Special Report

THE COMING NORTH AMERICAN RAIL MERGERS

by

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and

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THE COMING NORTH AMERICAN RAIL MERGERS[a]

In 2003 two steam generators, each weighing approximately 500 tons and 73 feet in length, were shipped from Cambridge, Ontario to Duke Energy's nuclear power plant in Seneca, S.C. The shipment was by ocean, rail and highway using special equipment for all three modes. No government bureaucrat, politician, or special interest group decided by what means the shipment would be made. Economic efficiency was the single consideration with each mode contributing its unique capabilities. What efficiencies and savings can only be dreamed of if such were the case for all freight moving over the U.S. transportation system.

In June of 2001 the U.S. Surface Transportation Board (STB) (1) proposed new rules governing rail mergers in the United States. Under the old rules merging firms were required to show that the proposed merger(s) would preserve competition; under the new rules merging roads had to show how the merger(s) would, in effect, *increase competition.* (2) In essence, the STB's position is that from June 2001 all proposed rail mergers will be considered anti-competitive, i.e. that there are no remaining economic efficiencies to be gained by further rail mergers. In a legal sense, the burden of proof was on the merging roads to show how the merger would enhance competition in addition to bestowing economic benefits on the nation as a whole.[a]

The practical effect of the proposed regulations is to encourage alliances and cooperative agreements among railroads rather than mergers.

This paper takes the position that the proposed new regulations inhibit railroad efficiency at a time when new highway construction and maintenance, and construction and maintenance of other transport systems infrastructures, are hard pressed to keep pace with an increasing demand for transportation services. Argued is that the proposed 2001 STB ruling should be relaxed to allow for a final set of mergers involving Class I railroads. Cited below are three arguments in support of this position.

1. Rail mergers would not lessen competition but would increase rail economic efficiency and overall efficiency of the U. S. transportation system.

2. Railroad capacity/capability is under-utilized in North America, especially in the United States.

3. Railroad mergers are economically more efficient than railroad alliances and cooperative agreements.

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[a]There is roughly a spread of three years in the data cited in this report, i. e., 2001-03. However, any differences as between data in 2001, 2002, and 2003 do not invalidate conclusions reached in the report. Historically, transportation statistics lag publication dates between 1-3 years. Such is the case here.

Background

From passage of the Act to Regulate Commerce in 1887 till the 1970s, when Congress passed several railroad reform acts, the power of the Interstate Commerce Commission (ICC) to regulate virtually every economic aspect of rail operations was uncontested. The most far reaching legislation during this period was the Transportation Act of 1920. So comprehensive was this legislation with respect to railroad activities that if reviewed by a family court judge today, he could fairly state that American railroads were now under the fostering guardianship and direction of the ICC. (3) This act could be considered the historical high mark of government regulation of railroads in the United States.

From the end of World War II through the 1970s, railroads, in particular those in the Northeast, suffered huge operating losses. There were a number of bankruptcies culminating with the bankruptcy of the Penn Central in 1970. Several reasons are cited for the financial plight of U.S. railroads during this period. The first was ICC enforcement of highly restrictive federal economic regulations including a tight control over rail mergers. The second was massive government expenditures on air, highway, and inland waterway infrastructure. e.g., the National Defense and Interstate Highway System. Last, railroads faced growing competition from other modes, particularly motor carriers and airlines.

During the 30 years following the end of World War II, federal expenditures on the “path” component of the U.S. highway system, the air transportation system, and inland waterways and ports approximated $115 billion. (4)

By the 1960s more Americans were traveling by common carrier buses and airplanes than by rail, which until then had been the dominant mode of inter-city passenger transportation. At the same time, common carrier and for hire trucks replaced railroads as the preferred mode of inter-city freight transportation. Add in the fact that railroads were the most regulated of all U.S. industry groups, the bankruptcy of 40 percent of the nation’s rail system and average rates of return on investment of less than two percent for the remaining roads was hardly surprising.

One area of regulation often cited as a major reason for past railroad operating losses was the ICC’s strict control over rail mergers. Table 1 documents rail legislation with respect to the size of rail firms 1887-1980.

TABLE 1

RAIL REGULATIONS AFFECTING FIRM SIZE 1871-1980[b]

Dates	Legislation and Size Provisions
1871-86	State (Granger) laws. Generally against consolidation
1887-1920	Act to Regulate Commerce 1887; Hepburn Act 1906; Mann-Elkins Act 1910 dealt with rates, discrimination, pooling of freight and equipment, authority to suspend rates. No specific sections respecting rail size. The 1887 legislation created an Interstate Commerce Commission (ICC) to oversee (administer) federal laws respecting railroads.
1920	Transportation Act of 1920. ICC given authority to control rail expansion, i.e. line extensions; control over rail abandonments. ICC tasked to develop a consolidation plan for all U.S. railroads. Concept was to combine weak roads with strong roads. Rail firm participation voluntary. Generally speaking, if two railroads wanted to merge, merger must conform to plan. Idea of a master plan abandoned in 1940s.
1920-62	Rail consolidations reviewed by ICC on a case by case basis. A number of mergers were approved under this procedure. However, procedure was very time consuming. In 1962 the Pennsylvania and New York Central submitted an application to merge; final approval was in 1966.
1970	Rail Passenger Act of 1970. Railroads allowed to shed passenger services if they agreed to a federally created rail passenger system (AMTRAK) by contributing equipment and funds.
1972	Penn-Central asks ICC for permission to abandon 9,000 miles of track. Permission refused.
1973	Regional Rail Reorganization Act of 1973: Railway Association created to organize bankrupt northeastern roads into a single system (CONRAIL) New system had *3200 less* route miles than the combined route miles of the bankrupt roads.
1976	The Railroad Revitalization and Regulatory Reform Act of 1976. ICC given a 31 month time limit to approve/ disapprove mergers. Time shortened for ICC to consider requests for abandonments. Principle established that railroads were not required to provide money-losing services. Secretary of Transportation instructed to facilitate proposed rail mergers.

