The Letters of John Sherman and the Origins of Antitrust*

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Abstract: This paper presents a survey of the letters of Senator John Sherman, who pushed for passage of the first federal antitrust law in the United States. By placing these letters in historical context, this paper helps resolve a debate about Sherman's true intentions in creating an antitrust law. In particular, Sherman's letters reveal that he was more concerned with protecting the interests of small and inefficient businesses than with protecting the interests of consumers.

The origin of the Sherman Antitrust Act has been the subject of much debate. A particularly contentious issue is why, and to what degree, small businesses lobbied for antitrust. There are three schools of thought. Traditional interpretations minimize the role of small businesses and argue consumers and populist farmers were the dominant interest groups in the battle for antitrust (Letwin 1965:53-70; and Thorelli 1955: 58-95). Revisionist interpretations suggest small businesses were the dominant interest group and that small businesses supported antitrust legislation because the trusts used more efficient production technologies and were better able to exploit economies of scale (Grandy 1993; Libecap 1992; and Stigler 1985). Hybrid interpretations suggest consumers and small businesses were roughly equal in political significance and that small businesses supported antitrust because the trusts used predatory pricing, vertical restraints, and other exclusionary tactics that undermined the ability of small companies to compete (Blicksilver 1985; and McGraw 1981).

These competing interpretations imply three very different rationales for the Sherman Act. Traditional interpretations suggest the act was designed to limit market power and promote consumer welfare. Revisionist interpretations suggest the act was designed to protect inefficient forms of economic organization, even if such protection reduced consumer welfare. The implications of hybrid interpretations are less clear. If one believes that the vertical restraints employed by the trusts were anticompetitive and threatened the welfare of consumers as well as small businesses, hybrid interpretations suggest that the interests of small businesses and consumers were aligned and that the Sherman Act was designed to protect both groups. If, however, one believes that the vertical restraints employed by the trusts served a legitimate economic goal, such as promoting quality or consumer choice, hybrid interpretations might suggest efforts to curtail such restraints through antitrust regulation reduced consumer welfare and served only to protect small businesses.

Studies testing these interpretations draw from a variety of sources. Exploiting the *Congressional Record*, Grandy (1993) finds that during the debate over the Sherman Act, legislators were more concerned with the welfare of small businesses than with the welfare of consumers. Grandy's findings contrast sharply with those of Bork (1966), who examines the same source and finds legislators intended to maximize consumer welfare. Exploiting census data, DiLorenzo (1985) shows that in industries dominated by trusts output expanded rapidly and prices fell, patterns consistent with the hypothesis that small businesses sought antitrust laws because the trusts were more efficient. Other studies, however, present evidence that, in the short run, the trusts restricted output and increased consumer prices, patterns consistent with the traditional efficiency interpretation of antitrust (Lamoreaux 1985; and Troesken 1998). In a widely-cited industry study, Libecap (1992) argues the meat-packing trust displaced small and inefficient competitors, who then sought antitrust and meat-inspection laws as a means of insulating themselves against the trust.[1] Other studies of the same industry draw contrary conclusions, suggesting the meat-packing trust exercised much market power and that consumers wanted inspection laws (e.g, Yeager 1981).

Using previously unexploited sources of evidence, this paper addresses two central questions in the debate over the origins of the Sherman Act. First, who lobbied more actively for antitrust: consumers or small businesses? Second, to the extent small businesses lobbied for antitrust, what motivated them? Did they seek antitrust because the trusts were more efficient, as revisionist interpretations suggest, or did they seek antitrust because the trusts used predation and vertical restraints to foreclose entry and competition, as some hybrid interpretations suggest? To answer the first question, the letters of Senator John Sherman are surveyed.[2] Sherman, an outspoken critic of the trusts and the architect of the Sherman Antitrust Act,[3] did not receive any letters from farm

groups, or any other consumer groups, requesting an antitrust law. But he did receive many letters from small businesses concerned about the trusts and encouraging him to introduce antitrust legislation. Small oil refiners were the most active business group lobbying Sherman. Also of interest is a letter Sherman received from a combination of glass producers. While not overly concerned about the prospect an antitrust law *per se*, the glass combination strongly opposed Sherman's efforts to exempt labor unions from antitrust prosecution.

To address the second question, the businesses who wrote to Sherman are linked to other historical sources, such as court reporters, newspaper accounts, and government reports. By linking these businesses to other sources, the paper identifies the economic problems confronting small businesses and provides indirect evidence on the forces that drove them to lobby for antitrust. The forces motivating small businesses varied. In the case of oil refining, small companies lamented the fact that Standard Oil used tank cars (rather than barrels) to ship its oil, a technological innovation many contemporary observers believed reduced the costs of transporting oil. In other industries, small manufacturers and distributers wanted the trusts and other combinations to stop using vertical restraints. Exclusive dealing and tie-ins were areas of particular concern. Only one manufacturer writing to Sherman (the John Deere Company) complained that trusts drove up input prices, and the veracity of this complaint is questionable.

The paper concludes with a section interpreting Sherman's actions in light of his letters. Sherman focused his energies on satisfying the demands of small oil refiners. He was much less concerned, if he was concerned at all, with the plight of other small businesses who complained about the trusts using vertical restraints. As explained below, these patterns corroborate revisionist interpretations and suggest that Senator Sherman intended to protect small and inefficient firms from

their larger competitors, regardless of the effect on consumer welfare (Grandy 1993; Libecap 1992).

I. Senator John Sherman

John Sherman came from a long line of prominent judges, lawyers, and politicians. Among his most famous relatives were Roger Sherman, a member of the Constitutional Convention, and nineteenth century politicians Chauncey Depew, William M. Evarts, and George F. Hoar. John Sherman's father, Charles Robert Sherman, was one of four judges on the Ohio Supreme Court. Before entering politics himself, John Sherman attended Kenyon College and worked as a lawyer in Mansfield, Ohio. He was admitted to the Ohio bar in 1844, at the age of twenty one. With help from his eldest brother, Charles Taylor, who later became an Ohio judge, Sherman's law practice thrived. Three years after becoming a lawyer, he owned $10,000 in property and was a partner in a booming Mansfield business. By the time of his death in 1900, Sherman had amassed a fortune amounting to roughly 32 million 1991 dollars (Burton 1906: 1-19; and Marszalek 1993: 1-29).

