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Coping with Competition: Cooperation and Collusion in the US Stove Industry, c.1870–1930

This article examines the attempts of several generations of manufacturers of cooking and heating appliances to manage competition in their very unconcentrated industry. They started with overt price-fixing, which soon failed, then moved on to a variety of more effective techniques—particularly joint regulation with the aid of a strong craft union, and the adoption of uniform cost-accounting and price-setting systems. The article illuminates the numerous ways in which a trade association could make cartel-like behavior work in an industry whose structural characteristics were apparently unfavorable and also the importance of state intervention to shaping and eventually limiting this strategy.

On January 4, 1922, the US Senate directed the Federal Trade Commission (FTC) to inquire into the house furnishings industries, "particularly to ascertain the organization and inter relation [*sic*] of corporations and firms engaged therein and whether there were unfair practices or methods of competition or restraint of trade."[1] It was concerned about these manufacturers' exceptional success in driving up prices for important consumer durable goods during the war and immediate postwar years, and maintaining them through the recession of 1920–21.[2] The FTC responded to the senatorial mandate with a

[1] US Federal Trade Commission (USFTC), *Annual Report for the Fiscal Year Ended June 30, 1924* (Washington, D.C., 1924), 88. Thomas C. Blaisdell Jr., *The Federal Trade Commission: An Experiment in the Control of Business* (New York, 1932), ch. 6, situates this investigation (summarized at 166–68) among many other attempts by the Commission to combat price-gouging through targeted research and publicity; Robert F. Himmelberg, *The Origins of the National Recovery Administration: Business, Government, and the Trade Association Issue, 1921–1933* (New York, 1976), 7–9, 12, 18–20, 36, remains the best guide to the tangled evolution of antitrust policy during the Harding administration.

[2] USFTC, *Report on the House Furnishings Industries*, vol. 2: *Household Stoves, 1 Oct. 1923* (Washington, D.C., 1924), 3.

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prodigious research effort.[3] This produced three long reports. The second of them, on the cooking- and heating-stove and warm-air furnace industry, was published at the beginning of 1923. It made interesting reading.[4]

This industry should have been a textbook case of competitive capitalism. In 1921, it consisted of 395 separate establishments scattered across the country, producing solid-fuel (coal and wood), gas, and liquid-fuel cooking and heating appliances. Some companies specialized in one fuel type, and, within that, even in just one kind of equipment. Others, generally the older and larger firms, were more versatile, making a full range of stoves and furnaces. This was an industry of proprietary capitalism and stand-alone close corporations, securely rooted in mid-size cities and primarily oriented toward regional markets. The FTC's detailed examination of their ownership and management found hardly any evidence of interlocking shareholdings or directorships. Few companies had a nationwide presence or significant market power. The great merger movement at the turn of the century had scarcely touched them. Barriers to entry were low, and there were no significant returns to scale above a low threshold; indeed, the data the FTC gathered suggested that, beyond a certain point, returns might even be negative. In 1920–21, the most consistently profitable enterprises were those capitalized at between $150,000 and $400,000, rather than the lumbering giants an order of magnitude larger—i.e., efforts toward consolidation or even organic growth through reinvestment were contextually inappropriate, and proved difficult to sustain.[5]

Yet this was also an industry that had boosted its factory-gate prices about 176 percent from January 1916 until the postwar peak in 1920, against a 147 percent rise in the general price level, and succeeded in holding the line against deflationary pressures through the following slump. Despite a collapse in the industry's sales and bulging inventories, by December 1922 its prices were still about 120 percent above the prewar figure, whereas the all-commodities index had fallen to a mere 56 percent above.[6]

[3] The inquiry cost $69,000, about $4.4 million at current prices, using the nominal GDP per capita method: USFTC *Annual Reports*, 1923–1925, Administrative Division, "Detailed Statement of Costs," 1923, 23; 1924, 7; 1925, 6.

[4] Sources underpinning its 187-page report are in Records of the Federal Trade Commission, Economic Division, Economic Investigations Files 1915–1938, RG122, National Archives and Records Administration, College Park, Md. (hereafter, National Archives). Key materials, including interviews with the National Association of Stove Manufacturers' secretary and documents from his office, are in Box 2337 (hereafter, FTC Investigative File).

[5] USFTC, *Household Stoves*, 45 (industry divisions), 89 (stand-alone firms), 52–53 (scale diseconomies). According to the industry's own count, in 1922 there were about 240 solid-fuel and gas appliance makers, the constituency among which its trade associations recruited: "Lists of Stove Manufacturers" [1922], FTC Investigative File, National Archives.

[6] USFTC, *Household Stoves*, 1 (price levels), 53, 74–76 (sales and inventories).

Almost as impressive was the way in which repeated advances and modest reductions in prices had been effected: as organized, synchronized movements initiated by manufacturers themselves, rather than as inchoate responses to market signals. It might be expected that individualistic and presumably competitive manufacturers would have behaved differently from one another as a result of their size, efficiency, profitability, market location, or other particular distinctions. The evidence the FTC gathered, however, was that in fact they all did much the same thing at much the same time, and maintained a common, stable, and high price level.[7]

There were significant differences in the effect of this policy on companies' bottom lines. In 1920, when the industry's overall rate of return on investment was 15.6 percent, the results for the seventy-eight manufacturers (representing about 60 percent of the industry's output, i.e., generally the larger firms) from whom FTC investigators could secure usable data ranged from 3.5 to 50 percent. The following year, after a 40 percent decrease in sales, rates of return ranged from −34 to +37 percent, average 1.1 percent. In both years, firms' results were evenly distributed between the extremes, with little clustering. A logical inference is that the more efficient firms preferred, in good times and bad, to achieve extraordinarily high rates of profit rather than to chase market share, and that their less efficient brethren also held to the common price level rather than taking the destructive and demoralizing course common among less disciplined industries—buying volume and illusory cash-flow at the expense of already inadequate margins.[8]

How could the FTC resolve this apparent paradox—on the one hand, an ideally competitive industrial structure; on the other, compelling *prima facie* evidence of pervasive and successful anticompetitive behavior? The task was not difficult. Adequately funded, armed with the state's authority, and receiving the industry's reluctant cooperation, FTC investigators gathered interviews and documentation and explained how the trick was managed. Superimposed on the industry's structure of seemingly autonomous firms was a network of organizations—regional manufacturers' associations for each of the main production and marketing districts (New England, New York State, the other Mid-Atlantic states, the Midwest, the Upper South, and the Mississippi Valley), and national associations for manufacturers of particular products (e.g., gas ranges, furnaces). Membership and, crucially, professional leadership overlapped. Just six men directed the eleven organizations studied by the FTC; one ran five, another two. Above them, and serving as another

[7] Ibid., 10–16.
[8] Ibid., 47, 49–53.

means for experience-sharing and policy coordination, was the National Association of Stove Manufacturers (NASM), founded in 1872—one of the United States' oldest trade associations, which many of the local members also joined, and whose annual conventions in New York City provided an opportunity for the local secretaries to meet and align sectional with national priorities. No membership list for the NASM survives from the early 1920s, but if we apply a weak test for active participation (i.e., attending at least one annual convention, 1920–24), we can estimate that it included at least half of the industry and most major firms. The local and sectoral associations increased NASM's reach even further.[9]

The FTC, of two minds about the benefits of cooperation among businessmen, concluded that "These associations perform various useful and lawful services, but some of their activities are evidently in restraint of trade." It did not merely produce a report. In subsequent years, the Commission continued to pursue individual stove manufacturers, investigating and achieving voluntary compliance or cease-and-desist orders to prohibit specific anticompetitive practices on which they had also relied for market control. But two significant political changes that came to fruition in 1925—the US Supreme Court's softening of the hard line it had taken since 1921 against price-controlling trade associations; and the establishment of a conservative majority on the FTC itself, resulting among other things in abandonment of the kind of wide-ranging inquiry to which the stove industry had been subjected—probably helped save the stove associations from a general prosecution.[10]

The remainder of this article will explain where this remarkably effective system of market regulation came from; how it evolved; and why generations of stove manufacturers dedicated themselves to perfecting it. There was nothing exceptional about stove makers' ambivalent

[9] "Lists of Stove Manufacturers" [1922], FTC Investigative File, National Archives; attendance at conventions in NASM *Proceedings* 49–53 (1920–24). The printed *Proceedings*—near-verbatim stenographic transcripts of biannual or, after 1890, annual meetings, a c.10,000-page treasure trove of information—are the key sources for the rest of this article.

[10] USFTC, *Household Stoves*, 82–83 [quote]; USFTC, *Annual Reports*, 1924, 89; 1925, 236–37; 1926, 20, 104, 119; M. Browning Carrott, "The Supreme Court and American Trade Associations, 1921–1925," *Business History Review* 44 (1970): 320–38; G. Cullom Davis, "The Transformation of the Federal Trade Commission, 1914–1929," *Mississippi Valley Historical Review* 49 (1962): 437–55 at 448–50. Gerald Berk, *Louis D. Brandeis and the Making of Regulated Competition, 1900–1932* (Cambridge, 2009), esp. ch. 8, is less persuasive about the evolution and impact of the FTC than Himmelberg, *Origins of the NRA*, chs. 1–4; Morton Keller, "The Pluralist State: American Economic Regulation in Comparative Perspective, 1900–1930," in *Regulation in Perspective: Historical Essays*, ed. Thomas K. McCraw (Cambridge, Mass., 1981), 56–94, at 77–81; or McCraw's own *Prophets of Regulation: Charles Francis Adams, Louis D. Brandeis, James M. Landis, Alfred E. Kahn* (Cambridge, Mass., 1984), ch. 4, esp. 146–52.

attitude toward the virtues of competition, or the methods they adopted to mitigate the rigors of the market. When they embarked on their attempts at price-fixing toward the end of the post–Civil War boom, many other industrial communities of proprietary capitalists were doing much the same.[11] What was more unusual about the stove trade was that it persisted with these attempts for decades, and that it left an extensive record of its thinking and behavior. It continued to rely on voluntary coordination among autonomous firms while many other industries were treading the road that led, via formal pools, trusts, and holding companies, toward the consolidated, oligopolistic corporate structures that came to predominate in many sectors of manufacturing by the end of the century. Stove makers' experiments in market regulation never enjoyed any formal status: they were always beyond what the law, common or statute, state or federal, would support, though the degree of practical toleration that it offered varied over time. And yet, with nothing stronger than a commonly perceived self-interest to rely on, these experiments continued for decades, becoming increasingly sophisticated until they reached peak effectiveness just in time for the FTC to investigate and compromise them.

