

Financial and Operating Information for Rail Regulation In Mexico

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Transport Concepts

<http://www.tgaassoc.com>

BASIC THOUGHTS

- No shipper has ever complained about rates being too low or service being too good
- Regulation is not an end in itself: we need it only when there are market failures among privately owned competitors
- Regulation, however well intended, should not be harmful to the financial health of carriers

Emphasis on Information

- Information = Numbers with a Purpose
 - If you don't/can't use a number, don't collect it
 - Information should support a regulatory objective or function effectively
 - Wherever possible, information should be available to public (U.S. good, Canada limited, U.K. and E.U. essentially non-existent)
 - Mexico has an unusual opportunity to define what it needs (and leave out the rest)

Rail Regulation Comes From

- Rail regulation is driven by interaction among three elements:
 - Industry structure
 - Ownership
 - Competition
- Regulation must operate within the legal framework of the country and must acknowledge politics
- Regulation is dynamic – e.g. U.S. 1871 to present
- No “cook book” solution: always a different balance
- In developing regulatory information, Mexico should look at future needs as well as the present.

Industry Structure

- U.S. freight railroads are integral, though ~25% of lines have more than one freight operator through trackage or haulage rights.* Amtrak pays (not enough) for access to freight lines.
- Canadian freight railroads (2 major) are integral though there is some (mostly unused) provision for competitive access. VIA pays (too much) for access.
- U.K freight railways pay access charges on public ROW (Network Rail). E.U. freight railways pay access charges on public ROW. All U.K. and E.U. passenger operators pay access charges on public ROW
- Mexico has integral concessions with large exclusive territories balanced by prescribed access rights in defined areas.
- Mexican concessions do not bear financial costs of ownership of infrastructure, but do bear maintenance costs and concession purchase cost. Ferrovial is a hybrid.

* US also has 21 “regional” and 546 “local” mostly integral freight railroads that have 31% of system tracks and 6% of revenue.

Mexican Rail System



Ownership of FREIGHT Railroads

- U.S: infrastructure and operations are private (Amtrak mostly operates on freight lines, but has NEC).
- Canada: infrastructure and operations are (now) wholly private (VIA operates on freight lines, mostly CN).
- U.K. freight companies (not franchises) are private. E.U. freight operators mostly publicly owned.
- Mexico: infrastructure mostly concessioned to private operators. Mexico controls by concession contract law things that U.S. and Canada “regulate.”