Sherman entered politics as a Whig, serving as a delegate to the party's national conventions in 1848 and 1852. He won election to the U.S. House of Representatives in 1854. Although admired as an able politician, Sherman's lenient attitude toward slavery evoked criticism from northern Whigs. By 1859, Sherman had become a member of the Republican Party and was a candidate for the position of speaker of the house. He advanced from the house to the senate in 1861 when President Lincoln appointed Salmon P. Chase, an Ohio senator, secretary of the treasury. Sherman went on to serve six terms in the senate. When Sherman retired from congress in 1897, he had served more terms than any other member of the senate. Also, during the 1880s and 1890s, Sherman was frequently considered a possible presidential candidate, as was his brother William Tecumsah Sherman, the famous civil war general. John Sherman served as secretary of the treasury

under Rutherford B. Hayes from 1877 through 1880. In 1897, he became secretary of state, a post he held until 1898, when he resigned citing his opposition to President McKinley's expansionist foreign policies and the war with Spain (Burton 1906: 34-80 and 298-409; Beisner 1968: 193-203).

While a senator, Sherman was a member of the finance committee and specialized in legislation relating to economic and financial affairs. Like other Republicans, he advocated high tariffs, and generally supported the gold. Sherman was also an outspoken critic of the trusts, especially Standard Oil. Sherman made several public speeches denouncing the trusts;[4] introduced antitrust legislation on three separate occasions between 1888 and 1890;[5] inspired the Ohio attorney general to file suit against the Standard Oil Company;[6] and introduced legislation that, if passed, would have prohibited the railroads from granting Standard Oil and other larger refiners special rebates for shipping their oil in tank cars rather than barrels. Sherman's opposition to the trusts did not sit well with other Republicans. For example, after the Ohio attorney general filed suit against Standard, Marcus Alonzo Hanna, a powerful Ohio Republican, warned the attorney general if he did not withdraw the suit, he would suffer the consequences of corporate revenge. Hanna concluded his letter to the attorney general with the remark: "I understand that Senator Sherman inspired this suit. If this is so I will take occasion to talk to him sharply when I see him (Flynn 1932: 300-01)."

As a senator concerned about the trust movement, Sherman received numerous letters from constituents in Ohio and elsewhere lobbying on topics related to antitrust. In the order they are reviewed here, the letters were from: small oil refiners concerned about Standard Oil and its use of tank cars; the John Deere Company, a manufacturer of agricultural implements, concerned about a pool in the steel and iron industry; a small watch-case manufacturer and a distributor of tobacco products, both concerned about the use of vertical restraints in their respective industries; and a

combination of glass manufacturers who opposed Sherman's (failed) efforts to exempt labor unions from antitrust prosecution.[7] By describing the economic and historical context of these letters, the rest of the paper identifies the forces that motivated them.

II. Sherman and Small Oil Refiners

II.a. An Overview of the Oil Industry, 1860-1900

As Figure 1 shows, the real price of refined oil fell by nearly 80 percent between 1860 and 1893. The sources of this decline were threefold. First, production of crude oil, the primary input in oil refining, grew dramatically during this period and this drove down the price of crude (Williamson and Daum 1959: 118-19, and 560-67). Figure 1 highlights the strong correlation between the prices of crude and refined oil. Second, increases in consumer demand for refined oil, particularly lighting oil, enabled refiners to expand output and exploit economies of scale (Williamson and Daum 1959: 282-84, and 621-22). Third, innovations in transportation during the 1870s and early-1880s reduced the cost of shipping oil. In particular, pipelines that ran from oil wells to railheads reduced the cost of shipping crude, and tank cars reduced the cost of shipping refined oil via the railroads. Before the introduction of pipelines, crude oil had to be transported from the wells to the railroad in barrels carried by teams of horses. Before the introduction of tank cars, refiners shipped their product to market in barrels carried by the railroads (Williamson and Daum 1959: 183-89, 383-90, 451-52, 529-30, and 570-72).

Given their connection to Sherman and the origins of antitrust, it is useful to specify why tank cars represented such an improvement over barrels. Barrels leaked and allowed much of the oil to evaporate; tank cars allowed roughly 50 percent less oil to evaporate. Barrels had to be repaired and

replaced constantly, which meant refiners typically had to hire a team of coopers to maintain an adequate stock of barrels; tank cars required much less maintenance. Barrels were costly to load and unload from railroad cars; tank cars were not. When shipping oil in barrels, there was a significant risk of accidental explosion; tank cars reduced that risk. In addition, because tank cars reduced the likelihood of accidental explosions and fires during transport, and because tank cars required much less handling by railroad workers–the responsibility for unloading barrels typically fell on the railroad, not the refiner–railroads offered refiners who shipped their oil in refiner-owned tank cars significant rate reductions relative to those who continued to use barrels (Williamson and Daum 1959: 106-07, 178-80, and 528-31).

Standard Oil aggressively pursued low-cost production and transportation techniques, including tank cars (Chandler 1977: 323-29). By 1889, Standard owned more than 50 percent of all tank cars then in use; owned and operated large pipelines to transport crude; and possessed relatively large and efficient refineries (Williamson and Daum 1959: 282-84, 383-90, 398-99, 621-22). The efforts of Standard to adopt low-cost production and distribution methods contributed to its market dominance. The share of industry-refining capacity controlled by Standard Oil rose steadily from about 10 ten percent in 1870, to 40 percent in 1874, to roughly 90 percent in 1880. Between 1884 and 1900, market structure stabilized with Standard controlling 80 percent of the nation's refining capacity.[8] Innovation and scale economies alone, however, cannot account for all of Standard's success. Rivals claimed that Standard dominated the late-nineteenth-century refining industry because it pursued anticompetitive strategies, including the use of predatory pricing and vertical restraints to forestall entry.

II.b. Senator Sherman, Tank Cars, and Standard Oil

During the late 1880s, Senator Sherman received numerous letters from small oil companies requesting that he take action against Standard Oil. These small oil companies lamented the fact that Standard Oil, as well as other large refiners, often received rebates from the railroads. Large oil companies received these rebates ostensibly because they shipped their oil via tank cars instead of barrels, as noted above. Small oil companies who continued to ship their oil in barrels objected to these reduced rates, claiming that they gave large refineries an unfair advantage. Although small oil companies eventually lobbied John Sherman to prohibit rebates for tank cars, these companies first used state legislatures and state courts. In 1878 and 1879, small oil companies in western Pennsylvania brought suits against Standard Oil and the Pennsylvania Railroad, claiming that the railroad and Standard conspired against them. These legal suits failed to bring an end to the rebates, as did later efforts to get the Interstate Commerce Commission to order the railroads to cease granting rebates (United States 1900).

