



13

Railway Reform:

Toolkit for Improving Rail Sector
Performance

Chapter 13:

**Encouraging Private Sector
Participation**

13 Encouraging Private Sector Participation

13.1 Introduction

Most reform and restructuring efforts aim to increase railways commercial orientation and reduce government direction and support of the sector. Governments worldwide have reformed state railway departments and agencies in an effort to reduce costs, improve services, and realize more effective investments. Revitalizing rail transport takes fresh approaches and often requires large capital infusions. Encouraging private sector participation is a dual-purpose strategy that seeks not only investors but also private sector operators, whose experience and skills can sharpen the commercial focus of railway enterprises. Private sector capital is typically more expensive than government financing, but the commercial discipline and expertise that comes with private sector participation can lead to increased railway productivity and efficiencies, ultimately leading to reduced financial risk and costs to the government.

The private sector has much to offer railway reform efforts—capital is more abundant in the private sector and investors recognize that railways can often offer opportunities for good returns. Private enterprises are driven by commercially oriented managers focusing on factors that affect profit and loss—marketing, customer service, and controlling costs. These factors are not necessarily the focus of state managers.

Private sector participation is not a panacea for reforming government-run railways. Governments with an ineffective and costly rail sector have to decide whether to: a) fix the railway first (corporatize, downsize staff, and make key investments); or b) let the private sector carry out the fixes. Even before reform efforts begin, governments need to be prepared, by doing the following:

1. *Clarify their objectives*, which might include the need to: (i) reduce or eliminate subsidies (reduce cost burden on treasury); (ii) seek relief from ongoing and deferred investment needs; and (iii) provide more and better services.
2. *Understand how these objectives might be achieved*, for example: (i) improve productivity and efficiency; (ii) reduce services and close branches; and/or (iii) draw in private sector participation.
3. *Understand the political implications of required actions*, which can include: (i) making large reductions in the workforce; (ii) reducing the scope of loss-making services hurting users of those services; (iii) introducing greater pricing flexibility; and (iv) restructuring within individual units.

Whatever the approach, having a clear and well defined set of objectives— the *Why* of reforms - is a critical first step as it will guide strategic options for moving forward with private sector participation.

13.2 Typical Forms of Private Sector Participation

Private sector participation in railways can take many forms, as outlined below.

13.2.1 *Contracting and outsourcing*

Enterprise rationalization through increased contracting and outsourcing should be part of most reform efforts, unless the reform is limited to a concession or full privatization. All railways, even state-owned vertically integrated railways, commonly contract with the private sector for a range of services, from purchasing supplies (such as fuel or materials) to contracting for services (such as audit, accounting or overhauling traction motors). Reforms that expand contracting for services and materials can expand private sector participation and stimulate increased private investment.

Many railway activities that were once considered ‘core’ to the railway entity can be outsourced to the private sector, depending upon the size of the economy and the railway. For example, railways may choose to outsource maintenance activities:

- To gain economies of scale for specialized activities such as ballast production;
- When a railway is not large enough to engage full-time specialized equipment such services can be provided by a private supplier to more than one railway;
- When the activity is highly specialized and requires expertise not normally employed by a single railway, such as rail flaw detection (RFD), verification of track geometry, and bridge rating;
- When the maintenance activity is not core to the business of railway maintenance, such as station/building/depot maintenance and automotive maintenance of road vehicles.
- When the cost of outsourcing maintenance activity is lower than the cost of providing this function internally.

Other railway activities that can be outsourced includes simple activities like building repair, cleaning, catering, repairs to bridges and structures, workshop functions, and track renewals¹⁴³. Some railways have also outsourced on-board passenger services and ticket collection, in order to control fraud, improve services, and reduce the need for non-core investments.

Many government-owned and operated railways have historically included subsidiary entities that produce everything from ballast and sleepers to advertising and printing. Often these subsidiaries can be sold, raising capital needed for critical ‘core’ investments. Costs typically decline when services and materials are purchased through competitive bidding. During railway reform implementation, a crucial task is thus to identify true ‘core’ functions, and then to shed as many of the “non-core” activities as possible. This reduces both annual maintenance cost and the capital requirements associated with the non-core functions, while expanding private sector participation.

¹⁴³ For example, India Railways outsourced catering.

When railways expand the share of non-core functions that they outsource, they need to both strengthen their procurement capacity and upgrade contracting and bidding practices. This may necessitate staff retraining programs. Railways sometimes balk at contracting out, citing ‘safety issues’ as an impediment and claiming that cost savings from contracting out will be cancelled out by increased supervision costs. However, global evidence confirms that when an appropriate Safety Management System is in place, it is safe *and* cost-effective to contract many functions to private sector enterprises—from signal maintenance to on-board catering—despite the need for increased staff to supervise contractors.

Both rationalization of non-core activities undertaken by subsidiary enterprises and increased contracting and outsourcing of core activities such as the running of trains should thus be considered as elements of railway reform.

