Objectives of Regulation and the Infrastructure Restructuring "Model": Lessons from the Rail Sector

Russell Pittman
Antitrust Division, U.S. Department of Justice and Kyiv School of Economics

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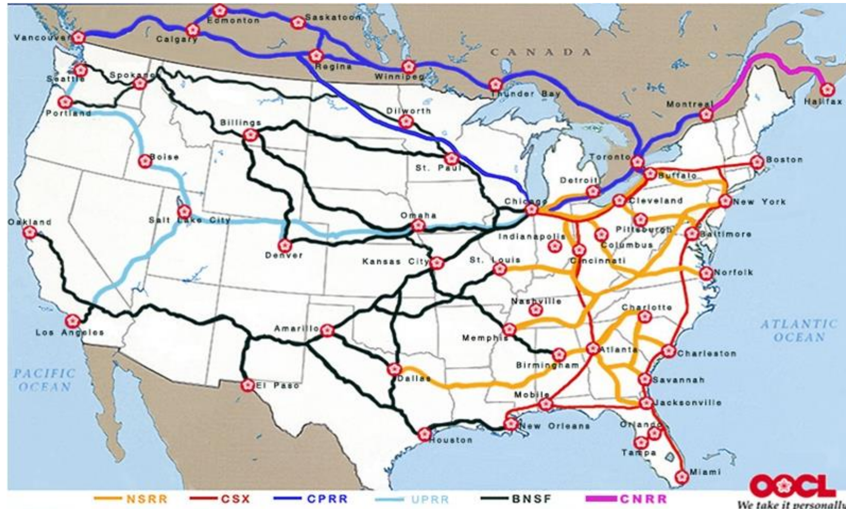
2 objectives, 2 models of freight rail restructuring

- Objectives (Of course there are others)
  - Protect shippers from monopoly power, abuses
  - Attract private capital into sector, especially infrastructure
- Models
  - Europe: Vertical separation or 3rd party access
  - Americas: Horizontal separation, vertical integration

Horizontal separation, vertical integration: US



Horizontal separation, vertical integration: Mexico

Objective 1: Protect shippers from monopoly

- For many shippers, intermodal competition does the job: motor, water carriers
- For rail-captive shippers (bulk, long distance, no water access), more complicated
- Vertical separation model: Addresses the problem directly. Shippers can run their own trains or contract with 3rd party Train Operating Companies (TOCs).
- Horizontal separation: Not so easy.
- This model inevitably creates some regional rail monopolies, so some shippers may be "captive" to one railway.

Protecting "captive" shippers under horizontal separation (I)

- Similar strategies in practice or under discussion in US, Mexico, Canada
- Alternative 1: Rate ceilings
- In US, captive shippers may challenge rates under 3 criteria:
  - Excess railway company profits (the "revenue adequacy test")
  - Inefficient railway company management
  - Cross-subsidization of other shippers (the "stand-alone-cost test")
- In practice, only cross-subsidization criteria has been basis for successful challenge, though excess profits criteria may soon do so

Protecting "captive" shippers under horizontal separation (II)

- Alternative 1: Rate ceilings, continued
- In Mexico, 2015 amendments to 1995 Railways Law
- Dissatisfaction with state of freight rail competition
- Serious consideration to imposing open access (European reform model)
- Instead, 2 choices of new freight rail regulator (ARTF)
- Article 47: If competition agency (COFECE) finds absence of competition, ARTF may impose rate ceilings
  - Methodology for rate ceilings under debate

Protecting "captive" shippers under horizontal separation (III)

- Alternative 2: Mandatory competitive "access"
- In US, mandatory "switching" to nearest competing long-haul railway
  - The "Canadian solution"
  - Called for in Staggers Act, but never imposed by ICC or STB
  - Under consideration by STB in current proceeding
  - STB proposes regulations for granting switching request "that is either practicable and in the public interest or necessary to provide competitive rail service"

Protecting "captive" shippers under horizontal separation (IV)

- Alternative 2: Mandatory competitive "access", continued
- In Mexico, Article 36: If COFECE finds absence of competition, ARTF may order "trackage rights" to competing long-haul railway
  - Contemplated in 1995 Railways Law, but rarely imposed
  - Order must specify railway, length, products, and origin and destination points
  - Methodology for calculating access fee under debate
  - Criteria for ARTF choice between using Article 36 and Article 47 also under debate

Problems with the 2 alternatives (I)

- Rate Ceilings
  - Differential pricing – "Ramsey pricing" – is efficient for industries with high fixed costs, encouraged by US regulator
  - But is there a limit? If so, what? What is "fair"? Less an economic than a political issue (*pace* contestability theory)
  - Stand-alone-cost test vs. 3 main alternatives:
    - Competitive rate benchmarking (TRB report, Wilson and Wolak)
    - Commodity-specific rate or mark-up ceilings (Pittman)
    - Geography-specific rate-of-return regulation (STB Staff Report)

Problems with the 2 alternative (II)

- Mandatory access (either switching or trackage rights)
  - At what rate?
  - Will the other railway company want to compete?
  - Duopolists often do not
  - Shippers: They're not competing now; why would that change?
- Thus alternative 3: Demonopolization?

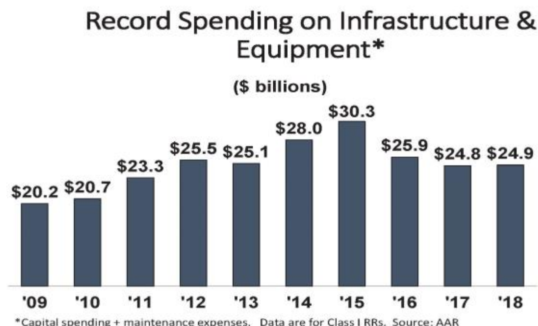
Objective 2: Attract private capital

- Attracting private capital into rail operations seems to be straightforward
  - Entry of new TOCs with privately purchased locomotives, rolling stock in liberalized European railways
  - Even reform laggards like Russia have successfully liberalized rolling stock (but not locomotives)
- Problem is attracting private capital into rail infrastructure
  - Many world railways have antiquated infrastructure, severe bottlenecks
  - How to attract private capital into government-owned, government-controlled infrastructure?

This is a strength of the "horizontal separation" model

- In the US and Canada, the railway companies own their own infrastructure
  - Historically the case in the UK and Russian Empire as well
- In Mexico and Brazil, the railway companies control the infrastructure under 30- or 50-year franchise agreements
- In Mexico and Brazil, these private consortia bid USD100K per track-km for the franchise rights, then investment millions into the infrastructure over the years
- Old state-owned monopoly freight railways moved quickly from subsidized ward of the state to successful, tax-paying enterprises

While in the US, ...



2 objectives, 2 models

- Vertical separation (European) model in principal leaves no freight shippers captive
  - However, it continues historic reliance on government for infrastructure funds
  - Chris Nash: "'Railway finances' is to a large degree about subsidies."
  - Other main disadvantage: Loss of vertical economics
- Horizontal separation model creates regional monopolies
  - Thus calls for regulatory regimes to protect "captive shippers"
  - However, quite successful in attracting private investment into infrastructure

Of course this is a broader debate

- Extensive literature comparing the two rail "models"
- Different advantages in different contexts
  - Small country vs. large
  - Freight-dominant vs. passenger-dominant system
  - Density of operations (though measurement issues)
  - Complete vertical separation vs. 3rd-party access
  - Cost penalty for vertical separation: How large?
- My purpose is to add one less-discussed advantage of horizontal separation: attraction of private investment into infrastructure