Forging an Association

In 1871, Giles Franklin Filley owned and ran America's largest stove maker, the Excelsior Stove Works of St. Louis, which he had founded in 1849. Excelsior made the country's leading cook stove, the Charter Oak, a device that Filley had steadily improved since its invention in the early 1850s and built into a valuable brand. In the years after the Civil War, however, he was a worried man, burdened by enormous debts (over a million dollars, or about $200 million in 2011 terms) resulting from having backed the unsuccessful speculations of a fellow member of St. Louis's Yankee Republican business and political elite. Ten years' strenuous effort was enough to repay his creditors. It turned Filley, always a hard-driving businessman, into an even tougher competitor. He became more committed than ever to maintaining control of his own factory by keeping the Iron Molders' Union (IMU) outside of it, and strenuously defended his most valuable asset, the Charter Oak trademark, against infringement.[12]

[11] William H. Becker, "American Wholesale Hardware Trade Associations, 1870–1900," *Business History Review* 45 (1971): 179–200, at 182–85, for manufacturers' behavior in other metal-products industries.

[12] "Obituary: Giles F. Filley," *NASM Proceedings* 29 (May 1900), 191–92; Jeffrey S. Adler, *Yankee Merchants and the Making of the Urban West: The Rise and Fall of Antebellum St. Louis* (New York, 1991), 67–69; Lawrence O. Christensen et al., eds., *Dictionary of Missouri*

His personal difficulties made Filley acutely aware of the problems of overcapacity, ruthless competition, and poor profitability that began to afflict the US stove business at this time. The industry was reaching the end of a boom. According to a contemporary estimate, output doubled from 1 to just over 2 million units per year between 1860 and 1870. As production capacity grew in response to profit opportunities during Reconstruction, price and nonprice competition between firms increased, and rates of return declined. By the early 1870s, the mature industry had tapped the country's last new markets, those of the post-Emancipation South, and reached the "stagnation" phase of its product cycle.[13]

How were manufacturers to cope with the resulting deterioration in business conditions? Filley understood that his firm's salvation depended on the health of the industry as a whole—though Excelsior was a relative giant (five or six times larger than the average stove maker, producing about 50,000 stoves a year, and employing about 350 men), its market share was no more than about 2.5 percent. He therefore decided to do what he could to improve matters for the *entire* industry. But there was no national organization for him to work through. One had been formed at a convention in Albany, New York, in 1866 to battle the IMU, whose strength had grown in line with the industry's wartime prosperity, but it had been torn apart by the strikes and lockouts that followed.[14]

So Filley had to undertake the work himself. In November 1871, he wrote "to the principal Stove Makers of the Country for the purpose of getting an expression of opinion as to the propriety of making an advance in prices for the coming year." His aim was to gain their cooperation in battling the growing problem of poor profitability. He argued

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Biography (Columbia, Mo., 1999), 296–98; and Donald G. Southerton, *The Filleys: 350 Years of American Entrepreneurial Spirit* (Lincoln, Neb., 2005), esp. 63, 69–70, 72, 83–86, 97–101, 121, 133. Filley and labor: Andrew Gyory, *Closing the Gate: Race, Politics, and the Chinese Exclusion Act* (Chapel Hill, 1998), 20–21; Charter Oak trademark: "Supreme Court of Missouri. Giles F. Filley, Respondent v. A. D. Fassett et al., Appellants [Filley v. Fassett]," *American Law Register* 17, no. 7 (July 1869): 402–11.

[13] Jeremiah Dwyer, "Stoves and Heating Apparatus," in *100 Years of American Commerce*, ed. Chauncey Depew (New York, 1895), vol. 2: 357–63 at 361, citing John S. Perry's report to the first meeting of the NASM; Howell J. Harris, "Inventing the US Stove Industry, c.1815–1875: Making and Selling the First Universal Consumer Durable," *Business History Review* 82 (2008): 701–33, esp. 731–33, and "'The Stove Trade Needs Change Continually': Designing the First Mass-Market Consumer Durable, ca. 1810–1930," *Winterthur Portfolio* 43 (2009): 365–406, esp. 392–400, on this phase of the industry's history.

[14] Market share calculated from Thomas Dunlap, comp. & ed., *Wiley's American Iron Trade: Manual of the Leading Iron Industries of the United States* (New York, 1874), 333–50; "Notes from the Newspapers," in *Collections on the History of Albany*, ed. Joel Munsell (Albany, 1871), vol. 3: 298–300, for the 1866 convention.

that consumers could be made to accept an imposed price increase, and that there would be no negative effect on aggregate demand. This surprising belief reflected the industry's general understanding of its own economics. Stove makers thought that the demand for stoves was price-inelastic, at least in the short term. The purpose of competition within the trade, ideally involving everything *other than* price, was therefore to share out a relatively fixed market among competitors, none of whom enjoyed significant cost or productivity advantages over their peers, and who could thus afford to adopt a common policy. Filley's aim was not absolute price uniformity, impossible to achieve given the number and diversity of producers and products, but rather that all should move up together, at the same time, and by the same amount, and also that they should stop discounting from their published lists, to prevent buyers playing one off against another. Collaborating competitors would retain most of their autonomy and flexibility, but only exercise them within agreed limits.[15]

Filley struck a responsive chord, particularly with his "moral economy" argument for a fair profit—"as Stoves are amongst the most important articles that enter into household use, there is no reason why this business should not pay a reasonable profit to the Manufacturer." About a tenth of the industry's members, representing about a fifth of production capacity (i.e., generally the larger firms), responded, almost all of them supportive of a concerted advance, but also favoring the *institutionalization* of cooperation. "Most of the smaller houses think a convention should be called, and a definit [*sic*] price fixed, by which all should be governed. The older and larger houses seem to doubt whether any arrangement that might be adopted in convention would be a long time adhered to, but were willing to try any plan that was likely to insure [*sic*] a reasonable advance."[16]

On that basis, the National Association of Stove Manufacturers was called into being. In January 1872, informal local meetings discussed the planned price increase; in February, convention invitations were sent out; and in March, at Delmonico's restaurant in New York, the Association was founded, with about a third of the industry's member firms represented.[17] Two-thirds of the participants were from New York and Pennsylvania, half of whose manufacturers attended, but there were enough from other sections (a third of the Upper South's, a

[15] Giles Filley to Marcus Filley (his older brother, a stove maker in Troy, New York) and others, 18 Dec. 1871, Box 1, "Targets" folder, Filley Papers, New York State Library, Albany, NY (hereafter, NYSL).

[16] Ibid.

[17] Albert Lyman (New York) to Marcus Filley, 30 Jan. 1872, Box 15, Folder A, Filley Papers, NYSL.

quarter of New England's, a fifth of the Midwest's) that it could claim to speak, and hope to act, for the industry nationwide.[18]

Finding Its Feet: The National Association's Early Years

Giles Filley ruled himself out as the Association's president, then and later, because the pressures of trading out of insolvency denied him the time, and also because he and other activists agreed that the industry had to be led from what was still its major production center, and the Association's main recruiting-ground, the New York Capital District. So the role was accepted by his close collaborator John Strong Perry, senior partner in the second-largest stove company in the nation, Albany's Oriental and American Stove Works. Perry was the same age as Filley (56), from the same Yankee background, and had pursued a similar career in the stove business since the 1840s, having his own brush with bankruptcy in the early 1860s and overcoming it by the same sort of aggressive business practices.[19]

As his subsequent conduct would reveal, Perry's commitment to collective action rather than competitive individualism was pragmatic, provisional, and selective, but he nevertheless made a compelling case for its advantages:

> The absence of frequent and friendly intercourse has engendered suspicions and jealousies, and these . . . have produced, as a natural result, a most unhealthy competition, threatening the very life of the trade; for, while the prices of our goods have been brought down lower and lower, until some of them have reached a point far below the cost of production, that cost has yearly increased so that between the two, we have been cut as with a two-edged sword. You will thus see, gentlemen, that the time has come for concerted action, for the ruin that has already overtaken some will be but the precurser [*sic*] for wider disaster, unless some energetic means are taken to prevent it. I believe these means are to be found in union, and that . . . in union is our only safety. To reach this result . . . we should form an organization . . . through which there will be an opportunity for adjusting differences, for correcting mistakes, for comparing experiences, and for establishing principles of action.[20]

[18] John S. Perry, "The National Association of Stove Manufacturers: Its History and Usefulness, and the Processes for Maintaining Its Profitable Perpetuity," NASM *Proceedings* 15 (June 1886): 23.

[19] *Perry & Co. Stove Works, Albany, NY* (1872), broadside, NYSL; William L. Stone, "Stoves and Heating Apparatus: Perry & Co., Albany, N.Y.," in *Industrial America; or, Manufacturers and Inventions of the United States* (New York, 1876), 450–56; George H. Hazelton, "Reminiscences of Seventeen Years Residence in Michigan, 1836–1853," *Michigan Historical Collections* 21 (1894): 370–417, at 385–86.

[20] Quoted in Stanhope Boal, "President's Report," *NASM Proceedings* 29 (May 1900): 19.

Perry and the other leaders intended to build an inclusive organization based on active membership participation. They solicited "the suggestions and aid of every man present, and we want every member of the craft to join us. We cannot see too much of each other, or be too intimately acquainted. Friendship is far better than enmity and must produce better results." The core of this "friendship" was, of course, *interest*. Everything discussed at the founding convention concerned different aspects of the mitigation of competition, which would remain the Association's chief preoccupation for the next six decades.[21]

Perry was "systematic and methodical in all things," and a firm believer in the value of *information*—ideally, quantitative data—as a guide to action and for clinching an argument. What distinguished the NASM from earlier, local, and less formal attempts at price-fixing was that he couched his case for an increase in a detailed cost analysis that sought to prove that any price below 6 cents per pound for the cheapest grade of stoves, rather than the prices below 5 cents then being realized, would be unprofitable. His argument was considered by a representative group of prominent manufacturers from the industry's major centers, who recommended it to the meeting. The members "adopted [it] with enthusiasm." They hoped that the agreed advance—to a minimum of 7.5 cents a pound for basic goods, which would deliver a healthy profit margin—would possess greater legitimacy, both with manufacturers and customers, than if it had been based on nothing more than a sense of what the market could be made to bear.[22]

To make their agreement stick, the convention was followed with a recruiting drive that raised membership to 157 firms, at least three-quarters of the industry's members and more than four-fifths of production capacity, within the year. With such solidarity behind it, the price policy was "so honestly carried into practice by nearly the whole trade that [1872 and 1873] were among the most profitable we ever experienced." To help win support, Perry also "scattered" his "printed sheets . . . all over the land," trying hard to persuade the entire industry to analyze and understand its business using his accounting methods, so that if all agreed not to sell below cost plus a decent markup, there should be no risk of a return to a downward spiral of profitless competition.[23]

[21] Quoted in James A. Lansing, "President's Address," and Percival W. Elliott, "Secretary's Report," *NASM Proceedings* 43 (May 1914): 14, 26.

