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TERMINAL RAILROAD REVISITED:

FORECLOSURE OF AN ESSENTIAL FACILITY

OR SIMPLE HORIZONTAL MONOPOLY?

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ABSTRACT

St. Louis Terminal Railroad (1912) has been cited by a number of authors as a case of vertical foreclosure by competitive rivals. The alleged foreclosure has been used as a basis for the "Essential Facility Doctrine," an antitrust theory that has attracted a large degree of interest since *Aspen Ski* (1985). This paper examines the factual basis for the claims of foreclosure. We find that a close examination of *Terminal Railroad* reveals that, consistent with the economic theory of vertical integration, no foreclosure occurred. Instead, *Terminal Railroad* was simply a case of horizontal monopoly. Our findings suggest that to the extent the Essential Facilities Doctrine is based upon this case, the doctrine should be reexamined.

I. Introduction

Following the Supreme Court's 1986 decision in *Aspen Ski*,[1] there has been a renewed interest in the Essential Facilities Doctrine. As we understand it, the premise of the doctrine seems to be inconsistent with economic theory. Broadly stated, the doctrine requires that if there are assets that cannot be economically re-produced by another firm and are economically essential to all producers of some good, then all producers of that good should have equal access to the asset. The presumption behind the doctrine is that the firm controlling such assets will not provide access equally to other firms. This problem is felt to be particularly acute in cases where the firm owning the asset is one among a group of competitors needing the input to produce the good.

The case that has been cited as "establishing" the doctrine and the "classic essential facilities case"[2] is *U.S. v. Terminal Railroad Association of St. Louis*.[3] Several recent articles[4] on this case, detail three important propositions:

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[1] *Aspen Skiing Co. v. Aspen Highland Skiing Corp.*, 472 U.S. 585 (1985).

[2] D. Troy, "Unclogging the Bottleneck: A New Essential Facilities Doctrine," 83 Columbia Law Review (1983), fn. 67.

[3] 224 U.S. 383 (1912) and 236 U.S. 194 (1915).

[4] Troy (supra note 2); T. Krattenmaker and S. Salop, "Anticompetitive Exclusion: Raising Rivals' Costs to Achieve Power Over Price," 96 Yale Law Journal 234 (1986); D. Gerber, "Rethinking the Monopolist's Duty to Deal: A Legal and Economic Critique of the Doctrine of Essential Facilities," 74 Virginia Law Review 1069 (1988); G. Werden, "The Law and Economics of the Essential Facilities Doctrine," 32 Saint Louis University Law Journal 432 (1988); J. Ratner, "Should There Be an Essential Facilities Doctrine?" 21 University of California, Davis Law Review 327 (1988); A. D. Neale and D. G. Goyder, The Antitrust Laws of the United States of America, University Press, 1980 (third ed.); and A. Sullivan Handbook of the Law of Antitrust, West Publishing co., 1977.

1) A group of railroads constituting a subset of all railroads entering St. Louis from the west jointly erected a railroad terminal.

2) The terminal was the only "feasible" terminal option for rail traffic coming into St. Louis from the east.

3) According to several articles, certain railroads (i.e., non-owners of the terminal) were denied access to the terminal, which foreclosed them from competing with those railroads that did have access (i.e., owners) to the terminal.[5] Alternatively, others have suggested that differential pricing between owners and non-owners rather than outright foreclosure may have taken place.[6]

From the standpoint of economic theory, these three facts seem surprising. Propositions 1 and 2 suggest that the terminal was a natural monopoly owned by vertically integrated firms. Proposition 2 also suggests that the elasticity of technical substitution was low, so that fixed proportions (i.e., one unit of terminal plus one unit of "transportation"

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[5] Troy at 452 writes, "Certain railroads were denied access to the terminal, foreclosing them from competing with those having access to the terminal." According to Gerber at 1079, ".. a consortium of railroad companies refused to permit a competitor to enter the consortium and thereby denied the competitor access to the sole switching station on an important railway line." Werden at 444 writes "While *Terminal Railroad* involved a concerted refusal to deal, *Otter Tail* and *Hecht* (two other essential facilities cases) do not."

[6] In Salop and Krattenmaker's view (at 234) "[T]he railroad operators obtained a promise from the bridge owners (here the railway operators themselves) that the bridge could be made available to other, non-owner, railroads on discriminatory terms." Neale and Goyder at 128 assert that "The proprietary group had the power of veto and to discriminate against any newcomer."

creates the final product -- transportation to a specific St. Louis location) seem to characterize production.

Given Propositions 1 and 2, the strong form of Proposition 3 seems curious and even paradoxical. Even if it were vertical integrated, why would a monopoly deny access to any customers? Further, even the weak form of Proposition 3 seems surprising given what appears to be fixed proportions. In the fixed proportions case, economic theory states that a monopolist at any level of production can realize the entire monopoly profit. The monopolist accomplishes this by charging a price that, when added to the competitive mark-ups at subsequent stages, yields the monopoly price for the final output. Therefore, regardless of whether a monopolist is vertically integrated, it has no incentive to foreclose[7] or discriminate against other firms.

This paper examines this apparent paradox. Our research indicates that the facts in this case support economic theory: all customers were allowed to use the terminal (and related facilities) on a nondiscriminatory basis. Further, the record indicates that the Terminal Railroad Association acquired a monopoly via a series of horizontal acquisitions. Once the Association acquired its rivals, its pricing policies were consistent with the principles of monopoly pricing for its services. Hence, at least in this case, economic theory is supported by the facts and public policy towards the Association can rely on a less exotic theory of economic behavior than that suggested by the Essential Facilities Doctrine. Further, since *Terminal Railroad* is the

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[7] According to Tirole, "Very loosely, market foreclosure are commercial practices (including mergers) that reduce the buyers' access to a supplier and/or limit the suppliers' access to a buyer." J. Tirole, The Theory of Industrial Organization, MIT Press, Cambridge (1988) at 193.

classic case in this genre, our analysis suggests that perhaps the Essential Facilities Doctrine requires further review.