(b) While this paper is primarily concerned with rail mergers, laws dealing with abandonments and new construction are also cited. Argued is that abandonments and new construction are opposite sides of the same coin since, like mergers, they affect the final size of the rail network.

The Staggers Rail Act of 1980

In 1980 the Staggers Rail Act was signed into law. It significantly relaxed federal economic regulation of railroads. Under this legislation carriers were given more freedom to set rates, abandonment criteria was liberalized, and following the general thrust of the Act (less regulation), rail mergers were viewed more sympathetically. There were, of course, major rail mergers before passage of the Staggers Act, but the largest and those with the most impact, occurred in the 20 years since its passage. Table 2 documents major North American rail mergers after 1980.

TABLE 2

MAJOR NORTH AMERICAN RAIL MERGERS, 1980-2001

Year	**Merger Partners** (Merged Name in *Italics*)
1980	Burlington Northern and St. Louis- San Francisco (*Burlington Northern*)
1980	Seaboard Coast Line, Chesapeake and Ohio, and Baltimore and Ohio (*CSX*)
1982	Louisville and Nashville and CSX (*CSX*)
1982	Union Pacific, Western Pacific, Missouri Pacific (*Union Pacific*)
1982	Southern Railway and Norfolk and Western (*Norfolk Southern*)
1985	Southern Pacific and St. Louis South-Western (*Southern Pacific*)
1985	Union Pacific and Missouri-Kansas and Texas (*Union Pacific*)
1991	Southern Pacific and Denver & Rio Grande (*Southern Pacific*)
1995	Burlington Northern and Santa Fe (*Burlington Northern*)
1995	Union Pacific and Chicago and North-Western (*Union Pacific*)
1996	Southern Pacific and Union Pacific (*Union Pacific)*
1998	Norfolk Southern, 58% of CONRAIL (*Norfolk Southern*)
1998	CSX and 42% of CONRAIL (*CSX Transportation)*
2001	Canadian National and the Wisconsin Central (*Canadian National*)

The Players

As so amply demonstrated by history, future rail mergers will not only involve the proposed merger partners but many other "players" with a stake in the game including NAFTA transportation entities in Canada and Mexico. A non exhaustive list of players include:

* Major North American Railroads

* North American Short Line Railroads

* North American common carrier and private trucking firms.

* North American domestic water carriers, including Great Lakes shipping and coastwise ocean carriage.

* Pipelines

* Employees/unions of railroad, waterway, trucking, and pipeline firms.

* North American shippers and their associations.

* Administrations, legislatures, and bureaucracies of the United States, Canada, and Mexico.

In the last quarter of the 19th century and the first part of the 20th century it could be fairly argued that railroads were in fact, monopolies in many areas of the country that were not served by existing navigable rivers and lakes or coastal ocean shipping. With the coming of motor vehicles, the U.S. numbered highway system, the interstate highway system, the Panama Canal, (5) thousands of miles of improved domestic waterways, including the St. Lawrence Seaway project and the Intercoastal Waterway System, allowing double bottom trucks on major highways, the rapid technological improvement of aircraft to a point where air freight is a multi-billion dollar industry, and the rapid expansion of oil and gas pipeline capacity, the assertion, when made, that railroads still retain enormous monopoly power with respect to the total U.S. transportation system is simply not sustainable. Unfortunately old concepts and arguments die hard in large part because "monopoly" is a pejorative term and not above being used by particular interest groups to further their own agendas.

Table 3 shows the "path" component of the different U.S. transport modes in miles. The path is a major consideration in determining whether and where a transportation monopoly exists.

Tables 4, 5, and 6 profile the transport industries that would be primarily involved in a final set of North American rail mergers followed by a summary of the roles played by airlines and pipelines in the context of the total U.S. transportation system.

TABLE 3

PATH COMPONENT OF THE U.S. TRANSPORTATION SYSTEM

Industry	Total Miles of Path
Motor Carriers	3,948,335 miles
Pipelines Oil Natural Gas	 200,000 miles 206,000 miles
U.S. Airlines	Practically infinite considering the hundreds of airports serving North American cities and the thousands of airports serving smaller cities and urban areas.
RAILROADS	143,000 miles (Class I 99,797 miles)
Domestic Water Carriers	25,777 miles (Primary system is 11,000 miles)

TABLE 4

THE NORTH AMERICAN RAILROAD INDUSTRY 2001

Number of all types of railroads	600 (U.S. 571)	
Miles of road operated by freight railroads (less trackage rights)	170,161 (U.S. 143,361)	
Total revenues earned	$42 billion (U.S. $36.6 billion)	
Total number of employees	225,061 (U.S. 184,369)	
Railroad	**Revenue** ($ mil. U.S.)	**Route Miles** (Approx.)
BNSF (U, S,)	9,201	33,000
CN (Canada)	3,650	18,382
CP (Canada)	2,386	13,893
CSX TRANS (U.S.)	6,454	23,000
FXE (Mexico)	557	6,485
KSC (U.S.)	566	6,000
NS (U.S.)	6,170	21,500
TFM (Mexico)	668	2,677
UP (U.S.)	10,614	33,500
Rail share of domestic intercity freight revenue		9.50%
Rail share of all domestic freight revenue		6.30%
Rail share of U.S. inter-city ton-miles moved		42.00%
Average rate of return on net investment (all roads)		7.00%
Class I railroads		7.96%
Class I railroads, median return on equity (2002)		8.70%
Average return on equity of five largest U.S. railroads (2003)		7.50%