13.2.2 *Service management contracts*

Frustrated with the cost and difficulty of reforming their state-owned railway, governments frequently seek to solve the problem by outsourcing railway management to a private sector operator. This can be effective, but is fraught with difficulty. One of the greatest challenges has been designing contract incentives that reward attaining the performance the government wants to achieve, while ensuring that the condition of the physical assets improves.

Governments may choose contract management because they cannot or are not able to face the difficult staffing and investment choices associated with greater private sector involvement. However, service management contracts often limit redundancies, prohibit significant reductions in service, or commit the government to renewal investments as part of the contract. Such contracts are typically short term. As a result, they do not involve significant private investment, becoming in effect “cost-plus” management contracts. A sample contract is included in Annex 5.

Private sector management can go some way to help achieve efficient railway operations, but most service contracts limit management’s ability to make significant long-term improvements. A more fundamental way to involve private sector operators and private capital is through longer-term concession or franchising contracts.

13.2.3 *Rail concessions and franchises*

Rail concessions and franchises are effective ways of increasing private sector participation. Concessions and franchises are simply contracts between a government owner and private parties for the provision of specified rail-related services. The contracts can be for infrastructure, operations, or both. The terms “concession” and “franchise” are often used interchangeably, but may be interpreted differently in different jurisdictions. Here, concessions and franchises are distinguished by the length of the contract – a concession typically lasts longer than a franchise and requires a more significant investment commitment from the private sector.

Concession contracts

In most cases, concessions involve a contract for vertically integrated train services. Under a typical concession contract, the state maintains ownership of the

land under the railway and the “below the rail” infrastructure, while transferring most other infrastructure along with rolling stock assets and the right to operate rail services to a private company for a period fixed in the contract. Concessions are usually longer-term arrangements, in order to take advantage of private sector investment and commercial management practices. Railway concessioning can encompass the whole enterprise or be limited to specific enterprise components – freight operations, commuter services, or long-distance passenger services. Railway concessioning has been used in Europe, Latin America, Africa, and in many other parts of the world. While a number of African concessions have been terminated early¹⁴⁴, those that have continued have had generally positive results.¹⁴⁵ At a minimum, concessioning has generally reduced the financial burden of the railway on Government, and in almost all cases rail traffic has increased, sometimes dramatically following the concession.

However, as was the case initially in many parts of the former Soviet Union, concessions in Africa did not deal effectively with a number of underlying issues¹⁴⁶:

- The fundamental misunderstanding by Government about what concessions meant. Concessions do not mean for concessionaires to manage the railways on behalf of Government. Rather, concessionaires are to take over the railways and operate it profitably (subject to concession contract terms).
- Failure to agree on the financing mechanism for public service obligations (PSOs), particularly passenger transport. A number of concessions required the operator to continue to cross-subsidize loss-making suburban and long-haul passenger traffic from freight revenue for a number of years. This drained available cash (the difference between revenue and direct operating costs), leading to under-maintenance of track and thus to declining running speeds and service levels and eventually to a declining capacity to move freight. In most cases, these passenger service requirements were eventually converted to directly subsidized PSOs to be provided by the concessionaire.
- Failure to establish a corporate structure that was sustainable in an environment where the interests of the operator and the owner were not always fully aligned.

¹⁴⁴ The 20-year concession of Zambian Railways (ZR), signed in 2003, was revoked by the Zambian Government in 2012. The 25-year concession of Tanzania Railways (TRC), signed in 2007, was terminated in 2011. The 25-year concession of the Kenyan and Ugandan railways to Rift Valley Railways (RVR) signed in 2005 remains in place, although the membership of the consortium has changed a number of times since the 25-year agreement was signed.

¹⁴⁵ For a discussion on concessioning, see Section 9.4.3 the toolkit case studies. A pro-forma concession contract is included in Annex 4.

¹⁴⁶ This section is drawn in part from recent surveys of African rail concession performance, including: Joan Miquel Vilardell, *Railway Concession in Africa: Lessons Learned*, prepared for AfDB Transport Forum, 2015; Larry Phipps, *Review of the Effectiveness of Rail concessions in the SADC Region*, prepared for USAID Southern Africa, 2009; Richard Bullock, *Results of Railway Privatization in Africa*, World Bank, 2005; Mark Pearson & Bo Giersing, *Revamping the Regional Railway Systems in Eastern and Southern Africa*, Trademark Southern Africa, 2012; CPCS, SSATP Transport Policy Review study conducted for the World Bank, 2013.