[22] "John S. Perry," *Stoves & Hardware* 9, no. 5 (16 Aug. 1886): 3; John S. Perry, "President's Address," *NASM Proceedings* 2 (Feb. 1873): 9.

[23] Perry, "The NASM: Its History and Usefulness," 24; Uriah Hill Jr., *NASM Proceedings* 3 (Feb. 1874): 46–47. Perry's cost estimates were reproduced as 155–66 of the *Proceedings*, in response to demand.

Perry and others attributed the industry's restored profitability to their price-fixing and educational efforts, but these could only work, and then only up to a point, because demand was temporarily strong. This is what permitted manufacturers to raise the price of common stoves by about 30 percent (less for higher-quality goods). They believed that they had escaped or disciplined the market, but Perry was overconfident when he proclaimed that "We have this whole matter in our own hands. The great volume of the business is done by less than one hundred firms, and, as they have no foreign competition, the way is clear for them to demand a fair return for what they give." He believed that as customers had nowhere else to go, they must accept manufacturers' prices—"All that is required is to let buyers understand that there is a bottom to the market, and that they have found it—they are then just as well satisfied to pay 8 cents as 7."[24] But things were not so simple.

First, for all of its efforts and early promise, the NASM could never achieve a high enough level of organization, either in terms of membership density or of collective discipline, in order to fix prices securely. It could not control its own members and prevent them underselling one another, and as for the nonmembers, when demand slackened after 1873 Perry was forced to acknowledge that "Even the smallest of them . . . is able to materially affect our prices."[25]

Second, to the extent that the NASM's price-fixing succeeded, at least in the short term, what it also did was to increase the incentive for free-riding or lower-cost firms to add capacity and steal market share by underbidding, thereby adding to overproduction in the run-up to the mid-1870s depression, and perhaps even making the latter worse for the trade. All of this reminded stove makers that the laws of supply and demand were not so easily cheated within a competitive business culture.

So far, so familiar. The NASM's early experience was entirely in line with the conventional wisdom about similar attempts by other US industries, then and later, to rig their markets. The basic problem with "Gentlemen's Agreements"—which is all that price-fixing and other competition-mitigating rules could amount to, without legal enforcement —is that members were not gentlemen when they met one another as competitors, whatever they promised and however well they got on during NASM conventions. The incentives to cheat were too powerful, and sanctions for noncompliance either weak or nonexistent.[26] The

[24] Perry, "President's Address," (1873): 7.

[25] John S. Perry, "President's Address," reported in *The Metal Worker* 3, no. 8 (20 Feb. 1875): 1.

[26] The classic statement of this argument is George Stigler, "A Theory of Oligopoly," *Journal of Political Economy* 72 (1964): 44–61, critiqued in Margaret C. Levenstein and Valerie Y. Suslow, "What Determines Cartel Success?" *Journal of Economic Literature* 44 (2006): 43–95.

comparison between the American and the much smaller Canadian stove makers' association was instructive: the latter evolved into a genuine cartel, its members bound to one another by contracts which fixed prices, quotas, and trade terms that the law respected, and they were disciplined by enforceable fines if they transgressed. In the United States, even before the Sherman Act, no such formal system seemed possible.[27]

Stove makers, like other competition-plagued proprietary manufacturers, were caught in a double-bind. Their industry's key structural features (low barriers to entry, small minimum efficient scale, weak returns to scale, and ease of growing output quickly without needing much extra capital) produced the tendencies toward overcapacity and profitless competition of which they complained and to which they responded. But these same characteristics also meant that companies were too evenly matched against one another for any to be able to assume a dominant-firm role and stiffen the market. Detailed figures compiled in 1874 with Perry's assistance showed that the industry's 128 smaller firms, producing up to 1,000 tons a year, its seventy medium-sized firms, producing 1,000 to 2,500 tons, and the fourteen larger firms, making between 2,500 and 6,000 tons, each controlled about a third of a very unconcentrated market.[28] In the absence of legally sanctioned cartelization, the natural tendency of NASM members and nonmembers alike was therefore to carry on much as before—relying on nonprice competition and holding to agreed prices if possible, but always ready to revert to direct price competition if market pressures or opportunities were too compelling.

Perry's unwillingness to subordinate his own firm's interests to what he claimed to be the industry's collective interests was instructive, and corrosive of his authority. He seems to have thought that he could have it both ways: at the same time as lecturing about the virtues of solidarity, he carried on in the old competitive style. He quietly bought up the controlling patents in the anti-clinker grate (a real breakthrough, making it much easier to maintain a continuous fire) and then attempted a hold-up on his own members, from whom he exacted a stiff royalty

[27] Mr. Copp, "Canadian Stove Industry," *NASM Proceedings* 3 (Feb. 1874): 24; Edward W. Bowditch, "The Canadian Iron Founders' Association," *NASM Proceedings* 17 (Feb. 1888): 248–54. Martin J. Sklar, *The Corporate Reconstruction of American Capitalism, 1890–1916: The Market, the Law, and Politics* (Cambridge, 1988), 95–98 esp., disputes this conclusion about state and federal law on cartels and cartel-like behavior before the Sherman Act, but Tony Freyer, *Regulating Big Business: Antitrust in Great Britain and America, 1880–1990* (Cambridge, 1992), esp. 3–4, 77–80, 85, is more persuasive; see Robert F. Himmelberg's discussion of both arguments, "Does Antitrust Matter? A Comparative History of Antitrust Policy and the Evolving Corporation in Britain and the United States," *Reviews in American History* 21 (1993): 273–78.

[28] Dunlap, ed., *Wiley's American Iron Trade*, 333–50.

charge if they wished to take advantage of a new technology that consumers demanded without risking costly litigation. They fought back, pooling resources to mount a legal defense and break his patents. In revenge, and to prevent the Anti-Clinker Association's leader (one of Perry's Albany neighbors) attending the 1875 convention, Perry had him served with legal papers keeping him tied up at home. The result was a furious public row, the end of Perry's presidency, and the commencement of an enormous and costly lawsuit embroiling much of the industry for the next several years.

Perry followed this move with another attempted coup, using his political connections to secure a monopoly over the cheap labor of the inmates of Sing Sing prison (in Ossining, New York), where he built a huge foundry for the production of low-cost stoves. Perry's excuse was that he wanted to undercut the IMU, not to underbid his own members:

> [H]e did not go to State prison out of spite towards other manufacturers [laughter] but went there to make money. . . . [H]e proposes to get all he can for his goods. . . . [H]e does not intend to slaughter prices; . . . he intends to sell them at the best prices he can, but sell them he must.

When that maneuver eventually failed too, partly because stove manufacturers joined forces with their trade-union enemies in lobbying the state legislature to restrict prison labor, Perry relocated production to the low-wage, nonunion South instead, and even experimented with using "colored" labor in what had until then been a lily-white industry. Perry's tactical flexibility clearly indicated that his own firm's profitability was always his main objective: he displayed the stove manufacturer's normal competitive instinct, albeit in an extreme form.[29]

In the standard narrative of loose, voluntary combinations among manufacturers, what normally happened after the disappointment of initial attempts at market manipulation was collapse and disintegration.[30] However, the NASM was not destroyed by its inability to live up to its original promise, nor even by Perry's repeated treachery. Members understood the strategic problems that they faced and engaged in

[29] *NASM Proceedings* 4 (Feb. 1875), reported in *The Metal Worker* 3, no. 8 (20 Feb. 1875): 2–3; "Fashions Even in Stoves," *The Sun* [New York] 27 July 1884, 6, for the anti-clinker suit; *NASM Proceedings* 7 (Jan. 1878): 39–41, 46–51 [quotation at 49], 53–55; and 8 (Jan. 1879): 73–89; and John S. Perry, *Prison Labor*; *Showing the Proportion of Convict to Citizen Labor in the Prisons of the State of New York, and of the United States* (Albany, 1885) for the prison labor issue; "From Albany to Chattanooga," *Atlanta Constitution*, 8 Dec. 1886, 4, "The New South: Transfer of the Albany Stove Works to Tennessee," *Atlanta Constitution*, 22 Dec. 1886, 4, and William D. Kelley, *The Old South and the New* (New York, 1888), 9, 78–81.

[30] Alfred D. Chandler Jr., *The Visible Hand: The Managerial Revolution in American Business* (Cambridge, Mass., 1977), esp. 141–48 (railroad cartels), 316–18 (industrial cartels).

open debate to find answers they could live with. They even rebuilt relations with Perry, who returned to active membership in 1879 and was reappointed to the Board of Managers in 1880. They still valued his advice on cost accounting or labor relations, even while fighting him in the courts and the state legislature. After their unsuccessful experiment under his leadership, they knew that they could not create an effective price-fixing combination, given the constraints of the law, and most of them concluded that they did not even want to. They believed in freedom of action—it was, after all, *their freedom* that was at stake—and even in competition, up to a point. They were comfortable with a situation where the most that the NASM could produce were nonbinding recommendations that had, at best, some moral force. They knew that they could not discipline one another, let alone the growing number of nonmembers, so most of them were content to lower their sights and aim for something more achievable, but still worthwhile.

First, the NASM continued with a watered-down form of indicative price-setting, which was useful for steadying members' behavior as the market slumped, together with the exchange of information about anticipated production and price policies. Members' business decisions came to be based on better intelligence, something they valued.

Second, the NASM provided members with a useful, indeed the only available, forum for discussion, experience-sharing, and occasionally action in areas of common interest, notably lobbying Congress about federal policies affecting their industry. For example, when stove makers, with their nationwide distribution networks, became plagued by fraudulent retailers taking advantage of the federal bankruptcy law of 1867 during the depression of the 1870s, they played a leading role in the campaign leading to its repeal in 1878.

