

Successful Monopolization Through Predation: The National Cash Register Company

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Kenneth Brevoort is a graduate student and Howard P. Marvel is Professor of Economics and Law, both at The Ohio State University, 1945 North High Street, Columbus, OH 43210-1172. The impetus for this research was provided a number of years ago by a claim by George J. Stigler that the Cash Register Trust had managed to monopolize its market by (literally) destructive competition, including exploding a rival factory. While we have been unable to document this claim, we describe conduct that came close.

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Abstract

This paper presents evidence to suggest that despite obstacles that made predatory pricing essentially impossible, the National Cash Register Co. (N.C.R.) managed successfully to deploy an arsenal of non-price predatory strategies that permitted it to consolidate and maintain a nearly complete monopoly of the cash-register trade. N.C.R. took actions to raise the costs and reduce the revenues of its rivals, actions that made sense only to the extent that N.C.R. could recoup their costs through the maintenance of monopoly rents. Our analysis suggests that antitrust prosecution was a significant threat to N.C.R., and ultimately forced the company to agree to abandon its most objectionable practices.

JEL Codes:

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We propose hereafter to set aside, say, \$5 on each register made, for knockout expense fund to be devoted to maintain a monopoly.

*The N.C.R.*¹

...

My first day as a salesman I had to read a booklet telling all Patterson Salesmen what they must not do, because if they did any of this the boss would go to jail. One of the things I couldn't do as a salesman was blackjack the salesmen of competitors. Another was bribe freight agents to hold up shipments, or drop sand in competitors' machines to put them out of order, open offices next door to competitors and cut the prices to knock them out of business—these were all things that his knockout squad had been doing which I was prohibited from doing.

Senator William Benton²

1 Introduction

This paper provides a description and analysis of that most elusive of business entities, a monopoly able to consolidate and defend its dominant position by means of an effective predatory strategy. The National Cash Register Company³ grew from a tiny start-up to one of the most prominent, successful, and influential business firms in the United States. Along the way, N.C.R. built an industry from scratch, selling a product that most customers did not believe that they needed. N.C.R.'s irascible and eccentric founder, John Henry Patterson, developed a technology of selling that was widely imitated throughout the American economy.⁴ But N.C.R. believed that neither its novel sales strategy nor its extensive patent portfolio would suffice to

¹ *The N.C.R.*, May 22, 1890, quoted in Attorney General. et rel. James, v. National Cash Register Co., 182 Mich. 99, 148 N.W. 420 (Sup. Ct. Mich., 1914), 112. We refer to this decision below as *James*.

² Interview, Oral History Research Office, Columbia University, quoted (with erroneous attribution) by Friedman (1998), p. 580.

³ We will refer to the National Cash Register Company as N.C.R., though in the early part of the century it was also common to shorten the company's name to "The Cash."

defend its position against a gaggle of upstart rivals. Accordingly, it employed a set of practices that it openly acknowledged as designed to “knock out” its competitors.

N.C.R. was hampered in its attacks on rivals by the difficulty it faced in employing predatory pricing, given that it manufactured a durable good and therefore faced the difficulty of convincing customers that the machines they purchased would not almost immediately depreciate due to price cutting. It turned instead primarily to non-price predatory tactics. Several of its practices were quite costly and provided no direct benefit to N.C.R. Their sole attraction was that they served either to raise the costs or reduce the revenues of nascent rivals, thereby “cutting off the air supply” of those rivals.⁵ N.C.R. shaped its predatory strategy to cultivate its reputation for toughness in order to deter further prospective competitors. Its actions cannot be interpreted as merely aggressive competition, but instead meet the most stringent definition of predation, and were, indeed, celebrated by N.C.R. itself as predatory both in intent and effect. Ultimately N.C.R. left its path littered with failed competitors. It was the first firm to be indicted under the Sherman Act for an offense other than price fixing. Concern about its activities constituted an important motivation for passage of the Federal Trade Commission Act designed to inhibit unfair competition.⁶

Despite its remarkable success in vanquishing its competitors,⁷ and the attention it garnered

⁴“At [Patterson’s] death in 1922, according to a corporate history compiled in 1984, ‘an estimated one sixth of the heads of the nation’s major corporations were former N.C.R. men who spread the Patterson methods throughout the U.S. business world.’” Murial Jacobs, “Antiques: The Incorruptible Cashier Lives,” *The New York Times*, January 12, 1986, p. 23. The alumni of N.C.R. included Hugh Chalmers, of the eponymous automobile company, Henry Theobald, founder of Toledo Scale, Charles F. Kettering of General Motors, and, perhaps most significant, Thomas J. Watson of IBM, who would later say, “Nearly everything I know about building a business comes from Mr. Patterson.” (Watson and Petre, 1990, p. 13.) The learning in question included familiarity with the rougher aspects of N.C.R.’s competitive practices. Watson was picked by Patterson to develop a second-hand register business charged with “knocking out” rival establishments (Rodgers, 1969, pp. 40ff). He later was directly involved in a cash register “war” with the Michigan Cash Register Company, a war that served as the basis for the Department of Justice antitrust second antitrust suit against N.C.R.

For a discussion of Patterson’s approach to sales, see Friedman (1998). See Bernstein (1989) and Crowther (1926) for more on John Henry Patterson.

⁵N.C.R.’s strategy thus prefigures that attributed to Microsoft. “As Paul Maritz, Microsoft Group Vice President in charge of the Platforms Group, was quoted in the *New York Times* telling industry executives: ‘We are going to cut off their air supply. Everything they’re selling, we’re going to give away for free.’ ” Passage quoted by Memorandum of the United States in Support of Motion for Preliminary Injunction,” *United States v. Microsoft*, <http://www.usdoj.gov/atr/cases/f1700/1762.htm>, quoting *New York Times*, January 12, 1998.

⁶See, e.g., Robert H. Lande, “Wealth Transfers as the Original and Primary Concern of Antitrust: The Efficiency Interpretation Challenged,” 34 *Hastings L.J.* 65 (September, 1982), note 198.

from antitrust authorities,⁸ N.C.R. has not been the subject of a detailed economic analysis. The problems the company faced in marketing its products were quite different from many of the other trusts of its time. Indeed, the N.C.R. experience has a contemporary flavor. In contrast to other trusts that attempted to control the prices of homogeneous commodities, the cash register required extensive sales efforts merely to convince prospective purchasers that they had a need for the product. Owing to the up-front promotion required, margins over production cost were necessarily substantial. In addition, the cash register was a very durable product that was typically purchased on an installment plan. Accordingly, N.C.R. faced a Coase Conjecture problem (Gul, Sonnenschein and Wilson, 1986) that made predatory pricing an unattractive strategy. The prospect of lower prices for registers could have induced prospective purchasers to postpone purchases indefinitely, an outcome that could be prevented if N.C.R. maintained a reputation for not cutting their own register prices (Ausubel and Deneckere, 1989). In place of

⁷A list of vanquished competitors distributed by N.C.R. in 1910 contained the following summary of the lack of success of its rivals:

Within the past fifteen years, 158 cash register companies have been organized to compete with the National Cash Register Company. Of these, 153 have failed in business. Their combined capital was \$5,735,000. Their combined loss was \$1,970,000. According to the sworn affidavits of its officers, the Boston Cash Register Company alone lost \$192,750.08. (See Seager and Gullick, 1929, p. 446.)

By about 1905, N.C.R. was thought to have about 95% of the domestic cash register market. This estimate appears to have originated from within N.C.R., from Hugh Chalmers, its one-time second-in-command. While Chalmers later became an ardent foe, N.C.R. did not appear to challenge his estimate during its 1912 antitrust trial. Here is Chalmers on the source of the estimate:

I don't know exactly what was the percentage of business done by The National Cash Register Company in the United States at the time I left. We had records and reports in the office of the National Company of all machines sold in the United States. We got them from the daily reports of the salesmen. It was the duty of the salesmen to report every machine they found. Based upon the records of that office, I should estimate the business done at the time I left at about 95 per cent.

This quote and much that follows in this paper comes from a three volume summary of the record of the district court case, the Transcript of Record of Patterson, et al., v. United States, Circuit Court of Appeals, Sixth Circuit, March 13, 1915. This document is part of Record Group 276, Records of the U.S. Circuit Court of Appeals for the Sixth Circuit, Cincinnati, Ohio, 1891-1971, Records and Briefs, 1897-1962, Case 2571, available from the National Archives, Great Lakes Region, Chicago, IL. These volumes, referred to below collectively as *Transcript* contain an extended summary (not a stenographic record) of the proceedings of the jury trial of Patterson and a number of other N.C.R. senior executives. The quote in question appears on p. 466 of the *Transcript*. Friedman (1998a, p. 579, n. 113) attributes the same number to Lee Counselman, one-time head of the Competition Department. The 95% figure was accepted by the Circuit Court, Patterson et al. v. United States, 222 F. 599 (Sixth Cir., 1915), at 623. The same court accepts an estimate that N.C.R.'s market share in 1890 had been roughly 80% (at 625).

⁸N.C.R. was not only the target of one of first Sherman Act cases filed. A later round of cases repeating essentially the same charges included separate antitrust actions by the Attorneys General of Ohio, Michigan, and Alabama, and both criminal and civil charges filed by the United States Department of Justice.

price predation, N.C.R. attempted to, and almost universally succeeded in, driving its rivals from the marketplace by an array of techniques designed to harm the rivals directly by curtailing their streams of revenue.