- Failure of the owner and the concessionaire to agree on reasonable traffic forecasts, and to align these with infrastructure upgrading proposals. Most agreements forecast a rapid increase in rail traffic, regarded as being constrained initially primarily by track and rolling stock condition. The agreements did not adequately consider the ‘chicken and egg’ question of how to finance the initial infrastructure improvements needed to handle additional traffic before traffic and revenue increased, or indeed how to convince potential customers to be the first to switch back to the not-yet-improved railway. In some cases, traffic volumes were simply not sufficient to support the infrastructure costs, setting unrealistic expectations. Failure to set up an appropriate mechanism to oversee the commercial agreement between the Government-owned railway and a private operator. In most cases, this task was left to the railway entity, creating a clear conflict of interest between the railway as regulator and the railway as owner and a party to the concession agreement.¹⁴⁷
- Failure to agree on appropriate mechanisms to facilitate cross-border movement of cargo by rail. With notable exceptions (Abidjan-Ouagadougou in West Africa, and Mombasa-Nairobi-Kampala in East Africa), African railways concentrate on national markets and do not cross borders. When they do cross borders, they can attract traffic with a longer average haul, but only if they can provide service comparable to that provided by through truck movement.
- Failure of Government to implement (or pay for) some of the rehabilitation costs in accordance with the concession contract.

Concession contracts that include upgrading of rail infrastructure are typically for a period of 25 to 40 years, to allow the concession operator to obtain a return on investment in long-term assets. A concession contract can also include government commitment to invest in assets, such as infrastructure or passenger rolling stock. Infrastructure concessions are generally exclusive – the concession operator has the exclusive right to invest, maintain, and operate the infrastructure and to run trains, although they can require the concession operator to provide access to other train operators providing specific transport services (passenger, freight, or both).

Typically, state-owners are financially responsible for resolving existing workforce redundancies and environmental issues prior to concessioning. The State may include one or more service contracts with the concession operator for loss-making services (usually for provision of specific number of passenger services).

A difficult and often contentious part of concession agreements involves terminal valuations—how the value of private investments will be calculated at the end of the concession. If assets simply revert to government ownership at the end of the concession, operators often seek to dis-invest during the final years of the contract, effectively using up their earlier investments. This can leave the government with railway assets that are no better than when they were transferred to the operator at the beginning of the concession, or in some cases assets that have degenerated beyond their initial condition. Another option is for the government to pay the operator for the asset value that remains at the end of the concession. This requires

¹⁴⁷ For example, the debate about appropriate structure continues - In 2016, 10 years into a 25-year agreement, Kenya Railway Corporation and the Ministry of Transport retained a consultant to advise on a more appropriate regulatory mechanism for the balance of the concession agreement between KRC and RVR.

contractual agreement from the beginning on a method to value the assets at the end of the concession. Often, concession contracts have a renewal period, to try to avoid this end-of-contract dilemma. In such contracts, a 30-year concession may be renewed for an additional period of 5-10 years after year 20, thereby providing the private investor with an incentive to continue to invest. This avoids reaching the ‘final years’ of the concession, unless there has been a decision by one party to terminate rather than to renew.

Concessions involve competitive tendering, engage private investment and management directly, and can transform a state-owned enterprise. Some countries have emphasized the use of concessioning both to promote competition within the rail sector and to seek private sector investment and management. Larger national rail networks, such as Brazil, Argentina, and Mexico, were concessioned into self-contained viable sub-networks – each constituting a natural geographic monopoly. In some concessions, the government has required new private operators to allow other licensed railway operators access to the concessioned network. In Mexico, the national railway was disaggregated into competing networks plus a jointly owned concession serving Mexico City. Network segments with lighter traffic density were separately concessioned as short-line railways. These concessions have created competitive rail services, attracting large private sector investments and new commercially focused railway management teams. Rail traffic in Mexico has grown dramatically, the need for subsidy and government investment has declined dramatically, and the condition of assets – infrastructure as well as rolling stock fleets – has improved greatly. In Cameroon, while the results are less dramatic, there have been significant investments by both the government and the operator, traffic has grown steadily, and the 20-year term of the original agreement, signed in 1990, has already been extended to 30 years. (Refer to Mexico and Cameroon Case Studies provided in this Toolkit for more details.)

Franchises

A franchise is a form of concession. Rail reforms in the UK mostly involve discussions of rail franchises (see Case Study: Virgin Trains), involving a contract to provide an exclusive right to operate defined train services for a period of between 7 and 15 years (some franchise contracts are now being written for longer periods). Of note, UK rail franchises were limited to rail services (‘above the rail’). These were not vertically integrated rail operations, as was the case in most of the concessions noted in the previous subsection. Consequently, the franchise period could be shorter as these did not entail capital investment in track and signaling (which typically have a longer term payback period).

A franchise contract can also be used to provide infrastructure. Franchises are usually auctioned or put out to competitive tendering to provide competition for the market for rail services.

Since the term of a franchise is usually shorter than the life of most rail assets, the existence of a local equipment leasing market or some other mechanism to provide for longer-term asset investment is usually a pre-requisite for franchises to work effectively.

