

# Current railway models: Great Britain and overseas – Country summaries

Evidence paper

**April 2019** 

This paper is an annex to the "Current railway models: Great Britain and overseas" evidence paper, and summarises the railway model of each of the countries considered in that paper.

They are:

- Europe: France; Germany; Italy; the Netherlands; Sweden; and Switzerland.

- Rest of the world: Australia; Japan; and the USA.

The following is summarised for each country: the industry structure; commercial relationships; decision making processes; and, recent industry changes.



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## 1. France

### **Industry structure**

1.1 The French railway system currently has practically no competition in respect of passenger rail services, with state-owned SNCF operating a monopoly in domestic rail services.



Figure 1. Simplified organisational structure of the French rail market<sup>1</sup>

- 1.2 Reform in 2014 created the new SNCF structure: a Group divided into 3 separate 'EPICs' (Établissement Public Industriel et Commercial) public service companies with a commercial and industrial focus, owned by the French State. The three companies are:
  - SNCF EPIC, which defines strategy for the SNCF group.
  - SNCF Mobilités, which is in charge of operating freight and passenger trains in France. Different departments within SNCF Mobilités operate different services, including:
    - High speed services covering long distance lines (TGV)
    - Intercity services covering long distance lines (Intercités)

- Regional services (TER "Trains Express Regionaux").
- Services specifically in the Paris Region ("Transilien")
- Management and renovation of France's 3,000 stations (Gares&Connexions)
- SNCF Réseau is responsible for managing, operating and maintaining the rail network

### **Commercial relationships**

- 1.3 Role of the regulator: An independent regulator (the Autorité de Regulation des Activités Ferroviaires et Routières - ARAFER) is responsible for monitoring the rail, coach and toll road markets. ARAFER regulates fares as well as ensuring fair access to the network, by ruling on access charging disputes regarding infrastructure and station access.
- 1.4 SNCF Réseau charges operators directly for track access, with charges calculated on a marginal cost basis. These charges, along with station access charges, are reviewed and validated by ARAFER.<sup>2</sup>
- 1.5 Delivery of passenger services: Currently, regional authorities decide the way in which regional services are specified, issuing a single contract for services across the region. The contracts issued are similar to concessions. The law requires that these contracts are negotiated with SNCF.<sup>3</sup> However, rail reform approved by the French Parliament in 2018 will significantly change the way passenger services are contracted for as regions will be able to competitively tender services.<sup>4</sup>
- 1.6 Standard contracts for regional services include objectives for passenger growth over the contract period, usually taking the form of a revenue sharing mechanism. There is also an incentive system that rewards / penalises an operator for success / failure against benchmarks for punctuality, cleanliness, station services and passenger information.
- 1.7 In principle, SNCF has complete freedom over the long distance TGV services that it offers.
- 1.8 **Rolling stock market**: For regional services, rolling stock is funded by the Regional Authorities or by SNCF itself.<sup>5</sup> Authorities are currently considering how to ensure that today's rolling stock arrangements do not introduce a barrier to entry to a new, more liberal, rail market.

#### **Decision making processes**

1.9 **Development of the network**: SNCF Réseau is in charge of determining and prioritising investments on the network in respect of infrastructure

maintenance and other development works. The government usually leads, or is heavily involved in, decision-making and financing of major national rail infrastructure. In recent years, France has seen a number of High Speed Rail extensions – for example to Bordeaux and Nantes. These extensions have been financed and constructed via PPP structures rather than through SNCF.

- 1.10 For regional networks, Regional Authorities have an investment budget and an operations budget that they are free to spend as they determine appropriate. Usually, while negotiating contracts or amendments with the regions, or during separate negotiations on investment needs, SNCF will also provide a list of suggested investments required on the network to the Region for a set number of years. Some of these investments can be part funded by SNCF, but the rest would need to be funded using the Region's investment budget.
- 1.11 **Long-term funding**: SNCF's budget is set by central government. For regional networks, around 20% of the budget of Regional Authorities comes from state funding, the rest from regional sources (taxes and debt mainly).<sup>6</sup>
- 1.12 In terms of fares, the government determines the level of concessionary fares (pensioners, students etc) for all passenger services. Regions can also decide to fund fare freezes for regional services. SNCF is free to set fare levels for its high speed rail services.
- 1.13 **Passenger service specification**: Responsibility for specification of rail services is devolved to Regional Authorities with the exception of a small number of intercity services, for which responsibility is retained by central government.

#### **Recent industry changes**

- 1.14 Significant changes are to be expected to the French rail industry in the coming years, following recent reform approved by the French Parliament in 2018, which will open the domestic high speed, regional and intercity passenger services to competition. The liberalisation of TGV services on an "open access" basis is due by December 2020. The liberalisation of Regional Rail services is due by December 2023. However, regions are able to introduce pilot schemes from December 2019 onwards.
- 1.15 The 2018 rail reform also creates a new structure for SNCF, which will become a national publicly funded group, 100% owned by the state and subject to French law governing limited companies rather than being an EPIC. The state has also agreed to take over a large proportion of SNCF's debt, in return for greater control over future rail investments.