II. The Basic Economics of Vertical Relationships

Most goods purchased by consumers pass through multiple production stages before reaching their final consumption. Economic relationships, including tying arrangements, and long-term contracts, as well as vertical integration (the ultimate long-term contract), may exist among firms at different levels. This section briefly outlines the potential impact of these relationships.[8]

Before proceeding, two factors should be emphasized. First, our discussion will largely abstract from any potential efficiencies that may be associated with vertical integration. There is a substantial literature describing the efficiency-related motivations for vertical integration, but these considerations will not play a significant role in either this discussion or in our analysis of the facts in *Terminal Railroad*.[9] Second, the analysis here makes a distinction between an "upstream" (or early) stage of production and a "downstream" or later stage, and we assume that monopoly

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[8] An extensive discussion of the economics of vertical relations can be found in A. Fisher and R. Sciacca "An Economic Analysis of Vertical Merger Enforcement Policy," 6 Research in Law and Economics 1 (1984) and Chapter 4, "Vertical Control," in Tirole, supra note 7. The original research from which these discussions derive include M. Waterston "Vertical Integration, Variable Proportions, and Oligopoly," 92 Economic Journal 129 (March, 1982), P. Mallela and P. B. Nahata, "Theory of Vertical Control with Variable Proportions," 88 Journal of Political Economy 1009 (1980) and F. Warren-Boulton, "Vertical Control with Variable Proportions," 82 Journal of Political Economy 783 (1974).

[9] A good overview of this literature is Oliver Williamson's "Assessing Vertical Market Restrictions: Antitrust Ramifications of the Transactions Cost Approach," 127 University of Pennsylvania Law Review 953 (1979).

exists at the upstream level. This distinction is purely expositional; similar analysis would apply if a monopolized downstream level of production is assumed instead.

Consider a firm with a monopoly at an upstream level of production, and its incentives for integrating with a downstream firm. For concreteness, it may be useful to think of the upstream firm as engaged in mining bauxite and refining it into ingots, and the downstream firm as engaged in taking those ingots and manufacturing them into frying pans. The incentive to integrate will depend on whether ingots are a "fixed" input in the production of frying pans. By fixed we mean that the amount of ingot used in each unit of output will not change with the price of ingot. If the production process is characterized by fixed proportions in this way, then the price of output cannot rise as a result of a profit-maximizing monopolist integrating into manufacturing.

The logic behind this assertion is straightforward. If the "downstream" industry is competitive, then the margin earned at that level (i.e., the product price minus the ingot cost) is equal to the marginal production cost (net of ingot price). Since this arrangement minimizes manufacturing cost, it maximizes the monopolist's profits for any given product price. If the manufacturing margin is equal to the marginal cost of manufacturing, the monopolist chooses an ingot price so that the ingot price plus the competitive manufacturing margin yields a product price that maximizes profit (i.e., the marginal cost equals marginal revenue, where marginal cost includes the cost of manufacturing). By choosing the appropriate ingot price, the upstream firm ensures that the frying pan price is at the monopoly level, and thus the upstream firm receives the entire monopoly profit on that product.

Suppose the monopolist decides to integrate forward. If the upstream firm's cost of manufacturing is the same as the independent firm, then its total cost of production (i.e., mining plus manufacturing) is unaffected by integration. Hence, the frying pan price that maximizes profit is likewise unaffected by integration. In this case, the internal transfer price (the implicit price the upstream part of the integrated firm charged to the downstream part) is identical to the price charged to independent manufacturers, and no additional profits are obtained through integration.

This leads to the basic conclusion that all the monopoly profits can be achieved by having a monopoly at one stage, and that the price of the final output in unaffected by vertical integration. There are, however, some complications to this analysis. First, if the monopolist is regulated and is thus prevented from charging the monopoly price, it will have an incentive to transfer the monopoly profit to an unregulated entity at another stage. Under these circumstances, a regulated ingot producer may refuse to sell to other frying pan manufacturers in order to establish a monopoly for its affiliated frying pan manufacturer.[10] In this case, vertical integration could lead to foreclosure and higher prices.

On the other hand, if the monopolist is unregulated, but the downstream market is not competitive (i.e., the margin exceeds marginal

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[10] This may explain the observed behavior is several essential facility cases, including *MCI v. AT&T* 449 U.S. 912 (1980) and *Otter Tail Power Co. v. United States* 410 U.S. 366 (1973). This point is discussed in T. J. Brennan, "Why Regulated Firms Should Be Kept Out of Unregulated Markets: Understanding the Divestiture in *United States v. AT&T*," 13 Antitrust Bulletin 741 (Fall 1987), as well as by Gerber (supra note 4 at 1087-8).

cost), the upstream monopolist can reduce price and increase profitability by vertically integrating. In this case, vertical integration reduces the monopolist's cost of refining and manufacturing the product. As with any monopolist, lower cost will translate into lower output price (albeit not on a dollar-for-dollar basis).

A further complication occurs if frying pan manufacturers are able to substitute other inputs so that they use less ingot in each pan as the price of ingot rises. In this case, downstream integration by the monopolist can increase its profits while the effect on the final price of frying pans is ambiguous.

The reason for the increased monopoly profit from integration is that as the monopolist raises the price of ingot, downstream unintegrated manufacturers substitute away from ingot into other materials. This will lead to production cost above the level that would prevail if ingot were available to unintegrated manufacturers at its marginal cost. Hence, if the monopolist could enter manufacturing with the same cost function as an independent manufacturer, its total cost of getting the final product to market would be less than that of an unintegrated monopolist.