13.2.4 *Private railways*

Railways are privately owned and operated in many countries. Outright privatization of a national rail network that was publically owned is uncommon, but several examples indicate that such sales can be effective in introducing private investment and management skills to the freight rail sector. In Canada, the formerly government-owned Canadian National Railways (CNR) was created in 1918-23 through the merger of a number of bankrupt private railways that had been taken over by the Government. It was privatized in 1995 through a stock offering and has since become an example of commercial efficiency and effectiveness.

In the United States, most railways had been privately owned. However, after a series of bankruptcies of large eastern railways, the federal government developed a mechanism to acquire and rehabilitate these railways. The newly government-owned railways were merged into Consolidated Rail Corporation (Conrail), which operated as a state-owned railway between 1976 and 1987. During that time, the government invested in improving the main line infrastructure, restructured operations, shed passenger services, sold non-core holdings, and reduced employment. Eventually, Conrail became financially healthy enough to be privatized. It was sold through an initial public offering (IPO) in 1987.¹⁴⁸ Privately owned US freight railroads today are among the most efficient and profitable in the world.

In 2001, Polish State Railways, Polskie Koleje Państwowe's (PKP), reorganized to create a holding company with passenger, freight, infrastructure subsidiaries. After considerable effort to turn around its operations, PKP was able to sell shares in PKP Cargo in an initial public offering (IPO) on October 30, 2013. The company was valued at US\$1.16 billion, and its share price closed 19 percent higher than the offer. The shares continue to be traded on the Warsaw Stock Exchange today. The successful privatization of four of the PKP subsidiaries since 2013 has realized US\$1.2 billion transaction revenue. The revenue from these transactions was used to repay PKP's historical debt. (Also see "Polish Railways" case study provided in this Toolkit.)

Some countries, including Australia and Canada, permit and even encourage private railway development, in many cases to exploit mineral deposits. If a state-owned railway network exists, private railways are often prohibited from competing directly with it. Thus, some private railways are permitted to serve only their parent mining companies. In other cases, when private railways are built in remote locations, they are not prohibited from providing rail services to other customers although they have no 'common carrier' obligations. In Brazil, Vale (formerly CVRD) built and continues to operate a number of private railways that not only serve their own major mining operations but also provide public rail services under a common carrier obligation. Since 2008, Vale has developed the Moatize Corridor in Southern Africa, linking coal mines at Moatize (Mozambique) with the deep-water port at Nacala (Mozambique) via a rail corridor of more than 650 km that passes through Malawi. In Western Australia, several mining companies built pri-

¹⁴⁸ See World Bank study by Eric Beshers on the bankruptcy, government takeover and eventual sale of several railways in the eastern US: http://www-wds.worldbank.org/external/default/WDSCContentServer/WDSP/IB/2000/03/23/000178830_9810190215474/Rendered/PDF/multi_page.pdf

vate railways to serve mines in remote locations. Under Australian law, these railways generally must allow other rail operators access to their infrastructure based on a regulated track access charge.

13.2.5 *Other forms of private participation*

Several other forms of private participation in the rail sector are common. Generally these require an existing rail market within which private investors can operate. If there is only a single customer—for example, the national railway—private investment is less likely, *except* on a contract basis. There are a number of possible forms of such private participation, including equipment ownership and leasing, infrastructure construction and maintenance, and private operation of trains (see the Case Study on HSR financing in France included in this toolkit for a number of approaches to private financing)

Equipment ownership and leasing

Reforms that permit or encourage private investors to purchase railway equipment and lease it to users can bring substantial private investment to the railway sector.

In many markets, third-party rolling stock companies own, maintain and lease equipment to railways. This is the case with much of the petroleum tank car fleet in North America. Another example is TTX, a rail wagon pooling company owned by a group of North American railways. (Also see the case study, “TTX Company—Rail Wagon Pooling” in this Toolkit). GATX, founded in 1898 and now the world’s largest railway car leasing company not owned by a railway, owns more than 125,000 wagons and 600 locomotives serving the North American market. GATX also operates in Europe and in India. In the UK, leasing of rolling stock is common for all of the passenger train operating companies.

Rolling stock leasing bring to the sector the following benefits:

- Provides both railways and shippers flexibility in their management of wagons fleets;
- Reduce the capital requirements of operators who pay for use of over time; and
- Frees up the railway operator’s balance sheet, which can facilitate financing of other capital needs.

To grow and flourish, leasing requires a market ecosystem. Usually, railways offer discounts on tariffs or transport charges for shippers that invest in rolling stock. Private owner-investors must be able to spread equipment ownership risk across multiple potential customers—shippers, rail operators or forwarders, or other railways – not just the state-owned railway.

Privately owned equipment usually has higher utilization, because the owner ensures that the wagon is returned quickly for reloading. Moreover, the equipment may be newer and more reliable, and provide a better net tare ratio and suitability for specific shipper needs than railway-provided equipment, which is likely more generic.

For a market to develop, however, there must be sufficient numbers of potential leasing customers. In the UK, several passenger operators use similar equipment

so an equipment investor has potential to lease to a successor operator on a concession, or to other passenger concession operators.