Third, it provided them with some of the less tangible benefits of fellowship. What seems to have kept the NASM afloat through the depression of the 1870s was that the core of active members found that they enjoyed one another's company. The burdens of membership were small—no hired staff, no regular dues (just occasional whip-rounds at conventions), and no rules. Instead, there was the opportunity to get to know one's competitors better and have a good time together. Conventions were occasions for memorable drinking bouts, jaunts, and lavish dinners. Good fellowship was initially spoken of by the NASM's leaders instrumentally—it would help the Association function better. But it seems to have become almost an object in itself.[31]

[31] William H. Tefft, *NASM Proceedings* 8 (Jan. 1879): 52. The NASM fits comfortably into the class of organizations, common at the time, that Louis Galambos called "dinner-club associations" in *Competition and Cooperation: The Emergence of a National Trade Association* (Baltimore, 1966), ch. 2, esp. 21, 25, 33–36: low dues, no office, no staff, and entirely dependent on membership participation.

The Association held two annual meetings until 1891, one in winter primarily for business (to discuss prices and production in advance of the making and selling season), the other in summer mostly for jollity, and when they cut back to a single convention, it was the winter gathering that they dropped. Conventions attracted between fifty and seventy members through the late 1870s. The value of sociability was quickly appreciated. As Sherman Jewett of Buffalo, Perry's successor as president, put it,

> without it we should soon tumble to pieces; but as I believe that we shall be an association for many years, . . . we should combine our meetings with pleasure, and give our wives and daughters the privilege of going with us once a year to . . . a watering-place . . . [I]t will go a great way toward keeping up the interest.

NASM get-togethers, even the most frivolous, also afforded stove manufacturers an opportunity for developing trust among competitors, creating or strengthening bonds of loyalty, and laying foundations on which the building of the organization could proceed. As John Rathbone of Albany, Jewett's successor, argued,

> When this Association was commenced, there was no class of manufacturers in the United States, I am sure, in which there was so little kind feeling and so little harmony. But what has been the result? . . . [W]e have come in contact with each other, learned to know each other, come to reflect a little and *love* one another.[32]

The Association Habit Grows

Love alone might not have kept the Association together, but fortunately there was always a sufficient admixture of interest too. Perry's repeated efforts through the late 1870s and early 1880s to corner the market in the foundation patents for market-leading base-burner stoves and anti-clinker grates led to the formalization of what started out as just a defensive gathering of men on the receiving end of his lawsuits, and turned into a permanent body, the Equity Protective Association. It functioned by combining manufacturers' resources against any attempt by one of their peers to exploit his intellectual property rights too flagrantly: joint legal defense hugely increased the cost and risk in enforcing a patent claim, and raised the incentive for manufacturers to issue licenses on reasonable terms instead, or even accept piracy as a fact of

[32] Jewett, *NASM Proceedings* 3 (Feb. 1874): 56; Rathbone, *NASM Proceedings* 7 (Jan. 1878): 28. Cindy S. Aron, *Working at Play: A History of Vacations in the United States* (New York, 1999), 66, for this new sort of "convention-vacation."

life. The industry's patent wars were not ended, but they were calmed down (with the perhaps paradoxical effect of reducing the incentive to innovate, by diminishing realizable gains; this at least was the complaint of one of NASM's leaders).[33] This organization operated on the NASM's margins—it could not be an Association activity, because it set members at one another's throats, companies regularly swapping the roles of defendant and litigant in patent battles—but the conventions provided a convenient occasion for its meetings.

Early in the next decade, the revival of the IMU had a similar effect in reminding stove makers of the benefits of collective action, and the usefulness of the NASM as a forum within or alongside of which they could organize for it. The NASM had an unwritten rule prohibiting the consideration of labor questions, partly a memory of the way the strikes and lockouts of 1866–67 had torn its predecessor apart. It was also sensitive to the facts that its members were differently situated, with some of them running union shops and others closed to union members, and that they had different appetites for conflict. Several prominent stove makers were even honorary trade union members themselves, reflecting their artisan background and active role in setting up the IMU. Three of the NASM's founding member firms were actually producers' cooperatives, relics of skilled molders' many attempts to escape from the wage system during the Reconstruction period. Those that did not quickly fail eventually devolved into ordinary joint-stock companies, but they provided another means whereby labor activists were recruited into the ranks of proprietors and managers, alongside the normal processes of small-scale entrepreneurship.[34]

When necessity demanded, however, the unwritten rule did not prevent the NASM from having extensive discussions about the problem of how best to confront the IMU's (and Knights of Labor's) growing strength. The contest with labor in the early 1880s helped increase the NASM's membership, and stimulated their involvement: 160 men, the largest number ever, attended the 1886 summer meeting where preparations for the coming battle were discussed. A new organization was erected alongside the NASM, with an overlapping membership and a single purpose: the Stove Founders' National Defense Association (SFNDA). Its first president was Henry Cribben, a Chicago stove maker whose background was very different from that of the older generation of Yankee merchants-turned-manufacturers who had founded the NASM and led it ever since. Cribben, born in 1834 on the Isle of Man,

[33] Lazard Kahn, *NASM Proceedings* 34 (May 1905): 164–68, 174.

[34] Jonathan Grossman, "Co-Operative Foundries," *New York History* 24 (1943): 196–210, at 206, and *William Sylvis: Pioneer of American Labor* (New York, 1945), ch. 9.

and brought to the United States as a young orphan, had been a stove molder since 1850, a charter member of the IMU in 1858, and remained a dedicated labor activist and politician until he reached middle age. But his experience running a successful producers' cooperative in Rochester, New York, helped persuade him to become an entrepreneur in his own right. Cribben's firm joined the NASM in 1873, and he played an active part within it until the end of his business career more than thirty years later.[35]

Cribben's views on labor relations were complex. Though he was critical of the Molders' leaders and many of their members, he remained open-minded about how to handle them. He endorsed "arbitration" (negotiation) as the best way to settle "the price of labor" rather than sharing his colleagues' preference for leaving it to the market. During the depression of the early 1880s he regretted "very much that we are compelled to reduce the wages of the laboring classes" on the progressive grounds that it resulted in cutting "the purchasing power of our patrons." He was also appalled at the cost and violence of strikes, and wanted to avoid them if possible. But he shared his fellow employers' attachment to "the control and management of our own business," and was certain that employers collectively could create "a citadel of strength" that the unions would hesitate before attacking, and then fail to overcome. After they had been defeated, and a truce had been enforced, the time would come to deal with the underlying causes of conflict.[36]

Cribben's role was to mobilize his fellow employers, give them confidence, and devise and execute their new strategy. He described his talents with undue modesty: "I am not a talker, talking is not my forte," though in fact he was highly articulate and persuasive; he saw himself instead as an organizer. "That is the business I was raised in. I can run a 'strike' on either this side or that, and I can do it successfully. I have tried it, and I know."[37]

His members soon knew it, too. Though only about half of the NASM membership, or about a quarter of the industry's firms, joined the SFNDA, that was enough. With their support, he masterminded a

[35] J. Clayton Youker, ed., *The Military Memoirs of Captain Henry Cribben of the 140th New York Volunteers* (Chicago, 1911), iii; "Henry Cribben," *NASM Proceedings* 40 (May 1911): 284–86 [obituary]. Cribben gave an account of his early working life in "Labor Organization," *NASM Proceedings* 21 (May 1892): 67–69; and 23 (May 1894): 154–61.

[36] *NASM Proceedings* 12 (Feb. 1883): 56; 14 (24 June 1885): 49–50; 15 (2 June 1886): 74; "Address by the President of the Stove Founders' National Defense Association at the First Semi-Annual Meeting, Held at New York, Feb. 1, 1887," in Stove Founders' National Defense Association (SFNDA), *Addresses by the President and Others* (Chicago, 1887), 3–16, quotation 16.

[37] *NASM Proceedings* 17 (Feb. 1888): 68–69—Cribben's report after the great Bridge & Beach strike.

confrontation with the IMU that spread from plant to plant, eastward and northward from St. Louis through the early spring of 1887, imposing huge costs on the union and its members and eventually forcing them to concede. The employers were prepared, and had chosen the time and the occasion: as Cribben boasted when his own Chicago plant was closed down, he “had a stock which would last six months, and . . . the trouble came at the best possible time for most of the stove makers,” because it even helped them to empty their overflowing warehouses and maintain prices in a downturn. The employers’ solidarity with one another forced their men to walk out, turning what was in fact a reversal of the union’s boycott tactics into a public relations coup: “This throws all the odium upon the men.” Outside observers did not understand that what was happening was a well-planned, rolling lockout, though Cribben was not reluctant to tell them: “[It] is simply following the example laid down by the labor unions in numberless instances, and it has proved . . . remarkably successful.”

> This strike is the first of its kind in the history of the world. Two organizations, both formed for the same purpose—protection—are engaged in a fight for supremacy. The stove manufacturers are accused of putting up a job; of trying to raise the price of stoves; of forcing the men to strike, and various other things. Of course we are doing these things. That is what we are organized for, and I have no hesitation in saying so.[38]

The most interesting thing about the SFNDA is what it did after achieving victory. Cribben’s advice to his members was to try to create something more stable than an armed truce:

> Would it not be far better for each to treat the other with respect and come as intelligent beings and reason together; and if the business will warrant it and the men in our employ feel they are entitled to an advance grant it, or if the trade will not warrant it, convince them of the fact and let them recede from their demands like honest men and be satisfied. . . . I feel assured if such an arrangement can be consummated, peace, harmony and prosperity in the future is assured to both parties.[39]

It took another three years of occasional conflict, through a period of economic recovery, before the IMU’s members could be persuaded to

[38] “Big Strikes on Hand: The Illinois Iron Molders Demand More Wages,” *New York Times*, 10 Apr. 1887, 10; “The Molders’ Strike: Indications that the Manufacturers Will Win,” *New York Times*, 30 Apr. 1887, 1.

[39] Cribben, “Address by the President of the Stove Founders’ National Defense Association at the First Annual Meeting, Detroit, June 21, 1887,” in SFNDA, *Addresses by the President and Others*, 17–45 at 45.

accept the employers' invitation to talk, but there then began one of the earliest and most durable national collective bargaining relationships in US history, the Chicago Agreement. This relationship was one of the few aspects of the contents of this article that attracted much public interest (from the National Civic Federation, US Industrial Commission, and US Commission on Industrial Relations) or scholarly attention.[40] Its importance here is its effect on stove founders' growing attachment to collective problem-solving, rather than on labor relations *per se*. The SFNDA gave them another object lesson in the value of associational activity to set alongside the Equity Protective Association, and a much more tangible one than the NASM itself had offered in its first fifteen years. But members understood that, without the NASM, they could not easily have built or sustained either working organization. The SFNDA also accustomed them to paying higher dues in return for service, and provided them with something the NASM, as a pure membership organization, had always lacked: a permanent, professional secretary dedicated to association work. The two overlapping organizations shared the cost, and both gained administrative capacity thereby.[41]

The SFNDA also made the NASM's own work of managing the market much easier. The effect of its negotiations with the IMU and other unions through the 1890s and 1900s was to standardize district and national wage rates, taking the largest element in manufacturers' costs (after raw materials) out of competition altogether. Regular nationwide wage movements also provided both a rationale for price increases, and cost pressure on manufacturers to comply.

