a 150MW hydroelectric project in the Laos PDR; (iv) a water purification and distribution project in Haiti that could serve up to 8% of the Haitian population; (v) a cascade of hydro projects in Georgia with a total installed capacity of 400MW; (vi) a waste-to-energy project in Pakistan; and (vii) a portfolio of four wind farms in Moldova with a total capacity of up to 350 MW.

Going forward, IFC InfraVentures aims to support private and PPP infrastructure projects with a combined value of \$7 billion in emerging markets and bring them to financial closure over the next 10 years. Of course, this represents only a small fraction of the huge needs for infrastructure investments in emerging markets. But it is expected that the accomplishments of IFC InfraVentures will have a demonstration effect and create more private sector-focused project development vehicles, which in turn will achieve much larger capital mobilization targets in the infrastructure space of emerging markets.

Box 6: Power in Africa and Private Investment: IFC and Azito

Many African power sectors present unique challenges to private investment, often characterized by IFC as being on the “frontier.” These typically include: (i) weak off-taker and government credit; (ii) inadequate regulation, often characterized by less-than-adequate cost recovery and lack of long-term visibility; and (iii) heightened perceptions of political risk. To attract private investment thus often requires holistic approaches to managing these risks.

In Africa, IFC often engages in in-depth work on the economic fundamentals of electricity sectors as a mean to pave the way for private investment. IFC’s 20-year long engagement in Côte d’Ivoire is a case in point. After the end of the country’s long-drawn political crisis, IFC, as lead arranger, succeeded in mobilizing about \$1 billion of private investment in the country’s power sector, financing the expansion of the Azito (2012) and CIPREL (2013) power plants. When converted to combined cycle operation, the power plants will together have a capacity of 970 MW.

At the heart of this effort has been IFC’s decade-long focus on the Ivorian power sector’s financial sustainability. In 1998, IFC (jointly with a group of commercial banks and as part of the landmark Azito 300 MW project financing) played a key role in designing a unique “cash waterfall” structure to manage the sector’s cash flows and make the prospect of payment apparent to private independent power producers (IPPs) and gas suppliers. In 2012, IFC supported the Ivorian authorities in their efforts to implement additional measures to restore and enhance the sector’s financial sustainability.

The Azito and CIPREL expansion projects both required the IFC to mobilize significant amounts (about \$700 million) of long-term (15-year) commercial debt from a variety of sources (IFIs and local commercial banks), to take into account a wide array of risks in a complex environment, and to arrange a \$116 million political risk insurance policy for Azito’s main sponsor (obtained from the World Bank Group’s Multilateral Investment Guarantee Agency).

The unique complexity of mobilizing private investment in such frontier markets has been widely recognized, winning the Azito expansion project the 2012 Global Power Deal of the Year Award from *Infrastructure Journal*.



3. Creativity in Revenue Generation: Land Value Capture



As cities grow, the demands on infrastructure facilities and services that support economic activity increase. For urban and metropolitan areas, the challenges of balancing growth with infrastructure development are reflected in policy debates about infrastructure finance, regulation, location, and the sustainability and affordability of service levels.¹⁰

Globally, the divergence between the need for infrastructure and the ability of governments to deliver is widening. Traditional approaches to infrastructure funding – general tax revenues and user charges – are not yielding enough revenue to provide infrastructure services at acceptable levels. As a result, governments are exploring new approaches. The creative scaling up of the concept of land value capture offers real opportunities to close the financing gap and provide the infrastructure that cities need to fulfil their potential as engines of economic growth.

Some background on value capture

Value capture can be defined as the practice of recouping some portion of the government’s cost of providing or improving infrastructure by allocating increases in land values resulting from the enhanced infrastructure back to the public sector.¹¹ Many mechanisms have been developed to capture the value added by better infrastructure, but the basic concept is illustrated in figure 5.

Value capture is not a new concept. Private rail companies in late 19th century Britain financed large portions of greater London’s suburban residential development through land-development schemes. In the United States (US), beginning in the 1880s, the major American railway companies developed whole “railway towns” across the continental expanse of the country, profits from which helped to finance the national (mainly freight) rail network that is still in place today. Indeed, nearly 40 years ago, Nobel laureate William Vickrey (1977) stated that “cities could benefit by funding transit system development costs and a major portion of operating costs from land value capture.”

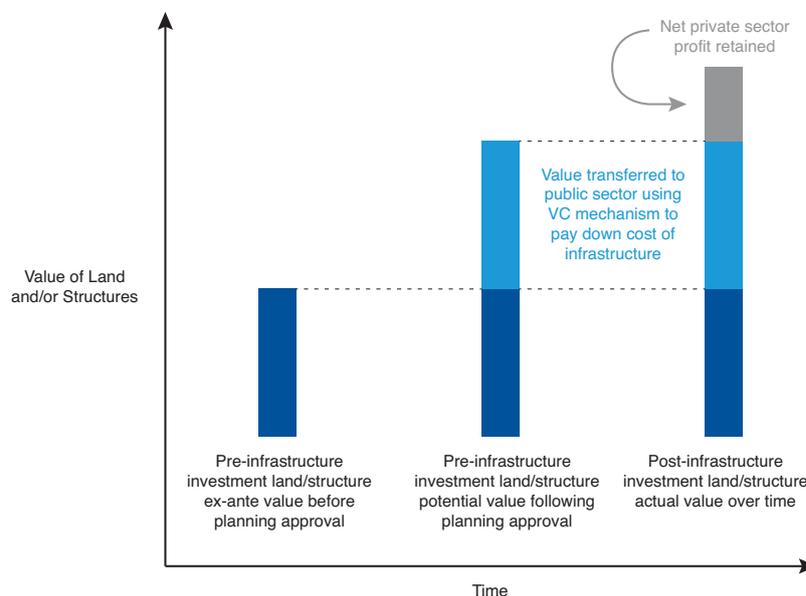
However, because value capture is still too poorly understood, some definitions are in order.

A value-capture mechanism results in a transfer (or “capture”) of increases in private real estate value generated by public investments back to the public sector. The public sector uses the recouped value to cover at least some of the cost to society of providing the underlying infrastructure. In this way, it is a means of funding some portion of infrastructure improvements, whilst also fulfilling a social equity function, since land wealth created by society (that is, wealth flowing from public investment) is shared by the broader public. This explains why almost all cases of value capture are led by the public agency responsible for the infrastructure investment.

An important caveat applies here. It is critical that value-capture instruments should be applied only to projects where it is reasonable to expect that infrastructure investments will cause significant increases in land value. Also, the anticipated increase in land value increase must be accurately assessed by the public sector *prior to the infrastructure investment*. If the increase is overestimated, a perverse incentive may well occur, whereby private property owners move away from the area to avoid burdensome transfers of money to the public sector. Conversely, if it is underestimated, the public sector will have “left money on the table,” with fewer resources left over to cover the cost of the infrastructure improvement.