In Section 2, we describe the essential features of the cash register and provide a brief outline of the N.C.R. sales techniques and organization. Section 3 introduces the N.C.R. Competition Department, a group of special salesmen who were compensated in far different fashion than the N.C.R. sales force, and whose mission was to destroy any competition that emerged. We detail the practices N.C.R. engaged in, with particular emphasis on practices that can only be described as predatory. In Section 4, we catalog N.C.R.'s acquisitions of rivals, a short listing in comparison to the number of rivals that N.C.R. faced, suggesting that N.C.R. adhered to its stated policy: "We do not buy out, we knock out."⁹ We explain the unusually large amounts paid in two N.C.R. acquisitions that stand out in the amount paid. In one instance, the owner of the acquired firm had inside information on N.C.R.'s accounts, obviating N.C.R.'s threats. The other instance was N.C.R.'s most expensive acquisition, the Lamson Cash Register Company. Lamson was the driving force behind a United States Department of Justice Sherman Act indictment of the company. The contrast between these acquisitions and the remainder of N.C.R.'s purchases suggests strongly that N.C.R. effectively drove its rivals to submission under terms favorable to N.C.R., and did so strategically, cultivating a reputation for toughness. Section 5 brings the pre-World War I era to a close with a discussion of a major effort to punish N.C.R. under both federal and state antitrust law. Section 6 offers concluding remarks.

2 The Cash Register and N.C.R.: A Brief History

The cash register is a machine designed to ameliorate the principal-agent problem that arises in retail transactions. Prior to the development of the register, retail clerks had occasion to access the cash till unannounced and with no tally of their activities recorded independently

⁹*The N.C.R.*, March 1, 1895, quoted in *James*, p. 117.

and automatically. The purchase of a cash register changed fundamentally the nature of the retail transaction. With a register present, when a customer tendered cash to a clerk, the clerk pressed keys on the register to enter the amount. The pressing of the keys raised tablets with the amount entered,¹⁰ thereby enlisting the consumer in monitoring the transaction. Simultaneously, the amount entered was added to a running tabulation that could later be checked against the contents of the register's cash drawer. The transaction was finalized and change could be made by turning a crank to release the spring-loaded cash drawer, at which time a loud bong was sounded on the register's bell.¹¹ The advent cash register thus resulted in the addition of the phrase "ringing up sales" to the lexicon.

James Ritty, a Dayton saloonkeeper invented the modern cash register, patenting his device in 1883. Ritty expected that shopkeepers, especially his fellow saloonkeepers, would beat a path to his door for the device, but few did.¹² One customer, however, was particularly impressed with the promise of "Ritty's Incorruptible Cashier," as the Ritty invention was known. John Henry Patterson, a struggling Dayton, Ohio coal dealer, purchased two registers, sight unseen, at a price of \$50 each, on the strength of an advertisement he had seen. His money-losing business almost immediately turned a \$5,000 profit. But while the register improved Patterson's bottom line, at least temporarily, the coal business ultimately failed, and Patterson was forced to cast about for another venue for his business talents. Impressed by his cash register experience, Patterson together with a brother purchased a substantial share in the company organized to

¹⁰The first cash register constructed by James Ritty used a dial resembling an analog clock to register amounts in place of tablets. See Marcossou (1945), pp. 52ff. Tablets appeared on the first commercial registers (Marcossou, p. 13). Ritty sold his register firm to new owners who added the ubiquitous cash register bell, together with a locking cash drawer operated by the same mechanism that recorded transactions. Improvements continued when John H. Patterson took over the company, with the major advance being the introduction of an electric motor under the direction of Charles Kettering, later to introduce electric starting to automobiles. Many cash register improvements, however, came from rival manufacturers. See, for instance, Fuller (1938).

¹¹"In sum, the magic money box provided publicity, protection, and compulsory morality." (Carson, 1966, p. 52.) Daniel Boorstin has described the "publicity" component: "Americans had thus found a way to give a new publicity to the shopkeeper's smallest transaction. Shopping now was a semipublic, communal activity, announced by the ringing of bells." (Boorstin, 1993, p. 201). An extended definition of the cash register and its necessary components can be found in *National Cash Register Company v. Boston Cash Indicator and Recorder Company*, 156 U.S. 502, 15 S.Ct. 434, 39 L.Ed. 511 (1895), p. 507.

¹²Ritty sold his cash register business and patents for \$1,000 and returned to saloon keeping. Boorstin (1993), p. 201.

produce the device, the National Manufacturing Company. In 1884, though much ridiculed by fellow businessmen and saddled almost immediately with buyer's remorse, Patterson ended up as the owner of the company, which he renamed National Cash Register.¹³

Patterson found himself in possession of a nearly derelict factory in the run-down Slidertown section of Dayton, Ohio,¹⁴ together with a patent on the Ritty mechanism for tabulating transactions while simultaneously displaying the amount involved to consumers. The original Ritty and Birch patent, No. 271,363, issued January 30, 1883,¹⁵ would soon be supplemented by a very large number of related patents, and would serve as the basis for claims by Patterson that the industry rightfully was his and his alone.¹⁶

Perhaps a stronger claim for "ownership" of the market for cash registers could be based upon the method for selling registers that Patterson developed. Selling was crucial to the success of the register. Many prospective customers, trusting their clerks to behave honestly, saw little need for the device. Patterson needed to sow seeds of doubt in the minds of storeowners about the honesty of employees, and to stir guilt over placing temptations in front of those same employees, some or most of whom might be related to the storeowner.

Presenting that message to storekeepers was not easy, for whenever possible, clerks prevented N.C.R. salesmen from meeting with the storekeeper directly.¹⁷ Resistance to the cash

¹³Patterson purchased control of National Manufacturing from its President, George L. Phillips for \$6,500. His announcement of the transaction to members of the Dayton Club elicited jokes and jeers sufficient to induce him to ask Phillips to cancel the deal in return for a cash payment of \$2,000. Phillips supposedly replied "You have purchased the stock. If you had paid for it and I had turned it over to you, I would not have it back as a gift." The transaction is detailed in Marcossou (1945).

¹⁴Patterson relocated his factory to high ground in Dayton, a decision that provided an unexpected dividend when the great 1913 flood inundated the surrounding town, but left the N.C.R. factory unscathed. The initial decision to move the factory was part of a broad effort on the part of Patterson to improve the treatment of his employees in order to encourage high quality production. Patterson became widely renowned for his treatment of his workforce, though he thought it merely an avenue to higher profits. He said simply of his benevolence: "It pays." See, for example, Tracy (1950) and Biles (1993).

¹⁵National Cash-Register Co. v. Navy Cash-Register Co, 99 F. 565 (Circuit Court, N.D. Illinois, January 26, 1900.) John Birch was a machinist who had added improvements to the original Ritty design. See Marcossou (1945), p. 16.

¹⁶The original Ritty-Birch patent expired on January 1, 1900, but by continually expanding its patent pool, N.C.R. remained in position to bring a large number of infringement suits against both its rivals and their customers. Chalmers (*Transcript*, p. 459) maintained that in 1907, N.C.R. owned 1,400 patents representing about 14,000 claims. This may have been an overstatement. During its antitrust trial in Michigan, N.C.R. asserted that it held a total of 882 patents, with about 200 applications pending. (*James*, p. 105.)

¹⁷N.C.R. manufactured sample three-key registers narrow enough to fit into a briefcase, permitting the sample

register was occasionally organized, with clerks forming "Protective Associations" to oppose register use (Crowther, 1926, p 92.) The clerks in question were often tough bar keepers. Ritty had invented the cash register for his own saloon, and as late as 1893, fully a fourth of all registers sold by N.C.R. went to saloons.¹⁸ Once the register was in place, there was need to prevent sabotage by offended clerks. N.C.R. hired Pinkerton agents from time to time, maintained a private detective on its payroll, and provided a detective checkup with every register sold. (Werthenbaker, 1953, p. 33; Conover, 1939, p. 155.)

The sales effort required to convince a prospective purchaser that he really needed a cash register was thus very significant. The gauntlet of hostile clerks needed to be run only to confront a "P.P." (Probable Purchaser, in N.C.R.'s optimistic terminology) who may have preferred to trust his employees. To surmount these hurdles, Patterson devised a selling scheme widely lauded and imitated throughout American industry. Patterson employed sales agents, to whom he granted exclusive territories. These agents were paid on commission, and were themselves expected to hire and pay salesmen, either on commission or salary.¹⁹ Patterson insisted on professional dress and behavior by members of his sales force, relied on routinized and memorized sales pitches,²⁰ and instituted sales quotas. The importance of the sales staff to N.C.R.

to be smuggled into a store. Demonstrations would often be given in hotel rooms, out of the sight of watchful clerks. Patterson was an early exponent of direct mail advertising. One of his first selling efforts consisted of identifying 5,000 "P.P.'s" (probable purchasers), each of whom was sent a letter for eighteen days. One such letter was returned by a besieged New York shopkeeper with a note: "Let up; we never done you any harm." Undeterred, Patterson proceeded to follow up with nine additional circulars (*Fortune*, August 1930, "Temple of the Dollars, the Pounds, the Marks, the Yen," vol. 2, no. 2, p. 67). Clerks needed again to be circumvented, a task accomplished by mailing circulars in plain brown envelopes postmarked from cities other than Dayton. See Wertenbaker (1953), pp. 33, 104.

¹⁸Friedman (1998a), Figure 2, quoting data from an N.C.R. publication, *The Hustler*. Earlier sales may have been even more heavily weighted toward saloons: "In 1891, the company's Atlanta agent included in his report sales to 43 bars, 31 grocers, 2 paint stores, 1 dairy, 6 butchers, 4 confectioners, 7 drug stores, 1 billiard hall, 1 crockery store and 1 icehouse," Jacobs, *supra* note 5, p. 23. Cash registers were used initially in retail settings with high numbers of relatively small transactions. The size of a transaction in a saloon was comparatively large, as indicated by the special purpose registers built for saloon trade. These had keys designed to enter in nickel increments, rather than pennies. Indeed, the Union Cash Register claimed an advantage because it was not intended for saloons: "The basic difference between the Union cash register and the others on the market at that time was that our machine was deliberately designed for use in general lines of retail business, whereas the others were made for and sold to saloons." Fuller (ca. 1938), p. 22.

¹⁹Most salesmen were ultimately on straight commissions and appear to have received a commission of 15% on each sale. Sales agents received a 35% commission on all sales made within their territories, but were expected to pay office expenses. See Rogers (1969), p. 32.