This incentive may induce the upstream monopolist to fully integrate downstream and replace all of the independent frying pan producers. If the upstream firm has available to it the same cost function as an independent downstream industry, it will be in its interest to become the sole producer of frying pans. The effect of this complete vertical integration on product price is ambiguous. On one hand, the actual cost of manufacturing frying pans falls because integration induces a more efficient output mix. All other things being equal, this will increase the output of that firm (relative to an independently one), and reduce frying pan prices. On the other hand, the integrated monopolist is no longer constrained by the ability of downstream firms to substitute away from ingot and can thus more effectively use its monopoly power by raising the (implicit) price of ingot.

The net result on the final price of frying pans of these two effects depends on the relative ease of substitution between ingots and other inputs on the part of producers, and the ease of substitution between frying pans and other final goods on the part of consumers. Generally speaking,[11] if producers can substitute away from ingot more easily than customers can substitute away from frying pans, then the final price of frying pans will rise, while if the reverse is true, the price of frying pans will fall. If the monopolist does choose to fully integrate downstream, it follows that the ingot price charged to independent manufacturers which yields the monopolist the same profit as it earns on its own frying pan sales is sufficiently high as to discourage independent firms from producing frying pans. In this sense, independent producers are "foreclosed" from the market, although there is no refusal to deal.[12,13]

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[11] See Fisher and Sciacca at 18-19 for a discussion of this issue. The primary reference is Mallela and Nahata, supra note 8.

[12] While it may be argued that this represents a *de facto* refusal to deal, the monopolist is willing to sell at a price which meets this criterion, and if the independent producer has sufficiently lower costs than the monopolist, it would be willing to buy at that price.

[13] A somewhat more complex case occurs if there are diseconomies of scale in frying pan production sufficient to make it unprofitable for the monopolist to become the sole producer of frying pans. In this case, the ingot monopolist may partially integrate downstream and continue to sell to other frying pan producers. Here again, the integrated firm will have lower costs than an unintegrated one, and will tend to increase output. The converse of this is that the ingot price charged to independent frying pan producers will rise, causing them to contract output. As in the case of

The theory of vertical relationships presented here indicates that the monopolist can fully exploit its market power without a refusal to deal. In reality, however, firms do refuse to deal. For example, it is common for manufacturers in certain industries to sell their products through dealers having exclusive territories. In effect, producers refuse to deal with all but one purchaser in a given geographic area.

If the imposition of exclusive territories does not represent an exercise of market power, why does it occur? One answer is that exclusive territories may represent an efficient way to market a product.[14] The standard example occurs in the provision of services such as product information, or proper product handling (in the case of perishable commodities). If one retailer provides these services, it bestows benefits on all retailers by increasing the demand for the product. Each retailer, however, can "free-ride" on other retailers by not supplying the services, and in so doing lower its own costs. In order to induce retailers to provide these services, the input supplier may refuse to deal with more than one seller in a given geographic area, or perhaps refuse to deal with any retail not providing its "fair share" of promotional services. More generally, when

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complete integration, the effect on price is ambiguous. (In at least one case, frying pan price will rise as a result of partial integration. H. C. Quirmbach ("Vertical Integration: Scale Distortions, Partial Equilibrium, and the Direction of Price Change," 101 Quarterly Journal of Economics 131 (1986)) has shown that if all costs are variable, and the downstream industry is initially in a zero-profit equilibrium, then frying pan price necessarily rises.)

[14] See B. Klein and K. M. Murphy, "Vertical Restraints as Contract Enforcement Mechanism," 31 Journal of Law and Economics 265 (1988) and H.P. Marvel, "Exclusive Dealing," 25 Journal of Law and Economics 1 (1982) for extended discussions of the efficiency rationale. The arguments made in these articles are traceable to L. Telser "Why Should Manufacturers Want Fair Trade?," 3 Journal of Law and Economics 86 (1960).

it is costly for the manufacturer to observe individual purchasers' actions, refusals to deal may serve to induce purchasers to act in a way consistent with the joint interest of the manufacturer and the other purchasers. Thus, if a vertically integrated firm refuses to deal with a downstream rival, economic theory indicates that such a refusal is likely to be efficient and should not be hindered by the antitrust laws.[15]

Essential Facilities cases would seem, almost by definition, to approximate the fixed proportions case. The "essential" aspect implies that using the essential input is the only economical way of producing the output. Troy[16] writes that a facility is essential if the end product cannot be (economically) produced without using the facility. Gerber[17] goes further, as he assumes throughout his article that fixed proportions characterize <u>all</u> essential facility cases.

Gerber's assumption is stronger than Troy's in that variable proportions can still exist even though the good cannot be produced without some amount of the monopolized input. For example, it may be impossible to run a car without gasoline, but gasoline would likely be used less intensively (per mile driven) if the price rose, as manufacturers could be expected to increase the fuel efficiency of their vehicles. Nevertheless, fixed proportions seem to characterize production in many essential facilities cases.

The situation in *Terminal Railroad* provides one example. There seems to have been little opportunity to substitute away from using the facilities of the Terminal Association, at least for certain geographic areas (see

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[15] A similar point is made by Gerber (supra note 4 at 1085-6)

[16] <u>See</u> supra note 2 at 459.

[17] Supra note 4.

section IV for details).[18] This suggests that whatever market power the Association held, it could be most easily expressed by charging a price for river crossing/terminalling services that would result in monopoly prices for shipping freight. In this case, we would anticipate that the price for these services would be the same to Association members and non-members.

Terminal Railroad is interesting in another respect. The economic analysis of vertical integration is well developed, but remains largely at a theoretical level. The type of transactions described above are usually internal to a particular firm. Thus it is difficult or impossible for an outside observer to determine if the reality of vertical integration fits the economic theory. In this case, however, we will be able to determine what price was charged and what type of discrimination, if any, occurred.