1.16 SNCF Réseau and SNCF Mobilités will become subsidiaries of the new Group. It is also expected that Gares&Connexions, the entity managing train stations, will transfer from SNCF Mobilités to SNCF Réseau.

## 2. Germany

## **Industry structure**

2.1 Germany has the largest national rail network in the European Union, which services a highly developed passenger and freight market.<sup>7</sup>



Figure 2. Simplified organisational structure of the German rail market<sup>8</sup>

- 2.2 Following German unification, the two former state railways were integrated in 1994 as Deutsche Bahn (DB) which is owned by the Federal Transport Ministry. To meet EU requirements, DB's infrastructure manager, freight and passenger operations are separate legal entities within the overall holding company of DB, each with their own management boards. Key entities within DB are as follows:
  - DB Netze is responsible for the rail infrastructure. Its roles include providing non-discriminatory track access for rail undertakings (acting on an armslength basis to other DB entities), compiling timetables and maintaining the rail network. In addition, DB Netze is responsible for the ongoing development of the existing network, as well as implementing new technology solutions.<sup>9</sup>

- DB Netze Stations manages the operation of DB's passenger stations, the development and marketing of areas within the stations and ensures nondiscriminatory access to station infrastructure. It is responsible for over 5,400 stations.
- DB Regio operates regional passenger services, now subject to competitive tender processes (see below).
- DB Fernverkehr operates long distance passenger services that operate without direct subsidy or contract from the Federal Government.
- DB Schenker Rail operates rail freight services both within Germany and internationally.<sup>10</sup>
- 2.3 DB also has significant investments in domestic bus operations, and bus and rail operators overseas (through Arriva, a DB group company). Technical consulting services are provided by DB Consult.
- 2.4 Germany has introduced a tendering system for regional passenger rail services. As such, DB Regio faces competition from international private companies, foreign public rail companies and smaller German rail companies. National Express, Abellio, Transdev, Keolis and Netinera all have a significant interest in this market.

## **Commercial relationships**

- 2.5 **Role of the regulator**: The Federal Network Agency (Bundesnetzagentur (BNetzA)) is a cross-industry economic regulator that is responsible, inter alia, for ensuring non-discriminatory access and charges to operate on the network. This includes regulating the cost to operators to use the network (the Track Access Charges (TACs)), reviewing principles for setting TACs and the allocation of network capacity. The EBA (Eisenbahnbundesamt) is the regulator for technical and safety aspects.
- 2.6 Delivery of passenger services: Germany's 16 States are responsible for regional services. They can either tender for services directly or further devolve this responsibility to local authorities, which normally combine together to form Passenger Transport Associations (PTAs). In total there are 27 'Competent Authorities', either States or PTAs, who have the responsibility for setting service specifications and running tenders for them.<sup>11</sup>
- 2.7 In June 2017, there were around 300 public service contracts with around 180 in place with DB Regio.<sup>12</sup> The typical contract is much smaller than a UK rail franchise. There is no standardised contract for rail operations each PTA is free to let contracts according to their own needs and procedures. Particular differences include the degree to which potential

operators are free to define their own rolling stock strategy and whether the contracts are gross cost or net cost.

- 2.8 Long distance services are operated on a commercial basis and are not subject to public service contracts. The only current competitor to DB is Flixtrain, which runs typically just one or two trains a day between Cologne and Hamburg and between Stuttgart and Berlin.<sup>13</sup>
- 2.9 **Rolling stock market**: DB owns its own fleet. For other operators, there is a leasing market for rolling stock which has evolved over time rather than through the breakup of the state railway fleet. However, this rolling stock is supported by commitments on future use or direct guarantees by the States or the PTAs.

#### **Decision making processes**

- 2.10 **Development of the network**: The Federal Transport Infrastructure Plan (FTIP) sets out the framework for investment in the Federal Government's transport infrastructure in Germany and covers the road and rail network. This is valid for 10 to 15 years. Only projects that have been identified in the FTIP will receive support from the Federal Government. DB has overall responsibility for the management and delivery of federal railway projects.
- 2.11 Long-term funding: Since 2009, a Service Level and Funding Agreement (SLFA) is signed between the Federal Transport Ministry and DB Netze every five years. This contract agrees the financial contribution of the Federal Government and DB Netze (as infrastructure provider) from its own resources over the five-year period as well as the outputs that DB is required to deliver. The latest SLFA agreed spend by the Federal Government and DB Netze between 2015 and 2019 of €28 billion.<sup>14</sup> The Federal Transport Ministry provides funding to the States for regional passenger services and they, as well as PTAs, have the option to invest additional funds from their general budgets if deemed to be appropriate to, say, increase the frequency of a socially important service.
- 2.12 **Passenger service specification**: The Federal Transport Ministry is not involved in the specification or conclusion of passenger services contracts; it is the PTAs that determine the service patterns.<sup>15</sup> DB's decisions around longer distance services are in principle made on a commercial basis but, in reality, are subject to considerable political oversight and discussion.

## **Recent industry changes**

2.13 A major change in the past decade is the obligation for competitive tendering for the provision of regional services. This was the result of a court case rather than a Federal Government decision.