Competition vs. Regulation Tradeoff

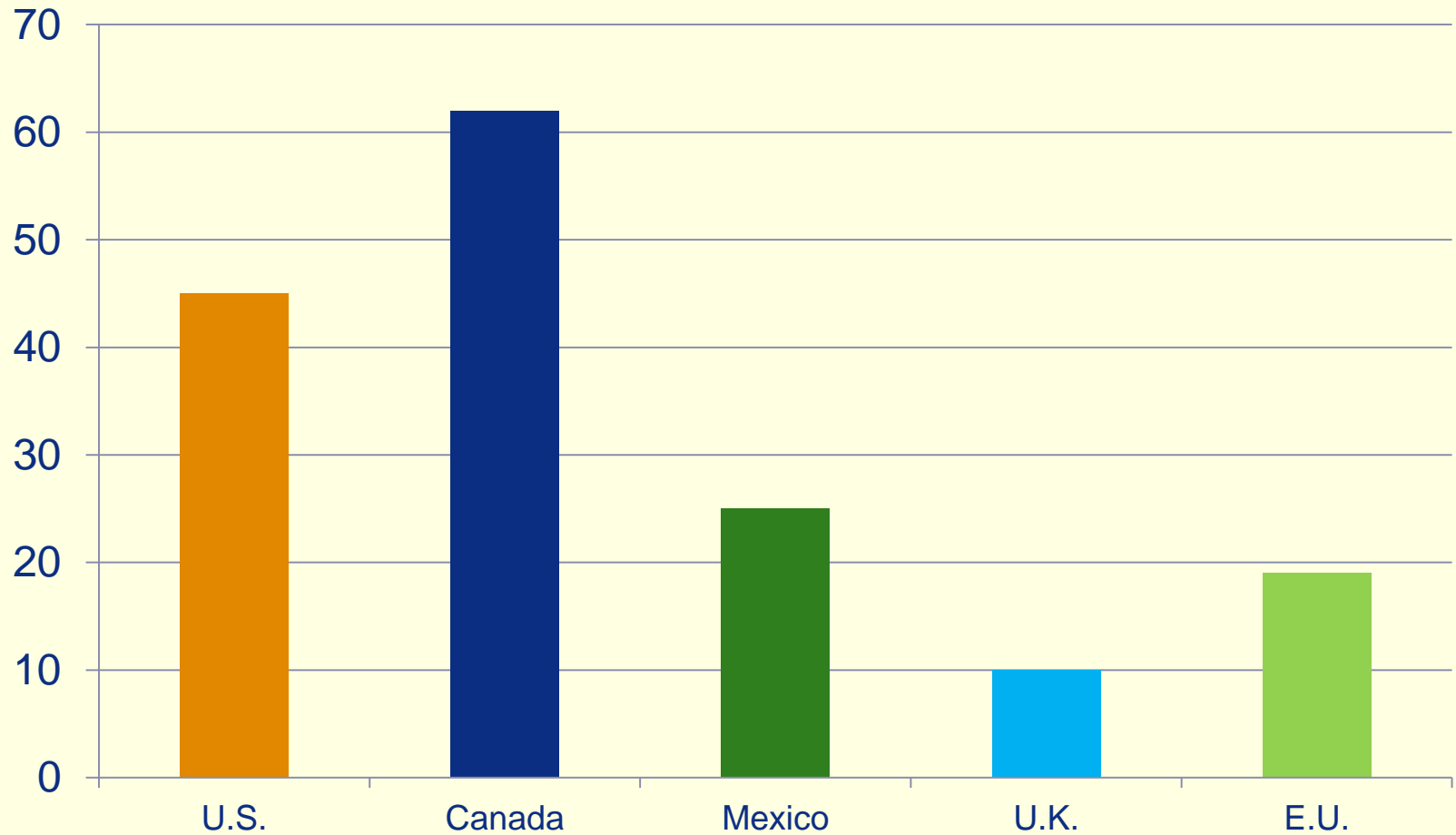
- Railways in U.S., Canada and Mexico vary in size, competitive structure and markets.
- Mexican rail share of freight traffic is lower and commodity mix is different from U.S., Canada, is similar to U.K. and E.U.
- U.S., Canada, U.K. and E.U. rely (to different degrees) on parallel and source rail competition (rail vs rail) + rail/truck/barge competition to control tariffs.
- U.S. regulates where market power exists and is abused. Canadians mediate rather than regulate. U.K. and E.U. don't regulate freight at all
- Mexico **defined** its rail vs. rail competition by the concession structures sold along with the joint access areas. Market power was monetized and sold in the concessioning process.