²⁰The sales pitch was recorded in *The N.C.R. Primer*. Carson (1966, p. 56) catches the standardization of the

is indicated by the high ratio of sales personnel to production employees: In 1890 the ratio was 128 to 283; by 1902 production workers had risen to 2819 while sales personnel had grown to 976. By contrast, the American Arithmometer Company, established to sell William S. Burroughs' calculating machine to banks, deployed three salesmen in the field in 1895, compared to an office and factory staff of 65. Five years later American Arithmometer had grown to 200 office and factory employees and a sales staff of 12.²¹

The net results of Patterson's substantial investments in selling were rapid growth in sales and high margins over production costs. "Patterson's theory of business was apparently the opposite of Henry Ford's. Patterson's cash register cost relatively little to make, compared with its \$75 to \$200 selling price, and as Patterson's output went up, the manufacturing cost decreased even further. Instead of cutting the price to increase the demand, as Ford did, Patterson created demand through salesmanship, and distributed the profits liberally to workmen, salesmen, executives and himself."²²

The high margins that National Cash Registers afforded naturally attracted competitors. Those competitors could easily undercut National's prices and still cover production costs, particularly if the competing register manufacturer was able to free ride on the efforts of N.C.R. salesmen in convincing P.P.'s of their need for a register. The high margins also implied high opportunity costs associated with across-the-board price cutting in response to entry. Accordingly, while Patterson vowed to fight vigorously to defeat any rival that presented itself, the desire to protect margins meant that price cutting needed to be avoided whenever possible, and when used, it needed to be confined so as to avoid dissipating surplus potentially available

sale process when he notes that "[t]he closing of a sale was as stylized as a Japanese kabuki play."

²¹Michael Hancock, "Burroughs Adding Machine Company, Glimpses into the Past: History-1857-1953." <http://www.dotpoint.com/xnumber/hancock7.htm>, visited October 19, 1999. A history of William S. Burroughs provided by the Charles Babbage Institute at the University of Minnesota remarks that the "challenge was to convince banks and businesses that they needed this new machine, surprisingly not an easy thing to do." Yet in contrast to the professional sales force at the by then much larger N.C.R., salesmen at American Arithmometer "doubled as the service department." <http://www.cbi.umn.edu/burros/wsb.htm>, visited October 19, 1999. Patterson, by contrast, would not allow his salesmen to carry screwdrivers for fear that they would be diverted to providing service for existing machines.

²²Wertenbaker, Part 3, October 3, 1953, p. 33.

from committed P.P.'s. N.C.R. rarely cut prices on its own registers, but was willing to disguise price cuts through favorable deals offered purchasers of rival registers. It also created special registers, called knockers, specifically designed to confront particular rivals. These registers were priced at a level that can only be interpreted as below cost. But the limitations that N.C.R. faced in pricing its main line registers placed a premium on tactics that did not require price cutting. This pressure, coupled with Patterson's belief that National Cash Register deserved its cash register monopoly, resulted in the development of an array of strategies designed to destroy any firm with the temerity to present itself as a competitor.

3 The Competition Department

N.C.R. made no secret of its desire to drive all rivals from a market that it viewed as rightfully its own. It claimed the market by virtue of its efforts and its patents, and promised to spend whatever was necessary to crush any opposition that emerged. N.C.R. promised to cross-subsidize any "fights" with rivals by diverting profits from other markets in which it stood unchallenged. Figure 1 reproduces an exhibit in the government's antitrust proceeding against the company.²³ Such lessons were repeated for the benefit of rivals. William McGraw, owner of a series of cash register companies based in Detroit, describes his conversation with Patterson:

[H]e picked up a large water bottle; sat it down; and said that that represented the National Cash Register Company. He then reached around and found a little salt cellar, which was the smallest object on the table, and set it down by the side of the water bottle. He said "Now, that represents the National Cash Register Company;

²³ *Transcript*, vol. 3, p. 1011, Exhibit 70. The exhibit includes the following accompanying text:

This circle represents the earth. The small crosses represent the selling offices of the National Cash Register Company in every civilized country. Suppose competition springs up in the territory pointed out by arrow No. 1. The National Cash Register Company can afford to do business here at a loss if necessary to meet the competition, because the profit made at the office marked with arrow No. 2 will make up for the loss, while all the other offices of the company all over the civilized world will make a profit and keep up the income of the Company to its normal amount.

See also testimony of Hugh Chalmers, *Transcript*, p. 467, noting that Patterson liked to use the circle illustration with competitors.

that salt cellar represents you, and we will wipe you off the face of the earth,” to use his exact language.²⁴

But in the Patterson formulation, dispatching competitors rapidly has a humanitarian aspect. While most observers appear to have recalled a famous Patterson aphorism as “The best way to kill a dog is to cut off its head,”²⁵ Hugh Chalmers reports a more elaborate Patterson analysis: “If you are going to kill a dog, it would be much kinder to hit him on the head instead of beginning with his tail and cutting off an inch or two at a time.”²⁶

But how were these resources to be marshalled, and how was the competition to be destroyed? Were the methods simply hard competition? To answer these questions, it is important to understand how Patterson intended to bring the resources of N.C.R. to bear on its rivals. The principal mechanism for doing so was the Competition Department, a parallel organization to the Sales Department that was staffed with experienced N.C.R. salesmen. But while the experienced sales agents and salesmen of the N.C.R. Sales Department were compensated entirely through commissions on register sales, the employees of the Competition Department were paid by salary. Members of this force, known variously as competition, opposition, special, and knockout men, were to be deployed into territories facing competitive threats with the goal of suppressing those threats. Commissions generated by their activities were assigned to the resident sales agent.

The first mention of a special effort to destroy competition comes from the May 22, 1890 issue of *The N.C.R.*: “We propose hereafter to set aside, say, \$5 on each register made, for knockout expense fund to be devoted to maintain a monopoly. It will amount to about \$200 per day.”²⁷ Soon after, Patterson wrote that “Prices of the registers must be kept up by knocking competitors down. Hereafter my whole time will be devoted to this business exclusively.”²⁸

The the Competition Department (also known as the Knock-out Department, the Opposition

²⁴Crandall and Robins (1988), p. 60. The water bottle story is repeated by Chalmers, *Transcript*, vol. 1, p. 479.

²⁵Carson (1966), p. 110.

²⁶Chalmers testimony, *Transcript*, vol. 1, p. 467.

²⁷Quoted *James*, p. 112. *The N.C.R.* was the widely distributed house organ of N.C.R.

²⁸*The N.C.R.*, February 2, 1891, quoted in *James*, at 113.

Department, and the Ways and Means Department) was established in November 1891 (Friedman, 1998a, p. 578). *The N.C.R.* called this “by far the most important department connected with this outfit.”²⁹

When a rival became active in a particular area, competition men were dispatched to deal with the threat.³⁰ The competition men were trained in techniques of “beating” rival machines by inserting objects into the register surreptitiously, causing incorrect tabulation.³¹ But such tactics were not unique to the N.C.R. Competition men; rivals employed similar methods.³² On some occasions, N.C.R. would go further, hiring rival salesmen for purposes of industrial espionage or attempting to impair the reputations of other manufacturers by sabotaging machines that were shipped to the rivals’ customers. While N.C.R.’s efforts to acquire information about the customers of rivals were clearly directed from the top of the N.C.R. management pyramid, it is unclear whether instances of sabotage were corporate policy, or simply the consequence of excessive zeal on the part of individual N.C.R. employees.³³

When competition men were assigned to a territory, they were tasked to remove all rival registers from the region, and were evaluated on their ability to do so. Each register displaced was to be recorded on a “Knock-Out Credit Card,”³⁴ together with the amounts involved in

²⁹*The N.C.R.*, January 15, 1892, at 469.

³⁰Sales agent A.T. Webb, put the policy as follows: “What we wish to convey is, that no one can produce a cash register anywhere, without some of us are *there* before the matter is twenty-four hours old, and are prepared to crush the life out of the opposition.” (*The N.C.R.*, August 15, 1891 vol. 4, no. 43.)

³¹A “circular letter” from the “Opposition Department, The N. C. Register Co.,” dated February 4, 1892, provided instructions for using the bullet and horse hair sent to managers: “...We want you to have your agents call the parties who are using the Simplex Register, in your territory, and explain how easy it is to beat them. (But do not show them how to do it.) You can easily ask the proprietor to step away about twenty feet from the machine, and then by concealing the bullet in your hand register any amount you wish by simply dropping the bullet in the small hole directly under the amount you wish to register. ...Of course, if you do not want to open the cash drawer you can step away from the machine and the proprietor (*unless he has an eagle eye*) cannot discover the horse hair protruding from the machine. ...We think agents will have little trouble ...impressing user that they have a machine which can easily be beaten and is worthless.” (reprinted in Crandall and Robins, 1988, p. 35, emphasis in original.)

³²Marcosson (1945, p. 99) describes a circular from Ideal Register “headed ‘Fourteen ways of beating the National cash register -79, one of their latest highest priced registers.’ Then followed 14 questions and answers as to how this register could be manipulated so as to prove inaccurate.”

³³It is clear that espionage was part of National’s arsenal. Stevens (1917, pp. 154ff) provides numerous examples drawn from antitrust cases. N.C.R. bribed freight agents, hired rival employees who stayed on with their previous employers, maintained its own spies, and hired Pinkerton detectives to monitor shipments of rivals. It is also clear that when N.C.R. acquired rivals through third parties, the quality of machines provided by those companies was allowed to decline.

the transactions. Cards were to be filed “for every opposition register knocked out, whether a National replaces it or not.”³⁵ In a typical case involving displacement of a Hallwood (one of N.C.R.’s bitterest rivals),

It appeared that a few days after the purchase, up to which time the machine had worked satisfactorily and accurately, an agent for the National Cash-Register Company, a competitor of the plaintiff, called upon the defendant, and after telling him that the machine could be beaten, showing him how to do it, and advising him to rescind the contract, sold him a National cash register, and defendant took the usual steps to rescind the contract for the Hallwood machine.³⁶

A former N.C.R. executive testified that this was standard company policy, and that N.C.R. defended suits by rivals against customers who refused to honor purchase contracts.³⁷

The goal of the Competition Department was thus to displace machines of rivals, rather than to sell National registers. N.C.R. obviously preferred to replace rivals registers with its own, but it was typically unwilling to discount its prices in order to do so. A competition man

³⁴One such card is displayed as Exhibit 1, *Transcript*, p. 939. The number of registers knocked out in a month was often recorded at the back of *The N.C.R.* According to those tabulations, in 1892, a total of 1,571 registers was removed. This total includes 396 Lamsons, 371 Kruse, 182 Peck, 169 Boston, and 83 Union cash registers (*The N.C.R.*, various issues).