## 3. Italy

### **Industry structure**

- 3.1 The majority of train services in Italy are provided by Ferrovie dello Stato Italiane (FSI), which is comprised of the passenger service operator (Trenitalia), the infrastructure manager (RFI), and a number of other subsidiaries including those for major stations, project management consulting and technical services.
- 3.2 FSI ran as a completely integrated company until 2000/01, when the network infrastructure and train operations were separated to comply with EU law. In practice it still operates as a very closely integrated company. Trenitalia is subsidised by both the national government (in respect of the national network) and by regional governments (in respect of local services).



Figure 3. Simplified organisational structure of the Italian rail market <sup>16</sup>

3.3 Key parties in this structure are:

Ministry of Transport, which owns FSI and part-funds the regional authorities.

- Regional authorities, which agree and award contracts for regional services and own and control some of the infrastructure upon which these services operate.
- RFI, which has a 40-year concession to manage the infrastructure, starting in 2000.
- Trenitalia operates the vast majority of regional services some in conjunction with in-house suppliers owned or controlled by the region they serve.<sup>17</sup> Trenitalia also operates a large proportion of Italy's long distance services – either on a commercial basis or under public service operations.
- Italo operates open access services on many of the same routes as Trenitalia, including on the Italian high speed rail network, with an hourly frequency as standard.<sup>18</sup>
- Grandi Stazioni (GS) (a company within the FS Group) has been created to redevelop and manage the fourteen main Italian railway stations.
  Centostazioni has a similar role in respect of the next tier of stations, being the larger regional and commuter stations.

## **Commercial relationships**

- 3.4 **Role of the regulator**: The rail regulator, Autorità di Regolazione dei Trasporti (ART) is responsible for regulating and promoting the efficient delivery of the entire Italian transport sector. It is answerable to Parliament, to which it reports regularly.
- 3.5 **Contracting for passenger services**: Regional services have been competitively tendered, in some cases. However, instead of inviting tenders, a common trend in the last few years is to directly award relatively long, often extendable, contracts. These contracts include specific terms and conditions, such as requirements to renew rolling stock. To date, all such awards have been made to Trenitalia.<sup>19</sup>
- 3.6 A new 10-year public service obligation contract to operate subsidised long distance services came into force between Government and Trenitalia in 2017.
- 3.7 **Rolling stock market**: The main train operators (Trenitalia and Italo) directly own the majority of their rolling stock.

### **Decision making processes**

3.8 **Development of the network**: In 2016, the Italian Government agreed with FSI a 10-year investment plan called 'Moving Forward', amounting to spend of €98 billion over 10 years. FSI revenue is proposed to almost

double in 10 years, in part through expansion of operations in other transport modes and also through overseas expansion of Trenitalia in the UK and elsewhere. Partial privatisation of long-distance operation has been proposed although since the change of government last year, it is less clear whether these plans will proceed for the time being.

- 3.9 **Long-term funding**: Responsibility for sponsorship and funding of regional services is currently with regional governments. The previous Italian government introduced a system in which its support for regional services would be cut by 15% if they were not tendered. This measure will be applied for the first time at the end of 2020.
- 3.10 **Passenger service specification**: The vast majority of regional services are provided by Trenitalia although some are in joint ventures with in-house suppliers owned or controlled by the region they serve. Each region must negotiate with Trenitalia on the level of service and the funds required to be paid to deliver it. The region leads the specification of passenger services and development of the timetable but has to work closely with RFI to ensure that adequate capacity exists.

## **Recent industry changes**

3.11 In 2012, Italo began to operate intercity services as a new large open access player, set up with funds including investment from SNCF and private investors. It took around four years for the company to obtain all operating and safety authorisations as well as access to the paths required to operate attractive journey times. However, now that services are established, Italo's rail market share on its chosen routes has risen from 9% in 2012 to 35% in 2017. Italo has now operated profitably for several years, earning revenue of €454 million in 2017, making it by far the largest open access operator in Europe. It was recently sold to private equity group Global Infrastructure Partners. Competition from Italo is said to have contributed to an increase in operating efficiency by Trenitalia.

## 4. Netherlands

## **Industry structure**



Figure 4. Simplified organisational structure of the Netherlands rail market<sup>20</sup>

- 4.1 Key entities within this structure are as follows:
  - Ministry of Infrastructure and Water Management oversees the rail sector.
  - ProRail is the state-owned rail infrastructure owner and operator, including for stations, the high speed line (HSL Zuid) and the dedicated freight line between Rotterdam and Germany. ProRail was separated from the train operator, Nederlandse Spoorwegen (NS) in 2003. A number of support functions such as NS's civil engineering design offices (Strukton) and its rolling stock support function (now owned by Ricardo Rail) were privatised to improve efficiency.
  - Nederlandse Spoorwegen (NS), is the dominant rail operator and is the corporate successor to the former state railway. It remains 100% owned by the Dutch Government through the Finance Ministry. It retains the exclusive right to operate the main rail network (Hoofdrailnet).

## **Commercial relationships**

4.2 **Role of the regulator**: There is an independent regulator, the Office for Consumers and Markets. It is the competition regulator for the economy generally and for the wider network industries. Its role includes adjudicating on disputes, for example on infrastructure access and charging.

