



Track Access Regime: THE INTERNATIONAL PRACTICES¹² AND PAKISTAN RAILWAYS

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The “Track Access” or “Right of Access” agreements allow multiple train operators to provide rail services on a shared infrastructure. These agreements are called ‘Network Statement’ in Europe and an ‘Access Undertaking’ in Australia. These “information packages” establish the ‘rules of the game’ between the two parties. Most of these agreements have a similar structure, dealing in turn with:

- Prerequisites to grant access to an operator. These include a license for the operator, the rolling stock to conform to standards, and the suitably qualified staff.
- Characteristics of the infrastructure over which access is available, e.g., axle-load, line-speed, signaling systems, etc.
- Procedures for capacity allocation; in some cases, network management when there are traffic conflicts and incidents.
- Services supplied by the access provider, including access to yards, terminals, maintenance, and fueling facilities.
- Charges levied.

This arrangement has led to two separate organisations for infrastructure (track authorities) and operations (train operators). In some cases, these are fully independent and in some two distinct companies under a holding company. It varies from country to country and tends to reflect the political strength of the railway and its unions.

The infrastructure manager provides a set train path and a working timetable to the private operators. The operators are responsible for capital cost, operating cost, and other relevant costs of train operations. From a commercial perspective, train operators, in general, are independent of infrastructure managers. This liberty provides ease of doing business to the private operator with the trade and industry.

Now, these arrangements have transformed into the “Right of Access” arrangements. The main change is that third parties have the right to obtain access provided they satisfy licensing requirements, i.e., financial capacity and technical capacity.

Historical Context

Access to rail infrastructure by operators who are not the infrastructure owners has a long history, starting from the beginning of the 19th century. Such arrangements have existed since the earliest days of railways. The 18th-century wagonways and canals operated on this basis. The Liverpool and Manchester railway had such an arrangement with Grand Junction railway in 1837. It is still common in countries with several rail companies. These arrangements, if generally managed by regulatory bodies or governments.

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¹²The discussion rests heavily on the PIDE-RE 8 webinar series on Pakistan Railways, jointly organised by Pakistan Institute of Development Economics and Reenergia, 2020-21 (<https://www.youtube.com/watch?v=Y5EqU21Q4Q0&t=4691s>)

TRACK ACCESS CHARGES – SHARING THE COST

These are the Payments from the Operators to the Track Owner.

Track Access Charges (TAC) is a significant and widely discussed component of these arrangements. In principle, the objective of these arrangements is to share the total cost of the track between the train operator and the infrastructure owner. In 1837, the Liverpool & Manchester charged the Grand Junction one-third of the total freight rate as its track using fee. Since then, many such railway-to-railway agreements have been made to share costs. The total cost of infrastructure operation and maintenance is divided based on gross tons. Wagons have a similar effect to gross tons, are easier to record and calculate. There are examples where the recovery of infrastructure maintenance is on a gross tons-km basis, and signaling maintenance and operation is on a train-km basis.

- How much of the infrastructure costs have to be recovered?
- How much from passenger? How much from freight?
- How should charges be levied? How to charge for scarcity?

TAC - EUROPE

The first railway package introduced in 2001 (as per the directive 91/440/EEC) called for the access charges to be the direct cost of running the train. In this, markups could be differentiated based on the type of passenger trains and freight commodities; this package allowed for scarcity and environmental costs. However, Europe adopted a wide range of approaches. These included marginal cost pricing, marginal cost-plus pricing,

full-cost minus discounts pricing, and full-cost pricing. Sweden and Britain followed marginal cost pricing, while Germany and France followed full-cost pricing.¹³

The diversity in charges levied indicates the complexity underlying the open-access regime and the conflicting efficiency and cost recovery objective. The infrastructure costs recovered through the track access charges ranged from zero percent or near zero percent in Norway and Sweden to 100 percent in Estonia, Latvia, and Lithuania. This reflects the rail traffic they support and the government policy towards supporting the railway. Eastern Europe is freight-oriented, so cost is recovered from freight railway traffic. Western Europe is passenger-oriented and encourages rail use.