Source: *American Association of Railroads, Policy and Economics Department*

TABLE 5

U.S. TRUCKING INDUSTRY 2001

Total Number of Trucking Establishments	109,814
General Freight	56,378
General Freight, Long Distance	20,726
Total Miles of Highway	3,948,335
Interstate and Expressways	55,593
Arterial	379,790
Collector and Local	3,512,952
Total Revenues Earned	$130 billion(est.)
Total Number of Employees	1,398,000
Ten Largest For-Hire Companies	
Motor Carrier	Revenue ($ million U.S.)
United Parcel Service Trucking	$20,313
FedEx Ground	2,711
Roadway Express	2,642
Yellow Freight	2,465
Schneider National	2,388
Sirva, Inc.	2,249
J.B. Hunt Transport	2,100
Consolidated Freightways	2,052
FedEx Freight	1,960
Con-Way Transportation Service	1,854
Motor Carrier Share of Domestic Freight	84%
Motor Carrier Share of Domestic Freight, Ton-Miles	28%
Industry Average Return on Equity	19.86%

Sources: *Statistical Abstract of the U.S. (2003); Commercial Carrier Journal* (August 2002); *Yahoo Financial (2004)*

TABLE 6

THE U.S. WATERWAY INDUSTRY 2001

Total Number of Establishments	
Ocean, Great Lakes, Coastal	1,227
Inland Freight	644
Total Miles of Waterway	25,777
Significant for Domestic Commerce	11,000
Total Revenues Earned	$27.6 Billion
Total Number of Employees	125,000
Ships	
Coastal	953
Inland Waterway	1,634
Great Lakes	52
Ten Largest U.S. Inland Water Carriers	
Company	Number of Powered/Unpowered Vessels
American Commercial Lines	3, 752*
American River Transportation Co	2, 217
Central Gulf Lines	842
Cargill Marine and Terminal	782
Crounse Corporation	755
American Electric Power River	669
Canal Barge Company	510
Bienge Corportation	492
Alter Barge Line	460
Campell Transportation Company	450
*Operating Revenue in 2001 was $788, 501, 000. Other inland water carrier revenue not available.	

Source: U.S. Bureau of the Census, Statistical Abstract of the United States. 2003, Tables Nos 1056, 1057, 1072, pp. 681, 682, 689; U.S. Army Corp of Engineers, *Civil Works Office and Missions (Navigation).*

Airlines and pipelines are relatively new players in the U.S. transportation system. Air freight as an important component of the system could be said to date from the introduction of wide-bodied aircraft such as the Boeing 747 and the DC 10, planes not only capable of carrying containerized cargo but having increased range and speed which made them competitors in the movement of high value, medium weight cargo. (6) As for light-weight, fast delivery, high value freight, advances in computer and communication technology, coupled with advanced aircraft design, insured the formation and success of multi-billion carriers such as FedEx and UPS. With

extensive ground transport capability, large air freight firms have increased their market share of freight that once moved exclusively over rails and highways.

One interesting trend is the use of rail by large air/ground freight carriers for ground movements over medium distances. This trend from truck to rail can be expected to continue as highways become more congested.

Although the concept of moving liquids through pipelines dates back to the early 19th century, pipelines were not major players in the U.S. transport system until the United States entered World War II. In 1941 the movement of oil from fields in Louisiana and Texas to refineries in the Northeast was by coastal tankers. It soon became apparent that this was a poor option as German submarines took an increasing toll of this shipping. To avoid such losses the federal government underwrote the construction of an extensive pipeline network as an alternative mode of transport. For the same reason—to avoid shipping losses—the government extended and improved the intercoastal waterway system.

Pipelines compete with railroads, trucks, domestic ocean shipping, and inland water carriers in the movement of petroleum products in an increasing number of markets. Pipelines are also capable of moving solid products. e.g. coal slurry pipelines. According to the Association of Oil Pipelines (AOPL), petroleum pipelines move 66 percent of ton-miles of oil transported annually followed in order by water, truck and rail. Also noted is that oil pipelines transport 17 percent of all U.S. freight account for only two percent of the nation's freight bill. (7) Also noted is that pipelines are safe and environmentally friendly. However, unlike railroads which have the capability to expand by using existing right of ways, pipelines, like highways, depend on acquiring land or land easements to serve new markets. In rural areas there is generally little environmental and/or social impact, while in urban areas land acquisitions can be costly and contentious.

Argued here is that air and pipeline transport firms will be interested observers with marginal interests in the coming last set of North American rail mergers. Down the road, however, their roles as transport alternatives are less clear. Technological improvements in all modes of transport are not only probable but certain, which makes predicting a particular industry's competitors highly speculative.

Arguments For A Final Set of North American Rail Mergers

Rail mergers would not lessen competition but would increase rail economic efficiency and overall efficiency of the U.S. transportation system

This argument can be addressed by logic as well as data. In this respect, in 1939 there were 132 Class I railroads in the United States. In 2002 there are seven. In 1945 miles of road operated (including passenger roads) was 226,696. As shown in Table 3 in 2001 this mileage has been almost halved to 143,361 excluding passenger trackage. What was the result?