Given a sufficient number of shippers or operators to provide a risk pool, it is in the railways' interest to provide sufficient tariff reductions for private rolling stock to attract private investors. This frees scarce railway capital for use in other areas, such as infrastructure improvement, where it may be harder to attract private investors.

Infrastructure construction and maintenance

Historically, many vertically integrated railways have constructed new lines with their own labor force, and many railways use employees to carry out renewals and infrastructure maintenance. However, construction and infrastructure maintenance activities can be contracted out, which can create a market in leasing specialized and expensive railway-specific maintenance equipment. Even with a single infrastructure entity, a sufficient number of specialized track maintenance contractors can become a sustainable market for equipment leasing, especially if other railways of similar gauge are nearby and also seek to contract construction and infrastructure maintenance services. Examples of this specialized and highly productive equipment include rail-grinding trains, tunnel boring machines, and high-productivity track tamping machines. Track renewal work is successfully contracted out in this way in Latin America, the US, Europe, and Australia, where there are multiple railways or railway concessions.

Private operators of trains

Many governments' railway reform efforts include trying to increase competition between rail services. Within the European Union, regulations now require infrastructure accounts to be separated from transportation services accounts. Multiple rail operators are licensed to provide services over the same multinational rail network. Private operators negotiate for network space ('train paths') and provide shippers with loading, unloading, train assembly, and transport services on a 'for-hire' basis. Private operators invest in locomotives and rolling stock and sell services to shippers or local communities for suburban and commuter passenger services.

Governments often forbid differential pricing for infrastructure access (all operators pay according to the same access charge formula, although this sometimes allows for differential pricing for different service bundles. In a market that includes private operators, this restriction on the extent of Ramsey pricing¹⁴⁹ permitted for rail services potentially reduces the total volume of rail transport. In addition, many state-owned railways continue to view the railway as an integrated monopoly and thus distrust the idea of separation of infrastructure from operations and the introduction of private operators.

¹⁴⁹ Ramsey pricing means charging shippers according to their sensitivity to transport prices - those who are less sensitive pay more, those who are more sensitive to transport prices are charged less. Like modern airline pricing, these pricing methods tend to enlarge rail transport markets, so restricting their use effectively constrains market growth.

In Russia (and in some other CIS countries), reforms have opened the market to private rail operators who compete with state-owned operators for freight markets. Private operators own or lease rolling stock that they manage for their customers, but in Russia they do not presently operate trains. The national railways provide train crews, dispatching, and infrastructure services (train paths) based on agreements negotiated with operators. Russian Railways assert that this ‘retained monopoly’ in infrastructure and haulage is “more efficient in the Russian context”. Russian Railways provide 15-20 percent tariff discounts for private wagon ownership. Equipment operators earn a return from leasing their rolling stock and providing an interface between the railway and shippers for billing and record keeping. Equipment operators manage their equipment carefully and target specific customers in order to achieve higher equipment utilization and lower empty hauls. This would be impossible to achieve in the general pool of railway equipment. Russian equipment operators thus combine the functions of freight forwarders and equipment leasing companies, adding value through risk mitigation, better equipment condition, and better customer service. The growth in private equipment operators has resulted in the development of a pure equipment-leasing market in Russia, leasing rolling stock to both shippers and equipment operators.

Using this market opening, private equipment operators in Russia have invested over US\$20 billion in railway freight equipment. As a result, the Russian railway did not have to finance these investments, old rolling stock has been replaced, and new equipment technologies have been introduced, reducing maintenance costs and out-of-service time. Globaltrans, regarded as Russia’s leading private freight rail operator, was created in 2004. As of mid-2016, Globaltrans owns and operates more than 66,000 wagons and 75 locomotives. Discussion continues in Russia about whether private equipment companies will be able to buy and supply their own locomotives, leaving the railways to supply qualified drivers, dispatching, and infrastructure services. The Russian Railways case study in this Toolkit provides more details.

13.3 Public Private Partnership

A public-private partnership (often referred to as PPP, P3, or 3P) in railways is a contractual arrangement between government and private investors to provide public rail infrastructure and/or services and to share the risks associated with those investments and/or operations in some way. Such arrangements include private ownership and/or operation of trains, but typically include financing and management of infrastructure and services.

PPP arrangements differ from simple construction and service contracts in that PPP for railway transactions typically involve a contractually defined division of risk for provision of rail infrastructure or other investment for a public service. Government may participate in several ways: (i) transfer existing assets; (ii) provide land; (iii) finance part or all of initial investment in infrastructure; or (iii) provide a revenue guarantee through a long-term contract. At the end of the contract, assets are transferred to government at a pre-determined price. This toolkit provides case studies illustrating two possibilities for division of risks in development of high speed rail services, based on recent French experience (See “France: HSR Public-Private Partnership” in this toolkit).