Enforcement of price-fixing agreements had always been impossible for the NASM, given its voluntary character and incomplete coverage of the industry, and a legal environment that was unhelpful even before it became hostile, with the passage of the Sherman Act and subsequent Supreme Court rulings. The IMU labored under no such limitations, and increasingly took the responsibility for compelling stove foundries outside of the SFNDA to implement agreed wage rates and working rules. It was able to do this because its strong relationship with

[40] See esp. John P. Frey and John R. Commons, "Conciliation in the Stove Industry," *Bulletin of the Bureau of Labor* 12, no. 62 (Jan. 1906): 124–96; George E. Barnett, "Report on the Agreement Between the Molders' International Union and the Stove Founders National Defense Association" (21 Dec. 1914) in *Research Collections in Labor Studies: The Wilson Administration and American Workers: The US Commission on Industrial Relations, 1912–1915, Unpublished Records*, ed. Melvyn Dubofsky (Frederick, Md., 1985), Reel 9; Clarence E. Bonnett, *Employers' Associations in the United States: A Study of Typical Associations* (New York, 1922), ch. 2; and Russell S. Bauder, "National Collective Bargaining in the Foundry Industry," *American Economic Review* 24 (1934): 462–76.

[41] In Galambos's terms, the NASM began to evolve into a service association; *Competition and Cooperation*, ch. 3.

SFNDA provided it with a secure membership and financial base, facilitating its recruitment of more than 90 percent of the skilled molding workforce within the industry as a whole by the early 1900s. The SFNDA also refused to take into membership firms whose competitive practices disturbed the market, thus depriving them of strike insurance and increasing their level of risk, and inducing them to comply with NASM norms.

Of course, stove manufacturers paid a price for this joint regulatory system: they lost their (in any case, limited) ability to escape dependence on skilled labor and traditional working practices, and to cut their labor costs, at a time of substantial mechanization and productivity growth in the rest of the foundry sector. Some resented their loss of control of the workplace, and of opportunities for increasingly necessary modernization. The SFNDA's officers, however, were determined to ignore or overrule their dissident minority, so great was their investment in the "live and let live" strategy that brought them peace, modest prosperity, and stability, as their industry stagnated.[42]

Organization Building and a Missed Opportunity, c.1885–1905

As stove makers were developing the industry's joint regulatory system, they were also exploring and progressing along alternative tracks. From the 1880s through the 1900s, the NASM pursued two different approaches to market regulation, as well as, from the early 1890s, supporting the SFNDA's Chicago Agreement, which turned out to be so productive and to complement the Association's own work. One option was to build on its own earlier experiments in collective self-regulation; another, which did not seem so different at the time, was to try a new and promising tack: consolidation.

Consolidation was on the stove industry's agenda as early as 1877, when one member suggested that "we might do as the tube-pipe men

[42] Margaret L. Stecker, "The Founders, the Molders, and the Molding Machine," *Quarterly Journal of Economics* 32 (1918): 278–308; SFNDA, *Report of Committee on Machinery* (25 Sept. 1908); National Founders' Association, *Stove Founders Pray for Relief* (Detroit, 1909); and "Stove Founders Again Succumb," *The [Open Shop] Review* 6, no. 2 (Feb. 1909): 7–12. Howell J. Harris, "The Rocky Road to Mass Production: Change and Continuity in the US Foundry Industry, 1890–1940," *Enterprise & Society* 1 (June 2000): 391–437, esp. 413, and "'The Stove Trade Needs Change Continually,'" explain why the stove trade was in any case resistant to mechanization. Open shop sentiment among stove founders also led to the *cause célèbre* of *Buck's Stove and Range Co. v. Samuel Gompers et al.*, 1907–14, brought by Buck's chief executive James W. Van Cleave, NASM vice president and president of the anti-labor National Association of Manufacturers. This went all the way to the US Supreme Court twice. See Daniel R. Ernst, *Lawyers Against Labor: From Individual Rights to Corporate Liberalism* (Urbana, 1995), esp. 126–32.

have done—consolidate all the foundries in one concern, and have them run under one management and divide up the profits," as the way to escape excessive competition. Another agreed that the answer to the root problem, overcapacity, was obvious: pooling and quota-setting, "each manufacturer to state how many stoves he makes of a particular class, and then ascertain the amount manufactured in the United States, and then allot to each foundry how many stoves to make, and confine the founders to making no more than that." But the next word in the transcript is revealing: "Laughter." At the time, the proposition seemed absurd. Yet from 1887 onward it kept coming back. There was an increasing number of successful precedents in other industries, and as Jacob Smyser, the then-president, put it, "There is no reason upon earth why the stove business should not be 'pooled.'" Influential colleagues were more doubtful. Henry Cribben asked, "Did it ever occur to you that . . . Congress might pass a law to prevent that?" Smyser was not prepared to be put off: "We won't anticipate that trouble. We'll wait until we get there."[43] They never did.

Smyser's idea of combination was designed to deal with what he and many others agreed to be the industry's fundamental problem: excessive, unprofitable production, which destroyed any possibility of effective market discipline. The answer was to consolidate and "*limit production*. This done, the balance takes care of itself." Nothing else would serve:

> [C]oncoct schemes, inaugurate compacts, establish arrangements with forfeitures, and you have at last but temporarily stayed the current of competition which seemingly, poisoned by rest soon breaks forth anew with venomous fury. The mind tires in vain search for relief outside of absolute "consolidation." Competition can only be limited by concentrating the management! You can only limit the management by massing your interests.[44]

Smyser's argument was that the elimination of overcapacity and also the "modern follies" of excessive nonprice competition in design and marketing would result in great cost savings. His notion of consolidation was not particularly revolutionary. It was principally designed to deal with the problem of imposing collective discipline on hundreds of independent proprietary firms, but envisaged leaving most of their operations unchanged. "Each member would continue to conduct his manufacture and sale as heretofore, subject to the direction of the mother head as to terms and prices. No leading stove would lose its

[43] J. O. Merriam, *NASM Proceedings* 6 (Jan. 1877): 63; James Spear, *NASM Proceedings* 6 (June 1877): 40; discussion, *NASM Proceedings* 16 (Feb. 1887): 128.

[44] Smyser, presidential address, *NASM Proceedings* 17 (Feb. 1888), 39, 41.

identity or the former owner his position *if he merited it*" (emphasis added). Proprietors would simply turn into shareholders, free as largely autonomous plant managers to carry on with most forms of nonprice competition against their partners in the combine.[45]

Smyser's scheme was half-baked. He saw the possibility of making economies by, for example, collective purchasing, but otherwise his vision of the industry's future after consolidation was remarkably similar to its present state, only less competitive and more profitable—"the greatest success, with the minimum of discomfort and risk." His was a classic vision of a rent-seeking horizontal combination—"it is the cure for our evils. It is the short cut." John Perry, one of his supporters, generated a set of optimistic forecasts to justify the strategy: consolidation would produce gains for all of the industry's stakeholders, including a 10 percent reduction in stove prices, a 20–30 percent increase in wages and salaries, and a steady 20 percent return on capital. But, perhaps surprisingly, Smyser could not deliver his members' backing.[46]

Part of the problem was his undiplomatic openness about one necessary step toward balancing capacity and demand, and eliminating overproduction: closing down the weaker firms among the consolidators. "Will that not exterminate some of them?" a perceptive member asked. "I would do it after properly compensating them! You can manufacture all the stoves needed by two-thirds of the stove manufacturers in the country to-day. Think of the money you could save by doing that." The less profitable and efficient firms should simply be "obliterate[d]." Their owners would be compensated with stock; if they were not competent managers, who could find a place in the new organization, they could do something else, "go and hoe corn or dig potatoes" or perhaps "go and clerk for some fellow."[47]

This was not an attractive option for proprietors completely identified with their own enterprises, especially because the future value of their stock would depend on the managerial competence and trustworthiness of those of their former competitors left running the show, and on the doubtful ability of a consolidated business to deliver on Smyser's and Perry's golden promises. As even the most persistent and sophisticated advocate of consolidation, Lazard Kahn of the Estate Stove Co., Hamilton, Ohio, put it, "if I had to face two contingencies, the one being that of conducting the stove business in a rotten concern and the other in digging potatoes, I would stick to the rotten concern." Where business was a way of life, the vision of a future as a redundant

[45] Ibid., 39, 44.
[46] Ibid., 38; *NASM Proceedings* 20 (7 May 1891): 118, 124.
[47] Discussion on consolidation, *NASM Proceedings* 20 (7 May 1891): 123–24, 125.

rentier, declared surplus to requirements by one's peers, was unattractive. Advocates of combination could have sweetened the pill if they had been able or willing to offer cash, at proprietors' inflated valuations, rather than stock, but this would have increased the cost of the merger and sabotaged the prospects of the new business, which were in any case not as glowing as Perry imagined.[48]

For there was another obstacle that defeated Smyser's initiative. Having decided to start the process in the industry's Midwestern section, which had emerged as its new center with the rapid decline of Albany and Troy in the late 1880s, Smyser interested English capitalists in financing and organizing region-wide consolidation. Forty-two firms sent men to meet the representatives of these potential investors in Cincinnati, bringing seven years' financial reports and subjecting themselves to a searching "due diligence" scrutiny. The outcome was unexpected: the firms were ready to join a consolidation, on the right terms and at what they considered a fair price, but the financiers were appalled at the poor profitability their audit process uncovered.

> They were just simply bewildered . . . "Of all the businesses that we have examined . . ., the stove business is in worse condition than any . . . I advise you people to do something." I said: "My friend, that is just what we are after." (Laughter.) They were disgusted and went away.