III. Corporate History of the Terminal Railroad Association of St. Louis.

Evaluating the history of the Terminal Association is important in understanding the economic environment that led the Attorney General to bring suit against the Association. As the following discussion illustrates, the activity that the government found objectionable was horizontal in nature. In particular, via a series of horizontal acquisitions, the Association gained a monopoly over methods of shipping freight across the Mississippi at St. Louis. The pricing policy of the Association simply reflected this monopoly.

In 1874, a bridge crossing the Mississippi River at St. Louis (known as the Eads Bridge) was completed. At the same time, a tunnel was constructed

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[18] The Waterston results indicate that if proportions are "close to" fixed (ie. little opportunity for substitution), the results are similar to those when the proportions are fixed.

connecting the bridge to the valley of the Mill Creek, where the railroads located on the Missouri side of the river were situated. To connect these facilities to the railroads, tracks were constructed that provided for the handling of railroad cars from the terminal to the bridge and tunnel. In 1880, the Terminal Railroad of St. Louis (which is distinct from the Terminal Railroad Association of St. Louis) was incorporated for the purpose of "provid[ing] the most ample and convenient connection and accommodation and terminal facilities in St. Louis for all railroads now entering or hereafter to enter the same."[19] These terminalling facilities then were leased to the companies that operated the bridge and the tunnel. One year later, two railroads, the Wabash, St. Louis, and Pacific (the Wabash) and the Missouri-Pacific, became joint lessees of the Bridge and Tunnel, and sub-lessees of the terminalling facilities.

By 1889, Jay Gould had acquired sufficient stock in both of these railroads to exercise control over them. In that year, Gould promoted an agreement between these two railroads and four additional railroads that also had terminals in St. Louis, creating the Terminal Railroad Association of St. Louis (the Association). Through this arrangement, the Association acquired the properties of the Terminal Railroad of St. Louis, the depots on both sides of the river, and the assignment of the lease (previously held by the Missouri-Pacific and the Wabash) to the bridge and tunnel.

In 1886, an Act of Congress authorized the construction of a second bridge at St. Louis. One provision of the Act prohibited any person who was a stockholder in any other bridge company from becoming a stockholder

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[19] Appellees' Statement and Abstract (hereafter cited as ASA) at 11.

in the second bridge.[20] It appears that the specific intent of this provision was to ensure an independent competitor to the Eads bridge.[21] This suggests that prior to the construction of the second bridge, the Association was in a position to charge monopoly prices.

The second bridge, known as the Merchants bridge was opened on June 1, 1890.[22] The company that owned the bridge, the St. Louis Merchants Bridge Terminal Company, secured control and/or built a series of small railways in Illinois and Missouri. According to the government, these railways, in combination with the Merchants bridge, constituted a system that provided "branches, switches, and depots, so as to enable it to conduct interstate and international commerce across the Mississippi."[23] As evidence for this, the government produced a tariff schedule, that showed the Merchants' Company posted rates for all railroads on either side of the Mississippi. The tariff schedule, according the government, demonstrated that all railroads connected to the Merchants terminal system.[24] In short, the government argued that the St. Louis Merchants Bridge Terminal Co. constituted a competitive system to that of the Terminal Railroad Association.

By 1893, the provision of the Act prohibiting individuals owning a share in the Terminal Railroad Association from owning any part of the Merchant's

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[20] Statement and Brief of the Attorney General (hereafter cited as Brief) at 51.

[21] See Bill of Complaint of John C. Higdon at 5.

[22] Abstract of the Pleadings and Evidence (hereafter ABS) at 4.

[23] Brief at 51-52.

[24] Brief at 81.

Bridge had been deleted in some "mysterious manner".[25] In that year, the members of the Association acquired the right in perpetuity to use the Merchant Bridge and its terminalling facilities. In exchange for this, the Association guaranteed $3.5 million of the Merchant Bridge Company's bonds and purchased 4,384 shares of stock. According to the Association,[26] this infusion of cash and credit prevented a foreclosure of some of the Merchant Bridge Company's assets. At the same time, the Association acquired 13,416 additional shares of stock, thus securing control of the Merchants Bridge Company.[27]

These two bridges were the only St. Louis-area bridges over the Mississippi during this time period. The Association faced, however, competition from other sources; primarily the St. Louis-area ferry companies.

The largest of these was the Wiggins Ferry Company. The Wiggins Ferry Company owned several miles of riverfront on the Illinois shore opposite St. Louis. On this riverfront property, the company built switching yards and other terminalling facilities.[28] It also owned the stock of the company operating the East St. Louis Connecting Railroad, which connected with the various railroad lines entering Illinois towns such as East St. Louis, East Carondelet, Madison, and Venice.[29] Similarly, the Wiggins Company operated facilities on the St. Louis side of the river, and through these facilities it was able to connect with railway lines terminating on that side

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[25] Brief at 53.

[26] ASA at 20.

[27] ASA at 20 and Brief at 53.

[28] 224 U.S. 385 and ABS at 73.

[29] ABS at 20 and Brief at 46.

of the river.[30] With these facilities (and two dedicated ferries), the Wiggins Company was able to ferry 1,200 railroads cars across the river each day.[31] The government argued that the Wiggins system, like the Merchants system, reached the same competitive territory in the center of St. Louis and in Illinois as the Association's system and reached "practically the same railroads in the two states."[32] Hence, the government concluded that the Wiggins and Merchant companies were independent instruments of interstate commerce, competing with the Terminal Association.