#### 4.3 Delivery of passenger services:

- NS: In 2015 NS was awarded its latest concession contract to operate the vast majority of passenger services in the Netherlands up to 2025,<sup>21</sup> including High Speed services. The concession specifies in detail the services to be operated, controls and targets on journey growth, seat availability, punctuality / reliability, customer satisfaction, fares, frequencies and requirements for financial reporting. It also specifies particular improvements including rolling stock replacement programmes.
- Franchising/devolution: There are a handful of franchises for branch services covering a small proportion of the total passenger train mileage in the Netherlands.<sup>22</sup>
- Lines around Rotterdam and The Hague, including to Gouda and Hook of Holland, are being transferred to Rotterdamse Elektrische Tram (RET), the public transport operator for the Rotterdam area, so that they can be integrated with Light Rail and Metro systems.<sup>23</sup>
- 4.4 **Rolling stock market**: All rolling stock is owned by NS or the relevant rail operator.

### **Decision making processes**

- 4.5 **Development of the network**: Planning of the network is shared between the Ministry of Infrastructure and Water Management, ProRail and NS, with considerable involvement from the Dutch Parliament. A programme of possible upgrades is recorded in ProRail's Network Statement, and amended annually.
- 4.6 ProRail is responsible for timetable development, with a focus on providing services at consistent regular intervals (referred to as clock-face services) within a very dense regular interval timetable. Major timetable changes happen only rarely, are planned several years in advance and are subject to widespread consultation with the communities affected before introduction.
- 4.7 **Long-term funding**: The vast majority of ProRail's spending is funded directly by the Ministry of Infrastructure and Water Management. There is an ongoing investment programme, which is updated every year, following

consultation with provinces and towns affected. Operations are currently funded for 10 years through the concession contract between the government and NS. At present, NS pays a dividend to its owner, the Ministry of Finance.

4.8 **Passenger service specification**: The day to day service pattern operated by NS is specified within its concession agreement.<sup>24</sup>

## **Recent industry changes**

4.9 Significant changes in the past 10 years have included greater coordination between ProRail and NS following various service failures during recent winters. In particular there are now clear policies about when services should be reduced if bad weather is expected. ProRail announced in July 2018 that the Dutch network was almost full: there has been an increase from 129 to 165 million train-kilometres per year between 2005 and 2018.<sup>25</sup> As a result, it is considering moving to a real-time train control system to increase capacity.

## 5. Sweden

#### **Industry structure**

5.1 Sweden's industry structure has arisen from a series of reforms, which started in the late 1980s, and mean it is now amongst the most liberalised of the European rail networks. Today there is extensive tendering covering the provision of train services, rolling stock and track maintenance.



Figure 5. Simplified organisational structure of the Swedish rail market<sup>26</sup>

5.2 Key entities within this structure are as follows:

- Näringsdepartemente is the Ministry of Enterprise and Innovation whose remit includes transport.
- **Transportstyrelsen** is the regulator for all transport modes in Sweden.
- Trafikverket is the state owned infrastructure company which manages both rail and road infrastructure. It is responsible for designing, planning and tendering the construction and maintenance of infrastructure. This infrastructure delivery function was previously held in-house until 2010.

- Jernhusen manages the operation of passenger stations and railway property. It is wholly owned by the Swedish government.
- The 21 Provincial Transport Authorities (PTAs) specify and tender regional rail contracts.
- Statens Jarnväger (SJ) is the state-owned passenger operator which competes to deliver services through either competitive tendering or open access. SJ currently operates 11% of open access services and 60% of services let under competitive tender.<sup>27</sup>
- Transitio acquires, finances and manages rolling stock on behalf of regional and local public transport agencies which specify and contract the rail services.
- 5.3 Long-distance inter-regional services that require a subsidy are either tendered by the Ministry of Enterprise, and Innovation or directly awarded to SJ.

## **Commercial relationships**

- 5.4 **Role of the regulator**: As infrastructure operator Trafikverket is responsible for path allocation, traffic control and setting and collecting track access charges on a non-discriminatory basis. The approach to calculating track access charges is set by the Ministry of Enterprise and Innovation. This process is overseen by the independent transport regulator Transportstyrelsen.
- 5.5 **Delivery of passenger services**: There is a mix of open access operation for commercial services (largely on long distance lines) and competitive tendering of non-profitable services.
- 5.6 Regional services: Responsibility for tendering regional railways was passed to the 21 PTAs in 1988 with the first non-commercial Passenger Service Contracts put out to tender from 1989-90. Passenger Service Contracts are typically let on a gross-cost basis of between 5 and 10 years.<sup>28</sup> Recently some PTAs have included within their contracts incentives to grow passenger numbers. The state-owned operator SJ runs around 60% of the country's passenger mileage that is operated under Passenger Service Contracts,<sup>29</sup> while other operators in the market include Arriva, Transdev, MTR and domestic operator Tågkompaniet.
- 5.7 Long distance/Inter regional services: Predominantly these are operated on a commercial basis by open access operators, but some unprofitable routes are tendered by the Ministry of Enterprise and Innovation or directly awarded to SJ.