The small oil companies writing Sherman asked that the Senator introduce legislation to prohibit rebates for tank cars. One letter, from the Great Western Oil Works, even provided Sherman with the precise language they wanted the proposed law to take (Sherman Letters, Great Western Oil Works, February 8, 1889). Sherman responded by introducing the law, and by repeating *verbatim*, the words used by the Great Western Oil Works. As requested, the bill was in the form of an amendment to the Interstate Commerce Act of 1887, and it read (*Congressional Record*, 50th Congress, 2nd Session, p. 2441. Hereafter cited simply as *Congressional Record*):

> That it shall be unlawful for any common carrier, subject to the provisions of this act, to carry refined oils and other petroleum products, cottonseed oil, and turpentine for any shipper, in tank or cylinder cars, who shall own, lease, or control the same in any manner, except upon the condition that said carrier shall charge the same rate for the transportation of said products in wooden package or barrels, in car-load lots, as in

> said tank or cylinder cars and said wooden packages and barrels being free in each case.

Not all independent oil companies, however, supported the anti-tank car bill. In particular, W.C. Warner, the secretary of the National Oil Company of Titusville, Pennsylvania, opposed the bill. According to Warner, Standard was not the only oil refiner that used tank cars to receive favorable railroad rates. Warner claimed that of the 8,000 tank cars in use in 1889, 1,700 were owned by the railroads; 4,200 were owned by Standard; and 2,100 were owned by independents with no affiliation to Standard (Sherman Letters, National Oil Company, May 14, 1890, p. 2. Hereafter cited simply as National Oil Company). Consequently, by outlawing rebates to all users of tank cars, Sherman's proposed measure would have undermined the competitive position of the independent oil companies who used tank cars, as well as Standard Oil. Moreover, because Sherman's bill outlawed rebates for tank cars in all industries (not just oil), the bill promised to increase the price of other commodities as well. Warner explained (National Oil Company, p. 2):

> Very many other fluid commodities are now also carried in tank cars. We used to get all of our sulphuric acid in glass carboys. If a law were passed saying we must pay the same rate in tank cars as in carboys, it would increase the cost nearly 50 percent.

For these reasons, Warner argued, Sherman's anti-tank car bill was "a boomerang club thrown at the Standard Oil Trust by a reckless and thoughtless hand," a club that would "knock out innocent independent refiners and lose its force before reaching the object at hand (National Oil Company, p. 3)."

Warner went on to explain that (National Oil Company, p. 3):

> 50 percent of the Pennsylvania petroleum production goes for export and has a direct and powerful competitor abroad in Russian petroleum. There are now about eighty tank or bulk ocean steamers engaged in the export-oil carrying trade, and freights by them are so much cheaper that export oil in barrels is rapidly becoming a thing of the

past.

He continued (National Oil Company, p. 3):

> We [referring to the National Oil Company and other independent oil companies located in western Pennsylvania] not only have to compete with Russian oil carried in on their bulk steamers but also against the oil carried by pipelines . . . by the Standard Oil Trust. If we cannot avail ourselves of the very cheapest methods of transportation all the way through, we are completely done for.

Closing its letter, Warner pleaded with Sherman to reconsider his position (National Oil Company, p. 3):

> We earnestly hope you will carefully investigate all the bearings of this matter and do nothing that will add to the troubles we are now daily meeting in doing business in competition with the great Trust and its merciless power of concentrated capital.

In congressional debates over the anti-tank car bill, several senators argued that tank car rebates were based on economic efficiency and ultimately brought consumers lower prices. Senator Gray, a Democrat and an outspoken advocate of free trade, argued that tank cars offered "great economy in the distribution" of oil (*Congressional Record*, p. 2436). Senator Gray's support for tank cars is a strong statement, because Gray was no friend of the trusts or big business. During the debate over the Sherman Act, Gray introduced an amendment that, if passed, would have enabled government authorities to suspend tariff duties for any industry controlled by a trust or anticompetitive combination.

Similarly, Senator Cullom, while he denied wanting to defend Standard Oil, argued that if the antitank car bill was passed "the result would be inevitably that the price of oil to the people of this country, the consumers, would be increased instead of reduced (*Congressional Record*, p. 2438)." More willing to publically defend Standard Oil, Senator Call maintained: "The Standard Oil Company has certainly reduced the price of oil to the people of this country, and in consideration

of this subject specially directed towards oil and its transportation this fact should have weight and influence (*Congressional Record*, p. 2441)." At one point during the debate, Senator Reagan of Texas argued, "I do not think there is any human being on earth who will contradict or take issue with the" claim that tank cars reduced the costs of transporting oil (*Congressional Record*, p. 2431).

Sherman countered these arguments, arguing that the legislation would preserve competition by keeping Standard's smaller competitors alive (*Congressional Record*, p. 2437):

> All this [legislation] is designed to do is to guard against the monopoly which, under the ordinary course of business, the oil-transporting companies with their tank cars will have over the others. All that is asked by these people, most of whom are struggling now for their existence, is that their oil...shall be carried at the same rate per gallon in the barrels...as the Standard Oil and other companies.

He concluded (*Congressional Record*, p. 2438):

> I am not here to demagogue. I am not here to appeal for these men, citizens of my own state, because they are not so strong and wealthy as those with whom they compete. I do not ask a single thing for them that I would not be willing to give to the greatest and strongest corporation in the world; but I do say that while I have a seat here they shall not be discriminated against unless against my most earnest and solemn protest.

Despite this "earnest and solemn protest," the anti-tank car bill was killed. A motion to lay the bill on the table passed by a vote of 34 to 11 (*Congressional Record*, p. 2442). Following the defeat of the bill, three small oil companies wrote Sherman thanking him for introducing the bill and encouraging him to continue his efforts against Standard Oil.[9] However, Sherman was never able to secure passage of his anti-tank car bill.[10]

In lieu of legislation prohibiting the railroads from granting rebates on tank cars, small oil refiners began advocating government ownership of the railroads. Testifying before the United States Industrial Commission in 1900, Louis Emery, a small oil refiner from Bradford, Pennsylvania,

argued:[11]

> If the waterways and the railroads can be put under government control, gentlemen, you will do away with all difficulties that exist today, because the prime movers of all this trouble are the railroads. They make the trouble by giving discriminating rates, giving rates to favored shippers lower than they give to the general public.