In 1902, the Chicago, Rock Island, and Pacific Railroad (the Rock Island), then not a member of the Association, attempted to purchase the Wiggins company.[33] According to the government, this engendered a take-over battle for Wiggins stock between the Association and the Rock Island. The eventual result of this battle was the acquisition by the Association of 9,500 of the 10,000 outstanding shares in the Wiggins company.[34] The total expenditure on Wiggins stock was $7,426,356 or about $782 for each of the 9,500 shares.[35] As part of the ultimate settlement, the

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[30] 224 U.S. 385.

[31] Brief at 82.

[32] ibid.

[33] Brief at 33.

[34] ABS at 33.

[35] ABS at 110. The various filings provide contradictory evidence on the price actually paid for the shares. For example, the government brief claims the price was either "greater than $725" (at 56) or $1,500 (at 89). Also, at ABS 110, a witness claims that he got $500 per share, which was more than the stock was worth. Our interpretation of these claims is that as time went on and the fight for the stock of the Wiggins Ferry intensified, the offer price rose. Early sellers received approximately $500 for their shares, later sellers $1,500. The average price paid was $782 while

Rock Island and seven other railroads were admitted to the Association. The Association's holdings in the Wiggins company were divided equally among 13 Association member railroads and the Pennsylvania company (which was affiliated with the fourteenth association member).[36]

Two other ferry/railroad combinations provided rail connections between the two sides of the Mississippi. One such combination was created by the Pennsylvania railroad, which acquired some existing track and expanded the system to the eastern bank of the Mississippi. This "belt" road, known as the Conlogue road, connected with the Pennsylvania's own tracks, as well as every other railroad in the city of East St. Louis, and reached every terminal located in that city. The southern terminus of the road was in East Carondelet, Illinois (a few miles south of St. Louis), where there was a ferry dock owned by the Missouri-Pacific railroad. Cars were transferred directly from the rails of the Conlogue road onto the ferry, and from the ferry directly to the tracks of the Missouri-Pacific Railroad in Missouri, south of St. Louis. The ferry handled 200 to 300 cars per day during its period of operation.

In 1902, the Association purchased the Conlogue road from the Pennsylvania company for $1.2 million. (The government gave no estimate of what the Conlogue road was worth.) At the same time, an affiliate of the Pennsylvania railroad became a member of the Association. Subsequent to this purchase, the rail line ceased delivering cars to the ferry service at

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the government claimed that they were 'worth' only $300 [Brief at 89]. The Association's 1914 annual report shows a book value for the Wiggins shares of $743.67.

[36] ASA at 71.

East Carondelet and the ferry ceased operations.[37] Another ferry operator, the Interstate Car Transfer Company, was bought by the Association for $600,000 when the government alleged it was worth only $225,000.[38] The government claimed that both of these companies competed with the Association.[39]

Of course, the Terminal Association's policy of buying up existing ferry companies would act to encourage new firms to enter (or threaten to enter) the ferry business in St. Louis.[40] There is, however, no court record of additional firms entering. To enter this industry required river bank land on both sides of the Mississippi that would make connections to railroads possible. Apparently, much of the suitable land was already owned by the Wiggins Company. Obtaining the required land could be made even more difficult by the necessity of buying it from several owners, each of which could ask for a sizeable portion of the available profits. Thus, given the nature of the task and the fact that there is no court record of new entry, it would appear that there were sizeable barriers to entry in establishing a ferry company.

The toll bridge across the Mississippi closest to St. Louis was at Alton, Illinois. While this bridge was not an Association property, its ownership consisted of 11 railroads, 10 of which were Association members. This

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[37] Brief at 84-87.

[38] ABS at 77.

[39] Brief at 109.

[40] Standard Oil faced a similar problem of buying up new entrants in order to protect market power during this time period. See J. McGee, "Predatory Price Cutting: The Standard Oil (N.J.) Case," 1 Journal of Law and Economics 137 (1958).

suggests that the Association could have effectively prevented the Alton bridge from competing for traffic with the Association. In fact, according to the manager of the Alton bridge, after the acquisition of the bridge by the 11 firms, the transportation price charged for a hundredweight of coal rose from 8 cents to 30 cents.[41]

IV. The Bridge Arbitrary

By virtue of its leases with the Merchants bridge and its acquisition of the three ferry companies, the Terminal Railroad Association had control of all feasible channels of transportation across the Mississippi into and out of St. Louis. Further, it appears that prior to these acquisitions, the largest single item shipped into St. Louis from the east was coal,[42] a product produced primarily east of the Mississippi.[43] The Association's records are consistent with this claim. For example, the Association's Annual Reports indicate that almost half of the west-bound traffic across the Mississippi at St. Louis in 1896 was coal.[44] Further, more than 70 percent of the coal used in St. Louis in 1907 was mined within 30 miles of East St. Louis.[45] It would have been extremely difficult to route coal from these areas into St.

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[41] ABS at 99.

[42] Brief at 75.

[43] Only 11.5 percent of the U.S. production of coal in 1900 was mined west of the Mississippi, and this share had declined to 10.5 percent by the year preceding the Supreme Court decision. Pennsylvania, Illinois, Kentucky, Alabama, Ohio and Indiana were (in order) the largest producing states. Source: Production of Coal, Bituminous and Anthracite, Years 1800 to 1974 Inclusive, by States and Producing Districts and the United States; Northern Illinois Coal Trade Association.

[44] 1896 Annual Report.

[45] Brief at 59.

Louis without using Association properties. This meant that St. Louis buyers of coal were limited in their ability to shift patterns of trade in response to higher transportation costs for bringing freight across the river.

In the one year for which data is available (1895) the physical volume of east-bound goods transiting the Association's tracks originating in St. Louis was less than 40 percent of the west-bound traffic terminating in the city.[46] Judging from the complaints of the plaintiff's witnesses,[47] it appears that the bulk of the goods traveling east-bound consisted of grain, flour and other milled products, and some manufactured goods.[48] Merchants selling these products, like the buyers of coal, were limited in their ability to shift patterns of trade when faced with an increase in the price charged to bring cargo across the river.[49]

Buyers and sellers in other cities west of the Mississippi, however, were not "captive" to the St. Louis bridges. There were many other toll bridges across the Mississippi, including bridges at Keokuk, Davenport, and Dubuque, Iowa; Hannibal and Louisiana, Missouri; Quincy, Illinois; Memphis,

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[46] 1895 Annual Report, Table V.