5.8 Rolling stock market: In 1999, most PTAs were involved in setting up a jointly owned subsidiary, Transitio AB, for the purchase and ownership of rolling stock for operation of the Passenger Service Contracts. Each regional PTA is charged for leasing the vehicles from Transitio on a cost recovery basis. Transitio currently owns around 145 trains purchased from Bombardier, Alstom and Stadler.<sup>30</sup> The commercially-run open access operators and SJ own their own rolling stock.

#### **Decision making processes**

- 5.9 **Development of the network**: The Swedish government plans its national infrastructure on a 12-yearly cycle, updated every four years. Within this framework, the development of long distance rail infrastructure is planned and prioritised by Trafikverket. PTAs develop their own plans for regional transport, sometimes in partnership with several other PTAs through joint development companies responsible for all development and commercial decisions.
- 5.10 Long-term funding: Parliament decides on the overall budget for the national infrastructure plan, while the government sets priorities within the budget available. Of the current 622.5 billion SEK plan (c. £52 billion), 125 billion SEK is allocated to maintaining and re-investing in state-owned railways. Trafikverket is responsible for delivery and effective cost control of the plan. For regional services, the PTAs retain control of revenue collected from passengers and the setting of the fares.
- 5.11 **Passenger service specification**: The PTAs specify regional passenger services. In the tendering process, the PTA usually sets an overall service pattern (e.g. peak / off-peak frequency) and bidders have to respond with a detailed timetable.

#### **Recent industry changes**

- 5.12 Sweden's rail market has included open access operators since 2009, with the market fully open from 2011. Prior to this, SJ operated all commercial rail services on a monopoly basis.
- 5.13 Open access operators entering the market include:
  - Weekend services between Stockholm and Malmo operated by Transdev starting in 2010 (which were later extended to include weekdays).<sup>31</sup>
  - In 2015, MTR initiated an open access long distance service between Stockholm and Gothenburg, offering a similar frequency to the SJ service.<sup>32</sup>

5.14 Roughly a third of the Stockholm-Gothenburg trains are operated by MTR and about 10-15% of the Malmo-Stockholm trains are operated by competitors to SJ.

## 6. Switzerland

#### **Industry structure**

6.1 The quality and extent of public transport is an area of significant importance to the Swiss public and politicians. Successive investment programmes since the early 1990s have led to a high quality system which achieves very high punctuality. Nevertheless, it faces considerable pressures from growth in demand for both passengers and freight usage.



Figure 6. Simplified organisational structure of the Switzerland rail market<sup>33</sup>

6.2 Key entities within this structure are as follows:

- Federal Office for Transport (FOT) (or Bundesamt fur Verkehr) oversees the rail system.
- Operators Three main parties operate the core national network which are all public sector owned - SBB is owned by the Swiss government; BLS is mostly owned by the Bern Canton and SOB similarly by the Cantons of St Gallen and Schwyz. These operators are awarded concession agreements which

cover the provision of passenger services and infrastructure maintenance. There are many smaller operators, including narrow gauge networks in regional areas.

- VoeV is an industry body of which all operators are a member. This body is similar to RDG in the UK.
- Trasse Schweiz is an organisation owned by the three main railway companies and VoeV but operated independently of them. It is responsible for the development of the timetable and resolving timetable conflicts.<sup>34</sup>
- 6.3 The passenger timetable operates clock-face services on regular intervals, known as 'Taktfahrplan' ("regular timetable").<sup>35</sup> This covers fast, stopping and connecting trains as well as providing paths for freight. Under this timetable, the same pattern of passenger services fast, semi-fast and slow, is provided every hour so there is no need for complicated timetable guides for passengers. This operating concept, in place since 1982, is believed by the Swiss to be crucial to developing passenger demand as it makes it easy to use the network and make connections between services.

## **Commercial relationships**

- 6.4 **Role of the regulator**: Schiedskommission im Eisenbahnverkehr (SKE) is an appeal body for access disputes, which is to be renamed 'RailCom' shortly. As the scale of passenger services is effectively agreed through the concessions with FOT, the regulator's main role is to ensure adequate capacity for freight traffic.
- 6.5 Contracting for passenger services: The Swiss Government, through FOT, has just completed a process of awarding the latest round of concessions for the main network for the next 10 years. This was a two-year process structured to provide a "competition of ideas" between the three main operators in relation to which lines they should operate and with what type of service. This has led to some minor changes in service operation between the three main operators. For example, SBB will transfer services on two regional routes (Bern La Chaux de Fonds and Bern Burgdorf Olten) to BLS.<sup>36</sup>
- 6.6 Rolling stock market: All rolling stock is owned by each operator.

#### **Decision making processes**

6.7 Who plans the development of the network: The FOT is responsible for strategic planning of the system, allocation of funding for improvements and the awarding of concessions. The FOT works in close conjunction with both the rail companies and the Cantons. It is possible for the Cantons to

contribute to particular projects where they wish to.<sup>37</sup> Where significant changes in rail policy or increases in rail funding are planned, they are subject to national referenda.