Average rates of return on investment increased from an average two percent in 1975 to 7% in 2001. Ton miles moved by railroads increased from 597 billion in 1950 to 1.507 trillion in 2002. Other indicators of increased railroad efficiencies include large, across the board gains in productivity. e.g., ton-miles moved per gallon of fuel, ton-miles moved per employee and ton-miles moved per constant dollar operating expense. The above data is a matter of record. And not to be overlooked is that these gains came about during a period when merger activity was at its zenith, particularly since passage of the Railroad Revitalization and Regulatory Reform Act of 1976 and the Staggers Rail Act of 1980.

To urge that further rail efficiencies cannot be created by further rail mergers defies logic. During the years since passage of the Staggers Rail Act, literally thousands of mergers have been proposed or have taken place in other sectors of the economy. (8) Most have come to fruition, others denied for various reasons but never have merger critics argued that there is a point in a growing economy where mergers, per se, cause inefficiencies. (9)

The STB's conclusion that railroads need to " take a breather" with respect to more mergers is reminiscent of the arrogance of the now defunct ICC. In this regard, how long is a "breather" in a dynamic, multi-trillion dollar economy? The STB's argument that shippers and the industry have not yet recovered from previous mergers seems to imply that rail mergers must be seamless before passing government muster. Its concern that a merger between two major railroads would lead to other mergers, if nothing more, demonstrates a misunderstanding of how the marketplace works. In this regard, the time to worry would be if no follow on mergers were proposed. The STB's concern that there are only six major U.S. railroads (actually there are five in 2003) is reminiscent of earlier monopoly fears about there being only three major automobile makers in the United States. Time has embarrassingly proved these critics wrong. In the case of railroads, the industry has more competitors than enough—trucks, inland water transport, air transport, domestic ocean shipping, and pipelines.

As for the overall efficiency of the U. S. transport system, consider the following:

*Railroads are 2-4 times more fuel efficient per ton-mile moved than trucks. It has been reasonably argued that if only 10 percent of freight moved on highways were diverted to railroads, the gallons of fuel saved would be in hundreds of millions.

*Per ton-mile traveled, trucks emit 4-8 times more pollutants than railroads. Less pollutants translates into environmental savings that can be used to improve transport infrastructure or for other general purposes.

*Movement by rail decreases highway congestion thereby making the overall highway system more efficient. At a minimum, one freight train is capable of moving an amount of freight that could take a hundred or more trucks off the nation's highways.

*Railroads are the most adaptable and flexible of all transport modes. A single train can move containers, highway trailers, bulk products (liquid and solid) in tank cars, general freight in boxcars, and highway and rail capable in "roadrailers." Special freight cars can handle a variety of outsize freight. This capability has the potential to further reduce highway congestion by adding or subtracting different kinds of cars on a single train as demand warrants.

*Railroads are land-economical when their right of ways are contrasted with the ROW required for major highways.

Argument #2 states that railroad capacity/capability is under-utilized in North America, especially in the United States. In this respect:

Railroads have the ability to increase path capacity by double tracking on existing right of ways. A reasonable estimate is that 50-60 percent of rail right of way, excluding yards, is unused, i.e., is single track. Such cannot be said for the country's highway system with its greater and greater demand for high value real estate that must be condemned and paid for with taxpayer dollars in order to expand two lane highways to four then to six, then to eight with no end in sight.

While railroads are essentially land conservation friendly, many, if not all, of the major rail carriers face congestion problems at major terminals and transfer points along their lines. Thus, while train speeds are approaching highway speeds on main lines, average transit time between origin and destination is significantly degraded if the movement must pass through large terminals and/ or transfer points. Trucks face a similar problem but not on the scale faced by railroads. While the problems on their face seem to be similar, the route to solutions is quite different.

The congested path that leads to the truck terminal entrance, be it a city street, a state road or interstate highway, is publicly owned. It follows that the capital required to relieve the congestion must come from tax revenues. In this respect, the trucking industry has a powerful ally---the motoring public. The reason is simple. Highway/street congestion in cities where truck terminals are located affects the automobile owner as well as the truck operator. In time, public pressure will insure the availability of the needed capital. Not so with railroads, the congested path that leads to the rail terminal is privately owned. The capital to alleviate this congestion must come from the railroads.

Argument #3. Railroad mergers are economically more efficient than railroad alliances and cooperative agreements.

If increased rail efficiencies, as noted earlier, occurred in a period when mergers were encouraged by the Staggers Act of 1980 (Section 228), then it would seem difficult to argue that additional mergers would somehow degrade overall rail efficiency.

Railroads for many years have had the option of entering into cooperative agreements with other roads, i.e. trackage and haulage rights. In fact, the Transportation Act of 1920 mandated cooperation in a number of areas including consolidations and cross subsidies. Such agreements, however, including federal loan guarantees, were unable to prevent the collapse and bankruptcy of 40 percent of the U.S. rail capacity in the 1960s and 70s.

It has been stated that 75 percent of strategic alliances and partnerships fail. (10) Grant that a high percent of proposed alliances and partnerships never come to fruition and that many that take place ultimately fail. Also grant that many mergers fail. Can then an argument be made that one option is preferred over the other?

One argument in favor of mergers is that "uncertainty" respecting future actions and options of the merged parties is reduced. And while mergers, like a marriage between a man and woman, can be dissolved, many uncertainties in their relationship are eliminated. This is not to say, however, that some uncertainties are not reduced by alliances and cooperative agreements, only that there is less uncertainty in a merger.