[47] ABS at 88-101.

[48] The most viable alternative for manufacturers seemed to be locating on the Illinois side of the river. In this vein, prosecution claimed that the growth of certain manufacturing cities in Illinois (eg. Granite City, Madison and East St. Louis) was "almost entirely due" to the Bridge Arbitrary [Brief at 25]. This indicates that for the products manufactured or processed in St. Louis, it was not practical to re-route shipments or find new markets which could be reached without using Association facilities.

[49] At ABS 98, the president of a flour mill said that 85 to 90 percent of his shipments were east-bound. Because of this, the Bridge Arbitrary (discussed below) had a "good deal" to do with the mill moving from St. Louis to Alton, Ill.

Tennessee; and Minneapolis/St. Paul, Minnesota.[50] Freight traveling to Kansas City or points west could easily be routed away from the St. Louis crossings.

These competitive conditions seem to explain the pricing policy of the Association. The Association obviously had no market power over shipments going from St. Louis to the west. Since numerous other crossings options existed, the Association had no market power over shipments from east of the Mississippi to points beyond St. Louis (or vice versa). Therefore, the only market power available to the Association was on shipments going into and out of St. Louis to points on the eastern side of the Mississippi.

This market power was expressed through the "Bridge Arbitrary". The Bridge Arbitrary was the practice of charging a bridge toll of 2 cents per hundredweight for goods traveling into or out of St. Louis.[51] There was no analogous charge for goods passing through St. Louis over one of the bridges in either direction.[52] This aspect of the Association's pricing was a central premise of the government's case.[53]

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[50] Commissioners Official Railway Map of Missouri, Higgins and Company, undated (but "correct to June 1, 1902"). Also "Centennial American Republic and Railroad Map of the U.S. and the Dominion of Canada" in Andrew M. Modelski, Railroad Maps of North America: The First Hundred Years, Library of Congress, Washington, D.C. (1984).

[51] Brief at 100.

[52] We found no evidence in the court records that the Association was constrained in its pricing behavior by any government regulation. Although the Interstate Commerce Commission was established in 1887, it was not given the power to enforce maximum rates until 1906, and it did not have the power to enforce minimum rates until 1920. See T. Ulen, "The Market For Regulation: The ICC From 1887 to 1920," 70 American Economic Review 306 (May 1980).

[53] See note 59 for details.

Even the Association's market power over St. Louis traffic was limited. Traffic to and from southern states[54] did not have to pay the Arbitrary. The apparent reason was that a direct connection to these areas existed via the St. Louis and San Francisco railroad using the Memphis Bridge.[55] As products going to this region had a good substitute available, the Association's market power was diminished, and the Association could not charge the Arbitrary without losing most or all of this business.

V. The Issues at Trial

a) History of Court Proceedings

In 1904 the Supreme Court of Missouri heard a case brought by the Missouri attorney general arguing for the dissolution of the merger between the Association and the Merchants Bridge.[56] The case was brought forth under Section 12 of the Missouri constitution that forbade mergers between competing railroads.

On a 4-3 decision the Missouri court held for the Terminal Association. According to the majority, the provision in the Missouri constitution called for what we would now term a "rule of reason" standard with regard to railroad mergers. Since the majority of the court felt that there were important efficiencies in the merger (from combining the switching facilities of the two systems), it refused to dissolve the arrangement.

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[54] Specifically, the area south of the Ohio River, east of the Carolinas and Georgia, and extending to the Gulf of Mexico (Brief at 31).

[55] Map of the "Frisco" line in Modelski (supra note 50).

[56] *State v. Terminal Association of St Louis* 182 Mo. 284 (1904).

In 1905, the U.S. Attorney General brought suit against the Association in Missouri District Court. The Court split 2-2 on the case. Since an evenly divided court does not generally write opinions, we do not know the reasoning of the justices involved at the District level.

The case was appealed directly to the Supreme Court. In 1912, by an 8-0 vote the Court ruled the Association, as constituted, to be illegal. The Court that the Association permit other railroads to be able to become Association members, serve non-members on equal terms, and eliminate the Bridge Arbitrary.[57] Only if the Association refused to meet these terms did the Court call for the remedy that would have gone to the heart of the monopoly problem, the dissolution of the Association.[58]

b) Efficiency vs. Monopolization as a Rationale for the Association's Acquisitions

As noted above, a central contention of the government's case was that the purpose of the Association was trying to eliminate competition by acquiring the Merchant's bridge and the three ferry companies. The government argued that the Wiggins and Merchants systems were "parallel"

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[57] In the 1914 Annual Report, we found that one additional road had joined the Association, bringing the number of members to 15. The Supreme Court decision refers to a total of 24 railroads serving St. Louis.

[58] While eliminating the Bridge Arbitrary would be expected to result in lower prices for St. Louis freight, it would also be expected to cause higher crossing prices for other cargoes, as the Association adjusted the method by which it took advantage of its market power. The welfare effects of proscribing price discrimination such as the Arbitrary are indeterminate. There is a long line of literature in this area, starting with J. Robinson, The Economics of Imperfect Competition, MacMillan, London (1933) at 188-202 and extending at least to M. L. Katz, "The Welfare Effects of Third-Degree Price Discrimination in Intermediate Good Markets," 77 American Economic Review 154 (1987).

lines to those of the Terminal Association, within the meaning of the Missouri state constitution. Consequently, the government contended that the acquisitions amounted to monopolization of interstate commerce.