- 6.8 Long-term funding: In 2014 there was a successful referendum on changing the way Swiss railways are funded, known as 'FABI' (Finanzierung und Ausbau der Bahninfrastruktur). Its main features were:
  - Creation of a dedicated, permanent rail infrastructure fund partly financed by a tax on HGV movements in Switzerland, road fuel taxes and a temporary allocation of 0.1% of the total VAT receipts. The funding balance is to be provided by FOT and the Cantons.
  - Commitment to 10-year upgrade plans, similar to the UK HLOS process. The first of these runs from 2015 to 2025 and is costed at CHF 6.4 billion (c. £5 billion)
  - A requirement that the first call on the fund must be for infrastructure maintenance rather than large projects.<sup>38</sup>
- 6.9 The FOT has recently announced the 10-year programme for the period between 2025 and 2035, under which CHF11.9 billion in improvements will be made.<sup>39</sup> It is likely that this programme will be subject to a referendum shortly.
- 6.10 **Passenger service specification**: The basic network usage plan for train services is agreed six years in advance and approved by the FOT. The high number of trains on the network means that significant timetable changes are made only rarely, normally not more than once every three years. In principle the network is completely open for open access passenger services, but to date there are none.

#### **Recent industry changes**

- 6.11 Major changes in policy in the past decade have included:
  - Further strengthening of the FOT as the body that takes the strategic decisions.
  - The new FABI funding strategy and development of the next 10-year plan.
  - The new 10-year concessions for SBB, BLS and SOB.
  - The introduction of long-distance coach services (which have never been permitted in Switzerland), to compete with the railways from June last year. SBB is offering some cheaper advanced purchase fares in part for this reason.

## 7. Australia

## **Overview**

- 7.1 In Australia, policy-making, funding and administration of passenger and freight rail arrangements are largely undertaken at a State Government level. Funding for transport (including rail and other public transport) is provided by State Governments from general Government revenue and / or borrowings from capital markets (e.g. through issuance of bonds). The Commonwealth Government contributes to the State Governments' revenues through appropriation of goods and services (GST) revenue and other grants. In some instances, the Commonwealth Government also contributes directly to major infrastructure initiatives.
- 7.2 To present an analysis relevant to the UK landscape, this section focuses on how the rail industry is structured in Victoria and New South Wales, the States containing the two largest metropolitan cities with the most rail intensive use, Melbourne and Sydney. There is then a brief overview of the long distance and freight markets.

## Victoria

- 7.3 The Department of Transport (DoT) brings together the relevant transport ministers responsible for transport infrastructure, public transport and roads. Public Transport Victoria is a statutory authority under the DoT responsible for the management of public transport operating contracts including rail.
- 7.4 Victoria has taken the decision to franchise train operations and maintenance. The first franchises commenced in 1999 with two train, two tram and one regional rail contract. The structure has subsequently seen some consolidation and change of ownership and in 2009 a single train and a single tram franchise were awarded to MTR and Keolis respectively for 8 year terms.
- 7.5 A further 7-year term could be achieved based on delivery against both fixed performance criteria (including reliability and customer experience) and flexible performance criteria (which where varied year on year). Each of the franchisees achieved these performance criteria and successfully negotiated the extended term with the State. These contracts commenced in November 2017 representing the fourth generation of franchising in Victoria.

- 7.6 Whilst the Victoria franchise model has remained largely unchanged from a structural perspective, there has been some important evolution in the franchising contract terms since 1999. For example:
  - Limitation of risk transfer to the private sector in particular where the risk cannot be (sufficiently) managed by the franchisee (e.g. tighter bands within which revenue risk is shared)
  - Profit clawback introduced to protect Government from an operator making super profits
  - Contracts around asset maintenance refocusing from output-based to inputbased, arrangements
  - Longer term franchises with break points where Government can choose either to renegotiate terms or to test the market

### **New South Wales**

- 7.7 Metropolitan and regional rail operations in New South Wales are provided by two Government agencies: Sydney Trains (metropolitan operations) and NSW Trains (regional operations).
- 7.8 Sydney Trains is responsible for the operation and maintenance of the network under a vertically integrated model. NSW Trains is responsible for train operations only. A portion of the metropolitan network is operated and maintained by the private sector (Sydney Metro PPP). Sydney Trains and NSW Trains are both owned by Transport for New South Wales (TfNSW) the Government's lead agency responsible for strategy, planning, policy, regulation, funding allocation and other non-service delivery functions for all modes of transport. In addition, the State is currently in the process of transferring rail assets into a separate entity (TAHE).

## Long distance operators

- 7.9 Long distance rail services are principally provided by State-owned operators, connecting the major towns and cities within states. For example:
  - NSW TrainLink operates ten long-distance routes, all of which originate from Sydney
  - V/Line, a not-for-profit organisation under the control of the Victoria government, runs eight long-distance services, all of which operate from Melbourne;
  - Queensland Rail, a state entity, operates several passenger lines under its Traveltrain subsidiary.