Comparing the Systems



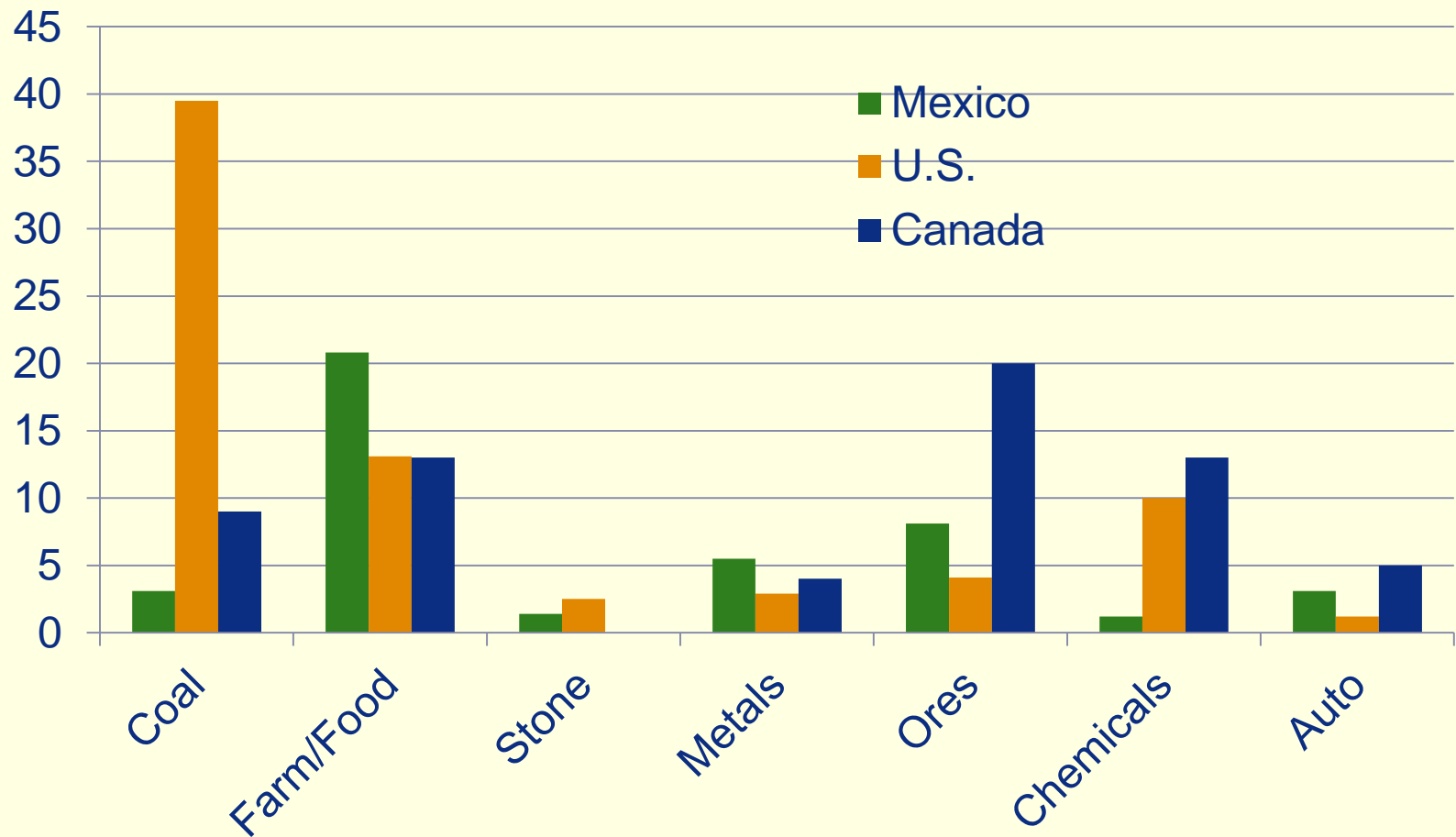
| | US BIG FOUR Class Is | | | | SMALLER 3 Class Is | | | CANADA | | MEXICO | |
|---|----------------------|--------|--------|--------|--------------------|--------|--------|--------|--------|----------|------------|
| | BN | CSX | NS | UP | CN/GTW | KCS | CP/Soo | CN | CP | Ferromex | KCS de Mex |
| Km Operated | 52,134 | 33,643 | 31,351 | 51,643 | 9,578 | 5,462 | 7,794 | 31,562 | 19,968 | 8,153 | 4,805 |
| M. Tons (mil) | 462.6 | 240.5 | 209.9 | 356.6 | 84.7 | 27.0 | 28.4 | 214.3 | 127.4 | 56.8 | 19.6 |
| M. Ton-Km (bil) | 919.7 | 303.3 | 278.3 | 643.2 | 82.2 | 44.3 | 45.8 | 313.2 | 198.7 | 46.1 | 29.5 |
| Length of Haul (Km) | 1,988 | 1,261 | 1,326 | 1,803 | 971 | 1,640 | 1,612 | 1,461 | 1,559 | 810 | 1,503 |
| Op Revenue (\$mil) | 19,962 | 10,771 | 9,888 | 19,940 | 2,987 | 1,200 | 1,314 | 9,086 | 4,701 | 1,424 | 1,124 |
| Rev/ton-Km (\$) | 0.0217 | 0.0355 | 0.0355 | 0.0310 | 0.0363 | 0.0271 | 0.0287 | 0.0290 | 0.0237 | 0.0309 | 0.0381 |
| Op Exp (\$mil) | 13,062 | 8,114 | 7,130 | 12,752 | 2,081 | 869 | 902 | 5,076 | 2,756 | 1,000 | 654 |
| Operating Ratio | 65.4 | 75.3 | 72.1 | 64.0 | 69.7 | 72.4 | 68.6 | 55.9 | 58.6 | 70.2 | 58.2 |
| Source: AAR, Railroad Facts, 2017 edition, pgs 65-77 and carload waybill sample | | | | | | | | | | | |