In its brief (at 104-105), the government claimed that the monopolization led to a variety of deleterious effects, including; 1) poor service; 2) deterring entry at the terminal/river crossing level; and 3) high prices (linked to the Bridge Arbitrary).[59]

The defense argument, in effect, amounted to the claim that providing terminalling and switching services was a natural monopoly. The Association claimed that use of the combined facilities of all five companies was necessary to service all locations in St. Louis with maximum efficiency. A subsidiary claim was that the three major systems did not truly compete since they served separate areas. Further, the combination of assets led the Association to make investments in enlarging and connecting facilities to enhance the movement of trains. Hence, the combination of assets led to greater competition, as each individual railroad could, as a result of the acquisition, provide service to any individual customer.

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[59] The government's charges can be summed up in these three categories. The actual list included: 1) Delays in transit and delivery; 2) City of St. Louis was deprived of adequate freight facilities; 3) Favoritism to St. Louis Transfer Co. (a wholly-owned subsidiary of the Wiggins Co.); 4) Guarantee Agreement (discussed below); 5) Independent freight stations rendered impossible; 6) "Bridge Arbitrary" established hostile to business interests of St. Louis shippers and manufacturers; 7) Coal Traffic handled to St. Louis' detriment; and 8) Freight rates arbitrarily fixed and maintained to St. Louis' detriment. The first two items suggests poor service, the fourth and fifth suggest an attempt to prevent competition with the Association and the last three deal with the effect of the Association's pricing policy (ie. price discrimination against St. Louis). The third item suggests that hauling services were used in variable proportion with terminalling or railway service, and hence that a lower price (or, equivalently, higher quality service) was charged to the Association's own hauling company. It should be noted that only a small percent of the Association's revenue was derived from the transfer company, and hence this issue was not central to this case.

c) Profitability of the Association

As detailed in Section IV, one apparent aim of the Terminal Railroad Association was to eliminate competition for rail services into and out of St. Louis. Given this, one would expect that the Association's actions would result in high profits for it and its members. Reaching this conclusion with the available facts, however, is more difficult then one might believe.

The only information we have available to us on profits comes from the Association's accounting figures. Use of accounting data to analyze the existence of monopoly profits has been subject to criticism in the academic literature.[60] Accounting data serve a variety of purposes, many of which have little to do with true economic profitability. These data are often calculated using depreciation schedules and cost allocation schemes that may not bear a strong resemblance to reality, and may thus produce misleading rate of return estimates.

Despite this caveat, a review of the Terminal Association's annual reports for several of the years in question indicates that there is at least some reason to believe that the Association was earning real economic profit.[61] From calendar year 1893 to 1897 the Association had average profits of $80,000 per year on average revenues of $1.758 million (4.5

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[60] See, for example, F. M. Fisher and J. J. McGowan, "On the Misuse of Accounting Rates of Return to Infer Monopoly Profits," 73 American Economic Review 82 (March 1983).

[61] Of course, the Terminal Association denied that its fees were too high. According to them, ".. the charge of extortion is absolutely without support in this testimony. There was not even an effort to support it, and on the other hand, the evidence is conclusive that the charges are based on cost of operation, proper maintenance and fixed charges." (Appellees Statement and Brief (APP) at 25.)

percent).[62] Accounting profitability increased to $313,000 (13.9 percent of revenue) during the period from 1898 to 1902. The first few years of data following the acquisition of the Wiggins company showed higher profits. From fiscal year (July to July) 1906 to 1909 the Association averaged profits of $567,000 on revenues of $2.911 million (19.5 percent). From fiscal year 1910 to 1914 the Association averaged profits of $257,000 on revenues of $3.107 million (8.3 percent). (The annual figures for 1903, 1904, and 1905 were not available.)

These profit figures do not include the fees the Association was paying its member roads. Prior to 1903, the Association reports indicate that it paid $550,000 per year (an amount equivalent to about 27.5 percent of the Association's revenues) to the Wabash and the Missouri Pacific roads (original partners in the Association) for use of tracks and the tunnel in the northern part of St. Louis. After 1905, the reports indicate that rental of $666,900 per year (22.1 percent of revenues) was paid to member roads for use of the track and tunnels. It may well be that these were justified expenses. Given, however, the large amount of the Association's costs taken up by these costs and the incentives for self-dealing, it would seem at least possible that part of the Association's profits were being siphoned off by the Wabash and the Missouri Pacific as part of the original agreement establishing the Association.

[62] The annual reports indicated that each member of the Association owned an equal amount of shares and thus shared equally in any dividends paid by the Association.

d) Exclusionary Practices

The modern interpretation of the facts in this case indicate that railroads that were not members of the Association either paid more for using the terminal, or were completely foreclosed from using terminals. The genesis of the modern interpretation is somewhat unclear. Perhaps it derives from the Supreme Court's remedy, which focused most of its attention on the Association's ability to exclude competitors, as opposed to the effects of the Association's pricing policy on St. Louis shippers.[63] At no point, however, in the government's brief or any other document, does the government make any accusation of foreclosure.[64] On the contrary, the government's case averred the reverse. For example, Joseph Ramsey, a former general manager of the Association and a government witness testified that all terminals were available to all roads on exactly the same terms.[65] Additionally the Department of Justice claimed that the Association "compel[ed] ... all other railroad companies to use the property of the Association",[66] a position which seems to be the opposite of claiming

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[63] Remedies that have little to do with the problem at hand are not that uncommon in antitrust proceedings. See K. Elzinga, "The Antimerger Law: Pyrrhic Victories?," 12 Journal of Law and Economics 43 (1969) and R.A. Rogowsky, "The Economic Effectiveness of Section 7 Relief," 12 Antitrust Bulletin 187 (Spring 1986).