Extensive evidence since the 1980s has shown that investment in transportation infrastructure, especially heavy urban rail, but also light rail and rapid bus transit, can bring measurable increases in property values in surrounding areas (box 7).¹² As presented below, there are numerous examples from around the world of land-value increases brought about by urban metro systems.¹³ Studies have evaluated impacts on residential property prices, office rents and retailing, numbers of shoppers in city centres, retail structures, parking requirements, and changes in building and development patterns. A recent study reviewing land-value increases from public transport infrastructure projects

Figure 5: The Basic Concept of Value Capture



revealed strong evidence of increases in Europe, North America and East Asia.¹⁴ In general, the authors found that a 10% increase in distance from a station results in a 1% drop in property value (i.e. a €100,000 property that is 1 km from a rail station is worth only €90,000 when located 2 km from a station).

Box 7: Metro Lines and Land Values: A Few Inspiring Examples

- Studies show that property prices within walking distance of the nearest metro station in Helsinki have risen by 7.5% above other locations. The impact was most significant at a distance of 500-750 meters.
- An analysis of the impact of Toronto's metro on surrounding properties revealed that tax assessments rose by 45% downtown and 107% near suburban stations, compared with a 25% increase elsewhere, while values of office space adjacent to the station were, on average, 30% higher than in the city as a whole.
- Washington DC's metro cost \$9.5 billion to build by 2001, but has created \$10-15 billion in new land value.

The likelihood that public transport (typically urban rail) will contribute to land value increases depends chiefly on the following factors:¹⁵

- Improved accessibility to public transport: Do users save time?
- Overall urban growth rates: Is the city growing economically?
- Presence of zoning incentives in station area: Are developers offering increased air/development rights?
- Level of physical integration of the station into the existing urban environment: Are there ample walkways, bus routes and parking directly connected to the station?
- The policies and procedures for undertaking value-capture strategies vary widely by country and by city. Everywhere, however, the perceived legitimacy of the value-capture approach is critical, especially as it often involves large sums and may involve an approach that lasts for many years, as in the CrossRail example in London. Therefore, government approval is always required, since taxation is involved, but often the buy-in of property owners is necessary as well – either formally through an approval vote (in Washington DC, voters approved a ballot initiative during local elections that authorized the value-capture approach), or at a minimum some form of governmental decision, which may be at the municipal level.

In addition to political approval, the public sector must have certain key faculties in order to carry out effective value capture:

- Where the approach known as special assessment district is used (table 2), government must be able to define a legal border or boundary around the land area expected to benefit from an infrastructure investment.
- Ease of land assemblage in the vicinity around new stations. The public sector must be able to aggregate land effectively.

- The affected property types in the district – residential, commercial, industrial, vacant – need to be defined; it must be made clear whether existing, new or both kinds of property will be included; and any new tax rates to be applicable must be mentioned.
- When the new tax policy associated with the value-capture mechanism comes into effect, how long it will last? This may be driven by the duration needed to repay the financing obligations.

Value capture is a flexible mechanism that can be used to finance a broad range of urban/metropolitan project types: public transport (mainly urban rail), urban development and regeneration; affordable housing; and community amenities enhancement. In its different forms (see table 3), value capture can facilitate the (re)development of city centres and can also work effectively alongside PPPs by providing the public sector with additional funding sources needed for high capex projects (like metro systems). As seen in table 2, two main groups of value-capture instruments can be distinguished. The first consists of mechanisms and techniques that are usually one-time lump sum payments. The second provides ongoing sources of revenue for governments.

Where does the captured money go? Ideally, a sequestration should be made. This would be in the form of an escrow-type account with the public-sector agency responsible for the infrastructure provision. Under the benefit district approach, for example, once the tax policy comes into effect, revenues collected from the benefit district go into a special account to repay the debt on the infrastructure investment made by the public sector. Additional revenues generated above those needed to repay the debt go into the general public budget. When the capture period expires, all revenues go to the general budget.

As the above cases involving urban rail development show, new transport infrastructure has had an impact on local land markets, confirming that value capture can create an additional stream of funding for the public sector to cover capital costs of investment. In this context, it is instructive to present a set of case studies of implemented value-capture programmes from selected cities.



Table 3: Principal Value-capture Instruments

Source: M. Modelewska, 2013, PhD dissertation.

| Value-capture instrument | Main features |
|--|--|
| One-time charges on land value gains | |
| Land value taxation | Land value tax (LVT) is a simple technique designed to recapture the value created by the provision of public services. LVT is assessment of land value rather than property value and focuses on landowners. It can discriminate against the beneficiary of the tax – that is, the tax can, for instance, be directed only towards a specific group of landowners. |
| Betterment tax | A betterment tax (‘benefit assessment’ or ‘betterment levy’), is used to provide funds to cover infrastructure investment costs by means of a one-time tax or charge on the land value gain; it is targeted at the beneficiaries of increased accessibility, reduced congestion and pollution, as well as those provided with a new public amenity or lower transport costs. Betterment tax is seen as an equitable and efficient levy, and can be used for urban transport/sidewalks, parks and water/wastewater sector. It recovers the added value on private land assets accruing to property owners positively affected by the infrastructure investment. |
| Project-related land sales | Publicly-owned land whose value has been enhanced by zoning procedures or by infrastructure investment can be sold. |
| Negotiated exactions | Negotiated exactions require developers to contribute, including, if needed, by giving up part of their land or facilities in return for greater off-site benefits, such as better transport provided by the public sector. The costs to the developer are upfront, by either providing land or making a payment to be used for infrastructure serving the development. Furthermore, land can be used by the companies as collateral for construction loans. Once the investment is financed, the development company can repay its debt by selling land after its value has been enhanced. |
| Development impact fees (DIF) | These are one-time charges applied by a local government to an applicant in connection with approval of a development project to finance a portion of the cost of public facilities related to the development project. An example of this is the requirement of a shopping mall developer to pay for the cost of road improvements to better access the new retail activity. |
| Joint development (JD) | Joint development, a form of public-private partnership (PPP), is a mechanism of cooperation and cost sharing between public and private operators or developers. Its advantage is that one need not identify direct and indirect impacts of the transport investment – as with betterment tax or tax increment financing (see below) – since there is cooperation between the public agency and private developers who share construction costs. JD promotes efficiency and equity among participants, creating a win-win situation when properly structured. Private developers benefit from better accessibility and more potential customers, and the public sector benefits through the sharing of construction costs while also securing increased demand for the transport infrastructure. It is the most easily applicable instrument – for example, within a PPP agreement – because it is technically straightforward to implement within the structure of a PPP contract. |
| Long-term revenue sources | |
| Tax increment financing (TIF) | TIF schemes, used extensively in the US, operate through fiscal incentives such as tax relief, tax breaks or tax disincentives in order to encourage development in a defined urban area. Any increase in tax revenue over the “base” is determined to be attributable to the new development and escrowed into a separate account from general fund revenues. It is used to retire debt for infrastructure or other public improvements associated with the new development. TIF can be applied to income, sales or property taxes. Furthermore, this funding stream can serve as the basis for securing a bond as the new, accretive revenue stream is used to back the bond obligation by the public sector. |
| Special or benefit assessment districts | This approach is similar to TIF except that tax rates are increased and are typically applied only in defined districts that will benefit from the transit investment. Special assessments for urban transit are being used to channel revenues from property tax rate increases to fund transit construction, operations or related infrastructure improvements. In the US, the districts are being set up in both suburban and downtown contexts and are funding a wide variety of transit types, from metro to light rail transit (LRT) to bus rapid transit (BRT). |
| Land asset management | Similar to joint development and long-term leases but in contrast to land sales, land asset management has the advantage that the public sector retains ownership and control over the plots of land around the infrastructure investment over the long term, while receiving the lease revenues. |
| Air rights | Air rights (sale or lease) are a form of value capture that involves the establishment of development rights above the previously permitted land-use controls (e.g. increased floor area ratios of buildings), or in some cases below a new transportation facility (e.g. selling rights to build a shopping area below a rail station). These further developments are expected to lead to increases in land value, which can be captured and used to fund infrastructure investment. |
| Transportation utility fees (TUF) | In TUF, a transportation improvement is treated as a utility (water, electricity) and is paid for by a user fee. Rather than establish a fee with respect to the value of the property, the fee is estimated on the number of trips that property would generate. |