Uncertainty is the bane of any business whether it be economic, political or social. Assuming that stock markets are a fair measure of the economic outlook for corporate America, then one only need observe the effect on these markets when the future is more uncertain rather than less.

The eminent economist, Frank Knight, dealt extensively with the concept of uncertainty in economics and by extension in business. He cites several ways in which uncertainty can be reduced. Among them are control of the future and increased power of prediction (11) both of which would seem to favor mergers over cooperative agreements.

Is there, however, a counter argument that makes the case for cooperative agreements rather than mergers? One might be that it is easier to exit a failed agreement that a failed merger which is unquestionably true. The only response to this observation is to look at the track record of rail mergers since passage of the Staggers Act in 1980. Fourteen mergers (Table 2) have taken place, none of these have failed while admitting that major problems did initially occur in some of them. The key point, however, is that the problems were solved and that these merged companies comprise the backbone of the North American rail network.

Likely Non-Government Objections to a Final Set of North American Rail Mergers

Perhaps, surprisingly, when two railroads propose a merger the loudest and most sustained objections often come from railroads that perceive their financial and market interests threatened. In some cases, absent regulatory interference, the aggrieved carriers can be accommodated by granting haulage and trackage rights. In other cases, however, disputes are long and bitter; witness the recent case of CSX and Norfolk Southern's fight to which road should purchase CONRAIL and for how much. Recent mergers between U.S. western roads were only slightly less contentious.

Another player that can be expected to carefully monitor and, when necessary, weigh in with political pressure when its interests, i.e., jobs, are threatened by a merger are the railroad unions. A case in point is the reaction of rail unions to an earlier Norfolk Southern attempt to acquire complete control of CONRAIL in 1984. Since the then sale of CONRAIL required the approval of Congress, both the House of Representative and the Senate had to agree to the sale. (12) The Senate approved. The House disapproved largely because of objections raised by rail unions. In some cases, rail unions can be satisfied with job guarantees or job buy-outs as was the case with the Penn-Central mergers in 1968.

Other objections can come from rail shippers, in particular, bulk shippers such as coal, grain and chemicals. Their complaint would generally cite the "market dominance" of the merged carriers should the merger take place and the expectation that this dominance would lead to unreasonable rail rates in the future. In the past, many bulk rail customers have not been satisfied with the merged carrier granting trackage/haulage rights to competing railroads to insure competition and have lobbied Congress for greater rail shipper protection. This was particularly true immediately following the mergers of UP/SP and NS/CSX split of CONRAIL and continues to the present day.

Under current regulations a shipper cannot bring a rate reasonableness case to the STB unless (a) the rate exceeds 180 percent of the revenue to variable cost ratio for a particular commodity and (b) an absence of effective competition. (13) However, should the STB determine a rate unreasonable it still could not reduce the rate below the 180 percent threshold. If a rate above the 180 percent level is allowed, the shipper must demonstrate that no effective competition exists and the rate should be declared unreasonable. It is then incumbent on the railroad to show that competition does exist. Essentially, the protection for the so-called "captive shipper" has remained unchanged since passage of the Staggers Act.

In the period FY 1998-FY 2001 the STB acted on eleven major rate complaints with respect to market dominance and rate reasonableness from rail shippers. It ruled in favor of the shipper in three cases; the remaining eight were dismissed. (14) If, in fact, there was abuse by market dominant rail carriers, one would expect more then eleven complaints in three years. Nonetheless, rail dependent shippers can be expected to continuously press for 'rail reform legislation,' individually and collectively through their trade associations. This has been the case since the mid 1800s and no doubt will continue on into the 21st century.

Under certain circumstances the viability of short line railroads can be significantly threatened by a merger of major carriers in the region served by the short line. (15) This is particularly true when the distance between origin and destination is considerably reduced after a merger in an area where a short line held a prior distance advantage. As a general rule, when the distance between origin and destination after the merger is in the 50-75 mile range, trucks can usually compete with the merged railroad.

Should, however, a proposed rail merger cause trucking and/or water carriers to abandon a particular market, thus removing an element of competition, the STB would, undoubtedly, consider the possibility of market dominance. Historically, when making the case for a rail merger, the principals often time cite water, truck and pipelines as alternative transport modes.

A lengthy and well-researched study "Simulating the Effects of Railroad Mergers" published in 2001 concluded:

> *That the ability of railroads to raise prices is restricted if the shippers in the area have access to at least two railroads (and) that railroad mergers do not necessarily increase railroad market power or make railroad shippers worse off. Instead…the impact of railroad mergers on shippers depends on factors that vary geographically, such as the degree of competition between railroads and intermodal competition. (16*)

A less favorable view of railroad mergers was contained in a March 2000 paper written by Louis S. Thompson, Railway Adviser to the World Bank. He concluded that the mergers of UP/SP and NS/CSX split of CONRAIL were “near disasters in operational and financial terms.” He also considered the possibility of two major railroads in the United States as a “threat.” Unstated was a “threat” to who and what. (17)

Nowhere in this report is it suggested that a final set of North American rail mergers would usher in a modern day renaissance for the railroad industry; or insure a competitive return on equity; or internally generate the capital needed in a capital intense industry.

What is suggested is that a North American network of financially strong roads, capable of internally generating sufficient revenues for capital expenses, will improve efficiency in the entire North American transportation system; that improved transport efficiency will positively effect the economic growth of NAFA nations and at the same time make NAFTA firms more competitive firms worldwide.