Government support for a PPP may include not only asset transfers, initial investment, and long-term contracts for services, but often also forms of tax relief or tax-related benefits. A typical PPP railway transaction would be the construction and operation of a rail extension or urban rail services to an airport. Government may provide land; a private operator would build the line and operate the service for the duration of the PPP arrangement, and assume related risks. Revenue risks associated with passenger services could be mitigated by revenue available from land development rights for the private builders, or through some direct revenue support from the government under specific conditions specified in the contract. This is typically required when the operation on its own is not commercially viable.

When government contracts for private construction, operation, and eventual transfer with a long-term contract to operate the facility, without regard to usage or without revenue risk, the arrangement might be better referred to as a private finance initiative rather than a PPP.

13.3.1 *Land rights*

Often, the public sector contribution to PPP is access to land for development. For example, the government may provide land and a private company may finance, build, and operate a railway line in exchange for land development rights along the railway (See, for example, “Hong Kong Rail Plus Property Program” in this toolkit). Alternatively, the municipal railway may provide passenger services under a long-term lease with the private developer, who then profits from developing land near stations. Depending on the attractiveness of a region’s real estate market, a municipality could potentially get a rail line and service without incurring the related full costs and the private developer pays upfront to build the rail link in exchange for development rights to land in the passenger service corridor, particularly adjacent to or over stations.

Land rights have been used to finance and develop railways for more than 100 years. In the United States and Canada, land grants were used to finance nineteenth century railway construction. In Japan, commuter rail services have been financed by land and development rights—private railways in Japan are in effect both development companies *and* railways. Some Japanese railway companies own office buildings, apartments, and sports stadiums and operate services that transport customers to these facilities. Their most profitable line of business is land development, although without railways to provide access the land would be less valuable.

Land combined with property development rights can contribute to developing and financing an urban railway system. However, land values are notoriously difficult to estimate prior to development, and the value of access to land may be insufficient to offset all of the costs and risks associated with a major rail investment.

13.4 Paying for Projects and Services That Have a Funding “Gap”

The financial dynamics of railway projects and services can range from fully private and commercial to public service type operations that are not viable without government financial support.

Fully private and commercially operated railways, such as North American Class I freight railroads, have a number of available sources of money to pay for rail projects (such as a new line to a mine) or increased services (such increased service frequency). These include cash generated from profits (U.S. Class I freight railroads generated \$13.4 billion in profits in 2013), or a range of financing mechanisms including debt and equity raised in capital markets. They often use other financing instruments to defer payments, such as equipment capital leases – paying for use over time, rather than making a large capital outlay to purchase equipment outright.

Rail projects and/or services that cannot generate sufficient revenue over their lifecycle to cover capital and operating costs – in other words, projects and/or services that are not commercially viable – are said to have a “funding gap”. Simply put, a funding gap is the delta between the sources of money available to pay for the project and/or service and all the costs associated with realizing the project and/or service.

There are two ways of reducing a project and/or services funding gap:

- **Increasing funding** (e.g. through government capital grants, subsidies or other sources); and/or
- **Reducing costs** of the project and/or service (e.g. scaling down the project’s design characteristics, offering a lower level of service, etc.).

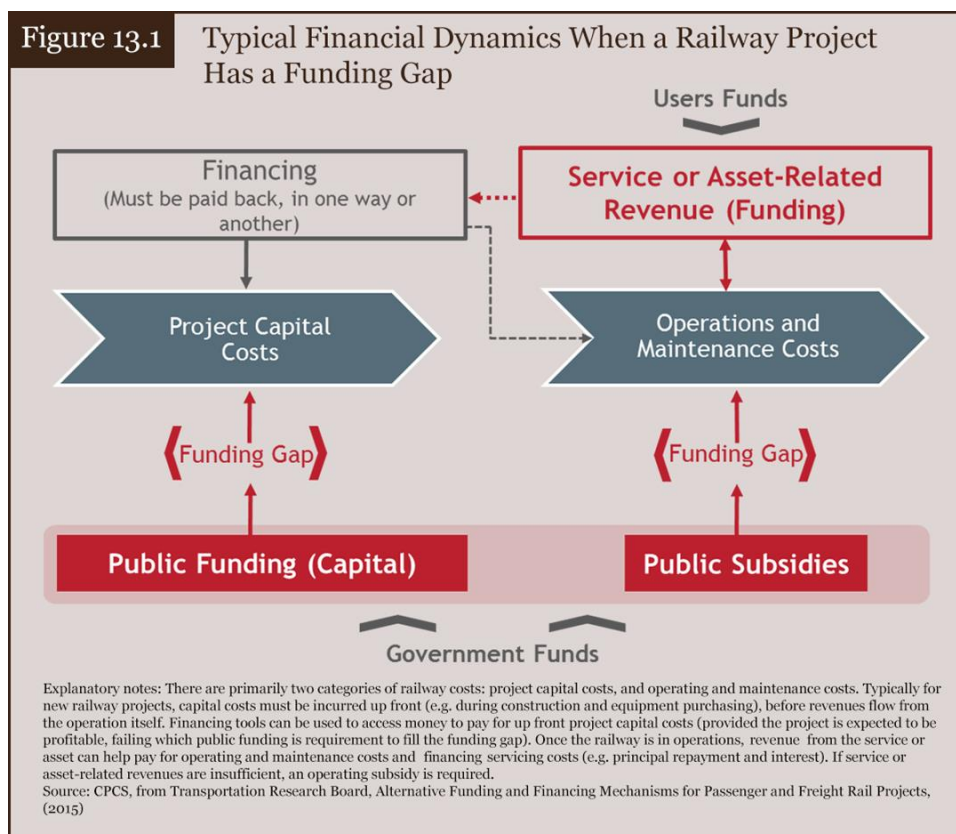
Of particular note, private financing (e.g. debt, equity, or other financial contributions from the private sector – as may be part of a PPP, for example) are generally not available to projects that have a funding gap, unless a government can pledge other future funding to repay the financing (e.g. service the debt). **Financing cannot solve a funding problem.**