³⁵Exhibit 2, “Important Notice,” *Transcript*, p. 939.

³⁶Hallwood Cash-Register Co. v. Millard, 127 Mich. 316; 86 N.W. 833 (S.Ct. Mich., 1901), pp. 317-8.

³⁷Carl Heyne, one-time head of the Competition Department who later defected to Hugh Chalmers’ rival American Cash Register (NCR v. Heyne, 26 Ohio Dec. 628 (1910)) testified as follows:

The agents of the National Cash Register Company, regular and special, were instructed to inform purchasers and users of the Hallwood registers that the registers they had purchased were defective and infringed The National Cash Register Company’s patents; and that if they were in the merchant’s place they would either not accept the register, in the case of purchasers to who the registers had not been delivered, and in case of users, that they would ...return the register to the manufacturer without further payment.

Q. Do you know whether or not registers were returned ...?

A. I do not know any registers were returned, but I do know that users of Hallwood registers refused to make further payments on their registers, which resulted in their being sued in several cases.

Q. Do you know whether or not the National Cash Register Company employed attorneys to defend suits against purchasers of competing machines?

...

A. They did not employ them openly, but they paid them in several cases of which I know. (Stevens, 1917, at 201, quoting from the transcript of *James*.)

One-time N.C.R. sales agent J. E. Warren provided similar testimony.

could (and sometimes did) offer to take a rival register in trade, and in such cases, the purchase price of the rival machine could be granted as a credit. It was apparently more common to tell the purchaser to stop paying on the rival, in which case the amount already paid was allowed toward the price of an N.C.R. machine. Nevertheless, an undated National Cash Register mailer (Crandall and Robins, 1988, p. 36), likely to date from the early 1900's presented a photograph of a "Store-Room at Our Dayton Factory" containing 2185 Hallwood Registers, with a claim that "[a]bout 500 more are in our agents' hands." Given that by 1900, N.C.R. sold slightly more than 40,000 registers per year and possessed a market share approaching 90%, and that Hallwood fought with several other competitors for the remainder of the market, it is likely that N.C.R. had on hand more than the annual Hallwood output. Clearly the Competition Department had been very successful in displacing Hallwood registers.

N.C.R.'s Hallwood mailer also contains an offer of any Hallwood register at "40 Cents on the Dollar."³⁸ These Hallwoods were an example of "knocker" machines offered by N.C.R. competition men to displace machines when consumers expressed a strong preference for a rival's machine. Knocker machines could be low-price N.C.R. models that were not normally offered to customers, but were available to those who had recently purchased a machine from a rival, competitive machines such as the Hallwoods above, but perhaps most commonly, machines designed and manufactured specifically by N.C.R. to mimic rival machines as closely as possible. A story in the March 15, 1892 issue of *The N.C.R.* discussing knockers, noted that "The American sometimes has a small railing on top. We will put this on our knocker, if you so order."³⁹ When N.C.R. targeted a rival, it typically produced a knocker which it then displayed to intimidate its intended victim. In one case, the knocker was shown to the rival before the

³⁸Reselling rival cash registers was one of the earliest techniques developed by N.C.R. to fight opposition. The December 1, 1892 issue of *The N.C.R.* reprinted an advertisement taken out by Jos. Crane in the New York World that offered rival cash registers for "half of manufacturers' prices." The article continued, "All Sales Agents should advertise in this way, in the leading newspapers in their respective territories, wherever opposition is strong. We believe that nothing discourages an opposition salesman so much and so quickly as to see his goods offered for sale by other companies at a less price than he sells them."

³⁹Hugh Chalmers testified that "When I say that we built machines as nearly like the competitive machines as possible, I mean in appearance and in the function that the machine performed." The inner workings differed to avoid infringement suits. *Transcript*, p. 457-9.

rival's own machine was introduced to the marketplace in quantity.⁴⁰

It is clear that both N.C.R.'s rivals and N.C.R. itself viewed the knockers as predatory. They were clearly to be offered at prices beneath those of the rival in question. One rival recalled a conversation with N.C.R.'s head as follows:

Mr. Patterson told me that he was going to put out a machine in competition with mine that would sell for \$35. I asked him this question. "Are you going to brand that machine National Cash Register Company?" He said he intended to. I said, "Do you mean you are putting that machine out to sell?" He said, "yes." I said I would take all those machines that he could manufacturer and send him a certified check for the amount, if they were branded National Cash Register Company. (Crandall and Robins, 1988, p. 60)

Perhaps more telling evidence, however, came from N.C.R.'s instructions to its own salemen:

In knocking out an opposition register by the use of a "knocker," it is desirable to accomplish one of three results. The first and best thing to do, of course, is to knock it out before it gets into use. The next is to disgust the purchaser in order that he will send it back to the manufacturer and buy one of our regular registers, or to so disgust him with the opposition register, that he will send it back to the maker and not buy anything. As a last resort, knock out his opposition register, and sell him a knocker. This last is the least desirable victory to be achieved, but we would rather have you do that than not to knock out the opposition register at all.

J. H. Crane⁴¹

In other words, the amount that could be made from selling a knocker was insufficient to cover its cost of manufacturer (with some allowance made for the possibility of selling the customer a profitable regular N.C.R. machine in the future).

⁴⁰See Hugh Chalmers' discussion of Toledo Cash Register and Scale, *Transcript*, pp. 476-7.

⁴¹Crane was N.C.R.'s sales manager and author of the *Primer*. Quotation from Crandall and Robins, 1988, p. 42.

We see, then, that N.C.R. had discovered a way to avoid cutting its regular prices, and so ensured customers that their machines would hold value. Moreover, N.C.R. could also protect its margins for those customers approached by the commission-compensated members of its Sales Department. The “wars” that the Competition Department fought were clearly costly,⁴² since the machines they sold apparently were unprofitable and the salaries of the Competition men were paid independently of any registers sold.⁴³ The subsidization of the costs of the Competition Department was justified clearly because N.C.R. expected to recoup them through the protection and improvement of its monopoly position. Given that N.C.R. did, in fact, improve its monopoly position over time, this expectation of recoupment was amply justified.

The process of knocking the opposition was thus clear. Active opposition would be reported by the sales agent in a region, competition men would be dispatched, efforts would be made to discover the customers of the rival, and those customers would be visited in an attempt to “disgust” them with the products of the rival, all to the end of inducing the buyer to renege on its contract with the rival. These tactics could leave the prospect of a National register sale to a potentially satisfied customer. But if persuasion did not work, other, stronger actions were available. The purchaser could be threatened with a lawsuit for the use of a machine that allegedly infringed on N.C.R.’s patents. Those patents included accessories for *machines of rivals* that National developed in order to prevent such features being added to the rival devices (Crandall and Robins, 1988, p. 37). When N.C.R. threatened to sue purchasers of Sun Cash Registers, Sun felt forced to assure its potential customers that “There is not the shadow of

⁴²In addressing the 7th Annual Convention, Mr. M. N. Jacobs argued that N.C.R. needed to expand its product line to include a few lower-priced registers. He described the expenses associated with knocking out a \$45 Peck register:

What do I do when I find this opposition machine? I try to knock it out, and here I spend another day, and I pay \$5 salary, and with probably \$5 expense, it costs me \$10 to undo what the opposition company has done; it costs the company probably a new register to replace the opposition machine; I lose the \$25 which was spent in talking to and educating this party, besides the \$10 expended in knocking out the opposition register, and it is often twice this amount.” (*The N.C.R.*, January 1, 1893, vol. 5 no. 16, p. 776.)

⁴³*The N.C.R.* reported that in July 1892 alone, the N.C.R. Competition Department expended \$10,500 in fighting the opposition. That month, N.C.R. knocked 178 registers. At a rate of roughly \$60 per register, the expenditures of N.C.R. often exceeded the purchase price of a rival machine.

a chance that any suit will ever be brought by any responsible person against the manufacturers, buyers, sellers, or users of “Sun” Registers. This was tried once—about three years ago—and the Acting U. S. Judge, Southern District of Ohio, literally kicked the case out of court.” (From 1896 Sun catalog, reprinted by Crandall and Robins, 1988, p. 36) Sun had reason to reassure its customers. At least three courts had occasion to enjoin N.C.R. from bringing “numerous suits ...against the customers of [N.C.R. rivals]” because the suits were “vexatious and oppressive.”⁴⁴

By these tactics, as opposed to simply cutting the prices of its regular machines, N.C.R. waged war on its rivals, and did so by deploying its primary strength—aggressive and carefully trained salesmen—against the corresponding weak point of the competition:

The first man we want to make suffer in this knock-out fight is the agent selling the register. We propose to cut the price on knockers so low that the manufacturers can’t afford to pay a living commission. As soon as the opposition agent ceases to make money, he is going to quit.

J. H. Crane⁴⁵

We can conclude that the significant expenditures on the Competition Department were designed not to enhance the attraction of N.C.R.’s products to consumers, but to harm rivals directly, denying them revenue sufficient to permit them to persevere. N.C.R. certainly felt the effort worthwhile and important. Its market dominance may not have stemmed entirely, or even predominantly from such tactics, but few firms of its time managed to acquire as strong a grip on their markets as N.C.R. did. It is difficult to resist the conclusion that N.C.R. successfully practiced predation.