Fig. 1. Charges, Fee, and Facilities Included in Track Access Charges

What is Charged

- Time of Day Pricing
- Train Frequency
- Train Speed
- Train Type
- Axil Load
- Loco/Traction Type
- Service Type
- Train Path Quality
- Line Type
- Capacity Maximisation Charges
- Scarcity Surcharge
- Low Speed Penalty

How is it Charged

- Flat Fee
- Fee per Train-km
- Fee per tons-km
- Fee per min
- Node Fee
- Fee per axle-km
- Axle load

Fee

- Reservation Fee
- Cancellation Fee
- Running Charge
- Admin Fee
- Access Fee
- Security Fee
- Accident insurance Charges
- Environmental Charges
- Special Infrastructure Fee
- Dangerous Goods Transport
- Low noise fee/Discount
- Freight Subsidy Discount/Fee
- Performance Scheme

Facilities

- Parking at Stations
- Parking at Sidings
- Parking Time
- Shunting Services
- Train Washing
- Provision of Water
- Brake Test Facility
- Loading Areas

¹³Nash, C. (2018), Track Access Charges, Reconciling Conflicting Objectives. Centre of Regulation in Europe.

TAC – ASIA

In 1897, the Japanese National Railways was restructured and divided into six vertically integrated and regionally separated passenger rail companies and one freight company; most of these are fully privatised. Japan adopted marginal cost pricing for TAC. In China, the historical focus of intercompany payments has been to balance the revenue between state-owned companies and their subsidiaries. However, to move towards open-access, track access charges would become considerably imperative. For China, Kang, et al. (2021)¹⁴ suggest marginal cost plus a markup according to the ability to pay.

OPEN ACCESS POLICY – PAKISTAN

In 2011, the Infrastructure Project Development Facility (IPDF) and Pakistan Railways (PR) published preliminary information on a new Open Access Policy (OAP) for railways. The purpose of the policy was to attract private investment in locomotives, rolling stock, and new facilities for freight services. The OAP did not provide for overall open access for freight operators. Instead, it allows concession only for specific commodities and between specified origins and destinations (Box 3).

Pakistan's Track Access Plan – Unique Features

- Limited to specific traffics, selected by PR or the government.
- Limited and specific routes.
- Provision for expansion by mutual agreement.
- Access governed by contract and operating agreement.
- No regulatory authority is required other than PR/Ministry of Railways and Pakistan's legal system.
- No fixed track access fee – each service will pay what the market determines; PR is not required to accept any bid.
- PR free to provide service while competing with any concessionaire but could not sell another concession for the same route and traffics.

Table 1
Auctioned Freight Services

Commodity	Route	Distance	Cycle Time
Oil	Karachi-Lal Pir	953 kms	5 days
General Cargo	Karachi-Badami Bagh	1,220 kms	6 days
GITA	Karachi-Peshawar	1,600 kms	10 days
Phosphate	Karachi-Piranghaib	939 kms	5 days
Containers	Karachi-Lahore	1,225 kms	6 days
Coal/Cement	Karachi-Daud Khel	1,265 kms	8 days



The government and railways decided what freight services they would allow to be operated by private parties. After a series of consultations between the government and PR, tenders were invited. The 20-year private concessions, with TAC based on gross tons-km, were awarded to the highest bidders. These TAC were higher than Spain and Europe at that time. PR was supposed to provide station facilities and access to its infrastructure.

The concessions resulted in operating contracts that guided access rights and priority. Investors prepared operation plans, invested in terminals, and called for expressions of interest from the international locomotive and wagon manufacturers. Total investments by private entities in rail-related services, including terminals, locomotives, and rolling stock, were estimated to be nearly \$1 billion. Unfortunately, PR/MOR did not activate the concessions they had signed.

¹⁴Kang, et al. (2021), "Railways Access in China: A comparison with Europe and Japan". *Transport Policy*, 108, 11-20.

In Pakistan, the rail traffic is diversified. Some routes have more traffic and hence can be more profitable than others. The private operator would be willing to pay more for that route. The 20-year of concession agreement is long enough for the private investor to work out a reasonable return on its rolling stock. Investment in the 20 years begins when the track access rights are activated. The adoption of OAP in 2011 could have evolved into something like the complexed EU, with multiple operators. However, PR missed the opportunity to increase its revenues associated with the above rail competition (Jensen, 1998)¹⁵.