The primary reason for suggesting mergers as a first step is that it would be accomplished intra-industry without federal funding in a period of multi-billion federal deficits with no definite end in sight and an era of a crumbling highway system heavily dependent on government support.

Return On Equity (ROE)

In 2004 railroads neither earned a competitive ROE or ROI. (18) If it is granted that this is a long-term problem and must be addressed, what are the options?

*Nationalization? Hardly, the move worldwide is toward privatization, not government ownership.

*Separate ownership of the "path" and the transporter? Would there be one path or several? Would the path(s) be privately or government owned? Would the railroads voluntarily acquiesce to such a scheme. Not likely, with expectations of court battles lasting over decades.

*Operating subsidies and management restrictions such as found in the Merchant Marine of 1936? (19) Given Congressional aversion, if not hostility, to continuing subsidies for AMTRAK, direct subsidies to any transportation mode is not a realistic possibility.

*Continuing the status quo as implied by the STB's ruling on the BNSF/CN merger. While one or two roads might remain financially viable in the long run as defined below, most would not. In this respect the median return on equity for Class I railroads between 1985 and 2002 was 7.49 percent while the median ROE for Fortune 500 companies in the same period was 12.84 percent. (20) Fifteen percent is the market place expected return for American industry in general. The average return on equity for the five major U.S. railroads in 2003 as 7.5 percent, ranging between 6.6 percent (CSX) and 13.3 percent (UP). (21)

Economic theory holds that a viable firm should at least earn the opportunity cost of its capital, that is, the average return if the capital were invested elsewhere. Today that would include the global economy, not just the American economy. Since passage of the Staggers Act in 1980, North American railroads have failed to earn the opportunity cost of their capital. On average, America's manufacturing sector allocates between 3-6 percent of revenues for capital expenditures contrasted to railroads between 15-20 percent.

In a book published in 1983 by the Brookings Institution, Theodore Keeler suggests a railroad earning a 9 percent ROI (return on net investment) is a viable firm even though it is not earning the opportunity cost of it invested capital. Firms in the 7-9 percent range are considered marginally viable; in the 4-7 percent range firms are not considered viable under existing structure and regulations. Under 4 percent, firms are having serious financial problems, and under 2 percent either bankrupt or in some way subsidized by government. e.g. CONRAIL for the first ten years of its existence. (22) In 2004 there is nothing to suggest that Keeler's classification is not still valid.

From 1980 to 2001 there were fourteen mergers between major railroads. During this same period average railroad return on equity increased from under 4 percent to 7.2 percent.

Finally, assigning weight to independent variables in an equation is always a risky undertaking although several statistical procedures make the effort. Said another way, to what extent were rail mergers responsible for an increase in ROE over this 11 year period, granting that other factors

also contributed to this gain? While no definitive answer is possible, it can hardly be denied that rail mergers played an important part.

Multimodal Transportation Companies

In 1978 the American Enterprise Institute (Washington, D.C.) sponsored a one-day conference on "Forming Multimodal Transportation Companies: Barriers, Benefits and Problems." Conference participants represented all transport modes, shippers, labor, government officials, and members of Congress. Points of view were as divergent as the conferees. In general, railroads and ocean carriers favored multimodal ownership, not surprisingly since these two modes fathered modern day intermodalism. Truckers were generally opposed; inland water carriers noted that there were minimal barriers to rail ownership of inland water carriers but should that occur, there should be anti-trust safeguards. Air freight participants believed there were some combinations of different modes that would benefit but offered no overall objection to the concept.

Shippers expressed various viewpoints none of which were hostile to the multimodal concept. As one shipper put it, it is a "ho-hum" issue. Freight forwarders complained about regulations that restricted them from direct ownership of motor carriers. A large Washington, D. C. law firm representing several transport unions believed there would be winners and loser with respect to employment and that any move toward lowering bars to multimodal ownership must provide for individual employee protection. The representative of the Teamsters Union stated his organization had an open mind with respect to multimodal companies but was nevertheless keenly interested in the concept. (23)

What has changed or hasn't changed in the 26 years since the AEI conference, or in the 37 years since U.S. News and World Report ran the story "Trucks, Trains, Planes and Boats All In One Company?"

The three most proactive railroads with respect to multimodal companies—Southern, now Norfolk Southern, CSX and Canadian Pacific—acquired, then shed their non-rail modes. Norfolk Southern sold North American Van Lines while CSX and CP both split off their ocean carriers. (24) Although North American railroads still have non-rail subsidiaries, their fascination with multimodal ownership has dimmed.

A likely reason for loss of interest by railroads in the period 1975-95 was their low rates of return on equity/investment. Railroads discovered they could not afford to invest in a non-rail mode that might take years before being fully integrated into the rail system and make a competitive contribution to the bottom line. In some cases, it was simply a poor fit with respect to the existing rail system. In others, it was a need for operating cash. Argued here is that a final set of rail mergers would result in larger firms with greater financial strength and staying power, a necessary condition to a successful rail based multimodal transportation company.

If a final set of rail mergers is proposed and agreed upon, would multimodal ownership again become attractive? The answer depends on the extent of competition in the merger proposal. If

competition is lacking or unclear, merger opponents could make a strong case against the proposal and likely cause it to fail.

One way to insure competition is through multimodal ownership, not just by railroads, but throughout the entire North American transportation system. The growing market share of air freight carriers and their ground subsidiaries is a good example of successful multimodal ownership in 2004.