Value capture is not a panacea. A very basic consideration is that it must be anchored in an ability to measure and use land and real estate value improvement. This only happens in well-functioning and transparent property markets with accurate property records in countries with a mature approach to taxation, including acceptance of property taxation by owners and a transparent government keen on accountability. Moreover, it should be clear that not all infrastructure projects can rely equally on value capture; the instrument works best for infrastructure sectors with a high degree of land value connectivity or a high potential to produce property premiums. That is why special assessment districts, tax increment financing and joint development are being looked at for transit investments, which have a demonstrated track record of generating real estate activity. All of the case study examples presented above bear out this point.

Value capture also has to be linked quite closely to more operational dimensions of the projects. While value capture can be used either to offset some or all of the upfront capital costs of an infrastructure investment, or to provide a long-term funding source in the form of incremental taxes or lease revenue, thought must also be given at the outset to how to fund that investment's longer-term operating and maintenance costs. This demands efficient contractual schemes for operating the new infrastructure (e.g. water or public transport). Only such schemes can allow the public sector and their service providers to increase user-based tariffs to a sufficient degree to cover (within affordability limits) a large(r) proportion of O&M costs than is currently the case. If these questions are not answered, the long-term sustainability and viability of the infrastructure investment cannot be secured.

Finally, infrastructure authorities may have a hard time convincing their government of the necessity to earmark revenue for their project. Value capture clearly requires strong and long-term political support to be an effective source of funding that can be used for structuring the project financing. This is why new transport infrastructure, for instance, cannot by itself be expected to generate a strong property market response. This is also why no standard model of value capture can be replicated across all cities. Relevant stakeholders such as local infrastructure authorities should consider the range of financing options before deciding which tool, instrument or method is most appropriate for a particular city and project.

What seems clear is that market values are maximized when government takes action, in concert with the private sector and civic groups, to take full advantage of the investments by revising zoning and planning frameworks, revising incentives and taking other coordinated actions. Value capture efforts must be tailored to the specific local political and legal context. As discussed, many jurisdictions around the world may not be able to use long-term stream-based value-capture mechanisms because they do not have well-functioning property tax assessment and collection systems. Private sector support for increased property assessments is usually procedurally and politically necessary, and this support often hinges on zoning changes that allow additional density, which can be controversial.

Finally, answers to key questions including what tax rates to use, what kind of properties to include, and where the benefit district boundary should be drawn are not always straightforward and take a good deal of discussion and negotiation between property owners and local governments.

Successful examples of value capture

This section provides some insights on how value capture worked in a broad range of illustrative urban projects in developed and emerging economies. It points to the importance of being able to assess the benefits of projects, which is essentially about identifying beneficiaries and hence users. This measurement is normally done as part of the cost-benefit assessments typically conducted for these projects. Once this has been done, these projects illustrate how different countries pick different instruments to capture the value generated from the new benefits generated by these projects, including bonds, land sales, special tax assessment and taxes anchored in property re-assessments. They also illustrate the fact that social concerns can be reconciled with private benefits when policy design is taken seriously.

Brazil: Relying on certificate of additional construction potential bonds (CEPAC)

Urban redevelopment projects in Brazil have successfully used additional building rights securitized and issued as market-traded bonds. For instance, over the last decade, the municipal governments in São Paulo, Rio de Janeiro and Curitiba have obtained approximately \$3.8 billion for investing in urban redevelopment projects by issuing more than 10 million securitization bonds known as CEPACs (*certificados de potencial adicional de construção*/certificates for additional construction potential) that permit additional building rights in special development districts. Established by federal law in 2001, the CEPAC municipal funding mechanism gives developers the opportunity to purchase the right to build above standard floor-area ratios (FARs) within the special development district for which the CEPAC is issued. The demand for additional FAR rights is created by the upgrade in the transport infrastructure that serves the urban area.

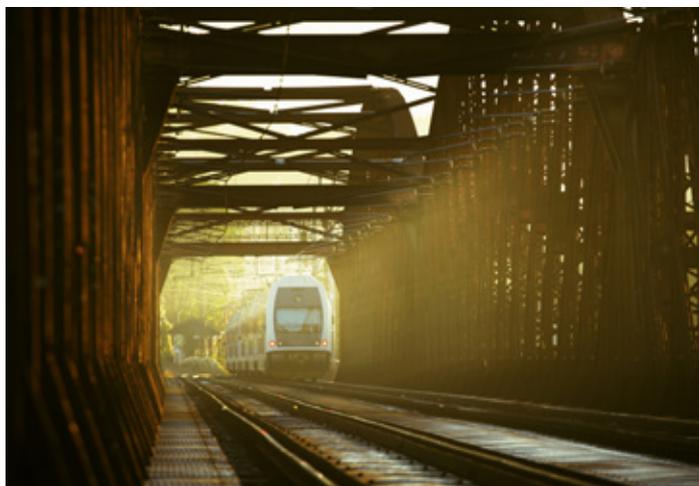
Master planning for the special development district is used to establish a ceiling for the total additional floor space for residential and non-residential uses that can be added beyond the initial stock established by the standard FARs. This additional floor space takes into account the increase in density allowed by the additional infrastructure or improvement to current infrastructure that will be funded by the sale of CEPACs. Within a special development district, licenses to build above the standard FAR must be purchased with CEPAC bonds. The bonds are sold through auctions that specify:

- The total amount of the issue, corresponding to the total additional square metres fixed in the law that created the special development district
- The initial price of each CEPAC

- Ratios for the conversion of a CEPAC into additional building allowances (typically 1:1, but varying from 0.5 to 3, since the quality of areas varies within a district), or for changing land uses or building footprints
- The public investments in the special development district to be funded from the sale of the bonds, which may include, besides regular urban infrastructure, payments for eminent domain, construction of affordable housing and improvement of slums
- The rules related to a dedicated escrow account for managing and using the funds raised through the CEPAC issue, which is overseen by a financial institution
- Once a developer has purchased CEPACs, it must designate a specific plot of land where the additional building rights will be used. Because the special development district is subdivided into smaller zones with their own FAR ceilings, developers who have purchased CEPACs have an incentive to allocate them soon after the purchase, because once the FAR ceiling is reached within a particular zone, a developer cannot use their CEPACs in that zone even if they own a plot there. The developer may still use the purchased CEPACs in other zones of the same special development district or sell them in the secondary market.

CEPACs are a market-based mechanism that allows value to be captured through a transparent and flexible process. From the public sector's perspective it enables upfront funding for the infrastructure investment that will raise real estate values. From the fiscal perspective, CEPACs do not increase public debt, because the bonds serve simply as a mechanism to transfer building rights, with developers retaining the risk of developing their private projects and of fluctuations in land prices in the special development district.

CEPACs provide developers with the assurance that funding for the public investment needed to create the increment in real estate value that justifies their auction bids is locked in and earmarked. At the same time, CEPACs allow them the flexibility to launch their individual projects according to their own perception of the market.



Denmark: Combining instruments to capture value

Ørestad is an area approximately 5 km south of the city centre of Copenhagen. Despite being relatively close to downtown Copenhagen and Copenhagen Airport, it remained relatively undeveloped until the 1990s, when the city council prepared a redevelopment plan that included an extension of the metro system to connect it with Copenhagen. At that time it was expected that 20,000 people would live in Ørestad, 20,000 would attend the local university and 80,000 would be employed in the area. This planning estimate set the business case for a fast transportation link to support development of the areas. A special-purpose vehicle (Ørestadsselskabet I/S) was set up in 1992 to implement the master plan. The construction and operation of the metro system was to be financed from sale of land to developers for the construction of residential units, offices and university buildings. The total cost of the Ørestad investment was €1.6 billion as of 2009.

Increased accessibility to the adjacent land raised demand for land among developers and investors. By the end of 2006, 52% of the whole site had been sold or was already under construction, with overall sales totalling €623 million. Value was captured for the public sector from transfer-tax payments on the sale of land parcels (10% of the value of the land sale), annual property taxes (10% of all property tax revenues flow into a special escrow account of the special-purpose vehicle), and operating profits from the metro (30% of this revenue is directed into the escrow account of the special-purpose vehicle).

The revenue derived from value capture has been used to service payments by the public sector on the €2.3 billion debt incurred during the construction process, thus paying for the metro construction. The first office building was completed in 2001 and the first residential buildings were ready in 2004. Currently, there are more than 3,000 flats, 192,100 square metres of office space, 71,400 square metres for educational use, and 65,000 square metres of retail stores in Ørestad. The metro system linking the area has two lines totalling 21 km, with 22 stations, nine of which are underground. In 2011, the metro carried 54.3 million passengers.

The Ørestad scheme confirms that value capture can combine wider public goals with private objectives. It also shows that finance techniques based on value capture need not be limited to a single tax or charge, since each project presents a unique set of opportunities.

Hong Kong: The railways and property (R+P) model of value capture

Almost all railways in the world require some form of government support for construction and often for operations. For MTR, Hong Kong's metro company, the R+P model takes the place of subsidies or capital grants. The model, widely viewed as one of the most successful in the world of value capture, is depicted in figure 6.

The basic steps to achieve value capture under the model are as follows:

- The government grants a land development right for sites that are comprehensively planned by MTR for railway development.
- MTR pays a land price to the government computed as if the railway did not exist.
- MTR builds railways and develops properties in partnership with private developers.
- Once the railway infrastructure is complete, property value increases significantly.
- MTR benefits from the land value enhancement as it receives lease payments from developers, which in turn helps fund railway construction and running costs.

The R+P model aligns the interests of various players in several important ways. There are community benefits in the form of world-class railway service and high-quality urban development along the railway corridors – at no cost to the public purse. The government benefits as it pays no direct subsidy to MTR while receiving a significant land premium in the form of the dividends that MTR pays to the state as a 77% shareholder. The real estate developers benefit from well-planned sites, making possible a “flying start” in construction to meet market demand. Finally, MTR benefits from physical synergies (integrated, transit-oriented

development) between rail and property, resulting in better connectivity, which further enhances railway patronage and property values.

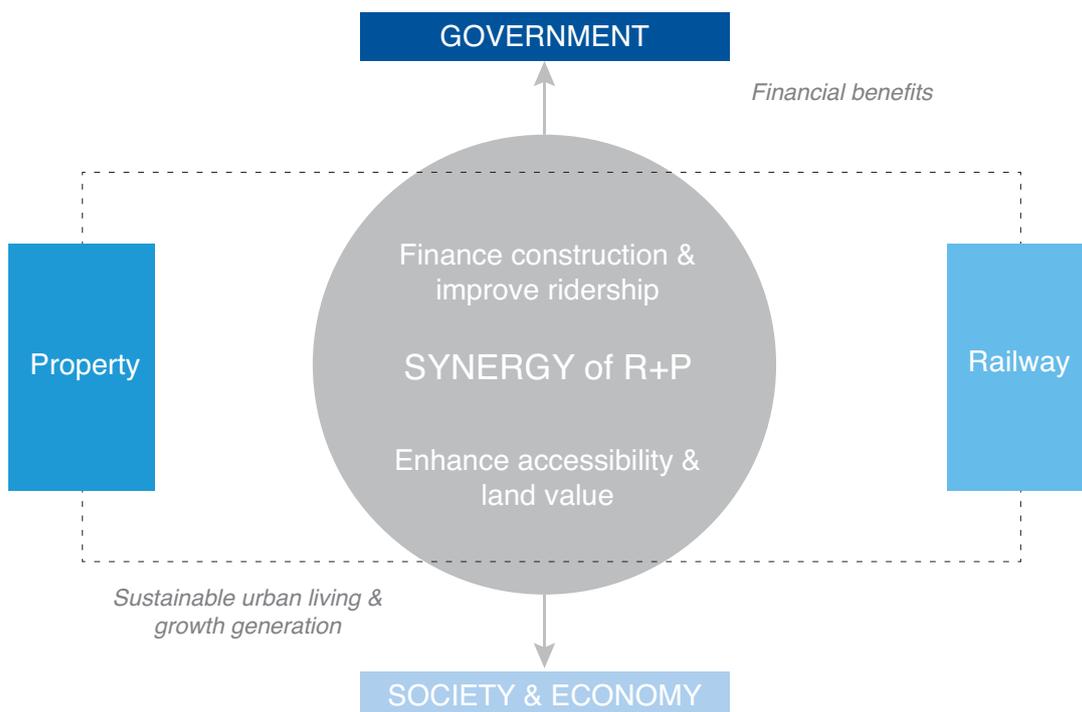
The Hong Kong model relies on certain important underlying characteristics that are needed to make the integrated joint-development approach successful. First, the chosen area is Kowloon, a dense urban area oriented to public transport. Land available for development is scarce and therefore valuable. Second, there is a very tight working relationship between the Hong Kong government and MTR, facilitating land assembly and site planning. Third, MTR has developed a competence in commercial development over time, and this has led to a situation where nearly half the company's revenues come from activities unrelated to rail transport.