⁴⁴National Cash Register Co. v. Boston Cash Indicator & Recorder Co., et al., 41 F. 51 (1889), which refers to “the unreported cases of National Cash Register v. Bensinger Self-Adding Cash Register Co.” and “Consolidated Store Service Co. v. Lamson Consolidated Store Service Co.” A former salesman testified that “We all received notice from the company to state to a probable purchaser of a competing machine, or those who had already purchased competing machines, either to delay the purchase of the competing machine and put them off thereby, and also to those who had already purchased, stating that they didn’t have a clear title and not to meddle with any competing machine—that there was the chance of a lawsuit.” (Stevens, 1917, p. 206.)

⁴⁵See Crandall and Robins, 1988, p. 43, quoting from *The N.C.R.*.

4 Acquisitions

In this section, we focus on N.C.R.'s acquisitions of rivals. We do so not because we believe that these acquisitions were more important than the entry that N.C.R.'s conduct may have deterred, but because deterred entrants are never observed. We show below that N.C.R. used a pattern of intimidation and its consequent reputation as an implacable foe to destroy rivals, acquiring them for very modest amounts. We believe that this same reputation should have been effective against entry threats, and indeed, the cash register market, beset by entrants during its early years, saw very few between 1900 and 1920. New entrants emerged again only after World War I, when N.C.R. was limited in its actions against rivals by a consent decree it had agreed to in 1915. Prior to that time the company had trumpeted its determination to destroy all rivals, and not to acquire them. It tried to hide the few acquisitions it did make. Its policy is most readily interpreted as one of reputation building designed to decrease its considerable costs of maintaining its position of nearly complete monopoly.

N.C.R.'s stated policy regarding acquisitions was simple: "We do not buy out; we knock out."⁴⁶ Nevertheless, N.C.R. did acquire the assets of a number of its rivals. These acquisitions are catalogued in Table 1.⁴⁷

⁴⁶*The N.C.R.*, May 1, 1892, quoted by *James*, p. 117. The full text surrounding the claim makes it clear that N.C.R. sought a reputation for toughness:

One opposition company said lately that if we whipped out the Bensinger Company we could whip out any company that might oppose us. There was, therefore, no hope for their company, because if we did not buy out Bensinger, we would not buy out any concern. We are reliably informed that Bensinger lost \$67,000 in this business.

It is only a question of whether we propose to spend the money to keep down opposition. If we continue, it is absolutely certain that no opposition company can stand against this company and its agents. If necessary, we will spend five times as much money as we have already done, in order to down opposition. If they really believe this "they will throw up the sponge and quit." We are receiving overtures to buy out opposition. We will not buy them out. We do not buy out, we knock out.

General Butler said to us, four years ago, that we had an unusually fine prospect. "The only way to make money out of it," said he, "is to fight. If you get whipped in one court, carry it to a higher court, and if you get whipped finally in the Superior Court, commence all over again in a new case and fight. Never compromise and never buy out. It is more expensive, probably for a year or two, to fight, but as soon as the opposition know that you will fight at every point, regardless of the money it takes, they will let you alone."

⁴⁷The acquisitions shown are only those catalogued in the *Transcript*. Crandall and Robins (1988) claim that

It is useful to note that the number of acquisitions in Table 1 is small relative to the number of rivals that N.C.R. faced and ultimately vanquished. By 1905 the company could boast:

Two hundred ...concerns have started in the cash register business. All but two have gone out of business. They have wasted amounts ranging from \$5,000 to \$500,000 cash each, in all, more than five million dollars.⁴⁸

Some of these manufacturers were small firms that never seriously challenged N.C.R. One such was the Heitz Cash Register Co., a small operation with a capital stock of only \$10,000. Heitz offered its “Cuckoo” cash register, with a cuckoo taking the place of the bell. The company was unable to survive the inevitable patent infringement suit brought by N.C.R.

Not all of N.C.R.’s competitors were as easily deterred as Heitz, however. The Ideal Register Co. provides an example of a much more serious rival. Like many of N.C.R.’s competitors, Ideal chose to take advantage of an existing sales organization, as well as offering its machines directly to storekeepers. “Premium” registers were offered by product wholesalers, ordinarily in combination with the product they sold to retailers. Ideal’s premium register was directed to the drug trade, offered together with a leading line of medicines. The new company claimed that it was capitalized at one million dollars, a claim that N.C.R. trumpeted when the company exited the business. Soon after Ideal registers appeared on the market, offered at a “discount of 50 per cent with orders for \$50 worth of medicines (Marcosson, 1945, p. 100.), the company was sued for patent infringement by National. Ideal’s machines included not only premium machines, but also a bronze-cased register which sold for in excess of \$100, substantially more than the typical premium register price range of \$15 to \$45 (Crandall and Robins, 1988, at 34.) As Ideal’s machines began to see success in the marketplace, Patterson determined to acquire the company, authorizing a price of up to \$125,000.

N.C.R. brought its usual array of patent suits against Ideal, and Patterson filed a \$350,000 Bensinger was acquired by National Cash Register, but we believe that this was a transaction by which N.C.R. obtained patent rights from a defunct enterprise.

⁴⁸N.C.R. *Guides Manual*, September 1905, quoted in *James*, p. 105.

“damage suit” against Ideal’s head. Chalmers reported that the Competition Department had been “active against them in the field, trying to replace the machines. We became more active after we had decided to purchase their plant.” (*Transcript*, p. 471.) National produced a knocker machine which it sold for \$85, less than the \$125 that Ideal charged for essentially the same machine. While claiming to be convinced that its registers did not infringe on N.C.R. patents, Ideal succumbed to pressure from the competition department and ultimately sold out to N.C.R. for \$12,000 and dismissal of all remaining litigation.

The acquisition cost that National was willing to pay often included a fee for technology acquired. The Kruse Company acquisition included patents, one of which was the basis for a later suit brought by N.C.R. against the successor to Hallwood.⁴⁹ The substantial price paid for the Union Cash Register Co. reflected both the advanced technology of that company and its ongoing success, both in the marketplace and in court. Earlier in the year, it had prevailed in an infringement suit brought by N.C.R.⁵⁰ Union had superior technology, so much so that its chief inventor, Frederick Fuller, was hired by N.C.R. and placed in charge of N.C.R.’s Invention Department following Union’s acquisition.⁵¹ But despite its technical superiority, Union agreed to be acquired after being shown a knocker that National intended to bring out to compete with the Union:

We showed him our machine that we were going to bring out, and we told him we

⁴⁹National Cash Register Co. v. American Cash Register Co., 178 F. 79 (1910).

⁵⁰National Cash Register Co. v. Union Computing Mach. Co., 143 F. 342 (February 19, 1906).

⁵¹Fuller later followed Thomas J. Watson to IBM. He described his experience as follows:

We [at Union] kept steadily at the job of improving the register. I perfected and patented the printing mechanism, and also the device which would give a printed receipt to the customer. There was general agreement, in the cash register business and among users of cash registers, that the Union was the best cash register on the market. But we were continually at a disadvantage because our financial setup was never as good as the register we made. Insufficient capital hampered us. We had several reorganizations, and the company remained solvent, but there never was enough money to do things in a big way. By 1907 we had thousands of cash registers in service, and by this time we had attracted the attention of the great National Cash Register Company in Dayton, Ohio.

It was inevitable that this should happen, and that the National should decide to buy the Union. Our cash register was too good to be allowed to compete, and it had a number of features that the National felt it should have in its own machines. So, after a period of negotiation that brought about a satisfactory offer, the National acquired the Union company and incorporated many of the features of the Union Cash Register in its own product. (Fuller (1938))

were going to sell it for \$25 less than his machine, which was \$100 and \$125 his, and he said, “We will make our machine \$100.” Then we said, “We will make ours \$75.” Then he said, “You would lose money on the proposition.” We said we got our money from all over the world and we could afford to sell for less and they would be losing money on everyone they sold. *Transcript*, at 469.

These threats were sufficient to induce Union to sell, but it chose instead to sell to a rival, the “Universal Cash Register Company,” operated by one Edgar Park. Park, however, was in Patterson’s employ. He continued to operate the company under the Union name for roughly a year, though in a fashion that proved unsatisfactory to Union’s customers. It is unclear whether N.C.R. wished to destroy Union’s reputation permanently or to harm Union’s dealers.⁵²

While it is apparent that N.C.R. focused the attention of its competition department on upstart rivals in part to reduce the acquisition prices of those rivals, it is equally clear that its attempts to foster a reputation were directed at forestalling the entry of rivals in the first place. N.C.R. demonstrated that it would not accommodate any rival who did emerge, and took pains to hide the acquisitions that it did make for fear of reducing the expected costs of failed entry. N.C.R. continued to target American Cash Register even when it was essentially the only remaining competitor standing, so that the effects of its actions could not have reduced the acquisition costs of no-longer-extant rivals.⁵³

The use of bogus concerns to make acquisitions appears to have been designed more to preserve National’s reputation for toughness than to confuse the targets themselves. Both McGraw and Union, each of which was nominally acquired by Park, were targets of the “glooming” process that N.C.R. brought to bear on rivals in order either to discourage those rivals from continuing in business or to induce them to sell out at favorable terms. Glooming consisted of

⁵²Park had also acquired and continued to operate the cash register companies owned by one McGraw. (*Transcript*, at 478.) One explanation for the continuing operation may be that N.C.R. wanted to reduce the purchase price of the assets of the company to be acquired by permitting it to sell off its existing inventories and wind down slowly.

⁵³There is thus no opportunity to test the effects of N.C.R.’s apparently predatory actions by looking at effects on the acquisition costs of non-targeted rivals, the effect of predation investigated by Burns (1986) for the American Tobacco Trust.

inviting the rival to Dayton, showing him through the “Inventions” room, commonly known as the “Gloom Room.”⁵⁴ This room was stocked with both National Cash Registers and a supply of registers of National’s defunct competitors labeled with the date of demise of the rival and the amount of money it had lost in its challenge to N.C.R.

It was there for two purposes; one was to show every visitor coming to the National Cash Register Company how strong we were, and how many people had gone out of the business, and the next object was to show the competitor how many people had gone in and out and how much money they had lost, and we tried to make him think the same thing. (Stevens, 1917, p. 185, quoting former N.C.R. sales manager Lee Counselman.)