Citing the experience of several European countries, Emery claimed that government-owned railroads would rejuvenate ailing businesses (United States 1900: 671):

> [European governments] have brought back into the markets the old manufacturers, and they are today a happy people, because the government has taken hold and made the rates equal to everybody--the Englishman, the Frenchman, the German, and the Yankee, and everybody else. We distribute oil in those countries, and we find no discrimination. Government ownership is my proposition.

Although small oil refiners were disappointed when Sherman failed to deliver an anti-tank car law, they were apparently quite satisfied when he secured passage of Sherman Antitrust Act in 1890. Still testifying before the Industrial Commission, Emery described the Sherman Act as "one of the best laws ever written (United States 1900: 671)."

The sources of antitrust sentiment in oil refining were similar to the sources of antitrust sentiment in the meat-packing industry. In meat packing, a trust exploited a technological innovation in transportation–namely the development of refrigerated rail cars–to centralize production and reduce the cost of processing meat. While this innovation reduced the price consumers paid for meat, it also displaced smaller, high-cost producers, who in turn lobbied for antitrust and meat-inspection laws in a vain attempt to undermine the meat-packing trust (Libecap 1992). In oil refining, a trust also exploited a technological innovation in transportation–namely the development of tank cars–to reduce the cost of shipping oil. While contemporary observers claimed this innovation reduced consumer prices, the use of tank cars displaced small oil refiners, who for

whatever reason, were unable to avail themselves of this new technology. In turn, small oil refiners lobbied for antitrust and anti-tank car laws in an effort to thwart Standard Oil and other companies who used tank-cars to ship their oil.[12]

III. John Deere and the "Steel Trust"

On August 29, 1888, an officer of the John Deere Company in Moline, Illinois wrote to Sherman asking that he and other Republicans introduce antitrust legislation. The Deere Company began its letter with a general description of the trust problem, a problem the company believed was caused in part by high tariffs (Sherman Letters, John Deere and Company, August 29, 1888, p. 1. Hereafter cited simply as Deere Company):

> We find considerable dissatisfaction manifested on the part of manufacturers on account of the trusts and combinations which exist on perhaps a majority of the raw material which the manufacturers of this place use in making agricultural implements. While these combinations may not be the direct outgrowth of a protective tariff, it would be impossible in some cases and more difficult in others to form a combination were it not for the tariff. . . . We believe in a protective tariff on the ground that it promotes the general prosperity, but [our] fealty is sometimes sorely tried when [we] go to purchase [our] raw material and find the prices controlled by a combination much high higher than they otherwise would be in an open market.

The company continued, citing its own experience (Deere Company, pp. 1-2):

> Soft-center cast steel is the largest item of our raw material, of which we use one thousand tons per annum. The price of this steel in an open market was six and one-half cents per pound in 1880, but during that year a combination was formed by six or seven manufacturers of that particular kind of steel and the price immediately advanced to seven and three quarters cents per pound. This combination lasted until July 1884. . . . [D]uring the spring of '87 a new combination was formed by the same parties, advancing the price to nine cents per pound, which combination is still in existence.

The Deere Company went on to argue that it was ruthless price-cutting that gave rise to pools (Deere Company, pp. 2-3):

> Facilities and capital invested in nearly all lines of manufacture in this country are considerably in excess of the ordinary healthy demand, creating an over-production which naturally leads to vigorous and sometimes reckless competition resulting in prices so low as to entail a loss on the manufacturer. Some lines of manufacture find it easy to form combinations and arbitrarily advance prices by which means the losses sustained during the period of free competition are made up to such manufacturers.

According Deere, antitrust legislation would eliminate both pools and price wars (Deere Company, pp. 2-3):

> Were there stringent antitrust laws on our statute books, both state and national, defining and inflicting penalty upon persons who combine together for the purpose of limiting production and controlling prices, it would have the effect of producing a more uniform range of prices. They would never go so low nor so high as they done under conditions that have prevailed in the past.

The Deere Company's letter contains two revealing inconsistencies. The first inconsistency involves the tariff. Like many other observers during the late nineteenth century, the company argued that high tariffs fostered the development of pools and trusts. And while Deere believed that tariffs tended to promote the "general prosperity," the company's faith had been tested after its experience with the steel pool. As the letter writer phrased it, "our fealty" to the tariff was "sorely tried" when we went "to purchase our raw material" and found "prices much high higher than they otherwise would have been." Yet Deere had no problem enjoying tariff protection on its own products.[13]

The second inconsistency involves the claim that an antitrust law would prevent, in the writer's words, "vigorous and sometimes reckless competition" that "runs down prices below cost." The idea that such ruinous price competition dominated many American industries is not unique to this writer, nor is it merely a veiled attempt to justify some type of combination. There is a long and legitimate school of thought in economics which holds that under certain, fairly mundane conditions,

sustainable competitive equilibria do not exist and, in the absence of some type of collusion or combination, freely-competing firms will set price below marginal cost.[14] The most recent theoretical statement of this line of thought is Lester Telser's work on the theory of the core. Core theory predicts unsustainable, below-cost pricing (i.e., an empty core) would occur most frequently in industries with variable demand and **U**-shaped cost curves (Telser 1978 and Telser 1987). Empirical studies have identified empty-core behavior in ocean shipping during the twentieth century and in the cast-iron pipe industry during the late nineteenth century (Bittlingmayer 1993; Pirrong 1992; and Sjostrom 1989). There is also evidence that empty cores characterized a broad class of industries during the late nineteenth century, and that ruinous price competition helped fuel the rise of the trusts and other large-scale combinations.[15]

If the late-nineteenth-century steel industry truly was characterized by an empty core, as the letter writer above suggests when he claims there were frequent periods of below-cost pricing, antitrust enforcement was certainly not the solution. That only would have made matters worse. The solution suggested by the current economic literature would have been to legalize and promote some type of cartel or pool in the steel industry (Bittlingmayer 1993 and Telser 1987).

IV. Vertical Restraints and the Origins of Antitrust

Sherman introduced the antitrust bill that ultimately became the Sherman Act on December 4, 1890. A few months later, he received to two letters applauding and supporting the bill. The first letter was from the Dueber Watch-Case Company in Canton, Ohio (Sherman Letters, Dueber Watch Case Company, March 5, 1890. Hereafter cited simply as Dueber Company). The second letter was from John Barnes and Company, a leaf and tobacco dealer located in North Carolina (Sherman Letters, John Barnes and Company, Leaf and Tobacco Dealer, January 27, 1890. Hereafter cited

simply as John Barnes and Company). When placed in historical context, these letters suggest that vertical restraints were an important source of discontent among small manufacturers and distributors. The next two subsections describe the history of vertical restraints in the watch and tobacco industries. Comparisons with other industries suggest that Barnes and Dueber were not isolated examples: trusts in many industries employed vertical restraints and these restraints typically agitated retailers and small producers.