[64] As pointed out in notes 5 and 6, this fact seems to have been overlooked in most studies of the Essential Facilities Doctrine. One exception is Ratner (supra note 4 at 337), who notes that "no denial of access was alleged or shown (in the Supreme Court record)".

[65] ASA at 110.

[66] ABS at 35.

foreclosure. The Association made the lack of favoritism a central theme in its defense.[67]

There are three senses in which some notion of foreclosure played a part in the case. First, the members of the Association had the ability, although it was never exercised, to exclude railroads from the use of the terminals. The economics of vertical integration (discussed above in Section II) suggests that the monopoly price could have been set unilaterally by the Association, and hence the Association did not have any need for coercion in order to achieve its objectives.

A second sense in which foreclosure occurred was that it required a unanimous vote of the Association members to admit new members. In this sense, certain railroads may have been excluded from the Association. Of course, if we accept the government's contention that the Association had a monopoly and made monopoly profits, it is not surprising that the Association would not want to admit new members. New members would not increase the total profitability of the Association. Hence, admitting new roads would simply decrease the share of monopoly profits flowing to each existing member.[68] Admission to the Association, however, was not a necessary condition to use the facilities of the Association.

A third sense in which foreclosure occurred was that each railroad promised to use only Terminal Association facilities to cross the river (the

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[67] eg. APP at 29, 50-51.

[68] If the existing members charged a sufficiently high price for membership, they would have admitted additional members. No change in total profitability would result from allowing new members. Therefore, new members would be required to pay a price which would make the existing members indifferent to admitting them (i.e. equal to the expected value of the new firms' share of the profits). Such a price would make the entrants indifferent as to whether to join or remain outside the group.

"Guarantee Agreement"). This made entry difficult for any potentially competing bridge or ferry since the competitor could not obtain the business of the 14 railroads in the Association. In this sense, the Department of Justice argued that the Association excluded horizontal competitors to the Association. This idea of foreclosure has had a long and controversial history in the antitrust literature.[69]

In essence, the government argued that integration by the "upstream" (i.e., terminalling) monopolist with firms at the "downstream" (i.e., railroad) level foreclosed access to the downstream input from potential competitors at the upstream level. Without such access, the upstream firm cannot sell its service at all. The government's argument, therefore, seems to be that the "Guarantee Agreement" forced an entrant to enter at both levels.

This argument seems curious, since several railroads were unaffiliated with the Association. Further, even Associations members could be induced to contract with the entrant if the combined enterprise were profitable. The fact that no complainant came forth claiming it had been foreclosed from establishing a terminal by the Agreement suggests that foreclosure was not a real effect of the Agreement.

Regardless of the plausibility of the foreclosure argument, if exclusion of this type were possible it would undermine the role of the essential facilities doctrine. If the "Guarantee Agreement" had an anticompetitive

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[69] For example, P. Areeda (Antitrust Analysis: Problems, Test, Cases, Little, Brown, and Co., Boston, second edition (1974), at 675) argues that integration by the upstream firm forces a potential upstream entrant to enter on both stages. "The additional capital, expertness, and facilities required to enter simultaneously on both levels will obviously increase the difficulty of entering." As discussed in Section II, however, vertically integrated firms do have important incentives for dealing with firms that compete with them on only one level of production. For an economic analysis of this argument, see Fisher and Sciacca (supra note 8), section IV.

effect, it must be through the threat of competition at the terminalling level. The basis of the doctrine, however, is that the monopolized input should be made available to all because it is "commercially impractical" for a competitor at the upstream level to reproduce the downstream asset. If entry at the upstream level is a real threat to the monopolist, then clearly it was not "commercially impractical" to replicate the Association's facilities.[70]

In sum, the first notion of foreclosure does not seem to be a cause for concern. It appears that monopoly prices for terminal services were already in effect and the Association had no incentive to exclude anyone. The second type of exclusion does not appear to be an antitrust issue at all. Forcing the Association to accept all railroads as members may have re-directed some profits, but would not have changed output, or final prices to consumers. The final sense of foreclosure may or may not have had economic merit, but it is clearly not a basis to support the essential facilities doctrine.

VI. Conclusion

Terminal Railroad has had a curious history in the annals of antitrust. Consistently misinterpreted, it has served as a basic source for misbeliefs about the economics of vertical integration. Upon examining the case, the

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[70] Krattenmaker and Salop (supra note 4 at 238) suggest that the Terminal Association was used as a type of cartel stabilization device, or, in their terms, a "cartel ringmaster." Under this scenario, the Terminal Association would have excluded, or threatened to exclude, a firm from access to its facilities if that firm broke a railroad cartel agreement in another part of the country. We found, however, nothing in the court record that indicated that the Association ever engaged, or threatened to engage, in any behavior of this type.

issues become clear. The anticompetitive problem identified by the court was really horizontal. The combination of the Merchants Bridge and the three ferry companies with the Association created a horizontal monopoly over traffic to St. Louis in a market with apparently high barriers to entry. Under current merger standards, antitrust authorities would almost certainly seek to block the merger or to undo it once it occurred.

There is, however, no vertical antitrust theory to be generated from this case. Economic theory tells us that if a firm has a monopoly over an input, and that input is used in fixed proportions, then the vertically integrated firm will charge its downstream rivals the same price it charges itself. In this case, the facts are consistent with the theory: Association members charged non-members the same price they charged themselves, and denied access to no one.

Antitrust policy based upon forcing the owner of an "essential facility" to provide equal access seems misguided. Economic analysis shows that in unregulated industries (with fixed proportion technology) there is no anticompetitive incentive to integrate. This suggests that when foreclosure does occur, efficiency considerations are a likely motivation. The essential facilities doctrine, therefore, may actually discourage efficient behavior without a corresponding benefit in terms of deterring anticompetitive conduct.