Rail Share of Rail + Truck Ton-Km (%)



Note: Barges are significant in U.S. system.. 2016 Data from OECD stat.

Commodity Distribution*



* Mexico and U.S. are % of tons, Canada is % of carloads

Is Mexican Rail Freight Regulation Different?

- Mexico has lower rail share versus trucks (intermodal competition).
- Mexico has source and parallel rail line competition as well as defined competitive trackage access (intra-modal competition).
- Commodity mixes different from U.S. and Canada, esp. coal and ores.
- Concessions are not like fully private, integrated freight railroads
 - No infrastructure ownership means different cost level and structure (ratio of fixed to variable costs is different)
 - Contract enforcement versus regulation – and some market power expectation was included in the price paid.
- Information availability lets U.S. use quantified regulatory targets: Revenue Adequacy, Stand Alone Costs, Rev/VC ratios. Can Mexico do something similar, at first, or in the future?
- Constraints and advantages from integration with U.S. and Canada.

Implications for Information

- STB role defining market power and measuring abuse needs market information and costs overall and specific to each particular case.
- STB faces stringent legal review and challenges.
- U.S. rail system overall planning (if any) and safety oversight done by FRA/DOT using commodity flow information and network models.
- System analysis, policy development and industry reporting done by AAR (operating information and waybills). AAR publishes ops and invest stats
- Key U.S. documents: Statistics of Class I Railroads (R-1 plus operating statistics) covers financial and operating data, SEC Form 10-k (financial information for investors), waybills, periodic reports from railroads, STB decisions and publications.
- Confidentiality plays major role in U.S. regulation, esp for waybills. Confidentiality critical in Canada. Mexico may have a similar problem.
- U.K. and E.U. freight railroads provide essentially no public data.
- Mexican objectives? Rate regulation in specific cases? Analysis of system structure for competition? Planning the 2027 system structure?

Bottom Line

- U.S. and Canadian regulations evolved over time to meet a specific mix of economic and political needs based on national values, economic and ownership structure and the legal system.
- The U.S. rail information system evolved accordingly.
- U.S. regulatory system is complex and costly.
- Mexico needs its own rules and principles adapted to Mexican needs and legal system.
- Integration with U.S. and Canadian systems will impose some constraints on what Mexican regulators can do but it also offers opportunity for better information and analysis.
- A critical characteristic of the U.S. system is **public** access to good information. Canadian information is limited and restricted. Mexico?

Realistic data goals for involvement in trackage rights

- To deal with trackage rights, you need:
 - Good track maintenance costs and traffic operating data as specific to segment as possible for the proposed routes.
 - Revenues of originating and terminating carriers for the traffic in question.
 - This could come from good “Stats of Class I” type data on maintenance costs, operational data and from waybill data
 - Degree of detail needed would be far less for arbitration than for prescription

Realistic data goals for involvement in tariffs

- Use waybill data to support arbitrator role (if done)
- Use waybill data to support analyses of “comparable” tariffs (actual tariff, tonnes and tonne-km, size of shipment, type of equipment, etc, by commodity for all carriers)
- Less realistic: develop “Variable Cost” from detailed financial and operating data (URCS-type) to support R/VC analyses
- Less realistic: data on comparable, competitive trucking traffic