IV.a. The Dueber Watch-Case Company

During the mid-1880s, nineteen watch case companies from across the United States formed a cartel. Members of the cartel agreed to restrict output and to charge prices above a specified a floor. As a mechanism for punishing cartel members who cheated, and for punishing manufacturers who refused to join the cartel in the first place, the cartel adopted the following exclusive dealing strategy. If a firm refused to charge prices above the established floor, the members of the cartel would refuse to sell their watch cases to any distributor who purchased the wares of the price-cutting firm. Assuming distributors placed a high value on carrying a variety of manufacturers, distributors would have refused to deal with the price-cutting firm and the strategy would have punished the cheater by foreclosing scarce distribution outlets.[16]

Dueber refused to join the cartel, or he joined the cartel and defected (the historical record is not clear on this point). Whatever the case, the cartel responded to Dueber's refusal to follow its pricing rules. On November 16, 1887, the members of the cartel met in New York City and formally agreed that "they would not sell any goods manufactured by them to any person, firm, association, or corporation whatsoever who thereafter should buy or sell any goods manufactured by [Dueber]." After the cartel informed distributors throughout Canada and the United States of this arrangement,

Dueber's sales dropped sharply. When a few distributors continued to carry Dueber watch cases, the cartel made good on its threat and refused to deal with them. After this, Dueber's sales dropped even further. It was this predicament that prompted Dueber to lobby Sherman for an antitrust law.[17]

Dueber not only lobbied for antitrust, he was also among the first three or four businesses to appeal to the Sherman Antitrust Act in private litigation. Under Section 7 of the Sherman Act, an individual or business injured by an illegal restraint of trade could recover treble damages from the offending combination. Using Section 7, Dueber sued the members of the cartel for $450,000, triple the damages he claimed to have incurred as a result of the cartel's exclusive dealing arrangement with his former customers and distributors.[18] Although Dueber won a nominal victory before the New York Supreme Court, federal courts found that the cartel's exclusive dealing scheme did not violate the Sherman Act, in part because it could not be shown that the scheme affected interstate trade in any way.[19]

IV.b. John Barnes and the Tobacco Trust

Like the watch cartel, the tobacco trust employed vertical restraints in an effort to influence the behavior of distributors and wholesalers. By the early-1900s, the tobacco trust was using six types of tie-in or quantity forcing contracts. Cover contracts offered wholesalers discounts if they purchased specified products from the trust in fixed proportions. Quantity discounts were given if wholesalers purchased quantities greater than some minimum threshold. Gratis offers provided wholesalers some tobacco products "free" when wholesalers purchased enough of certain products. Straight sales with no restrictions were occasionally offered, but only for very short periods of time. Drop shipments sent tobacco products directly to retailers. These shipments were usually combined with a discount offer. Tag offers provided wholesalers with a specified number of tags for every

pound of tobacco product they purchased. The tags could later be redeemed for merchandise or cash. In addition to these tie-in and forcing contracts, the tobacco trust ran exclusive dealing arrangements on many of its products. Under the exclusive dealing contracts, wholesalers received sizeable discounts if they agreed to handle only brands produced by the trust.[20]

Rivals of the tobacco trust claimed these vertical restraints foreclosed scarce distribution outlets. As one independent manufacturer of tobacco products explained to government investigators: "the result [of these contracts] has been that the independent manufacturers market their goods through stray or occasional jobbers . . . but the general market is practically closed to them."[21] These conditions prompted independent manufactures to lobby the federal government for laws prohibiting vertical restraints and prompted a few independent firms to vertically integrate. For example, unable to find distribution outlets for its products, the Campbell Tobacco Company began selling its products through a fleet of wagons it operated. Wholesalers, especially those who specialized in carrying the tobacco products of independents, also grew dissatisfied with the tobacco trust's use of vertical restraints, in part because such restraints limited their ability to carry a wide variety of brands and products (Clay and Hamilton 1997).

Parallel developments occurred in the whiskey and sugar industries. In the case of whiskey, the whiskey trust initiated an aggressive exclusive dealing campaign during the early 1890s: the trust offered wholesalers a large rebate on alcoholic spirits if wholesalers agreed to purchase solely from trust-affiliated distilleries. Rivals complained that the program foreclosed distribution outlets and that the trust often failed to pay-out on the rebates when wholesalers tried to redeem them. Wholesalers grew so dissatisfied with the trust's rebate program that they began building their own distilleries to compete with the trust; lobbied state and federal authorities to bring antitrust suits

against the trust; and sued the trust themselves for failing to redeem their rebate vouchers. In the sugar industry, the sugar trust granted large rebates to wholesale grocers who carried only trust-produced sugar. According to Eichner (1969), the effect in sugar was the same as in whiskey and tobacco: exclusive dealing foreclosed scarce distribution outlets and helped to undermine competition. Although wholesale grocers were more sympathetic to exclusive dealing than were wholesalers in other industries, they became so concerned about the dominance of the sugar trust that they too considered building their own plants to refine sugar.[22]

Like wholesalers in the whiskey and sugar industries, John Barnes strongly opposed the competitive strategies used by the tobacco trust. In his letter to Sherman, Barnes denounced the trust and its tactics as a “monstrous organization” that “must be stopped.” Barnes, however, did not believe the measures proposed by Sherman, or his fellow Republicans, would solve the trust problem; Republican antitrust proposals were, in Barnes’ view, ineffective “panaceas.” Instead, the best way to eliminate the trusts, at least according to Barnes, was to lower tariffs, because it was tariffs, and particularly the tariff on tobacco products, that enabled the trusts to “flourish” and “crush” their smaller competitors. (Sherman Letters, John Barnes and Company.) The belief that reducing tariffs would help solve the trust problem was widely shared by nineteenth century observers and advocates of free trade. For example, between 1888 and 1890, the *New York Times* published several editorials and articles which purported to show that tariffs had promoted monopolistic trusts in the following industries: agricultural tools, iron and steel, lead, linseed oil, refined oil, refined sugar, tobacco, and tin plate.[23] During the same time period, Democrats in both the house and senate introduced bills that would have eliminated tariff protections in any industry dominated monopolistic trusts. Senator Sherman, however, continued to support high tariffs and

opposed using tariff reductions to combat the trusts.[24]