The competitor would then be shown the knocker machine or machines with which he would be confronted together with the inevitable infringement claims. Lunch would follow, an opportunity for Patterson to assert his willingness to spend any amount to destroy the competitor.

It is clear that N.C.R. behaved strategically in its acquisitions. It was clearly in N.C.R.’s interest to acquire rivals on favorable terms rather than continuing to do battle with those rivals, provided it could do so without sacrificing the credibility of its threats. One acquisition in particular establishes that N.C.R. was prepared to pay, rather than fight, if the rival it faced could not be convinced of its intention to fight to the end.

Henry Theobald had been the general manager of N.C.R. and had handled the company’s financial dealings. Indeed, it is apparent that he was far more conversant with the financial strength of N.C.R. than was Patterson himself, who took little interest in financial matters.⁵⁵ Patterson, however, believed in dismissing any underling who threatened to become indispensable: “When we get to the point where all depends on one man, let’s fire him.” (Crowther, 1926, p. 78). Theobald was among the first to go.

⁵⁴N.C.R. also maintained a large “Graveyard” filled with rival machines. Stevens (1917), pp. 184-5.

⁵⁵Crowther (1926, p. 180), a sympathetic biographer, reports that “Mr. Patterson knew nothing of finance...” Crowther (pp. 182-5) provides correspondence dealing with important N.C.R. financial dealings in 1898. The N.C.R. correspondence is signed by H. Theobald, Jr.

In 1901, subsequent to being fired by Patterson, Theobald founded the Toledo Computing Scale and Cash Register Company. Theobald clearly intended to manufacture scales, having “seen opportunities for development in a scale invented by Allen DeVilbiss, Jr. that for the first time combined the accuracy of the age-old gravity principle of weighting with the speed of an automatic indication of the weight and computed value.”⁵⁶ Initially, Theobald had also planned to produce cash registers, but this portion of the business was sold to N.C.R. Following the sale, Theobald would change the name of his company to the Toledo Computing Scale Company and achieve enormous success in that business.

Hugh Chalmers testified that at the time of the sale, Theobald’s company was “starting to manufacture cash registers and had gotten their tools made and were ready to put their machines on the market.” (*Transcript*, p. 476) Following the purchase, N.C.R. did not manufacture the Toledo machine, and it is unclear whether the tools in question were provided to N.C.R. or whether they were converted to the manufacture of scales. As such, the supposed merger is probably better interpreted as a covenant not to compete.

Chalmers reported that the cost of the acquisition was \$115,000, which is consistent with the sum of the payments to Theobald and Toledo Scale reported in Table 1 and constituted the second most expensive acquisition made by NCR. This high price is particularly interesting, given that, unlike the ongoing operations such as Osborn, Ideal, and Union, Toledo was not even on the market.

Why, then, did N.C.R. agree to such a high price for a rival that was not even in operation? Theobald, given his background as general manager of N.C.R., was familiar with the costs to N.C.R. of engaging in predatory activity. With accurate knowledge of N.C.R.’s willingness to purchase rivals in the past, he could discount the public reputation that N.C.R. had worked so hard to accumulate. N.C.R.’s threats of infringement suits and knocker registers (N.C.R. had prepared a copy of the Toledo Cash Register for sale before the Toledo machine was on

⁵⁶For a history of Toledo Scale, see “‘The First Fifty Years’ A Company History by Toledo Scale Company, 1951,” <http://www.history.utoledo.edu/att/scale/scale.html>, visited October 20, 1999, and “A Century of Toledo Scale,” <http://www.history.utoledo.edu/att/scale/chron.html>, visited October 20, 1999.

the market) had little impact. Chalmers reported that “Theobald said it didn’t bother him very much, he had been all through that before.” (*Transcript*, p. 476.) Faced with a serious competitor who could not be convinced of N.C.R.’s unwillingness to buy out rivals, N.C.R. chose to pay a handsome price.

While the amount paid to Theobald and his company was large relative to the costs of most of the remaining N.C.R. acquisitions, it is only about one-third of the amount of the most expensive acquisition made by N.C.R. during its early history. The record expenditure was the \$325,000 paid for the Lamson Cash Register Company, a.k.a. The Lamson Store Service Company. The Lamson Company was one of a number of competitors that arose around 1890. The other leading competitors included the Kruse Cash Register Company, the Boston Cash Indicator and Recorder Company, and the Union Cash Register Company, all eventually acquired by National at prices far below that paid for Lamson. The other companies had well-designed machines, some of which may have been superior to National’s offerings. All were the target of National infringement suits. What was it that made Lamson different?⁵⁷

A notice printed in the October 4, 1890, issue of the N.C.R. declared war on Lamson:

TO THE AGENTS. We have opened a fight against the Lamson Co. Keep us posted on all matters regarding Lamson’s agents and their movements. We are getting out some special advertising matter for this war. If you need any of it in your territory, let us know and we will send you some. The most valuable weapon for this fight at present are testimonials from parties who have used the Lamson machine, replacing them with Nationals, setting forth the superiority of the National over the Lamson. If you know of any parties who have made such exchanges go at once and get good, strong testimonials from them. Mail them to us. This is to be a hard fight, and if I

⁵⁷The price paid for Lamson does not seem to have been related to the condition of the company at the time. A summary of the competition, published in *The N.C.R.* in December, 1892, suggests that Lamson was not in any better shape than the other competition. Of these, Union was said to be “doing practically nothing,” Kruse was “gradually dropping one peg at a time,” and Lamson “hate to admit that they are whipped, and are not quite ready to quit a losing game.” The text of this summary also seems to suggest that even at this late date, N.C.R. was not concerned with the indictment they were facing.

have your hearty cooperation I feel sure it will be a short fight.

Jos. H. Crane.

The “fight” in question appears to have included the weapons standard in the National arsenal, competition men, knocker machines, and infringement suits. But Lamson, in return, deployed a weapon of its own. In the thirty-two months of the Benjamin Harrison administration remaining following the passage of the Sherman Act, very little antitrust enforcement occurred. Only seven cases were filed, one of which was directed at a labor union.⁵⁸ These cases appear to have been pursued on the initiative of individual district attorneys.⁵⁹ One apparently vigorous prosecutor, Frank D. Allen of Boston, brought suits against both the Distilling and Cattle Feeding Co. (the Whisky Trust) and the National Cash Register Company.⁶⁰

In fact, the indictment of N.C.R. stemmed from Lamson:

This case was brought largely at the instigation of the Lamson Store Service Co., and I am informed that the Attorney of the Lamson Store Service Co. drew the indictments and the briefs which were used in support thereof.⁶¹

The subsequent history of the case is as follows:

On February 28, 1893 the Circuit Court first declared that it did not think that any constitutional questions were involved in the case. It quashed a major part of the indictment. However the counts containing “allegations of an intent to engross, monopolize, and grasp (the market), and of means clearly unlawful and adapted to accomplish this intent,” were allowed to stand. The defendants were given leave to

⁵⁸United States Department of Justice, *The Federal Antitrust Laws, with Summary of Cases Instituted by the United States* (Washington, Commerce Clearing House, 1949). (*Summary of Cases*)

⁵⁹This discussion is derived from Thorelli (1955), pp. 371ff.

⁶⁰The indictments in *United States v. Patterson, et al.* were dated July 2 and October 5, 1892. See *Summary of Cases*, supra note 58.

⁶¹Thorelli (1955), at 378. The source of the quotation was a letter from Sherman Hoar, successor to Allen as District Attorney for Boston, to President Cleveland’s Attorney General, Richard Olney, dated October 11, 1893. According to Thorelli, who had access to the entire letter, “Hoar had ‘inherited’ the case from his predecessor, whose work in the matter appears to have been confined to pure formalia.” Thorelli (1955), p. 378, note 52.

file special demurrers to the counts sustained. Petition of the defendants for rehearing on the general demurrer was granted on June 1, 1893. Prior to the rehearing the defendants, apparently disturbed by even the limited success thus far achieved by the government, reached a settlement with those competitors at whose instigation the case had been brought. These erstwhile competitors were undoubtedly taken into the fold of the combination on advantageous terms. On November 10, 1894 Attorney General Olney found it appropriate to drop the case against what was now presumably a more overwhelming, and from the point of view of the Sherman Act more obnoxious, combination than that originally attacked. (Thorelli, 1955, p 440, footnotes omitted)

Compare the timing of the rulings by the court and the acquisitions of Kruse and Lamson. Kruse is acquired before portions of the indictment are allowed to stand, while Lamson is acquired only after. The price of Lamson is very substantially higher, and is paid once the threat to National becomes real. The acquisition of Lamson had the intended effect, for District Attorney Hoar, writing to the Attorney General on October 13, 1893, “advised against further proceedings against the cash register combination after the absorption of the Lamson Store Service Company.” (Thorelli (1955), p.389, note 101.) While Thorelli is correct in noting that the case was *nolle prosequi* in November 1894, Attorney General Olney had decided by October 16, 1893, to allow the prosecution to lapse “because of the consolidation of the complaining witness with the defendants, said witness being in possession of the evidence relied on.”⁶²

It seems reasonable, therefore, to accept the hypothesis that National’s price for Lamson, roughly three times higher in nominal terms than the cost of any other National acquisition, was designed to terminate a potentially very costly criminal antitrust proceeding. The size of the premium paid over both later acquisitions and over the Kruse price suggests that the threat posed was quite credible.

⁶²“Letter from Attorney General submitting statement in response to a Senate resolution of June 25 (1904) requesting a statement of all suits instituted by the Department of Justice under the Sherman Antitrust Law and the disposition made of such suits, etc.” (Thorelli, 1955).

The very size of the premium, together with its apparent uniqueness, raises the question of why more companies did not exercise a similar threat. Why were not the rents available via such threats dissipated? The Lamson example suggests that, at least early in the history of Sherman Act enforcement, legal representation characterized by both extraordinary ability and superb political connections was required.