Parameters

If the 2000 BNSF-CN merger had been approved, a likely follow on merger would have been UP and CP which would have created two trans-continental roads. Since the remaining three major roads—Norfolk Southern, CSX and KCS—are Eastern roads there would be no possibility of forming a third trans-continental carrier, while a defensive merger of CSX, NS and KCS would raise questions of market dominance east of the Mississippi. A merger between two of the three would have been opposed by the left out carrier and probably would not have passed Department of Justice (DOJ) and STB muster. The likelihood of market dominance would also rule out any mergers between eastern roads or a merger between western roads, either including or excluding KCS. With respect to a CN-CP merger the Canadian government would never allow it to occur since it would void a historic policy of mandating competition between the two roads.

The remaining option is the creation of two major railroads serving the United States and Canada with equal access to Mexico's FXE and TFM. Major emphasis would be on negotiating trackage/haulage rights to the degree necessary to insure that shippers had several viable transport options. (25)

Rail unions would strenuously oppose a two-railroad proposal citing, correctly, loss of jobs. Inland waterway carriers would move from indifference to active interest. Truckers would be uncompromisingly hostile. Oil and natural gas pipelines, several already multimodal transportation companies, might object in specific instances but more likely see an opportunity for expansion. Short line railroads, not included in the final rail map, would have to be compensated. The STB could be expected to make a prolonged and detailed case for continuing the status quo, that is, favor agreements between railroads for trackage/haulage rights rather than mergers. Every Congressional district would have its own demands to be satisfied. And if a final set of mergers seemed likely, proposals would be for the STB define the rail map rather than a rail map negotiated by the carriers. (26)

Given the above, which is not an exhaustive list of likely objections and objectors, is pursuing a final set of rail mergers worth the time and effort that would have to be expended while all the time recognizing the high probability of failure?

Conclusion

In 2004 the United States has one of the world's best transportation systems. But can it be maintained and expanded to meet future demands with government, directly and indirectly, supporting four of the six major transport modes, i.e., highway, air, inland water and domestic ocean carriers while leaving railroad financing to the marketplace? Is this in the best long-term interest of the system as a whole? What is not needed is re-regulation of railroads as practiced under the Transportation Act of 1920 and later legislation or operational subsidies (Merchant Marine Act of 1936) at the price of strict government control of otherwise market place decisions. What is needed is a continuation of deregulation as begun with passage of the Staggers Act of 1980.

Creating the necessary conditions for rail expansion is not a complicated matter. The first task is to end the threat of re-regulation of railroads. Second, Congress should give a fair hearing to the concept of a final set of North American rail mergers through hearings and/or requesting a General Accounting Office review of the concept. Third, should such prove necessary, institute a program of loan guarantees for specific rail capital projects to improve system efficiency. e.g. modernize terminal facilities in major rail hubs. A present major rail deficiency is the time freight spends in terminals and transfer points.

In 2004 metropolitan areas are scrambling to meet stricter EPA air quality standards and avoid the harsh penalties for failure. Many regional planners consider building light rail systems as a way to reduce emissions from automobiles. Relatively few, however, suggest that pollution could be significantly reduced by removing trucks from the highways.

By 2025 or before, the country with a larger population and an economy to match, will be much more dependent on its transport infrastructure than it is today. Adding to a 4 million mile highway system by expanding 2 lanes to 4, 4 to 6, 6 to 8, 8 to 12 and beyond, or creating inland seaports on the inland waterway system that cannot be justified by any reasonable cost-benefit analysis, is hardly the best use of scarce resources.

This report is controversial, as intended. Its central message is for federal and state governments to examine the country's transportation system from an overall point of view, not narrowly as is the present case. The authors believe that should this occur, railroads will be recognized as an under utilized transport asset and one that can substantially contribute to future transportation demands.

NOTES

(1) *The ICC Termination Act of 1995 (Public Law No. 104-88, Stat. 803 (1995)* removed a number of restrictive rail regulations administered by the ICC. Remaining regulatory functions were transferred to the Surface Transportation Board.

(2) On its face, this new rule challenges the main purpose of the Staggers Rail Act of 1980 which was to create an environment conducive to achieving an economically efficient, stable and profitable rail system in the United States. The new rule came about after an appellate court upheld an earlier STB 15-month moratorium on new rail mergers following a proposed Burlington Northern Santa Fe-Canadian National merger. The merger was later called off by both roads citing that the delays and uncertainty should the merger be pressed were not in their shareholders' best interest.

(3) Provisions of 1920 Act. (a) ICC has authority to determine return on railroad investment. Rates were to reflect this *fair* return. (b) Recapture clause. If a railroad earned more than 6%, one half of overage into a railroad contingency fund, other half into an ICC contingency fund from which loans could be mead to weak railroads. (c) ICC given authority to establish minimum rates. (d) ICC instructed to prepare a national plan for railroad consolidation, i.e., railroads could request mergers if merger within the proposed system; ICC to specify number of systems. (e) ICC could require intrastate rates be raised if it considered them too low, i.e., discriminatory. (f) Carriers can pool freight and equipment with ICC permission.(g) Railroads could not issue securities without ICC permission.(h). ICC given control over abandonments and new construction. (i) ICC given authority to compel a carrier to share its facilities; carriers to receive a reasonable compensation.

(4) *The Railroad Revitalization and Regulatory Reform Act of 197*6 initially provided approximately $5 billion in federal grants and subsidies to mainly weak railroads, including $2 billion for CONRAIL.