Beyond this, Sherman made no effort to outlaw the types of vertical restraints that undermined either Barnes or Dueber: Sherman's antitrust proposals did not contain a single word on the topic of vertical restraints. Sherman's actions on this front stand in sharp contrast to those of other state and federal legislators, who often expressly prohibited anticompetitive vertical restraints in their antitrust proposals. For example, of the fifteen states that passed antitrust laws between 1888 and 1891, seven (Kansas, Michigan, Missouri, Nebraska, North Carolina, North Dakota, and Texas) expressly prohibited vertical restraints, such as resale price maintenance and exclusive dealing, when such restraints had anticompetitive effects.[25]

V. Flint Glass Producers and an Antitrust Exemption for Unions

On March 25, 1890, several months after he had first introduced his original antitrust bill, Senator Sherman introduced an amendment to the bill. The amendment exempted labor unions from antitrust prosecution (Thorelli 1955: 193). A few days after Sherman introduced this amendment, James Gillinder wrote to Sherman, protesting an antitrust exemption for unions. Gillinder, President of the Associated Flint Glass Manufacturers of the United States, wrote: "I hope that if any bill against trusts or combinations is passed, that it will include all kinds of combinations, for I know of no trust that is to be compared, for evil, to the ones you propose to protect by the amendment you [Sherman] offered (Sherman Letters, President, Associated Flint Glass Manufacturers of America, April 1, 1890, p. 4. Hereafter cited as Flint Glass Producers)." Although the senate judiciary committee ultimately deleted the union-exemption from the antitrust bill, Gillinder's letter to Sherman had little to do with this. Sherman strongly opposed the judiciary committee's revision of his bill, which was later passed by the senate.[26]

Gillinder's opposition to the antitrust exemption for unions was predicated on an elaborate theory of political economy. Gillinder argued that the price of most commodities was determined by the laws of supply and demand (Flint Glass Producers, p. 1):

> In the natural order of things prices are regulated by the laws of supply and demand. When more goods are manufactured than the market will take, prices are low; when less goods are made than the market requires, prices are high. Left to itself this is the natural order of trade.

But labor was different, because unions, not the laws of supply and demand, dictated wages and working conditions (Flint Glass Producers, pp. 1-2):

> Labor being a commodity, in the natural order of things, would be influenced in the same way as other commodities. But for many years combinations have been formed in almost every trade in this country, to limit the number who should learn the trade, to limit the number of hours of labor, to limit the number of articles made, to say who should and who should not work, in fact practically controlling the business.

By insulating labor from market forces, unions reduced the incentives of workers to acquire skills and become more productive: "One of the results of this is the tendency to produce inferior workmen, as the poorest workmen in these combinations is made equal to the best, so far as compensation is concerned (Flint Glass Producers, pp. 1-2)."

Gillinder also maintained that labor combinations left producers vulnerable to the business cycle. The business cycle was driven by the inability of producers to adequately anticipate either shifts in demand or the response of their competitors to those shifts (Flint Glass Producers, pp. 1-2):

> Trade, like the tide, rises and falls. In the periods of activity the producer uses every effort in his power and strives to produce all the goods possible to meet the demand. The result in the end is generally overproduction, for all have been doing the same thing, and the competition causes him to sell his goods on very small margins, and in many instances to sell his product at a loss.

But the real problem for producers was that while labor combinations demanded higher wages when

times were good, they refused to accept lower wages when times were bad (Flint Glass Producers, pp. 1-2):

> Here comes in the law of supply and demand. Overproduction has made low prices, and the manufacturer finds himself in a dilemma. His employees have had the advantage of the brisk and active demand, but when the time of depression comes, they say, 'No. We will not share in the depressed conditions of things. We will have our full pay or we will not work; nor will we allow anybody else to work.' And the laws of the country sustain them.

In short, wages were rigid downward: "The wage question is a fixed quantity. It is not regulated by the natural laws of trade. No matter how large the supply, labor's compensation cannot be changed because unions compel laborers to work for nothing less than the rates named by the unions (Flint Glass Producers, p. 3)."

Hence, to make a profit, producers had to follow the same course as laborers and combine (Flint Glass Producers, p. 3):

> Now the manufacturer adopts the same course. He finds that, with a large proportion of the cost of his production unchangeable, and with an overproduction in the market, to make a profit he must agree with his fellow manufacturers to limit production, just as the workmen do, or else he will fail to receive anything like compensation.

If producers were denied the right to combat combinations of labor with their own combinations, they would be ruined: "The manufacturers of this country in many lines of trade are not prosperous. The combinations that are being formed are in many instances a necessity, and it either means that or stagnation and bankruptcy (Flint Glass Producers, pp. 4-5)." In light of this, fairness and equity dictated that if one form of combination be outlawed, so too should other forms (Flint Glass Producers, pp. 4-5):

> In view of these facts, I ask you, is it right to make laws that tie the hands of the manufacturer or employer, and allow the employees to form all the combinations they choose? Such a condition of things will not work. It is not fair; it is not founded on

> equity. If it is necessary to pass a bill against trusts, pass one against all combinations, whether combinations of the employer or the employed.

Gillinder buttressed this appeal to fairness with a discussion of European laws and labor movments, which he believed illustrated the wisdom of outlawing unions. Gillinder argued that trusts originated in England, where they had been created as an antidote to the formation of unions: "England is the home of the trusts. They originated there and they were forced upon her manufacturers and dealers by these very combinations that are now so strong in this country. The Trade Unions were first formed there also and I believe led to the trusts (Flint Glass Producers, pp. 3-4)." Extensive unionization implied unusually high wages, which in turn, implied unemployment and financial ruin for producers (Flint Glass Producers, p. 4):

> The rate per day to the laboring classes is much higher in England than in any other portion of Europe because the wages of English workmen are protected by trade unions. And because of high wages, Germany, Belgium, and Bohemia furnish the manufactured products at a less cost than the English manufacturer can produce them. The result is that in many branches of trade the profits to the producers are nil, and the workman walks the streets rather than meet the competition.

Continental Europe, where unions had been discouraged by the state, experienced more satisfactory results:[27]

> The governments of continental Europe do not allow their working people to combine, and as a result, while their people earn but very small wages, they are mostly employed and are able to furnish England a large proportion of goods that she exports to other parts of the world, and to furnish the United States (after paying duties) for much less in many instances than what is paid for labor alone in this country.