They could not afford to be interested in an industry that, even after consolidation, would not meet their target rate of return and justify the investment required. Ironically, the industry's "rotten" state—the problem from which Smyser and others sought deliverance—made it an unpalatable target for a buyout. Evidently the outsiders did not have as much confidence as some stove makers did in the profit-generating magic of a horizontal merger without any fundamental reorganization.[49]

None of the subsequent attempts, launched by the industry's own members rather than relying on outside finance and expertise, did much better, resulting in nothing apart from a couple of small mergers. Each of these brought a handful of firms together into loose local or regional holding companies, miniature versions of what Smyser had envisaged, that left former owners as managers of their old establishments, producing their old model lines, even preserving their old trademarks,

[48] Kahn in ibid., 132–33. Kahn published his views as a widely circulated pamphlet, *The Stove Industry and the Ethics of Consolidation* (Lancaster, Penn., 1893).

[49] Smyser's and Henry Cribben's accounts of this meeting are in *NASM Proceedings* 20 (May 1891): 121–22, 129–32, and *NASM Proceedings* 32 (May 1903): 47–48, reviewing a dozen years' repeatedly unsuccessful consolidation attempts.

and consequently not transforming the industry's structures and strategies in any fundamental respects. [50]

So the NASM's leaders pursued a parallel track from the dawn of the Trust Era right through the Great Merger Wave and into the New Era of the 1920s, initially as a holding operation while they waited for consolidation to happen, but eventually in its own right; some even concluded that its relative success was what finally killed the demand for consolidation within the industry itself, rather than the frustration of repeated failure. This was the system of coordination of independent firms through a network of overlapping associations, which the FTC's investigators uncovered at the peak of its effectiveness.

The movement for organizational deepening of the NASM began in 1883, alongside the parallel discussions leading to the formation of the SFNDA. It built on the memory of transitory and informal local bodies for price-fixing and union-busting that had existed for decades before the national organization came on the scene, but most of which faded away when the NASM occupied the field. In the industry's largest centers, however, they survived: the New York Capital District, and Philadelphia and its hinterland. By the early 1880s, the Albany and Troy founders—the activist core of the NASM—were using their local organization to get business done between semi-annual meetings, notably lining up support across the Midwest in order to get a price rise agreed in convention to stick in everyday competitive practice, thereby netting members an estimated $200,000 in additional revenue at negligible expense. The Pennsylvania group, although well-organized locally, felt the lack of regular interaction with a national coordinating body to assist them, notably with timely reports on the state of the market to provide the context within which they could decide price and production policies. "With the present situation we rely wholly upon the annual or semi-annual meetings of the National Association for our information. . . . [Between conventions] we were at sea, not having any statistics or information to govern our action."[51]

In due course, the NASM responded to this evidence of how a branch organization could make national policy more effective, and also of demand from a well-established local group for the services that only a national body could provide, by appointing influential members in all major stove-manufacturing centers tasked with reviving or creating

[50] These produced the Pittsburg Stove & Range Co. and the American Stove Co., a combination of Chicago and St. Louis firms and the most likely original for the fictional Consolidated Stove & Range Co. of North America, the evil protagonist in the only novel about the stove industry, Robert Updegraff's *Captains in Conflict: The Story of the Struggle of a Business Generation* (Chicago, 1927).

[51] *NASM Proceedings* 12 (Feb. 1883): 46–49, quotation 48.

local associations. Their purposes were to be trade-practice regulation and price-fixing, with the NASM playing a coordinating role.[52]

In 1887, the NASM took a further step, building on the experience of the SFNDA's successful coordination of the local implementation of its national strategy. The SFNDA was organized into districts (mirroring the structure of its adversary, the IMU), and had a well-paid, full-time professional secretary shared 50:50 with the NASM and dedicated to making both Associations more effective. Now, the NASM divided itself into districts, too, and encouraged each to appoint a full-time secretary of its own, to serve and mobilize his members and coordinate policy with the national secretary and executive.[53]

This turned out to be a step too far, because it implied a greater readiness on the part of ordinary members to pay dues and accept collective discipline than was in fact the case, so the leadership made another realistic retreat and laid their emphasis on cheaper, less formal local structures instead. As Smyser argued, "They are the sheet anchor of the business, these Local Associations. We announce principles here, but the effective work has got to be done in our own districts, among competitors at home—getting our inspiration from this body, and going back to our homes, and there getting in our effective work."[54]

The next element in the NASM's alternative-track strategy was also one of Smyser's enthusiasms, and represented a logical development of the work with which Giles Filley and John Perry had inaugurated the Association: encouraging the development of a common understanding of costs, a uniform procedure for determining them, and an ethic or policy that chasing volume at the expense of margin was destructive of the individual and collective interest in achieving a fair rate of return. Local associations could complement the national organization's work of smoothing the asperities of competition by developing relationships of trust and even friendship among business rivals; they could also reach smaller firms, or those otherwise not inclined to join the National's work. And they could serve as the transmission-belt for a shared cost-consciousness from the NASM's activists to the industry as a whole. If consolidation, as a route to the imposition of discipline on the industry, was not an immediate option, then the combination of a professional central secretariat with increasingly active local associations focusing on the implementation of agreed cost-accounting standards and methods would serve as an acceptable interim substitute. It would

[52] *NASM Proceedings* 15 (Feb. 1886): 49–50, 93–94.
[53] *NASM Proceedings* 16 (Feb. 1887): 113–29, "Central Bureau" plan at 130–31.
[54] *NASM Proceedings* 18 (Feb. 1889): 197–98.

improve levels of self-discipline among autonomous firms and channel their competitive energies into more acceptable nonprice rivalry.[55]

Discussions about how to calculate costs preoccupied stove manufacturers from the Association's outset, but their somewhat amateur efforts to reach agreement about principles and methods led to no consensus, and therefore no basis for common action. So in 1886 they turned to an outside expert, Captain Henry Metcalfe, pioneer of systematic management, in charge of the Watervliet Arsenal, which was conveniently just across the Hudson from Troy, who provided them with a sophisticated criticism of methods then employed by the industry. Metcalfe's direct influence is hard to assess—the NASM's new secretary was himself an expert accountant—but the Association was soon publishing the first of a series of increasingly detailed guides to the organization of cost accounts, the principles on which they should be based, and how to use them.[56]

If all firms paid much the same for basic raw materials; if they were constrained, by the IMU and the Chicago Agreement, to use the same labor-intensive manufacturing techniques, and to pay the same rates of wages; if they calculated their costs in the same way; and if they could be persuaded, by the social pressure and educational influence of local associations, not to sell below cost—then, without obvious collusion, their prices would settle within a tolerably narrow range. As William Pfahler, Philadelphia-based advocate of more effective collective organization (consolidation if possible, cooperation if not), put it in 1891, "the question of Cost Accounts is one which is so intimately connected with the question of co-operation that it is impossible to separate them."[57]

The final ingredients in the work of the evolving NASM developed through the 1890s on the strong foundations of common action in labor relations and cost-accountancy. Under the rule of the Chicago Agreement, all stove founders had to negotiate piece prices with union committees in the same way, and increase those prices by a uniform percentage if the annual national conference so determined. In fact, however, some of them were paying a lot more (or less) for a similar job than their nearby competitors, because they had started out with

[55] This increasingly common strategy's rationale is explained well by John R. Bowman, "The Politics of the Market: Economic Competition and the Organization of Capitalists," *Political Power and Social Theory* 5 (1985): 35–88, at 51.

[56] Metcalfe, *NASM Proceedings* 15 (Feb. 1886): 98–118; he had just published *The Cost of Manufactures and the Administration of Workshops, Public and Private* (New York, 1885), and went on to use the stove industry data supplied to him, probably by Perry, in his celebrated American Society of Mechanical Engineers address "The Shop Order System of Accounts," reprinted as 333–43 of the 3rd (1894) edition.

[57] *NASM Proceedings* 20 (May 1891): 108–13, quotation 109.

different costs, and the IMU was determined to equalize molding prices (upwards) within competitive local market areas, to satisfy its members and realize the Agreement's full potential. Stove founders did not welcome this pressure, but its effect was to put them even more nearly on the same footing with regard to labor costs.[58]

Second, even as increasing numbers of stove founders (NASM members and nonmembers alike) began to compute their costs using the Association's regularly revised, extended, and improved "Cost Book" and "Formula," and assisted by its peripatetic "Cost Expert," it became clear that an accounting system that was suitable for determining a firm's overall rate of profit on broad categories of goods was not capable of producing definitive answers to the question of how much any particular stove should cost. This left a great deal of room for competitors to disturb orderly markets by offering particular models at low prices, thereby reintroducing price competition by the back door. In the late 1890s local associations began to apply themselves to eliminating this evil too, not by formula but by the detailed comparison of one stove against another, with the aim of reaching a near-utopian situation where all stoves of the same size, quality, weight, basic design, added features, etc., from any manufacturer within a local market area, should be offered to the consumer at exactly the same price.

Achieving this objective, even imperfectly, was difficult and time-consuming, but it paid off in the further reduction of the scope for price competition among manufacturers. It was, as Lewis Moore of the Joliet Stove Co. explained, "the stepping-stone to the prosperity of the stove maker." But for local associations to be able to deliver equalization, than which there was "nothing that has ever been done in the stove business that makes profit so easy to get," they had to bite the bullet and accept that a full-time, paid secretary was essential: "No man not giving his entire time to this work could possibly attempt to practically equalize prices," asserted Franklin Sheppard, head of one of the oldest firms in Philadelphia, the best-organized district. Local associations got the message, so that in the early 1900s the industry finally adopted the structure of complementary national and local bodies, with overlapping membership and a cadre of paid officials linking them all together, that the FTC would find in perfect working order two decades later.[59]

[58] *NASM Proceedings* 24 (May 1895): 73–77.

[59] W. J. Myers, "Equalization of Prices: Cannot a Uniform Rule Be Established That Will Be Fair and Equitable?" *NASM Proceedings* 29 (May 1900): 117–23 and discussion, 123–43; Moore, "Equalization—What is the Fairest Method for Determining the Relative Value of Different Goods? Is it Advantageous and Beneficial to the Stove Manufacturers?" *NASM Proceedings* 32 (May 1903): 95–97, quotation 95 and in discussion of "Equalization of Prices," *NASM Proceedings* 34 (May 1905): 157; Sheppard in same discussion, 156.