(5) *The Panama Canal Act of 1912* forbade railroads from owning/controlling inter-coastal shipping firms and inland water carriers that competed with railroads. The concern was that railroads would use these acquisitions to create transportation monopolies in the areas served.

(6) The U, S, Air Force was a pioneer in building large air freighters with the introduction of the C-5 Galaxy in 1970. The C-5 is capable of lifting 270, 000 pounds at a speed of 518 mph. With the follow-on C-141 Starlifter and the C-17 Globemaster, the U. S. military continues to be a world leader in the development and use of cargo aircraft.

(7) Association of Oil Pipelines (AOPL), “Why Pipelines?” March 25, 2004.

(8) In 2002 the number of U.S. companies acquiring U.S. companies totaled 1, 994. U.S. Bureau of the Census, Statistical Abstract of the United States: 2003, p. 511.

(9) Statement of Richard J. Pierce, Jr. before the Surface Transportation Board on November 16, 2000. Mr. Pierce makes essentially the same point with respect to mergers and inefficiencies as the authors. His entire statement is recommended reading.

(10) Krasner, Jeffery, "Alliances Usually Fail, Study Says," The Boston Globe (Boston MA) May 3, 2002. Website Posted by Rod Williams.

(11) Knight, Frank H., Risk, Uncertainty and Profit, Houghton Mifflin Co., Boston, MA 1921, pp. 239-40.

(12) CONRAIL was established with the passage of the Regional Rail Reorganization Act of 1973. It was made up of bankrupt northeast railroads, including the Penn-Central. CONRAIL was a publicly owned company subsidized under provisions of the Railroad Revitalization and Regulatory Reform Act of 1976. In 1998 CONRAIL was sold to Norfolk-Southern and CSX.

(13) For example. If a railroad charged $100 to move a ton of commodity Z from X to Y and variable costs were $50 then the ratio of revenue to variable cost would be 100/50 or a cost ratio of 200% which would exceed the threshold and presumably be considered unreasonable. The importance of this ratio rests on economic theory which states that if a firm's revenue covers its variable costs in the short run it should remain in business. In the long run revenue must, of course, cover fixed as well as variable costs. Railroads are a capital intense industry with large fixed costs.

(14) "Surface Transportation Reports," Decision of the Surface Transportation Board of the United States (E-Library, STB Reports at http://www.stb.dot.gov).

(15) The American Short Line and Regional Railroad Association represents approximately 400 short line and regional railroads. These railroads operate 29 percent of the total U.S. railroad mileage and account for nine percent of the industry's freight revenue. (American Short Line and Regional Railroad Association, "Who We Are.")

(16) Babcock, Michael and Weisman, Dennis. "Simulating the Effects of Railroad Mergers," Southern Economic Journal (April) 2001, pp. 938-954.

(17) Thompson, Louis S., Railway Adviser, to the World Bank. Regulatory Developments in the U.S.: History and Philosophy March 2000.

(18) Return of equity (ROE) is the shareholders (owners) claim on the assets of the company plus earnings retained after a dividend is paid. Return on investment (ROI) is the firm's return on its net investment.

(19) Provisions of *The Merchant Marine Act of 1936* included (a) compensation to shipping executives could not exceed $25, 000, (b) Subsidized firms were prohibited from owing any beneficial interest in foreign shipping, (c) subsidized firms could not operate in the protected domestic trade, (d) The act required minimum sailings on specified routes, (e) Government controlled entry of other subsidized operators on subsidized routes, (f) government approval

required for mergers, (g) a part of firm's profit had to be deposited into a capital trust fund and, (h) minimum manning, wage, and working conditions specified by Act. At beginning of World War II, 50 percent of U.S. flag fleet elected not to embrace the Act. By 1959 all eligible firms had applied for subsidy. Lesson learned is that an industry divided between government subsidized firms and non-subsidized firms cannot endure.

(20) Association of American Railroads, Policy and Economics Department, "Railroad Profitability." July, 2003.

(21) Standard & Poor Stock Report (Norfolk Southern). Sub-Industry: Railroads. January 17, 2004.

(22) Keeler, Theodore E., Railroads, Freight, and Public Policy, Brookings Institution (Washington, D.C.) 1983, p. 17.

(23) Whitehurst, Clinton H., Jr. (Ed.) Forming Multimodal Transportation Companies: Barriers, Benefits, and Problems. American Enterprise Institute (Washington D.C.) 1978. pp 73-141.

(24) Examples of then and present multimodal transportation companies include: Southern Pacific, trucking and pipelines; American Commercial Barge Line, natural gas pipeline and a motor carrier; Southern Railway, barge line and trucking firm; Sea Land, trucking firm.

(25) A necessary condition to a two railroad scenario is a Surface Transportation Board with the same regulatory authority it commands at present. However, in the event of a final set of rail mergers it is likely that rail shippers will insist on an enhanced overview authority with respect to rates and service.

(26) *The Transportation Act of 1920* directed the ICC to draw up a national rail map. Rail mergers in accordance with the map would be viewed sympathetically by the ICC. No railroad accepted the offer.

ADDENDUM

Over time, there will probably be fewer large airlines . . . . . .Downsizing, merging with another large airline or folding could be inevitable for some legacy carriers, said Paul Biederman who teaches about the airline industry at New York University. There will be one or two big ones left then you will have medium size ones like Southwest and AirTran, and then the regional carriers, Biederman said. It's going to happen by hook or by crook, either by voluntary merger or bankruptcy.

Harry R. Weber

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