- The Public Transport Authority, a government agency of Western Australia, operates four long distance rail routes through its Transwa subsidiary.
- 7.10 In addition, there are a small number of privately run tourist operators that run trains across State. For example Great Southern Rail has a private equity owner and operates three passenger trains:
  - Indian Pacific (Sydney–Adelaide–Perth): 1 round trip per week
  - The Ghan (Adelaide–Alice Springs–Darwin): 1 round trip per week
  - The Overland (Melbourne–Adelaide): 2 round trips per week

## Freight

- 7.11 The continental geography of Australia and its strong mining, manufacturing and agriculture industries lends itself to freight shippers using rail. Indeed, rail has a significant modal share of over 50%<sup>40</sup> meaning that the railways move more freight (by tonne-km) than all other modes (sea, road and pipeline) combined. The Freight on Rail Group (FORG) identified that rail freight added AUS\$13.2 billion to the Australian economy in 2013.<sup>41</sup> The key players in the market are privately owned and include the previously nationalised operators Aurizon and Pacific National and US freight operator Genesee Wyoming.
- 7.12 The Australian rail freight network has performed well in recent years with volumes increasing by 57% since 2007 and continuing to grow.<sup>42</sup> Indeed, the target is to grow another 26% by 2026.

## 8. Japan

## **Industry structure**

- 8.1 Rail services in Japan are provided by around 200 companies.<sup>43</sup> They are all vertically-integrated businesses (with very minor exceptions): the largest are the six regional Japan Railways ("JR") companies formed when Japan National Railways was broken up in 1987. Of the six, four (JR East, JR Central, JR West and JR Kyushu) are listed on the stock exchange, while two (Hokkaido and Shikoku) are still owned by the Japanese government.
- 8.2 The state also runs the national rail freight company (JR Freight) and 11 local companies, while the rest are privately owned and operated.<sup>44</sup> Under this structure, all companies that require subsidy are, in principle, controlled by the government.



Figure 7. Simplified organisational structure of the Japanese rail market<sup>45</sup>

8.3 The key market participants within the Japanese railway are as follows:

- 8.4 **Ministry of Land, Infrastructure and Transport** (MLIT) is the ministry which oversees transport. Within MLIT, the Railway Bureau deals with policy, regulation and subsidy.
- 8.5 **JR Companies** consist of six vertically integrated track and train companies providing high speed / regional and commuter services.
- 8.6 **Regional and local companies** consist of 16 major, 5 mid-sized and 128 small vertically integrated track and train companies, the vast majority of which are privately owned and operated.<sup>46</sup> In addition, the industry also includes several municipal operators, cargo railways and light rail operators.
- 8.7 **JR Freight** is the national freight operator owned by JRTT and operates across all JR Networks.

## **Commercial relationships**

- 8.8 **Role of the regulator**: The Railway Bureau within MLIT regulates the market through the control of fares (upper limit based on a margin on efficient costs); approving the introduction of new services (noting that new service introduction is a commercial decision by the Companies); and by providing some oversight on access charges. The MLIT is also the safety regulator.
- 8.9 **Delivery of passenger services**: Passenger services are provided on a commercial basis by the Companies, with no contracting or specification by state or local government. Companies generally own and operate their infrastructure. Track access charges only apply to freight operators or for through services which utilise another Company's infrastructure.
- 8.10 **Rolling stock**: Most companies own and maintain their own rolling stock. Some companies have a commercial interest in rolling stock manufacturers.

#### **Decision making processes**

- 8.11 **Development of the network**: MLIT undertakes overall network planning and oversight with reference to the Traffic Policy Basic Act, development plans for Social Infrastructure and High Speed Rail and Urban Master Plans. MLIT also authorise new entrants who fulfil the necessary conditions. New entrants are involved in privately funded construction of new urban and inter-urban lines with state support from regional authorities.
- 8.12 The Japan Railway Construction, Transport and Technology Agency (JRTT) is responsible for constructing new high-speed lines (Shinkansen),

and the specifics of these are agreed between the Agency, local government and the prospective JR company. The new main line currently in construction is a very high speed maglev between Tokyo and Osaka

- 8.13 **Long-term funding**: Private railway companies are self-supporting and are expected to be profit-generative businesses that pay corporate taxes and dividends to their shareholders. Funding for new infrastructure is primarily sourced from private financial institutions and other private-sector sources, but state support, including interest free loans, is also a source of funding for some projects.
- 8.14 The larger JR companies earn significant revenues from property development in and around major stations and can also own department stores and hotels. Fares are expected to cover operating costs and are largely distance-based with supplements for higher quality services. More recently operating subsidies have been provided to some companies to mitigate against the commercial impacts of population decline.
- 8.15 **Passenger service specification**: Passenger service specifications are commercially determined by companies.

## **Recent industry changes**

8.16 The rail sector has experienced a decline in passenger numbers on some routes which has been attributed to population decline, particularly rural depopulation. This has reduced the commercial sustainability of certain businesses, especially those providing rural services. This has meant that more state intervention has been required to support both capital investment and service delivery.<sup>47</sup>

## 9. USA

## **Overview**

9.1 Railways in the USA are dominated by the freight railroads. The continental nature of the USA lends itself to rail freight and the modal share is around 35%.<sup>48</sup> In terms of passenger services, the distance between major cities means that aviation provides the main means of intercity public transport. Whilst there is a publicly owned intercity operator, Amtrak, its operations are concentrated in the North East corridor which links Boston to Washington D.C. via Philadelphia and New York. In addition to this, a number of the USA's major cities have dense rail commuter networks.