Success and Vulnerability: The NASM in the Progressive Era

Surveying the results of a generation of organization-building in 1905, George Mitchell of the Pittston Stove Co. had every reason to sound satisfied: "it is in the ranks of the associations you will find the real money makers. . . . [T]he best insurance policy we hold is our membership in our local association." Freed from the pressure to compete on price, manufacturers could follow the more agreeable and industry-traditional course of nonprice competition, and—a new emphasis in the Age of Efficiency—pursue profit, not just in the market for their goods, but by "better methods and results" in the administration of their enterprises, where the NASM helped them too, acting as an experience-sharing forum.[60]

Thanks to national coordination, they were also protected against the risk that, however disciplined stove manufacturers within a local association might have become about not competing with one another on price or terms of doing business, their efforts might be undermined by companies from another district, with different prices and rules, invading their profitable home turf and underselling them. Proprietors were persuaded to respect prevailing prices, discounts, and other terms of trade when, as happened decreasingly often, they chased nonlocal markets rather than sticking to their more profitable home patch. The competitive national market dating from the 1840s, with firms exploiting cheap, efficient transport networks to sell their goods continent-wide, devolved into a patchwork of regional markets by the 1900s. Under the shelter of their regulatory umbrella, stove makers were enabled to protect themselves against excessive price declines during recessions, coordinate price movements on the upswing, and to achieve a modicum of stability and profitability within their mature industry as they transferred capital and capacity from their traditional product lines into new and more promising areas (e.g., steel ranges, central heating boilers, gas appliances), or even out of the industry altogether and into new ventures (e.g., in Detroit, automobiles and parts).[61]

Contemporaries recognized the effectiveness of the NASM's work. When David Kinley of the University of Illinois surveyed a wide range

[60] Mitchell, "The Value of Local Associations," *NASM Proceedings* 34 (May 1905): 181–86, quotations 182, 186.

[61] Mitchell, "How to Bring about Co-operation between Local Associations Where Their Members Sell Goods Outside the Territory of Their Own Local Association," *NASM Proceedings* 35 (May 1906): 159–63. Changes in share of industry output from NASM Secretaries' Reports in *Proceedings* 1896–1914; movement of capital, Donald F. Davis, *Conspicuous Production: Automobiles and Elites in Detroit, 1899–1939* (Philadelphia, 1988), 46, 49–50, 67–68.

of businessmen and others on behalf of the Chicago Conference on Trusts in 1899, his informants included stoves among goods that "cannot be bought outside of trusts," despite the fact that the industry's ownership and management structures had scarcely been affected by two decades of consolidation talk and one of apparently fruitless action.[62] From the perspective of Kinley's sources, including jobbers and retail merchants, the stove industry's alternative track had reached a significant destination: without overt national price-fixing, the Association had managed to do a good enough job of organizing nationwide price movements, local price-fixing, and promoting an ethos of "fair competition" among its members, that buyers could no longer play one supplier off against another.

"Fair competition" was the kind of competition that delivered a "fair" rate of return. As NASM president William J. Myers of Peekskill's Union Stove Works put it in 1910,

> In ascending the ladder of competition it is unfair to wear spiked shoes and try to lacerate the hands of the man just below us, and it is unfair to use force to pull the man above us off the ladder altogether. It is apt finally to cause us all to wear spiked shoes, and all to use force with the result that down will come competitors, ladder and all.[63]

But to outsiders, "fair competition" looked suspiciously like collusion and conspiracy against the public, particularly the consumer, interest. That same year, the NASM and its Midwestern branch lost their entire Missouri membership, who resigned in a hurry and *en masse*, and the Association had to decline an invitation to hold the annual convention in St. Louis. This was because the state's antitrust law was so draconian that "we have been advised if we held meetings to discuss trade matters that we would be violating the laws . . . and the punishment for doing so is very severe, as it provides for confiscating property and imprisonment." The entire Western Stove Association had to abandon efforts at equalizing selling prices, because of advice that state and federal antitrust law prohibited it.[64]

The NASM believed that antitrust laws should not apply to it because it was not a monopoly, did not even "attempt to regulate prices, or do anything that controls trade conditions"; or so, rather inconsistently, it claimed, in published proceedings where much of the business

[62] Civic Federation of Chicago, *Chicago Conference on Trusts: Speeches, Debates, Resolutions, List of the Delegates, Committees, Etc. Held September 13th, 14th, 15th, 16th, 18th, 1899* (Chicago, 1900), 530.

[63] Myers, presidential address, *NASM Proceedings* 39 (May 1910): 22–23.

[64] Stanhope Boal, *NASM Proceedings* 39 (May 1910): 246–27.

was and always had been devoted to these very topics. It was, as Myers put it, part of "our great industrial fabric" on which "our advanced position in the industrial world" depended, and which antitrust policy must not sacrifice.[65]

But by the middle of the Progressive Era it was in fact clear that the NASM stood on shaky legal ground, despite the assurances of 1915's president, James A. Lansing of the Scranton Stove Works, that:

> We meet together for the purpose of elevating the standard and improving the conditions of our business, with no control whatever over the regulation of prices or other matters except as we as honorable gentlemen consider these things in the interest of the craft as a whole. [Applause.] No charge has been made, no charge can be justly made that this Association has in any way ever restricted trade or controlled prices to any extent whatever. Every member is a free citizen to exercise his own judgement and except as we meet together for the good of the craft in a general way we are simply a body of friendly manufacturers.[66]

There was some hope that they might find friends in high places. The Association's honored guest that year, Wilson's Secretary of Commerce William C. Redfield, was Albany born and bred, the son of a NASM member and a former commercial traveler himself. But there was also a kind of fatalism. As Lazard Kahn, still advocating consolidation, put it, "the statesmen who decreed that American industrial war between those engaged in the same business is a patriotic duty and a source of profit" were among the industry's continuing problems, and uncertainty about the practical meaning of the Sherman and Clayton Acts meant that the way ahead was unclear.[67]

By the beginning of the First World War, the stove industry was in obvious decline, and disappearing from public view. The dedicated trade press that had covered it since the 1870s had closed down in the 1900s, or refocused on central heating in order to survive. The mainstream press, which had, for example, provided detailed coverage of the Great Lockout of 1887, was no longer interested, except in bankruptcies and the occasional obituary. But solid-fuel stoves remained a household necessity for rural Americans and for urban dwellers who lived beyond the reach of manufactured and natural gas networks, or were locked by their relative poverty into dependence on the simplest heating and cooking technologies. Wartime and immediate postwar conditions—a

[65] N. H. Burt, "Systematic Ascertainment of Stove Values vs. Haphazard Comparisons," *NASM Proceedings* 39 (May 1910): 123–29 at 125; Myers, presidential address, 18.

[66] Lansing, "President's Address," *NASM Proceedings* 44 (May 1915): 78.

[67] *NASM Proceedings* 44 (May 1915): 111.

50 percent reduction in raw material supplies, its consequences managed through the NASM as the industry's liaison with the War Industries Board; a savage capacity cut, accompanied by drastic simplification of the industry's costly, proliferating product lines (an economizing and modernizing measure that the NASM had only been able to advocate, not implement, in normal times); masses of pent-up demand, and the ability to ratchet up prices—these brought one last surge of artificial prosperity, which the NASM's associational network enabled its members to enjoy to the full. In the process, they generated the political heat that focused Congress's—and consequently the FTC's—attention on them.

The effect of the FTC's investigation is difficult to ascertain. It was just one element in the uncertain regulatory environment that troubled US business in the early 1920s. But by the time that public policy had moved in the direction of toleration and even encouragement of associational activities, short of overt price-fixing, largely as a result of well-organized business lobbying and the sympathetic intervention of Secretary of Commerce Herbert Hoover, the NASM was already a shadow of its former self. It had stopped compiling statistics of output and prices, cut back on its cost-accounting services, and "clarified" its purposes to spell out that they did "not contemplate any price control or any control of normal healthy competition, and adjustments would not be secretly accomplished."[68]

What was left was an organization that did less for its members and accordingly attracted less support. Membership collapsed, and convention attendance declined to levels not seen since the depression of the 1890s, before falling back even further to those of the late 1870s. But how much of this was because the NASM's strategic retreat to stave off a threatened regulatory assault that never came to fruition destroyed its own *raison d'être*, and how much because the industry itself was in terminal decline, its urban markets hollowed out by the rapid advance of electrification and oil-fired central heating, is impossible to determine. The latter was certainly the principal reason for the industry's decade-long crisis, but the Association's loss of effectiveness meant that it was no longer able to ease its members' burden of adjustment, as it had managed before the war. By 1929, the Association's last recorded meeting, the representative of one of its oldest members, Bridge & Beach of St. Louis—the first stove maker west of the Mississippi in the 1840s, the center of the Great Lockout in 1887—lamented that "if ever the industry needed it, this is the time." Competition had "reached the 'cut throat'

[68] Secretary's report on trade association activities, *NASM Proceedings* 51 (May 1922): 22–24; on statistics, *NASM Proceedings* 53 (May 1924): 39, and costs, 41; Report of the Executive Committee on constitutional revision, *NASM Proceedings* 54 (May 1925): 77.

stage—terms, there are none, and it is a race, each one for himself, and devil take the hindmost." Almost sixty years after the Association had been established, conditions in the industry were back to square one, and the "fair competition" that had been built by decades of effort, and thrived until the state's intervention in 1922–23, was no more than a fond memory.[69]

Conclusion

Why should readers be interested in a small organization whose peak membership scarcely exceeded 150 firms, in an early maturing and increasingly peripheral industry directly employing no more than 15,000 to 20,000 people, which rarely came to public notice even when it was thriving, and that quietly expired more than eighty years ago? Because its story casts light on some of the larger concerns of scholars of US business, notably the nature and purposes of the trade associations that proliferated in the United States in the late nineteenth and early twentieth centuries; why some cartels fail and die quickly, whereas others succeed and survive; the role of joint regulation in helping some competitive industries to organize their own affairs; the modalities of the turn-of-the-century consolidation movement; and the influence of the state in shaping business strategies and structures.

There is little recent scholarship on the family of organizations of which the NASM was a founding and, until the early 1920s, quite successful member, and some of what there is, is not very useful. Political scientists Gerald Berk and Mark Schneiberg classify it as having been in the 1920s a relatively advanced "developmental association," which they define as "collaborative learning systems, which used deliberation, cost accounting, and benchmarking to shift competition from volume and cutthroat pricing to innovation and improvement." But as we have seen, by this time it was in fact falling apart, once its price-fixing role had been compromised. Their analysis is far too rosy-hued, and accepts the arguments of salesmen of New Era associationalism at their own misleading valuation. In the NASM's case, price-fixing was clearly its central purpose, methods improvement never more than a distant second, and innovation nowhere to be seen. It is thus more accurate and helpful to think of the NASM as a cartel, despite its leaders' repeated but implausible denials that it was any such thing.[70]

[69] *Proceedings of the National Association of Manufacturers of Heating and Cooking Apparatus* 58 (May 1929): 10.