The first opinion issued in *United States v. Patterson* includes the briefs offered by the government, by N.C.R., as well as a third brief captioned “Elihu Root and John Lindsay, (also in support of the indictment,) in the interest of certain private individuals.”⁶³ Root appears to have been the author of the government’s brief as well, though this link must be made by inference from Hoar’s letter identifying the source of that brief.⁶⁴ Root was certainly among the most able and well connected attorneys of his time. The head of Whitney-Ryan syndicate (the company that controlled the New York street railways) remarked that “I have had many lawyers who have told me what I cannot do; Mr. Root is the only lawyer who tells me how to do what I want to do.”⁶⁵ Root had served at the behest of President Arthur as District Attorney for the Southern District of New York and was a member of a private club whose total membership of ten also included Arthur. By 1890, he was regarded as one of the nation’s most eminent corporate lawyers as well as a leading figure in New York Republican Party circles. He was involved in both of the antitrust cases brought by Allen in Boston, representing the defendants in the Whiskey Trust case (Thorelli, 1955, p. 403.) He was simultaneously engaged in reorganizing the Sugar Trust, and soon after guided the reorganization of the Lead Trust (Jessup, 1939, p. 184-5). His political influence can be gauged by his appointment by President McKinley as Secretary of War at the conclusion of the Spanish American War. He later served as Secretary of State and Senator from New York. He won the 1912 Nobel Peace Prize.⁶⁶

⁶³*United States v. Patterson, et al.*, 55 Fed. 605, at 616. Lindsay was Deputy Assistant District Attorney for New York County from 1887-1894. *Who’s Who in America*, 1932.

⁶⁴Thorelli (at 403) identifies Root as representing “the plaintiff on whose behalf the government had intervened in the Cash Register Case.”

⁶⁵It is unclear whether the remark should be attributed to Whitney or Ryan. See Jessup (1938), p. 185. “Elihu Root,” *Brittanica Online*,

⁶⁶His Nobel Foundation biography can be found at <http://sunsite.bcc.bilkent.edu.tr/oldnobel/>

Root may have been equaled by contemporaries in his knowledge of business law and in his familiarity with the emerging jurisprudence of the Sherman Act, and others may have had similar political connections, but it seems likely that the combination of the two qualifications was rare. Thorelli argues that “the considerations typically governing the initiation of an antitrust action were either the easy accessibility of evidence, political expediency in a broad sense or a combination of these factors.”⁶⁷ One final indicator of the importance of the role played by Root in the Cash Register case is provided by the opinion rendered on whether to permit the indictments that had not been quashed to go forward. The listing of the attorneys in this case includes the following: “Elihu Root and F. D. Allen, for the United States.”⁶⁸

The acquisition of Lamson, and, to a lesser extent, Kruse, apparently ended the antitrust prosecution against N.C.R., but left two competitors standing, namely Union and Boston Cash Indicator and Recorder. One might ask why these remaining firms did not simply hire Root to continue the case in their interest. A suggestion of an answer comes from a listing of Root’s clients between 1890 and 1898. The list includes the National Cash Register Company (Jessup, 1939, p. 184).

In sum, the very large payment by National Cash Register for the Lamson Store Service Company suggests that a firm that could both credibly threaten an antitrust prosecution and terminate that prosecution upon being gathered into the monopoly fold could expect to share in the monopoly profits of the incumbent monopolist. The Lamson approach would be repeated, but not before nearly two decades had elapsed. The next time the Department of Justice moved against N.C.R., jail sentences would be imposed, though none were served.

The preceding discussion of acquisitions deals only with transactions with rival manufacturers. N.C.R. also moved vigorously to destroy or acquire dealers, whether for new or second-

[laureates/peace-1912-bio.html](#), visited October 25, 1999.

⁶⁷Thorelli, 1955, p. 594. Thorelli remarks that “The most striking of several examples of the weight given to easy accessibility of the evidence is the National Cash Register suit, in which an attorney for one of the companies involved apparently drew the indictments and briefs used on behalf of the government. This suit was discontinued when that company joined the Cash Register Trust somewhat later.”

⁶⁸United States v. Patterson, et al., 59 Fed. 280 (1893).

hand registers, and employed many of the same tactics (Rodgers, 1969). N.C.R.'s contracts with these firms "evidence[d] a purpose to acquire complete control of the business in second hand registers of its make..." (Patterson v. United States 222 F. 599, 644 (Sixth Cir., 1915)) N.C.R. deployed bogus companies, often establishing register companies on either side of a competing store, in a well-funded and successful campaign to own the market run by Thomas J. Watson, later to head IBM. Figure 2 lists these acquisitions. As its campaign progressed N.C.R. appears to have made diminishing efforts to hide its ownership of bogus stores from the targets of its acquisition campaign, suggesting that the hidden identity was intended instead to convince potential entrants that entry would be unwise.

The pattern of N.C.R.'s acquisitions makes clear that it valued and cultivated its reputation for toughness. That reputation obviously paid dividends, for after the turn of the century, few competitors dared to challenge N.C.R., and those who did typically either collapsed or sold out to N.C.R. at modest prices indeed. The prices that N.C.R. paid for dealers exceed the costs of several of its manufacturer acquisitions. N.C.R. appears to have succeeded in intimidating prospective rivals.

5 Antitrust Redux

The success of Lamson in deploying the Sherman Act against Patterson and N.C.R. presaged an even more serious antitrust challenge, a challenge made more threatening because the individuals behind it, former N.C.R. employees, were determined not simply to extract a large payment from N.C.R., but rather to gain revenge against John H. Patterson. We discuss it here to demonstrate the power of antitrust law exhibited to cause firms to be much more circumspect in their activities, in the process limiting their ability to advertise their toughness.

The challenge to N.C.R. that emerged in 1909 had its origins in the early 1890's, when Henry S. Hallwood, a manufacturer of street paving blocks in Columbus, Ohio, purchased a set of register patents and began to market cash registers under his own name. Hallwood apparently

organized the company for the purpose of selling out the N.C.R., but that company instead chose to meet him with infringement suits against the Hallwood Cash Register Company and the New Columbus Watch Company, manufacturer of Hallwood's registers (Marcosson, 1945, pp. 100ff). Though perhaps the most stubborn and threatening competitor facing N.C.R., Hallwood eventually succumbed to NCR's competitive pressure, going into receivership. National then attempted to buy Hallwood's assets, though surreptitiously (*Transcript*, p. 635). The effort failed, however, and Hallwood reemerged first as International, then American Cash Register, though the Hallwood name continued in common use for the registers of the successor companies.

N.C.R.'s reacted to the Hallwood renaissance with its customary declaration of war, accompanied by deployment of the usual arsenal of weapons. Knocker machines, Hallwood clones of National's own manufacture, were ordered up, but to fill the need for knockers. In the interim, genuine Hallwoods owned by National were shipped to the most threatened markets, those in the Detroit district. A letter from Thomas J. Watson authorized that the Hallwoods be offered at "thirty cents on the dollar." (*James*, p. 101.) American's local representative was driven out and promptly hired by N.C.R.

In January of 1909, the situation changed dramatically. Henry James, the local commander of National's Detroit war, defected to American. That company had been acquired by Hugh Chalmers, formerly general manager of N.C.R., but fired, like so many others before him, by Patterson.⁶⁹ James was induced to join Chalmers and Carl Heyne, a former head of N.C.R.'s Competition Department. These three almost immediately began gathering affidavits regarding N.C.R.'s actions in the American war. On July 14, 1909, this activity bore fruit when the state of Michigan filed an antitrust action with the stated goal of ousting N.C.R.⁷⁰

⁶⁹Chalmers had worked his way up from office boy to the number two position in the company. When fired, he was making \$84,000 per year, a princely sum in 1907 dollars, and more than 1.5 mil. 1997 dollars. This compares with the \$144,000 paid to Patterson, \$24,000 paid to the sales manager, William Pflum, and \$16,000-\$18,000 paid the production manager, E.A. Deeds. *Transcript*, p. 460.

⁷⁰This case, Attorney General et rel. James, v. National Cash Register Co., 182 Mich. 99, 148 N.W. 420 (Mich. S.Ct., 1914), was brought to bar N.C.R. from doing business in Michigan, but although the company was judged to have intended to and succeeded in monopolizing the cash register business, the penalty consisted of a fine of

The threat of antitrust action instigated by James and Chalmers⁷¹ probably came to the attention of N.C.R. almost immediately, and resulted in a letter issued to N.C.R. salesmen instructing them “that in no case will we permit any of our agents to misrepresent cash registers manufactured by other companies, neither will we permit any agent or person in our employ to induce any purchaser of a cash register made by any other company to break his contract and return the register to the manufacturer.”⁷² The Michigan Supreme Court was unimpressed: “Without intending to intimate that this letter was not written in good faith, it is significant that at that late day it became necessary to write such a letter at all...There was much evidence of subsequent conduct of salesmen along the old lines of objectionable practice, but not to the same degree, as at an earlier date.” (*James*, p. 126.) The caution of the letter would prove crucial, however, in the course of a Department of Justice criminal prosecution of Patterson and 29 other N.C.R. executives. The indictments in this case were issued slightly more than three years after the cautionary letter was mailed by N.C.R. On February 13, 1913, a jury convicted Patterson and 28 of the 29 executives (excepting the shadowy Park, who had left the company’s employ) were convicted. Patterson was sentenced to one year in jail and a \$5,000 fine. Other executives received lesser sentences, but many, including Thomas J. Watson, were sentenced to three months in jail.

\$10,000 and costs.

Upon leaving N.C.R., Chalmers had taken over the manufacturer of the Thomas Flyer, an expensive automobile, moving the company from Buffalo, N.Y., to Detroit and renaming it Chalmers-Detroit. He sold the company to department store magnate J. L. Hudson. He then started the Chalmers Motor Co. When he testified in 1913, Chalmers claimed to own 60% of Chalmers Motor Co., a business with \$16 million in annual sales and 4200 employees. He was also president of Michigan Cash Register, with 200 employees. *Transcript*, p. 454. Chalmers Motor Co. operated from 1909-1916, and was one of the principal predecessors of Chrysler.