Box 13.1 Funding versus Financing

Funding refers to the sources of revenue that can be used to pay for a project or service. Sources of funding include, but are not limited to, future revenue streams from the delivery of rail transportations services (whether freight or passenger services), ancillary revenues, and non-repayable government grants and subsidies.

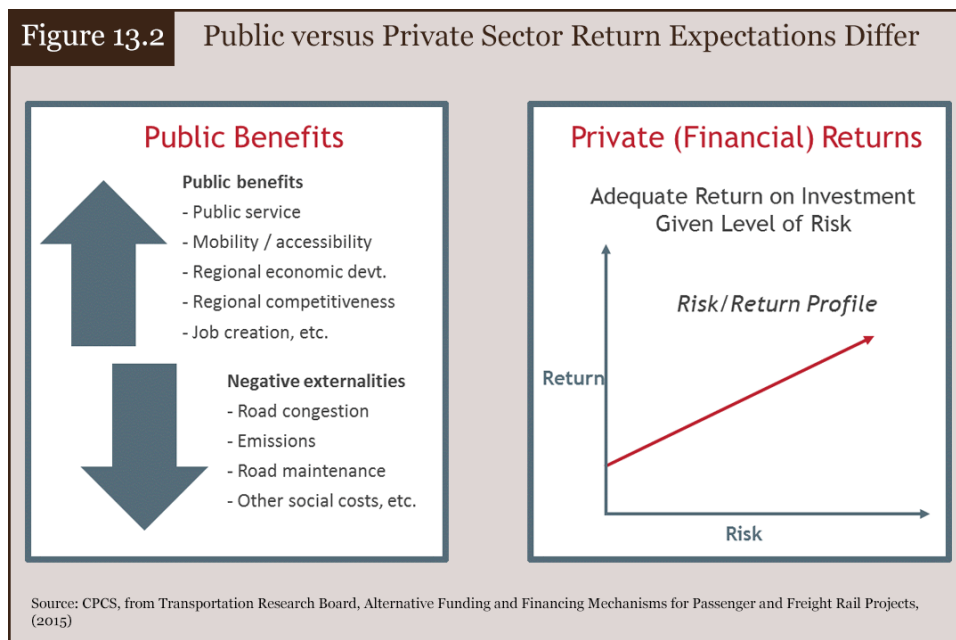
Financing refers to the financial mechanisms or tools used to access money to pay for a project or service (including various forms of debt, equity, and capital leases), generally before the project generates the necessary revenue to pay for the investments. For instance, financing mechanisms can be used to raise the capital needed for the construction phase of a project, before revenues associated with the project start to flow.