United Kingdom: Relying on special tax assessments

The need for increased capacity on London's urban rail network has been recognized since the 1990s. The combination of growth in business activities and household creation has put increasing pressure on the London Underground to handle passengers. East-west travel in particular chronically exceeds capacity, especially in peak hours. It was found that a major new east-west rail line would save some 20 minutes in travel time for more than 750,000 daily commuters, translating into a benefit of £42 billion (\$ 69 billion) in current value terms. With respect to land value, commercial office values around a major rail corridor's stations in central London were projected to increase over the next decade by 10% in capital value above the already projected baseline. Residential values were projected to increase with the opening of new stations in central London by 25% and in the suburbs by 20%, above a rising baseline projection. Based on this underlying business case, the CrossRail project was conceived (figure 7).

Figure 6: The R+P Model Applied to Funding

Source: MTR Corporation.



London's new CrossRail line is being partially paid for using a special 2% increase in business property tax levied since 2011 for the next 24 years on all businesses in Greater London. This is projected to create a fresh revenue stream of £4.1 billion toward the total cost of £16 billion for the new line. The new funding is being used by the Greater London Authority to service the bond obligations that it has taken on to contribute to the project (alongside funding from the national government). The authority will issue debt to the order of £3.5 billion between 2010 and 2016, to which £0.6 billion in financing charges are added to arrive at the £4.1 billion needed to cover its borrowing costs.

The Greater London Authority was authorized to levy a tax surcharge on all businesses positively affected by the CrossRail project under a 2009 law (the Business Rate Supplements Act) passed specifically for the project. Enforcement and collection of the new tax will be carried out under the national revenue collection system.

Another important feature of the CrossRail value-capture scheme is that it will apply to all business properties of a certain value throughout the London area and not just within a certain geographic proximity to the new line itself, though only those with an assessed value of more than £55,000 are subject to the tax supplement. This decision was made for two important reasons. First, the positive economic effects of CrossRail were expected to spread out quite widely across Greater London, given the complex nature of public transport networks and the multimodal trips that commuters are accustomed to taking (for example, regional train to Underground, or bus to Underground). Second, the very high capital cost of CrossRail necessitated a funding scheme that reached across a very broad swathe of the economy.

Obvious prerequisites for this mechanism are the existence of a well-functioning property tax and cadastre system, as well as excellent collection mechanisms. Finally, the ability to plan and sell these wider economic benefits to the business community was of utmost importance in gaining political support for the value-capture scheme.

USA: Relying on special assessment districts to capture value

In the Washington DC metro region, a special assessment district was established to fund an extension of the region's heavy rail system, known as Metro or Metrorail. Special assessments will provide up to \$1 billion for the new Silver Line, a 37 km project with a cost of \$6 billion. The project is located in fast-growing northern Virginia. The metro extension is being built in two phases. Both the private and public sectors are involved.

Phase I of the project will bring the Silver Line through the employment hub of Tyson's Corner – part of an ambitious, decades-long effort to transform the sprawling retail and office complex into a high-density, walkable neighbourhood. Because transit will be key to the reinvention of the area, in 2004, property owners took advantage of a Virginia law that allows them to petition to tax themselves to pay for transportation improvements, and pushed for the establishment of an assessment district to fund the local share of the \$2.6 billion capital estimate for Phase I.

Figure 7: Map of the CrossRail Route

Source: <http://www.crossrail.co.uk/route/maps/regional-map>.



The Phase I funding district, created with the endorsement of 64% of local property owners and approval from the county board of supervisors, will generate up to \$400 million from a tax of 22 cents per \$100 of assessed value on commercial and industrial properties near the corridor. Additional funding is being drawn from the federal government's public transit grant programmes, toll-road revenues and other sources. Phase I of the metro line began construction in 2008, with the first 13 stations scheduled to begin operations in early 2014.

Timothy J. Steffan, senior vice president at Macerich, a major Tyson's Corner land owner, described why his firm supported the funding approach and tax assessment. "You didn't get any upzoning until the delivery of Metro was assured. And you could only be assured of bringing Metro if you had a funding source." Of the special tax, he said, "You knew what you were getting for it, and you knew what it would do for Tyson's. You knew that increases in density were going to be allowed, and as a result you could value the future development rights."

For Phase II, which will connect the rail system to Dulles International Airport and points beyond, local funding is being generated by a taxing district approved in 2009, with charges on commercial and industrial properties near the transit corridor escalating from 5 cents per \$100 in value in 2010 to 20 cents per \$100 in 2013, for a total contribution of up to \$330 million.

In addition, for Phase II, \$270 million in capital funding and \$10 million per year in funding for operations will be generated from a special tax district approved by the county board of supervisors in 2012. This district encompasses commercial property and undeveloped land around the Metro station locations. Although it excludes most existing residential property, new residential buildings will be taxed. Approval for this tranche of funding was key to getting critical federal money for the project.

Revenue from special assessment districts is also being used to pay for a projected \$3.1 billion in improvements to the horizontal infrastructure in the Tyson's area, including sidewalks, bike lanes and a new street grid, in order to remake the area into a walkable and bikeable urban centre.



Two special assessment districts were established for these purposes. The two funds will generate approximately 18% of the total horizontal infrastructure investment needed.