When one considers the history of the glass industry, it is not surprising that industry leaders like Gillinder strongly opposed an antitrust exemption for unions. In the mid-1880s, the United States Bureau of Labor studied union activity and labor strife in thirty-eight industries. In the course

of this study, investigators calculated the number of days the average firm in each industry had been closed by strikes from 1881 through 1886. Glass producers experienced more strike-induced work stoppages than producers in any other industry: the typical glass company was closed seventy-nine days because of strikes during this six-year period. Few industries could rival this dubious fate. Even in mining, the industry with the next highest rate of strike-induced shutdowns, the typical company was closed less than forty-five days because of strikes (United States 1888). Moreover, Gillinder's letter to Sherman came on the heels of a particularly long and contentious dispute between flint-glass workers and producers: on January 2, 1888, a dispute over wages and the hiring of apprentices resulted in a strike that shutdown all glass manufacturers in the United States; the shutdown ended four months later on April 30, 1888. The *New York Times* reported that "this was the longest strike ever known in glass-making circles."[28]

A more surprising dimension of Gillinder's letter is its apparent indifference to Sherman's antitrust bill, minus the amendment exempting labor unions from prosecution. Nowhere in his letter did Gillinder claim that an antitrust law *per se* was a bad idea; he only claimed that if an antitrust law was passed, it should cover all types of trusts and combinations, including unions. Along the same lines, Gillinder did not protest when Sherman first introduced the antitrust bill in December; he only protested several months later after Sherman introduced the union-exemption amendment. More generally, it seems odd that no other combination or trust wrote to Sherman protesting his introduction of antitrust legislation.

One explanation for the absence of protest is that observers considered the Sherman Act a weak and ineffective measure. There is much evidence to support this view, especially when press reactions to the Sherman Act are juxtaposed with reactions to state antitrust laws passed around the

same time. For example, in an editorial, the *Commercial and Financial Chronicle* (June 8, 1889, p. 744) expressed serious concern over state antitrust laws, using the Missouri antitrust law as a case in point. Characterizing the Missouri antitrust statute as "sweeping" and "serious," the *Chronicle* explained that it declared "combinations of all sorts, and especially the formation of trusts, to be penal offenses." Although the paper hoped the law would be held unconstitutional, it went on to recommend that businesses "keep out of reach of its provisions just as far as they can." In contrast, the pages of the *Chronicle* said nothing about the Sherman Antitrust Act, except the following terse statement:[29]

> In spite of the fact that the anti-trust bill is now awaiting the President's signature, little importance seems to be attached to it, as the dealings in Trust stocks have been unusually large this week, and prices in some cases have advanced greatly.

A formal event study corroborates these characterizations: the market value of trust stocks fell sharply with announcements regarding state antitrust regulation, while they fell only slightly, if they fell at all, in response to passage of the Sherman Act.[30]

Summary and Interpretation

Sherman was probably the leading spokesman for antitrust in the senate, and the architect for the nation's first antitrust statute. For this reason his letters can be viewed as a barometer of antitrust sentiment. Taken as a whole, the Sherman letters undermine the traditional view that consumers lobbied for, and supported, antitrust because the trusts were increasing prices. All of the letters Sherman received regarding antitrust were from small businesses, and only one of these businesses, the John Deere Company, complained about pools and combinations driving up prices. Moreover, the Deere Company's letter is not internally consistent. The company complains about a pool in steel driving up prices, and suggests antitrust as a means of remedying this. Yet the

company's description of ruinous price competition in steel suggests the industry was characterized by an empty core, in which case antitrust enforcement only would have exacerbated the problem.

Two of the small businesses writing Sherman, the Dueber Watch-Case Company and John Barnes and Company, complained that the trusts employed vertical restraints that had anticompetitive effects. While these complaints appear justified, Sherman did not take concrete steps to address the concerns of either Dueber or Barnes. He introduced no legislation outlawing the type of exclusive dealing arrangements that undermined Dueber's market position, or the types of vertical restraints that undermined John Barnes and other independent tobacco dealers. In this way, Sherman contrasts sharply with other state and federal legislators, who often included provisions relating to vertical restraints in their antitrust proposals.

Small oil companies located in Ohio had the greatest influence on Sherman. When they lobbied him to prohibit the railroads from granting rebates on oil shipped via tank cars, Sherman obliged them, despite the fact that prohibiting such rebates would have discouraged the use of tank cars and promoted higher transport costs and consumer prices. Beyond this, outlawing rebates for tank cars hurt not only Standard Oil, but also independent refiners such as the National Refining Company who used tank cars. As the National company explained in its letter to Sherman, it and other independents could not effectively compete against Standard if they were denied access to the cheapest, most efficient forms of transportation. In this way, there is a clear parallel between antitrust sentiments in meat-packing and in oil refining: in both cases, antitrust agitation had its roots in innovations in transportation (refrigerated rail cars in meat-packing, and tank cars in oil refining), that displaced small, inefficient producers who could not avail themselves of the new transportation technologies.

When Sherman's legislative actions are considered in light of his letters, and the other historical sources considered here, his actions are inconsistent with the idea that he wanted to promote competition and lower prices. If Sherman wanted to promote competition and low prices in oil, he would have opposed efforts to outlaw rebates for tank cars; instead, he actively sought to suppress tank cars. If Sherman wanted to protect the Deere company and John Barnes from monopolistic trusts, he would have acceded to their requests for reduced tariffs; instead, he advocated high tariffs and refused to support antitrust measures that would have reduced tariffs in industries controlled by monopolistic trusts. If Sherman wanted to protect Dueber and Barnes from anticompetitive vertical restraints, he would have tried to outlaw the strategies employed by the watch cartel and the tobacco trust; instead, he declined to take action against these types of vertical restraints. In short, Sherman was no friend of either consumers or small businesses who were displaced by anticompetitive vertical restraints.

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Notes

1.Further support of Libecap's argument can be found in Boudreaux et al. (1995).

2.In his doctoral dissertation, Blicksilver also makes use of these letters. Blicksilver, however, is not directly concerned with the origins of antitrust, but with historical arguments about the desirability of big business. See Blicksilver (1985: 124-26).

3.Technically, Sherman did not write the Sherman Antitrust Act. The bill that eventually became the antitrust act was introduced by Sherman, but was heavily revised by the senate judiciary committee before it passed the house and senate. See Letwin (1965: 53-70), and Thorelli (1955: 210-13).

