ITF-OECD Peer Review

• Benchmarking of Mexican railway performance against world’s major freight railways
• Performance since 1995 reform
• Strengths, weaknesses, opportunities
• Review team:
  – Aimee Aguilar Jaber, International Transport Forum-OECD
  – Paul Amos, World Bank, EBRD, Booz Allen, Travers Morgan
  – Lou Thompson, TGA, World Bank, US DoT
  – Jorge Kohon, consultant IADB, CAF
Mexico: 11th biggest freight railway in the world around 8th if coal and ore excluded
(million t-km - log scale)
Mexican rail system density similar to biggest in the world

Size of railway networks relative to land area and population

route-km/million square kms  route-km/million population

- Brazil
- Russia
- China
- Mexico
- India
- USA
- EU

UIC, 2013
Since 1995
GDP growth 56%; Rail freight growth 100%
Mexico: Rail share of road/rail market has grown from 19% to 25%
Europe: Rail share of road/rail market has fallen from 21% to 18%
Mexican railways most productive in Latin America

<table>
<thead>
<tr>
<th>Railway Company</th>
<th>Locomotive productivity (t-km per fleet loco)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ferrocarril Mexicano (MX)</td>
<td>66</td>
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<tr>
<td>Kansas City Southern de México (MX)</td>
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<td>Línea Coahuila-Durango (MX)</td>
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<td>Ferrosur (MX)</td>
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<td>América Latina Logística (BR)</td>
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<td>FerroExpresso Pampeano (AR)</td>
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<td>Ferrosur Roca (AR)</td>
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<td>Ferrovía Tereza Cristina (BR)</td>
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<td>Ferrocarril del Pacífico (CH)</td>
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<td>Ferrocarril Central Andino (PE)</td>
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<td>Perurail (PE)</td>
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<td>Compañía de Ferrocariles Chiapas-Mayab (MX)</td>
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<td>Transnordestina Logística (BR)</td>
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<td>Administración de Ferrocarriles del Estado (UY)</td>
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<td>ALL Mesopotámico (AR)</td>
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<td>Ferrocarril y Terminal del Valle de México (MX)</td>
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<td>Ferrocarril del Oeste (CO)</td>
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</table>

IDB, 2013
## Major productivity improvements since 1995

<table>
<thead>
<tr>
<th>Mexican railways average productivity</th>
<th>1996</th>
<th>2006</th>
<th>2012</th>
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<tbody>
<tr>
<td><strong>Ton-kms per locomotive (million)</strong></td>
<td>27</td>
<td>60</td>
<td>60</td>
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<tr>
<td><strong>Ton-kms per freight car (million)</strong></td>
<td>1.6</td>
<td>2.3</td>
<td>2.7</td>
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<tr>
<td><strong>Ton-kms per employee (million)</strong></td>
<td>0.8</td>
<td>5.4</td>
<td>5.3</td>
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<tr>
<td><strong>Ton-kms per litre of fuel</strong></td>
<td>80</td>
<td>107</td>
<td>116</td>
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IMT, 2014
Productivity has been driven by investment
Investment by Main Concessionaires (billion pesos)

IMT, 2014
### Mexican freight tariffs among lowest in Latin America

#### Average tariffs US cents per t-km

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<thead>
<tr>
<th>Company</th>
<th>Tariff</th>
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<td>Ferrovia Tereza Cristina (BR)</td>
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<tr>
<td>Ferrocarril Mexicano (MX)</td>
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</tbody>
</table>

[Source: IDB, 2013]
Mexican rail freight tariffs close to US and Canada
2012 US cents per t-km (adjusted for inflation)

- US Class I
- Canada
- FNM freight tariff only
- FNM freight tariff + 80% of railway losses
- Avg FM + KCSM

US Deregulation
CN Privatization
Mexico concessioning

Thompson, 2014
Mexican road freight tariffs have been rising
Road freight tariffs in relevant corridors (index)

Autotransporte
Crecimiento Estimado Precio /Ton-Km
Base 2002=100
Fuel prices major factor in rail and road tariff rises

Real Fuel Price Evolution Index

(Index Mar1996=100)

- Pemex Magna
- Pemex Premium
- Pemex Diesel

SENER, 2014
Policy, structural and regulatory framework

Objectives for freight railways:
• Efficient and responsive to market
• Financially sustainable generating revenue for reinvestment
• Take freight from roads where efficient for improved safety, congestion, road damage, emissions

Context:
• Target markets where rail has comparative advantage, large consignments, dense traffic, high load factors
• Maximise use of advantages – e.g. secure customs clearance
• Road provides door-to-door service and total spatial coverage providing strong competition
Policy principles

- Freight rail should be a commercial business, best provided by private sector.
- Largely free to agree tariffs with shippers:
  - To compete with road
  - To match service to willingness to pay
  - To recover fixed infrastructure costs
  - Regulate only where demonstrated market power and abuse
- Free intermodal competition – mainly from road.
- Rail-rail competition in specific markets where benefits outweigh risk to financial sustainability.
- “Prescribed competition” right solution.
- Vertically integrated management of train operations and infrastructure except in special circumstances.
Strengths
Mexican concession structure has been highly effective
Four kinds of ‘prescribed competition’

• Direct competition
  – alternative routes to key locations (e.g. Monterrey) by competing concessions

• Parallel route competition
  – alternative routes from equivalent locations (e.g. the ports of Manzanillo or Lazaro Cardenas to Mexico City) by competing concessions

• Alternative source competition
  – substitute supply routes operated by competing concessions (e.g. the port of Lazaro Cardenas versus Veracruz to Mexico city)

• Trackage rights (partially developed)
Weaknesses

Data and analysis on competition must be improved

• Capacity of regulators should be strengthened
  – To understand markets, competition, competition problems
  – Collect systematic data to allow regulator to make informed
determinations on pricing and capacity under trackage rights
  – Same data require for decisions on changes to system structure,
access rights and tariff regulation

• A Mexican version of the Canadian and US regulatory data
reporting requirements is needed
  – US STB “R-1 forms” (tariffs, commodities, financial data)
  – US Class 1 railway electronic waybills (commodity, weight,
distance, origin/destination, tariff, revenue)
  – Information confidential but allows market analysis and
monitoring of trackage rights
Risks

• Changes to access rights and tariffs, without market analysis, risk undermining performance, financial sustainability and investment

Choices – the European model

• Open access is used for freight in the EU because vertically integrated freight train and track operation ruled out:
  – Passenger dominated railways with large subsidies
  – Difficulty of ceding track to cross-border concessions

• Most EU railways do not recover fixed costs from freight, simplifying access pricing

• Passenger concessions in Europe are mainly exclusive, with competition for concessions
Opportunities

1. With stronger regulatory capacity (data and analysis), make better use of trackage rights, and where analysis indicates, extend access rights in specific markets.

2. Make public financial contributions to investments that support policy but are not commercially viable
   – Gauge enhancements, urban by-passes, safety investments
   – All countries make such joint investments

3. Begin work now on regulatory arrangements post 2027 to provide confidence for investment by the railways and businesses dependent on efficient rail services
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