Two additional tax districts were created in support. Firstly, a Tyson's-wide tax district, which was created in early 2013 and encompasses approximately 6,000 commercial and residential property owners, is expected to generate \$250 million over the next four decades to pay for improvements within the service district. Though opposed by residents of the Tyson's area (despite projected property value increases), the county board of supervisors approved by an 8-2 vote the special assessment to fund what are considered vital improvements that connect the urban area to the new metro line. A second transportation fund, expected to generate \$304 million over the next 40 years and paid into exclusively by developers, was approved to build a new local street grid within the Tyson's development and to rework major roads in the area.

The support and involvement of public leaders and leadership bodies to establish the special assessment districts has been essential, as has the extensive involvement and support of private developers. These owners and brokers recognize the role that transit plays in supporting denser, compact growth – and the importance of their own participation in funding it.

A more general lesson from the examples

In most of the cases, projects have tended to rely on overall funding and financing mix anchored in land asset increases to cover some portion of the capital costs of infrastructure needs. This has several advantages, including the added benefit of generating price signals that increase the efficiency of urban land markets. However, it is important to point out that this has to be project specific. Governments should not look to value-capture instruments as long-term generators of recurring revenue for their operating budgets. The experience also shows that when this happens, projects end up underfinanced and ultimately delayed. Value capture has to be thought of as a way to mainly provide capital financing opportunities and deliver the capital budget to accelerate delivery of new infrastructure capacity.

This is why value-capture techniques are often part of a well-designed strategy for infrastructure investments, while they also help to shape the pattern of urban development.

This implies that the potential advantages of land finance go beyond the generation of revenue. As part of the mix of capital financing, value capture complements borrowing and adds flexibility to public finance overall. Public agencies, with proper preparation and foresight, can capture a portion of the capital gain resulting from the increase in permitted densities and the presence of the new or expanded infrastructure. In its different forms, value-capture financing offers a set of mechanisms that can better integrate urban development with wider public policy goals while also working well alongside other financial instruments such as PPPs, urban development funds and wider impact funds. However, each financial solution and investment strategy should be tailored to a city's needs and aspirations in order to provide sustainable economic and social development.

4. Concluding Remarks

This overview of the lessons learned from the IFIs' experience as well as value capture examples from around the world shows that better funding and financing structures for infrastructure are possible. However, as for so many public policies, the effectiveness of changes in processes, preparation and creativity will depend on the political will of all actors at all levels of government, but also on the many IFIs and donor governments capable of supporting the financing of infrastructure projects around the world.

As supported by the various G20 statements over the past five years, this is the time to show players that have enough margin to increase their commitment (such as sovereign wealth funds or pension funds), as well as somewhat more

reluctant traditional players, that process improvements to cut risks are possible and need not demand drastic changes. Indeed, it is now clear that there is a need for improved project preparation approaches by IFIs and their donors, as well as better dissemination of project experiences through "knowledge platforms" for the benefit of public authorities and other key stakeholders.

The scope for improvement and the sources of those improvements are well known and well tested. The remaining challenge is to ensure that the information comes through to those who can make a difference. And that is what this paper aims to achieve.



Annex 1. Case Study on the Philippines PPP Centre and Project Development and Monitoring Facility

Sustainable and significant private infrastructure investments are needed to address inadequate infrastructure in the Philippines, a critical constraint to growth.¹⁶ External shocks and governance challenges have negatively affected private sector investment commitments in infrastructure, which fell from a peak of 15.5% of GDP in 1997 to 2% in 2000-11.¹⁷ Recently, the government announced its intention to increase government-funded public infrastructure investments from about 3% of GDP now to 5% in 2016 to bring the Philippines at par with the regional average. Nevertheless, the country is very likely to still need an additional 2% of GDP of infrastructure investments every year to ensure high and sustainable growth in the medium term. This investment can be generated from the private sector, which is willing and capable of investing given the solid macroeconomic fundamentals of the economy and the liquid financial sector.

For this, a programme-based approach to PPPs is needed. In 2010, it became clear that the previously dominant deal-based approach – “cherry-picking” of PPPs by government contracting agencies, state-owned enterprises or the private sector (in case of unsolicited projects) cannot deliver the desired annual investment of 2% of GDP. To achieve socio-economically significant private infrastructure investments, a programme-based approach – relying on a pipeline of solicited and properly prepared projects – is required that implies “regularization” of PPPs as one of the standard modalities of public infrastructure investment delivery.

Such an approach must be anchored on a “nodal” PPP office and a sustainable Project Development Facility. Such a nodal PPP office needs to have quick access to a pool of reputable experts for PPP project preparation and transaction. Overall, a nodal PPP office’s functions would be (i) advocacy and limited/project-based capacity building; (ii) facilitation, quality enhancement and monitoring of project development (through a Project Development Facility (PDF) and in-house capacity) and implementation;¹⁸ (iii) fiduciary management of the PDF (transaction advisor selection, contract management, payments, financial accounting and reporting, PDF account management, etc.); (iv) monitoring and improvement of policy and enabling environment; and (v) PPP information/knowledge management.

Such a nodal PPP office and Project Development Facility have been successfully established and are operational in the Philippines. In 2010, with support of a capacity development technical assistance report, *Strengthening PPPs in the Philippines*,¹⁹ the government established (i) its nodal PPP office – the Philippine PPP Centre, and (ii) a Project Development and Monitoring Facility (PDMF) as a revolving fund administered by the PPP centre.

This resulted in substantial progress in PPP programme delivery.²⁰ The pipeline of PPP projects grew from 11 projects in November 2010 to 45 by September 2013. Contracts for two toll roads and two classroom projects have been awarded with a total estimated investment of \$1 billion. Five PPP projects for a total of \$1.4 billion are at the bidding stage.²¹ Another five projects worth \$2.3 billion are undergoing the approval process, 30 are under conceptualization or preparation by the implementing agencies (IAs) and the PPP Centre, and 50 other PPP projects are expected to be prepared by 2016 under the PDMF administered by the PPP Centre. Overall, a fuller pipeline of quality PPP projects has emerged, raising the likelihood that the country’s PPP programme will be sustainable.

The Philippine PPP Centre is an agency attached to the National Economic and Development Authority (NEDA) for budgetary purposes and administrative supervision. The PPP Centre reports directly to the PPP Governing Board, the government’s central body on PPP policy issues. The PPP Centre is headed by an undersecretary-level executive director appointed by the President upon recommendation of the NEDA Secretary. The PPP Centre’s functions are: (i) to facilitate PPP project preparation and implementation through assistance to GCAs via provision of advisory services, technical assistance, trainings and capacity development; (ii) to monitor and recommend improvements in PPP enabling environment; (iii) to administer PDMF for the preparation of a business case, pre-feasibility and feasibility studies, and tender documents for PPP programmes and projects; (iv) to manage PPP information and knowledge through a central database covering all PPP programmes and projects; (v) to prepare reports on the implementation of the PPP programmes and projects of the government for submission to the president at the end of each year. The PPP Centre is the secretariat to the PPP Governing Board and the PDMF Committee.