4.For example, in the spring of 1890, Sherman delivered a speech in Toledo, OH. As reprinted in the *Toldedo Blade*, the speech was an open denunciation of the Standard Oil Company. Sherman began: "Do I exaggerate the evil we have to do deal with? I do not think so. I do not wish to single out any particular trust or combination... I will only cite a very few instances." Drawing on recent court decisions, Sherman described how Standard "crushed" its competitors and "compelled" distributors to grant rebates. The reprint of the speech can be found in Sherman's political correspondence. See Sherman Letters, editor of the *Toledo Blade*, April 4, 1890. Sherman also made several speeches before congress denouncing the trusts. See, for example, Thorelli (1955: 184).

5.For Sherman's three antitrust proposals, see Thorelli (1955: 163-77).

6.On the forces that motivated Ohio to file suit against Standard, see Bringhurst (1985: 11-14); and Flynn (1932: 300-01).

7.The originals of all of these letters are available at the Library of Congress, manuscript reading room. Several of the letters, including those from small oil refiners, the John Deere Company, and the letter from the glass association, have been microfilmed. Copies of these microfilmed letters are available from the author upon request.

8.Standard's market share fell steadily after 1900: in 1906, Standard controlled 70 percent or industry capacity; in 1911, it controlled 64 percent. Data on market share are taken from McGee (1958); Williamson and Andreano (1962); and Williamson and Daum (1959: 473).

9.Sherman Letters, Globe Oil Company, May 14, 1890; Great Western Oil Works, April 6, 1889; and Sun Oil Company, May 14, 1890.

10.The Elkins Anti-Rebate Act of 1903 prohibited railroads from granting secret rebates to shippers; it did not prohibit the railroads from granting open and publically-advertised discounts for oil shipped via tank cars rather than barrels. The Elkins Act was passed in response to the demands of the railroads who hoped the act would help them better enforce cartel agreements. See Kolko (1965: 98-102, and 117); and Thorelli (1955: 549-50).

11.United States House (1900: 670). For more details on Emery's career, see McGee (1958: 55-57); and Williamson and Daum (1959: 282, 439, 484, 518, 559, 571, 577, 586, 659, 708, and 717-18).

12.For a similar interpretation of the origins of food inspection, see High and Coppin (1988).

13.For details on tariff protection on agricultural implements, see the following issues of the *New York Times*: February 10, 1890, p. 4; September 10, 1890, p. 4; October 20, 1890, p. 2; and December 16, 1890, p. 4

14.Early economists who developed this line of argument include: Clark (1923); Ely (1920); Marshall (1920); and Viner (1952).

15.See Bittlingmayer (1982) and Lamoreaux (1985). Although Lamoreaux does not explicitly invoke the theory of the core, her emphasis on high fixed costs and intense price competition as sources merger and consolidation are consistent with the arguments of Telser.

16.See *Dueber Watch Case Manuf'g Co. v. Howard Watch & Clock Co. et al.*, 66 Fed. 637 (1895); Hovenkamp *Enterprise*, pp. 240-41; and Dueber Company.

17.See *Dueber Watch Case Manuf'g Co. v. Howard Watch & Clock Co. et al.*, 66 Fed. 637 (1895), especially p. 639; and Hovenkamp (1991: 240-41).

18.While the cartel initiated its exclusive dealing arrangement before the Sherman Act was passed in 1890, it continued the arrangement into the early 1890s. It was therefore subject, at least in theory, to prosecution under the act.

19.See *Dueber Watch Case Manuf'g Co. v. Howard Watch & Clock Co. et al.*, 55 Fed. 850 (1893); and *Dueber Watch Case Manuf'g Co. v. Howard Watch & Clock Co. et al.*, 66 Fed. 637 (1895). Dueber, it appears, was not particularly well treated by the courts. In 1895, two competitors, Royal E. Robbins and Thomas M. Avery, sued Dueber for violating their patent on watch pendants. Dueber lost this case as well. See *Robbins et al. v. Duebuer Watch Case Manuf'g Co.*, 71 Fed. 186.

20.For a more detailed description of the vertical restraints employed by the Tobacco Trust, see Clay and Hamilton (1997) and United States (1900: 19-25).

21.Quoted in Clay and Hamilton (1997: 26-7).

22.For a more complete description of the vertical restraints employed by the whiskey trust and the response these restraints provoked from wholesalers, see Troesken (1998) and the following issues of the *New York Times*: June 24, 1890, p. 9; June 25, 1890, p. 3; June 26, 1890, p.3; and July 1, 1890, p. 4. For the history of exclusive dealing in the sugar industry, see Eichner (1969: 90-98). .

23.See, for example, the following issues of the *New York Times*: August 21, 1888, p. 4; March 28, 1890, p. 1; June 23, 1890, p. 4; July 14, 1890, p. 4; August 2, 1 890, p. 4; September 16, 1890, p. 4; October 1, 1890, p. 4; December 9, 1890, p. 4; December 10, 1890, p. 4; and December 25, 1890,

p. 4. See also, DiLorenzo and High (1988).

[0]For Democratic proposals eliminating tariffs to battle the trusts, see Thorelli (1955: 173-76, 179, 187, and 204). For Sherman's support for the tariff, see *New York Times*, June 23, 1890, p. 1.

25.On the provisions of state antitrust laws, see Seager and Gulick (1929: 341-49); and Troesken (2000).

26.On Sherman's disapproval with the judiciary committee's revision, see for example, *St. Louis Globe Democrat*, April 4, 1890, p. 7. On the judiciary committee's revision of Sherman's antitrust bill, see generally Thorelli (1955: 197-200).

27.Flint Glass Producers, p. 4. Overall, Gillinder's description of labor laws and labor movements in Europe is surprisingly accurate. Before 1890, Germany and France had passed laws that were designed to discourage the formation of unions, and England had a vibrant trade union movement. However, by 1899 Germany experienced more labor disputes (10.9 disputes per 100,000 non-agricultural laborers) than did England (6.0 disputes per 100,000 laborers). See generally, Bamber and Lamsbury (1993: 173-74, and 195-96); Flora (1987: 717 and 753); and Thompson (1964).

28.See the following issues of the *New York Times*: September 7, 1887, p. 1; November 4, 1887, p. 5; and May 8, 1888, p. 1.

29.*Commercial and Financial Chronicle*, May 10, 1890, p. 653. Other papers such as the *New York Times* and the *New York Herald Tribune* reacted similarly to state antitrust regulation and passage of the Sherman Act. See Troesken (2000) for a survey of press reactions.

30.See Troesken (2000) for an event study comparing the effects of state and federal antitrust laws and regulation. Market reactions to passage of the Sherman Act contrast sharply with market reactions to actual federal antitrust enforcement during the early twentieth century. See Bittlingmayer (1993).