[70] Berk and Schneiberg, "Varieties in Capitalism, Varieties of Association: Collaborative Learning in American Industry, 1900 to 1925," *Politics & Society* 33 (2005): 46–87 at 47; also in Berk, *Brandeis*, ch. 6.

According to Margaret C. Levenstein and Valerie Y. Suslow, the most thorough analysts of the reasons for success and failure in cartels, there are few unambiguous explanations for their effectiveness and duration, or the reverse. They emphasize the difficulty of coming up with definite conclusions, and that "as seems so often to be the case in studying cartels," particular explanations "are bad for cartel stability—unless they aren't." But it seems clear that most of the stove manufacturing industry's key characteristics (notably the large number of firms, limited market concentration, highly heterogeneous nature of products, and low barriers to entry) were indeed not normally correlated with the formation of effective, durable cartels. Any successful cartel has to overcome a common core of challenges—"coordinating the behavior of all cartel participants on mutually consistent, collusive strategies"; monitoring that behavior "to detect and deter defections"; and "preventing entry (or expansion) by noncartel firms." All of these tasks become more difficult in an industry like the NASM's. However, Levenstein and Suslow provide a helpful explanation for why this rule, too, has its exceptions: "successful cartels have operated in a wide variety of industries by developing organizations that can overcome these challenges," particularly trade associations.[71]

The structural characteristics of the stove-making industry did indeed present leaders and members with enduring obstacles to effective collective action. One of the key tasks of any cartel—controlling entry or expansion by nonmember firms—they never even attempted, and the others only ever gained indirect and approximate solutions. But the industry's structural characteristics also generated the persistent hunger for the mitigation of competition that was the NASM's key organizational resource, and motivated leaders and members to stick together and build their Association through decades of experimentation. The Association itself then turned into the key explanation for why good-enough price fixing and other anticompetitive practices could be developed without a formal cartel, and in an environment where, even without hostile state intervention, one would in any case have been likely to fail. The prior existence and deliberate cultivation of a culture of nonprice competition; the building of trust among leaders, members, and (some) nonmembers; the management of expectations about what the organization could and could not achieve; and the ability to learn from

[71] Levenstein and Suslow, "What Determines Cartel Success?" University of Michigan Working Paper 02-001 (21 Jan. 2002), 16 [http://www.umass.edu/economics/publications/econ2002_01.pdf], and "What Determines Cartel Success?" *Journal of Economic Literature* 44 (2006): 43–95, esp. 44, 67–69, 73–74, 86. Bowman, "The Politics of the Market," further explains how trade associations can make cartel-like behavior possible in settings not otherwise favorable to cartel functioning and survival.

experience—all of these appear to have been crucial to the NASM's survival and growing success, just as much as they were to some of the other cartels in Levenstein and Suslow's study where an effective trade association seems to have provided both the glue and the lubricant in a community of competitors. In a somewhat circular fashion, then, the NASM's organizational biography and its adaptive character were key explanations for its success, and that success explained both its own persistence and, perhaps, the ability of a large number of otherwise marginal firms to survive in a stagnant and unconcentrated industry well into the twentieth century. This article's narrative method is thus the most appropriate way of explaining the NASM's history as an evolving process.

There was nothing unusual, and little original, about the NASM's intentions and methods. It was formed at a time—the depression of the 1870s, the start of the long deflation—when concern about excess capacity, destructive competition, and low profitability was general among US manufacturers, and more or less formal attempts at price-fixing, capacity-reduction, and quota-setting were among their common responses. The failure of most of these initiatives, because of problems of voluntary compliance and the difficulty of enforcement without solid legal backing, led to the series of experiments in the restructuring of industries' forms of ownership and control that started out with the "trust" and ended up with the holding company or tight corporate merger.

The NASM of the 1870s was at least a qualified failure, on its own terms—it quickly discovered that it could not make the economic weather in its own industry—but it did enough to persuade a hard core of members to sustain it. It was this enduring commitment, and its consequences, that began to distinguish the NASM from other unsuccessful, short-lived associational efforts. Stove manufacturers never lost sight of their original and principal object, the mitigation of price (and some nonprice) competition. The promotion of good social relations and the exchange of experience among business rivals were always intended to help achieve it, as well as being valuable in themselves.

Then, in the early 1880s, they found additional reasons to work together to achieve common objectives—protecting one another against some of their fellows who were trying to use patented innovations in order to secure an unacceptable margin of competitive advantage; and, even more significantly, the threat posed to managerial control and enterprise profitability by an over-mighty craft union. The SFNDA was a path-breaking and, unlike its parent body, an unusually disciplined and effective organization, largely because its labor opponent provided it with both a model and an enduring *raison d'être*. It was also blessed with strategic flexibility: under the leadership of a cadre of self-made entrepreneurs, most of whom had climbed from the molder's sand heap into the manager's office, it fought its way to an armed truce with the IMU, and then built an early and unusually successful experiment in joint regulation of the whole industry. This solved a number of the NASM's own compliance problems in the key areas of price-fixing and the control of competition, as well as anesthetizing labor conflict. Here, too, the stove industry fits into a pattern, though most other joint-regulatory arrangements devised at the same time were in local-market industries (apart from that for bituminous coal's Central Competitive Field) not facing the same kind of coordination task as the NASM, with its hundreds of member and nonmember firms scattered right across the industrial belt; they were also much less durable and effective.[72]

The narrative of the NASM's failed fifteen-year effort to participate in the consolidation movement is also not exceptional. Most of the many contemporary and subsequent studies of "trustification" concentrate, understandably, on industries that achieved consolidation. The study of something that did not happen is less compelling as well as more difficult; the survival of copious evidence of stove makers' prolonged discussions about their own nonevent is just a happy accident. But we know from those other studies that stove makers' motives for and expectations of consolidation were entirely conventional, and also that the kind of "trust" they envisaged—a loose horizontal combination among firms in peripheral industries, involving minimal interference with ex-proprietors' continuing day-to-day control of their own enterprises—was a common, and generally unsuccessful, version of what even the "Great Merger Movement" produced.[73]

The failure of stove makers to achieve consolidation by their own efforts also demonstrates the truth of Wharton School professor Edward S. Meade's contemporary observation, based on extensive research including some on the stove industry itself: "It is next to impossible to form a trust in a caucus of manufacturers." The crucial failure thus appears to have been the first one, when the NASM's leaders *had*

[72] John R. Bowman, *Capitalist Collective Action: Competition, Cooperation, and Conflict in the Coal Industry* (Cambridge, 1989); David Brody, "Market Unionism in America: The Case of Coal," ch. 4 in his *In Labor's Cause: Main Theme on the History of the American Worker* (Oxford, 1993); William Graebner, "Great Expectations: The Search for Order in Bituminous Coal, 1890–1917," *Business History Review* 48 (1974): 49–72; Robert Max Jackson, *The Formation of Craft Labor Markets* (Orlando, FL, 1984), for construction and printing; Andrew Wender Cohen, *The Racketeer's Progress: Chicago and the Struggle for the Modern American Economy, 1900–1940* (Cambridge, 2004), on regulatory unionism in local-market industries.

[73] William Z. Ripley, ed. and intro., *Trusts, Pools, and Corporations* (Boston, 1905), still the best case-study collection; Jeremiah W. Jenks, *The Trust Problem* (New York, 1907), esp. ch. 2, "The Wastes of Competition," summarizes the conventional wisdom.

interested outside financiers in reorganizing the industry, but it proved unattractive to them. After that, there was little prospect: short-run obstacles to achieving practical agreement among self-interested individuals always trumped the consensus about long-term objectives. This was a problem in game theory, and its solution always evaded them, particularly because the incentives for consolidation declined through the 1890s as the NASM's and SFNDA's strategies delivered a serviceable alternative.[74]

The final respect in which the NASM's singular story fits in with what we know about the process and patterns of business consolidation in the United States is that they were very sensitive to state intervention. Stove makers were used to thinking of the federal government as a distant problem and at the same time as a potential resource, which provided Association leaders with one of their enduring arguments for united action—lobbying. The politics of the tariff and later of railroad rate regulation, both of them seriously affecting prices and costs, always required stove makers to speak with a common voice if they were to hope to be heard. So, too, did the administration of patent law, a particular concern of an industry that relied so much on intellectual property rights in its preferred style of nonprice competition.

Thus, the Association and its members were always politically aware, and discussions of price-fixing and consolidation were always informed by what they thought the law allowed. Historians of the Great Merger Movement and its aftermath have long understood the apparently paradoxical impact of the Sherman Act, as interpreted by the Supreme Court, on the strategies that companies and corporate promoters pursued in the 1890s and 1900s. Large-scale horizontal integration, often taking advantage of New Jersey's permissive incorporation laws, emerged as a safer and better alternative than the legal makeshifts (pools, trusts, and holding companies) on which earlier anticompetitive behavior had depended. They have also noted the second paradox of evolving Sherman Act jurisprudence, that while it was encouraging and enabling tight corporate mergers, it became increasingly hostile to surviving cartels. The NASM obviously felt vulnerable to this tendency in antitrust policy through the Progressive Era, as its leaders' steadfast but dishonest denials that they engaged in anything as crude as price-fixing indicate. Thus, the FTC investigation of 1922–23, and the NASM's self-limiting response, emerge as a good illustration of the way in which federal intervention, even when all it amounted to was fact-finding backed by the vague threat of further action that never actually happened, was

[74] Meade, *Trust Finance: A Study of the Genesis, Organization, and Finance of Industrial Combinations* (New York, 1903), 84–85, 106.

capable of shaping entrepreneurial behavior and affecting the fate of an industry. The result was not the "Losing to Win" that Thomas McCraw and Forest Reinhardt detected in US Steel's strategic response to the threat of antitrust enforcement, but something much less tolerable: "losing to lose."[75]

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[75] Thomas K. McCraw and Forrest Reinhardt, "Losing to Win: US Steel's Pricing, Investment Decisions, and Market Share, 1901–1938," *Journal of Economic History* 49 (1989): 593–619. The NASM's decline in the 1920s was neither fatal nor final. The industry's pursuit of "fair competition" resumed in June 1933, when its successor organization, the Institute of Cooking and Heating Appliance Manufacturers, took advantage of the National Industrial Recovery Act in order to rebuild itself and enshrine sixty years' experience of what it took to make price and nonprice competition tolerable in a body of rules with statutory backing—see National Recovery Administration, *Code of Fair Competition for the Cooking and Heating Appliance Manufacturing Industry* [Approved Code No. 236] (Washington, DC, 1934), esp. 258–60.