Realistic data goals for involvement in future system design

- Network model showing station locations keyed to waybill data. Some version of this may exist already
- Waybill data by commodity (tonnes, tonne-km, shipment size, actual revenue) keyed to O/D station locations

Essential steps

- Get the necessary waybill data. Use U.S. format (already used by Railinc in Mexico) but eliminate unnecessary fields.
- Review existing network models and develop an agreed model with O/T station locations. This may well already exist, but review
- Review “Statistics of Class I Railroads” to specify data to be used in costing and for traffic reporting. Joint project of concessions and ARTF.

U.S. Class I Track Costs (\$/Car-Km)



| Way and Structure Expense per Car-Km | | | | | |
|---|---------------|---------------|---------------|---------------|---------------|
| | 2012 | 2013 | 2014 | 2015 | 2016 |
| 167. Labor | 0.0268 | 0.0290 | 0.0300 | 0.0312 | 0.0345 |
| 168. Fringe Benefits | 0.0133 | 0.0131 | 0.0124 | 0.0134 | 0.0149 |
| 169. Materials and Supplies | 0.0099 | 0.0102 | 0.0104 | 0.0096 | 0.0094 |
| 170. Casualties and Insurance | 0.0015 | 0.0013 | 0.0017 | 0.0021 | 0.0026 |
| 171. Lease Rentals and Other Rents | 0.0037 | 0.0037 | 0.0035 | 0.0037 | 0.0041 |
| 172. Depreciation | 0.0717 | 0.0776 | 0.0804 | 0.0811 | 0.0929 |
| 173. All Other | 0.0259 | 0.0242 | 0.0257 | 0.0270 | 0.0289 |
| 174. Total Way and Structures | 0.1529 | 0.1592 | 0.1641 | 0.1681 | 0.1874 |

Source: Statistics of Class I Railroads, indicated years

Track Maintenance Costs

| Way and Structure Expense per gross ton-mile (ex locomotives) | | | | | |
|--|---------------|---------------|---------------|---------------|---------------|
| | 2012 | 2013 | 2014 | 2015 | 2016 |
| 167. Labor | 0.0005 | 0.0005 | 0.0005 | 0.0006 | 0.0006 |
| 168. Fringe Benefits | 0.0003 | 0.0002 | 0.0002 | 0.0002 | 0.0003 |
| 169. Materials and Supplies | 0.0002 | 0.0002 | 0.0002 | 0.0002 | 0.0002 |
| 170. Casualties and Insurance | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 171. Lease Rentals and Other Rents | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 |
| 172. Depreciation | 0.0014 | 0.0014 | 0.0014 | 0.0015 | 0.0017 |
| 173. All Other | 0.0005 | 0.0004 | 0.0005 | 0.0005 | 0.0005 |
| 174. Total Way and Structures | 0.0029 | 0.0029 | 0.0029 | 0.0030 | 0.0033 |
| Way and Structure Expense per net ton-mile | | | | | |
| | 2012 | 2013 | 2014 | 2015 | 2016 |
| 167. Labor | 0.0009 | 0.0009 | 0.0010 | 0.0010 | 0.0011 |
| 168. Fringe Benefits | 0.0005 | 0.0004 | 0.0004 | 0.0004 | 0.0005 |
| 169. Materials and Supplies | 0.0003 | 0.0003 | 0.0003 | 0.0003 | 0.0003 |
| 170. Casualties and Insurance | 0.0001 | 0.0000 | 0.0001 | 0.0001 | 0.0001 |
| 171. Lease Rentals and Other Rents | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 |
| 172. Depreciation | 0.0025 | 0.0025 | 0.0026 | 0.0027 | 0.0031 |
| 173. All Other | 0.0009 | 0.0008 | 0.0008 | 0.0009 | 0.0010 |
| 174. Total Way and Structures | 0.0053 | 0.0052 | 0.0053 | 0.0056 | 0.0062 |

Source: Statistics of Class I Railroads, indicated years

Thanks