There is no doubt that a competitive market can potentially provide more choices to the consumers, which creates pressure for the stakeholders in their spending. Stakeholders are also under pressure to develop innovative plans and services to exploit new markets and maintain profits (Tsang, 2007)¹⁶. PR lost the welfare gain of 24 percent that could have been materialised by decreasing the dead weight loss stemming from the monopoly situations (Broman, 2019)¹⁷.

The freight market analysis reveals that PR has the potential of 58 daily freight trains, which it is not managing. It is equivalent to the loss of PKR 5 million per day.¹⁸ Reverting to OAP and unleashing the economic activity can have a ripple effect on the PR and economy.

ESTIMATING THE MARKET POTENTIAL OF FREIGHT¹⁹

1. Domestic Cargo

Pakistan's freight and logistics sector has enormous potential, given its' domestic market of around 226 million and strategic geographic location. Within the country, containers of almost 1.8 million TEUs are being transported from South to North in a year. Only 4 percent of this freight is carried by railway sector and remaining 96 percent

is transported through the road operators. In terms of rolling stock, only 74,000 containers are transported by PR. For the domestic cargo of 1.8 million TEUs, a total of 24 trains per day are required. Under the Track Access regime, only 6 percent of the market share will be offered to the private sector via two trains per day, leaving 22 trains per day of untapped potential on the tracks of PR for container traffic.

2. Coal Market

Taking the coal market into account, currently, Pakistan is handling almost 15 million tons of coal freight. Again, PRs transport hardly 750,000 tons of coal through daily service on this corridor while the market size is 15 million tons per annum. Only for coal, there is an unapprehended market potential of 20 trains daily from the South to North corridor.

3. Oil Market

In the 1990s, oil traffic fell due to its shifting to pipelines. This shift from rail towards pipelines was the outcome of the illogical incentives provided by the regulatory authority. With hardly any oil train running in Pakistan, more than 400 oil tanker wagons are sitting idle. One oil train can carry almost 1800 tons. There is a consumption of 8 million tons of furnace oil in power plants. This translates into the potential freight of 14 trains per day from South to North. That potential is still not materialised, despite the Federal Government directing Pakistan State Oil and Pakistan Railways to run oil trains on this corridor in 2019.

¹⁵Jensen, A. (1998) Competition in Railway Monopolies. Transportation Research. Part E, 34(4), 267-287.

¹⁶Tsang, T.W. and Tin K. H. (2007) Conflict resolution through negotiation in a railway open access market: A multi agent system approach. Transportation Planning and Technology, 29(3), 157-182.

¹⁷Broman E. Jonas E (2019) Welfare Effects of Open Access Competition on Railways Markets. Transportation Research part A. 129, 72-91.

¹⁸Authors calculations.

¹⁹Based on Javaid A. Siddiqui's presentation.

²⁰Anwar and Afrasiyab (2020), "Pakistan Railways: Why not on Rails?", PIDE Blog.

<https://pide.org.pk/blog/pakistan-railways-why-not-on-rails/>





Overall, there is a freight potential of 58 freight trains per day on the corridors of Pakistan Railways. The revenue loss from these 58 freight trains amounts to PKR 5 million per day. It does not include other commodities which PR has been carrying and can carry. That will further increase PR potential to run more freight trains, in addition to the above trains. This potential, once tapped, would help in overcoming the losses in PR and stimulate growth.

CONCLUSION

- The incapability of the PR to adopt a simple model/ policy decision of an open-access regime that has been practiced globally for over 183 years indicates the sheer lack of motivation to transform this 18th-century colonial asset into a vibrant commercial organisation of the 21st century.
- The inability to completely implement the open-access plan and faltering the process at the last minute indicates the gravity of political interference, the resistance within the PR to any change, the incompetence and non-existence of business ethics or model.
- There is an enormous freight potential that can help the PR to turn the balance sheets in its favour and exit from the list of top ten lossmaking State-Owned Enterprises through open-access policy and unleash the economic activity via the private sector.
- The open-access regime can still be a good starting point for a comprehensive business model of PR.