Resources for the PPP Centre have expanded. Its operational budget has increased from about \$0.7 million in 2010 – the year when the Build-Operate-Transfer Centre was transformed into the current PPP Centre – to \$1.5 million in 2012 and more than \$1.3 million in 2013. Its staff pool has been expanded recently by 15 positions to 99 staff, of which 11 are director level, 74 are technical professionals, and the rest are support/administrative staff. The Centre’s staff capacity is augmented with more than 30 individual consultants recruited on an intermittent basis through ADB technical assistance.

- *Cost of PPP project preparation and implementation monitoring:* Use of PDMF proceeds is governed by PDMF guidelines and is subject to approval from the PDMF Committee comprising NEDA (chair), department of finance, department of budget and management, and the PPP Centre.²² PDMF guidelines are adopted by the PDMF Committee and approved by the PPP Governing Board (see Section B). To enhance PDMF sustainability, the PPP Centre may receive reasonable fees and collect cost of project preparation; GCAs can reallocate their funds to PDMF.²³
- *Co-funding:* In addition to ADB, PDMF is co-funded by AusAID, the government of Canada and the government of the Philippines. AusAID's contribution is \$15 million, the government of Canada has provided \$3 million, and ADB \$2 million. The share of the government of the Philippines is about \$22 million, representing 44:56 cost-sharing. AusAID funding channelled via ADB enables application of ADB consultant selection guidelines to the whole PDMF. Due to larger-than-expected government budget for PDMF and commitment of several GCAs to reallocate their funds to PDMF, this ratio is set to change to 20% by AusAID and 80% by the government. Hence, the total PDMF pool will increase from about \$40 million now to about \$90 million. This will cover preparation of an additional 70 PPP projects by end 2016.
- *Consultant selection mechanism:* Use of ADB consultant selection guidelines allows (i) a flexible and efficient approach in selecting transaction advisors for PPP project preparation, and (ii) hiring of reputable international firms, hence raising the quality and credibility of PPP projects offered for bidding.
- *Panel arrangement:* Transaction advisors for PPP project preparation (from pre-feasibility study up to financial closure) are first pre-qualified to enter a panel of firms/consortia which is retained for 3 years on noncommittal basis. This panel now consists of 15 reputable international consortia and is available on ADB and PPP Centre's websites. Each consortium consists of a lead firm that partners with other foreign or local firms to meet the requirements of the generic terms of reference (TORs). Each consortium signs a framework agreement with the PPP Centre based on the ADB's indefinite delivery contract template. Selection is done on the basis of expanded expressions of interest (EOIs) following the quality-based selection method.
- *Call-down assignments:* After approval by the PDMF Committee of the GCA request for PPP project preparation, the PPP Centre enters into a Technical Assistance Agreement with the GCA that details the PPP Centre-GCA interaction in consultant selection and management and PDMF reimbursement. After this agreement is signed, the PPP Centre sets up a Project Study Committee comprising PPP Centre and GCA staff to be in charge of substantive aspects of consultant selection and management, including endorsement of the TORs for consultant recruitment and consultant deliverables review. The PPP Centre also sets up a Special Bids and Awards Committee comprising of PPP Centre and GCA staff to be in charge of procurement-related issues. Once these organizational steps are completed, the request for proposals (RFP) is finalized and issued to the panel members for submission within 20 working days through email. Selection is based on simplified technical proposals and follows a fixed-budget selection approach. On average it takes 45 days between issuance of RFP and signing of contract with transaction advisors. This is three times faster than stand-alone selection following ADB or Philippine procurement systems.
- *Progress:* Overall, the PDMF Board has approved 27 proposals for PPP project preparation. For 17 projects the transaction advisors have been hired. Of these, two projects (Philippine School Infrastructure Project 1 and 2) reached financial closure in January and October 2012, respectively, and construction work started in February 2013. The cost of about \$600,000 spent on transaction advisors for this project was reimbursed to PDMF. Two projects (Philippine Orthopaedic Centre and Philippine School Infrastructure Project) are at the bidding stage, three are at the request for qualification (RFQ) stage, and seven at various project preparation stages. For 11 projects, transaction advisors are being recruited currently. The estimated total project cost of 17 PDMF-supported projects is about \$4,180 million.²⁴ On average, PDMF project preparation cost is \$1.5 million per project, implying about 0.6% of investment cost spent on transaction advisors.
- *Advisory:* Project development staff of the PPP Centre provide in-house core skills to advise internal and external clients on PPP project development. Its role has significantly grown with the growing PPP portfolio and the need to cope with both PDMF and non-PDMF projects. The PPP Centre has initiated significant capacity building (on-the-job training) and organizational strengthening (of procedures, business processes, manuals and handbooks for easy use by staff) with ADB technical assistance. The challenge remains, however, with limited number of staff at the senior technical level (between the director and the junior technical staff).

Annex 2. Examples of the ADB's Project Development Facility (PDF) Approach

ADB has helped several countries in the region establish project development facilities (PDFs) to prepare infrastructure projects using the PPP modality.

*India*²⁵

India's infrastructure needs are massive, estimated at upwards of \$1.7 trillion during the decade 2010-20 alone. The government of India established the India Infrastructure Project Development Fund (IIPDF) with an initial contribution of \$15 million, supplemented by \$8 million technical assistance support from ADB. Operating on a rapid revolving basis, the PDF has allocated project preparation funding for over 250 projects, with supplementary resources given by provincial governments or agencies. The government has also launched a National PPP Capacity Building Programme in December 2010. It aims to train 10,000 senior and middle-level government officials over the next three years in PPP preparation and delivery, and is expected to result in improved capacities among government officials in preparing and managing PPP projects across various infrastructure sectors in different parts of the country. In parallel to the PDF, the government has also established the India Infrastructure Finance Company Limited (IIFCL) to lend for capital expenditures of PPP projects. ADB has provided \$1.2 billion in loan funding over the last few years, which has resulted in IIFCL supporting 35 PPP projects, primarily in toll roads, airports and energy sectors, leveraging additional funding of some \$4.8 billion.

Indonesia

It has been estimated that Indonesia needs approximately \$210 billion over a 15-year period to 2025, of which \$105 billion will be from private-sector sources. To help with this endeavour, ADB helped the government establish a PDF in 2006 with a \$25 million concessional loan supplemented by \$6 million grant financing from the Netherlands government. The PDF has helped prepare 12 projects and many of them are in the process of being bid out or financially closed.