## Freight

- 9.2 Nearly 600 freight railroads operate in the United States. Each company owns the signalling and track and owns (or leases) its own locomotives, wagons or coaches. Companies tend to initiate and implement their own capital projects but there are examples where private and public investment are combined to relieve capacity constraints.
- 9.3 The market is led by seven Class I railroads BNSF Railway Co., Canadian National Railway, Canadian Pacific, CSX Transportation, Kansas City Southern Railway Co., Norfolk Southern and Union Pacific Railroad Co. Together, these operators account for around 69% of freight rail mileage and 90% of employees. Total operating revenue for Class I railroads in 2017 was approximately \$70 billion.<sup>49</sup>
- 9.4 Each Class I railroad operates in multiple states over both its own infrastructure and infrastructure owned by its competitors. Arrangements to operate over competitors' tracks are contained within various 'trackage' agreements, which are subject to approval by the US Surface Transportation Board.
- 9.5 Non-Class I railroads (also known as short line and regional railroads) range in size from tiny operations handling a few carloads (wagons) a month to multi-state operators not far from Class I size. 31% of US freight rail mileage moves along America's 560 short line and regional railroads, which receive traffic from Class I railroads for final delivery. Short line and regional railroads operate in every state (except Hawaii) and employ 10% of US railroad workers.<sup>50</sup> Together, US freight lines form an integrated,

nearly 140,000-mile system that earned close to \$74 billion in revenue in 2017.

#### Long distance passenger services - Amtrak

- 9.6 Amtrak runs services and manages infrastructure. However, whilst Amtrak's operations span a network of 21,400 route miles, it only directly owns 623 miles of track. Amtrak services are able to run over other operators' infrastructure through an established process of agreements with freight railways under which Amtrak compensates infrastructure owners for the incremental costs of its operations.
- 9.7 Amtrak, as with most operators in North America, owns the majority of its rolling stock. A small number of train sets are leased from other transport authorities in order to operate commuter rail services, such as the Transportation Departments of California, North Carolina and Illinois. However, the passenger rolling stock leasing market is not as developed in North America as it is elsewhere.
- 9.8 Amtrak operates on a for-profit basis. Until the Amtrak Reform and Accountability Act (ARAA) of 1997 was passed by Congress, Amtrak was obligated to maintain a basic system with routes specified by lawmakers. However, ARAA repealed this provision and Amtrak now has the complete flexibility to determine its national system of routes and service frequencies on a commercial basis in response to the marketplace and to the availability of subsidy. In this respect, it functions in a similar environment to that of domestic airlines.
- 9.9 For medium and long-distance intercity services, Amtrak pursues a marketdriven fares policy and Congress has not imposed any constraints or caps on fares. Similar to airlines, fares tend to vary by demand, when the ticket was purchased, and time/day of departure. Amtrak has recently imposed a number of fees for cancellation and the reissuance of tickets.
- 9.10 Beyond Amtrak, Brightline is the United States' only privately owned and operated intercity passenger railroad. Brightline is a fast train service, run by All Aboard Florida, a subsidiary of Florida East Coast Industries and Virgin Group Its services started operating in 2018 between Miami and West Palm Beach. More extensions to the Brightline network are planned.

#### **Commuter rail**

9.11 Local commuter rail systems are typically owned, and often operated by the State. The largest systems by passenger volume are the Long Island Rail Road and Metro North owned by MTA in New York, New Jersey Transit Rail, the SEPTA system around Philadelphia and Chicago's Metra network.

- 9.12 The largest operator of commuter and regional rail services in the USA is, in fact, Amtrak which operates services for 13 commuter agencies.<sup>51</sup> These services are typically let through a procurement process by the State or regional commuter agency. Amtrak is paid through operator contracts funded by the commuter rail agency and / or its State partner (e.g. the California Transportation Agency) through a mix of operating subsidies, grants, and fare revenues. These contracts typically run for five to 10 years with the commuter rail agency imposing limits on fare levels and fare increases.
- 9.13 The system that has commercial arrangements most analogous to those in the UK is the commuter network around Boston owned by the Massachusetts Bay Transport Authority (MBTA). The MBTA commuter rail network includes 13 lines, covering 776 route miles and 131 stations connecting population and employment centres across the Boston area.
- 9.14 The infrastructure and the rolling stock remain under the ownership of MBTA. However, train operations and the maintenance of both rolling stock and infrastructure have been outsourced to the private sector via a tender process initially to a Veolia-led partnership in 2003 and more recently to Keolis.
- 9.15 The current operating agreement between the MBTA and Keolis, awarded in 2014, is an eight-year, fixed-price, performance-based contract for train operations and the maintenance of the MBTA-owned rolling stock (including some 90 locomotives and around 500 coaches) and part of the associated infrastructure. The MBTA pays a fixed fee based on the operator's bid price, subject to monthly deductions if the operator does not meet specified performance requirements. Unlike the UK's "net cost" rail franchises, MBTA has retained all fare setting policy decision-making and revenue from operations.
- 9.16 In recent years operating performance of the MBTA system has been in decline. In 2017, the MBTA started work on a new "Rail Vision" seeking to develop a strategic plan for its rail system to meet long-term investment and capacity challenges. A review of the operating contract, and the commercial incentives that it provides to help meet MBTA's policy goals, will be part of this exercise.

## Endnotes

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