Figure 13.1 Typical Financial Dynamics When a Railway Project Has a Funding Gap



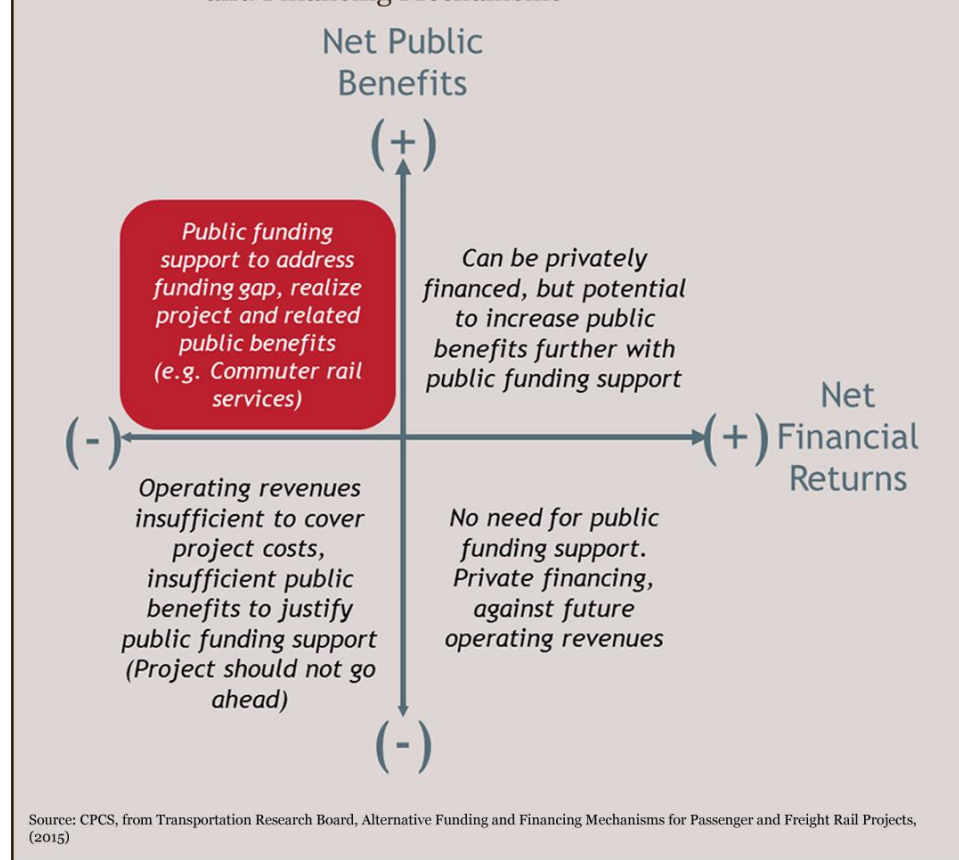
Rail projects and/or services that have a funding gap may have merit. But there is a critical distinction between a public policy rationale for a project (e.g. the economic benefits of a project or services, relating to increased mobility, safety, reduced emissions) and its commercial rationale. Public benefits are generally measured in economic or public terms rather than financial terms and accrue to society at large, rather than to private investors.

Figure 13.2 Public versus Private Sector Return Expectations Differ



This distinction has important implications. Fundamentally, if a rail project and/or service has a funding gap, the public sector must decide whether the public policy rationale and economic benefits case warrants public support (capital investment or operating subsidy). The private sector will not invest in such projects unless government can pledge financial resources to eliminate the funding gap, and provide an opportunity for profit. Projects or service with neither public benefits nor financial returns are bad projects that should not go ahead.

Figure 13.3 Basic Framework to Determine the Use of Rail Funding and Financing Mechanisms



13.5 Private Investor Perspectives

Private investors are looking to secure long-term returns on their invested capital and are willing to take risks, but will expect commensurate returns. Some returns from railway infrastructure investments are equivalent to a virtual government guarantee. If government uses a PPP structure with a long-term operating contract that limits the private sector risks to construction risk, the private company will expect returns similar to those of utility companies. If construction cost risks are shared with Government, the project may look more like a government guaranteed investment, with lower risk and commensurate lower returns.

If the private sector accepts fundamental risks, but the markets are not fully developed, private investors will be looking for returns similar to those of land developers or others who invest equivalent sums in risky commercial ventures. If private investors' potential returns from the venture can be expanded through land development rights or other profitable opportunities, they may accept lower returns or

assume more investment risk. For private investors, government-guaranteed financing or development bank-structured financing can shift a potential project from ‘too risky’ to ‘possible’.

In short, private sector return expectations must be commensurate with the risk of the rail project and/or service.

13.6 Government Perspectives

Government must determine the degree of restructuring and private sector participation appropriate to a restructured railway by assessing national goals and objectives. Only a government is in a position to predict the extent of reform and restructuring that is politically feasible. Government then has to develop a roadmap for the required changes, which will include some of the following.

- Identify essential public services that must be retained;
- Identify a desired industry structure and a preliminary plan to achieve it;
- Determine what extent of private control is permitted in infrastructure;
- Develop required legal and regulatory environment;
- Develop criteria for resolving labor issues;
- Develop a road map to restructure the sector—functions, timing, investment needs, potential investors, and so forth.

Simple outsourcing of services—catering, construction, building maintenance, and so forth—yields modest private sector participation. The highest level of participation emerges from complete sector-wide restructuring. Full privatization offers the potential for the widest range of private sector specialist companies to develop. Many countries now have a vibrant rail sector comprising multiple private enterprises that supply manufacturing, maintenance, operating, retail, and other services to private businesses operating in the sector.

The case studies presented in this toolkit, as well as other resources of the World Bank and other development banks, can provide examples. It should be kept in mind that opening part or the entire railway sector to the private sector is likely to limit the ability of government to use the railway (or railway tariffs) as a tool to achieve other regional or sector development goals. While this issue can be dealt with in contract negotiations with the private sector partners to some extent, there remain risks, since government development priorities may change over a time horizon that is shorter than the 20-30 year term of a typical concession agreement. Many governments work with development banks to hire consulting firms that will help them work through a rail reform roadmap.