Philippines

The Project Design and Monitoring Facility (PDMF) was established in 2011 with a total funding support of \$45 million, half of it administered by ADB on behalf of the governments of Australia and Canada (see Annex 1.) The PDMF Board has approved 27 proposals for PPP project preparation. For 17 projects the transaction advisors have been hired. The pipeline of PPP projects grew from 11 projects in November 2010 to 45 in September 2013. Contracts for two toll roads and two education projects have been awarded with a total estimated investment of \$1 billion to date. Five PPP projects for a total of \$1.4 billion are at the bidding stage.²⁶ Another five projects worth \$2.3 billion are undergoing the approval process. Thirty projects are under conceptualization or preparation by the implementing agencies (IAs) and the PPP Centre, while 50 other PPP projects are expected to be prepared by 2016 under the PDMF. Overall, a more robust pipeline of quality PPP projects has emerged, raising the likelihood that the country's PPP programme will be sustainable.

Vietnam

The country needs \$170 billion in infrastructure investment over the decade from 2011-20, of which \$65 billion will be sourced through the PPP modality. The Vietnam PDF, established in 2012 with a \$20 million concessional loan from ADB and \$10 million loan from Agence Française de Développement (AFD), is expected to help achieve this goal. The PDF will be used by government ministries and/or project sponsors to fund PPP project preparation activities which include pre-feasibility studies, full feasibility studies and the engagement of transaction advisors who would structure deals to bring to the private sector for bidding in a range of infrastructure sectors.

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Endnotes

1. Infrastructure financing and the large gap in the provision of infrastructure are the focus of ongoing work by the Long-Term Investor Council of the World Economic Forum.
2. There is another set of infrastructure assets procured via the PPP route where the “taxpayer pays” principle applies. In this approach, the public sector makes payments to the private partner in exchange for the latter making the new infrastructure asset available to the public. For such procurement models to be successful, however, the credit quality of the public sector “off-taker” has to be solid, either by itself or through a “credit enhancement wrap” to facilitate limited-recourse financing. But limited resources, capacity and reliability are often the reason why the government could not build the infrastructure in the first place.
3. Note that while EBRD’s experience is the focus of this section, sister IFIs such as the Asian Development Bank also are active in the urban infrastructure sector. ADB support for municipal and urban infrastructure is delivered through sovereign operations in five sub-regions in Asia and the Pacific as well as non-sovereign operations across the entire region. A team at ADB comprising approximately 80 urban and municipal infrastructure experts, including investment specialists, works in the municipal sector. Backed by its Urban Sector Operations Plan, ADB’s sovereign lending has been to the order of about \$2.5 billion per year, while its non-sovereign lending and equity investments have averaged about \$0.7 billion per year.
4. The EBRD operates in 34 countries, including most countries of Eastern Europe, Central Asia and Turkey. In response to the Arab Spring, the EBRD’s shareholders extended its mandate to Morocco, Tunisia, Jordan and Egypt.
5. While projects have an explicit goal to improve the creditworthiness of clients, environmental and social impacts are seriously considered. The bank’s formal project compliance approach requires the preparation and covenanting of an environmental and social action plan.
6. This is despite the inclusion of features such as high gearing and long tenor that are typical for project finance loans but generally associated with higher-risk corporate loans. While most project finance borrowers are highly leveraged, thinly capitalized special purpose vehicles with limited financial flexibility, project finance loans are structured to be both highly robust to withstand a wide range of potentially severe risks while also minimizing any post-default economic loss. These data point toward the conclusion that within the subset of the project finance asset class, PPP projects present a lower default rate and a higher average ultimate recovery rate than the study average.
7. Urban transport, as described here, includes the entire range of transportation activities in urban areas including public transport fleets and supporting infrastructure, urban street improvements, traffic management and intelligent transportation systems, ticketing and parking. All but two of the EBRD’s 65 urban transport projects to date have been approved after 2001.
8. This figure includes EBRD loans, all commercial B-loans and any other EU or other IFI financing.
9. Bangladesh, Cambodia, China, Fiji, India, Indonesia, Lao PDR, Myanmar, Mongolia, Nepal, Pakistan, People’s Republic of China, Philippines, Thailand and Vietnam.
10. This section onwards was prepared jointly by Rachel MacCleery, Urban Land Institute; Helcio Tokeshi, EBP; Norman Anderson, CG-LA; Leonard Turk, consultant and former CFO of MTRC; and Matthew Jordan-Tank, Marta Modelewska and Thomas Maier, EBRD.
11. Described also as land-based financing or land value capture finance. The ULI report (Huxley, 2009) defined value capture as “the appropriation of value, generated by public sector intervention and private sector investment in relation to an underused asset (land and/or structure), for local reinvestment to produce public good and potential private benefit.” In this way, value capture financing deals are designed to create a win-win situation from development which benefits both public and private sector actors. Batt (2001) defines value capture as “an innovative public finance method in which the increase in property or land value owing to public infrastructure improvements is captured through land-related taxes or other means to pay for such improvements.”
12. Dewees, 1976; Inlandfeld and Raper, 1990; Gatzlaff and Smith, 1993; Benjamin and Sirmans, 1996; Workman and Brod, 1997.
13. Some examples include Washington DC (Lerman et al., 1978), Toronto (Bajic, 1983), San Francisco (Landis et al., 1991, Cervero, 1996), Seoul (Bae et al., 2003; Cervero and Kang, 2011) and Atlanta (Nelson, 1992).
14. D. Salon and S. Shewmake. 2011. Opportunities for Value Capture to Fund Public Transport: A Comprehensive Review of the Literature with a Focus on East Asia. Institute for Transportation and Development Policy.
15. *ibid.*
16. ADB. 2007. *Philippines: Critical Development Constraints*. Country Diagnostic Studies. Manila.

17. Private sector investment commitment in a year means the total amount of fiscally closed PPP contracts in that year as reported in the World Bank's Private Participation in Infrastructure Database (ppi.worldbank.org).
18. This could also cover review of all unsolicited PPPs of national government GCAs and sub-national government (above certain project cost threshold) before GCA can accept the unsolicited PPP for further processing. A review fee would be paid by the private proponent of the unsolicited project.
19. ADB. 2010. TA Report "Strengthening PPPs in the Philippines." Manila. TA7796-PHI. Co-financed by the governments of Australia and Canada.
20. Information in this paragraph is as of 30 September 2013 and is sourced from the Philippine PPP Centre's website at ppp.gov.ph.
21. The largest PPP project – extension and operation and maintenance of line 1 of Metro Manila's light rail transit system – costing \$1.37 billion, is bidding.
22. The guidelines can be accessed at http://ppp.gov.ph/?page_id=688.
23. This is reflected in the 2013 General Appropriations Act and in the President's Executive Order No 136 (dated 28 May 2013).
24. The cost of seven PDMF projects is yet to be estimated.
25. For more information, see <http://pppinindia.com>.
26. The largest PPP project – extension and operation and maintenance of line 1 of Metro Manila's light rail transit system – costing \$1.37 billion, is currently being rebid.



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