Chalmers’ dismissal from N.C.R. was characteristic of the eccentric John Henry Patterson. Patterson had fallen under the influence of Charles Palmer, described variously as a “gym attendant” (Carson, at 109) and “a sort of rubber or trainer..., an enterprising cockney with a finely balanced body but what appears to have been a somewhat unbalanced intellect” (Crowther, 1926, p. 220). Palmer, who claimed the ability to read faces, got Patterson to dismiss a number of employees on the basis of physiognomy. He also decreed that bread and butter, salt and pepper, and coffee and tea be banned from sales meetings. Chalmers tried to rescind the dietary edicts and was fired in consequence. Chalmers then vowed that “I will not be even with the old man till I put him behind bars.” (Bernstein, 1989)

⁷¹The cases brought by Michigan and Ohio were clearly instigated by Chalmers and his associates. See *National Cash Register v. Carl Heyne, et al.*, 26 Ohio Dec. 628 (1910).

⁷²Letter from the head of the N.C.R. Sales Department addressed “TO ALL DISTRICT MANAGERS” and dated April 1st, 1909. *James*, p. 126.

The Appeal

The jury verdict against Patterson and his fellow executives was immediately appealed. Before that appeal could be heard, however, Patterson became a national hero. Beginning on March 25, 1913, rain poured down on the Ohio River valley. Dayton, with the exception of the National Cash Register factories, relocated some years before to high ground, was inundated. Patterson was in his element. Before the flood actually materialized he announced, "I now declare the N.C.R. out of commission and I proclaim the Citizens' Relief Association." (Crowther, 1926, p. 303.) He collected supplies in anticipation of the flood to come, relocated hospitals to the factory complex, gathered transport, and "started the carpenter shop at making rough large flatboats, and developed a working relief organization." (Crowther, 1926, p. 304) Relief trains, organized by Thomas J. Watson in New York, began to arrive.⁷³ Though Dayton itself was chaotic, the N.C.R. complex was an oasis of organization. Particular care was given to the treatment of the press:

Newspaper reporters, shot off by their city editors without time to get so much as a toothbrush or a collar, found themselves sleeping in brand-new brass bedsteads, under down quilts, and rattling round in tiled bathrooms, where everything was supplied them, even—if they had time to use them—with buffers to polish their fingernails. When their clothing gave out they were given new ones—clean linen, overalls, pajamas, anything they needed. Hard-working clerks and attendants at once acquired all the special knowledge of valets with the gracious manners of Southern gentlemen. Men smeared with mud were asked, as they went to bed, to send their clothes to be pressed, and there were large signs posted in the lower corridor stating that clothes-pressers and barbers worked all night and accepted neither pay nor tips.⁷⁴

⁷³Watson was widely praised for his efforts, resulting in his inevitable dismissal by Patterson.

⁷⁴This reporter's account is quoted by Crowther (1926), pp. 306-7.

Even though Patterson banned card-playing and the use of alcohol by his subordinates, the press was supplied “with such amenities as pinochle cards and ewers of whiskey which were described for Patterson’s benefit as ‘pop’.” (Carson, 1966, p. 110)

Patterson’s efforts yielded both a humanitarian triumph and a public-relations bonanza. How could it be possible to imprison a man deemed by Evangeline Cary Booth, head of the Salvation Army, an “Instrument of the Lord” who must be rewarded? (Carson, 1966, p. 110) Pleas for pardon were dispatched to President Wilson. Patterson sent a telegram of his own: “I do not ask for, nor would I accept, a pardon. All I want is simple justice.” On March 13, 1915, the Circuit Court of Appeals gave him a victory, reversing the district court and remanding the case for a new trial. The court’s opinion,⁷⁵ delivered in excruciatingly opaque prose, turned on two points. First, since most competitors—Chalmers’ American Cash Register Company constituting the principal exception—had been vanquished more than three years prior to N.C.R.’s indictment, evidence of anticompetitive activities against these defunct firms was barred by the statute of limitations. The instructions issued by N.C.R. to treat American fairly were handled by the statute of limitations for the principal remaining competitor. Competitors now vanquished were no longer relevant to the charge of monopolization. They had missed their chance:

But in the case of a monopolizing by wrongful means, as here, the monopolizing ceases whenever the pugnacious competitor ceases to fight. It is not possible to resurrect the competitors who have been slain in the contest and restore to them what they have lost. Such competitor does not continue to monopolize, within the meaning of the statute, in holding onto the spoils of victory. It is never to be lost sight of that actually doing business, no matter how large, is not monopolizing. It is excluding from the opportunity of doing business that is. If it is thought that this is an evil condition of things, which should not be allowed to continue, the answer is that things should not have been allowed to get in that condition. The competitors

⁷⁵Patterson et al. v. United States, 222 F. 599 (1915).

attacked should have called upon the courts to protect them whilst they were being attacked. (222 F. 599, 615)

In passing, the court found that the Sherman Act did not pertain to industrial espionage, including bribing employees of rivals or of shipping companies for information, for “[i]f no use was made of the information thereby obtained, no competitor would be restrained in his trade or commerce.”(222 F. 599, 623) But while its consideration of the statute of limitations protected N.C.R. from charges that it had illegally destroyed past competitors, the American company remained in operation and had been the target of some of N.C.R.’s destructive activities during the three previous years. Accordingly, the court needed a second avenue if it was to proceed to overturn the jury verdict. It found that avenue in a district court ruling that prevented N.C.R. from introducing a claim that it had bludgeoned its competitors in self defense, in order to protect its patent rights. The district judge had put the N.C.R. claim as follows:

The doctrine asserted in this case for the first time, that the rights of the patentee are of such character that those operating under them may agree, in order to protect them, to engage in acts of unfair competition such as are charged in this case, and even to burn their competitor’s factory, or destroy the competing—as they believe, infringing—machines, by violence, whenever and wherever found, no matter how much it may affect commerce between the states, carried on by competitors, and be amenable therefor only to the police and to the criminal law of the locality in which the acts were committed, I am unable to agree with.⁷⁶

The Circuit Court, however, found that patent evidence should not have been excluded, for if N.C.R. was entitled to “hold on to” the cash register business by virtue of its patents, “its conduct in so doing could not have been monopolizing.” (Patterson v. United States, 255 F. 599, 625

⁷⁶United States v. Patterson et al., 205 F. 292, 300 (S.D. Ohio, 1913). Acts of violence were not at issue, however: “testimony tending to show instances of fisticuffs between the agents of the National and the agents of competitors ...was excluded ...[because] it might be difficult to determine who was immediately to blame for such occurrences, and it would be wandering from the issues to try incidental issues raised by charges of assault or assault and battery.”

(Sixth Cir., 1915) Moreover, while the possession of a patent did not permit the patentee to deter the infringer “by killing him, or destroying his factory, or such infringing articles as he may own.” (155 F. 599, 646), N.C.R.’s patent evidence should have been permitted since it would go to the question of whether the blizzard of infringement suits filed by N.C.R. were malicious. The court determined to remand for a new trial.

The Circuit Court’s opinion was hailed as a victory for Patterson. Marcossou (1945, p. 107) claims that upon his return to Dayton on the evening of his victory, he was swept up in a procession of 20,000 persons, a parade watched by countless others. When the Supreme Court refused to hear an appeal, prosecutors dropped the criminal case in return for a consent order in which N.C.R. agreed not to use the practices of which the government had complained.

6 Summary and Conclusions

Kenneth Elzinga has posed the question of whether predatory pricing is rare like an old stamp, or rare like a unicorn (Gomez, Goeree and Holt, forthcoming). Even studies that claim to find profitable predation are hard pressed to establish that the predation worked successfully to deter entry and preserve monopoly. In one of the most recent studies of predation, Genesove and Mullin (1999) find evidence that the American Sugar Refining Company (ASRC) preyed on rivals, and that its reputation as a “willing predator” influenced rivals, lowering acquisition prices of entrants and small incumbents. But ASRC did not succeed in deterring significant entry and ultimately needed to accommodate large rivals that emerged. N.C.R., in contrast, needed only to accommodate a rival that was fully informed about N.C.R.’s profitability and costs, the Toledo Scale Company. Its reputation and tactics succeeded in clearing the field of effective competition, apart from a firm whose owner appears to have been driven more by a desire for revenge than by a profit motive. In short, when confronting conventional rivals, N.C.R.’s implacable reputation proved an important entry deterrent. While it could not practice conventional predatory pricing, it deployed its array of predatory practices successfully,

suggesting that the answer to Elzinga's query is "rare stamp."

N.C.R.'s position was obtained despite its apparent reluctance to price its own machines in predatory fashion, a reluctance that appears to have stemmed from its desire to induce customers to purchase its high-price, high-profit durable goods. It was forced to prey on rivals not through its own prices, but rather by spending substantial sums to deny revenues to those rivals, either by selling cut-price rival registers or knockers, or by simply inducing the customers of rivals to repudiate their purchases. This was a tough business, but the strategy appears to have worked. By combining this effort to reduce revenues with campaigns of litigation to raise its rivals' costs, N.C.R. appears to have been successful in protecting its monopoly position.

While Patterson and his fellow executives managed to avoid jail after their 1913 conviction, N.C.R. did sign a consent decree agreeing to halt many of its more objectionable practices. After World War I, its market share eroded slowly in the face of entry by a number of new competitors who recognized that entry "required minimal technological expertise and capital." (Cortada, 1993, p. 178). With N.C.R.'s truculence in check, it faced new cash register companies and entry from adding machine manufacturers, firms no longer deterred by either its tactics

or its reputation.⁷⁷ N.C.R. remained a formidable competitor, but was no longer unassailable. The early history of N.C.R. suggests that at least in some circumstances, a firm can acquire and retain a monopoly position by predatory means, unless prevented from doing so by the threat or actual use of antitrust action.

⁷⁷The Consent Decree (Shale, 1918, pp. 315-322) prohibited N.C.R. from

1. Persuading a purchaser of a competitor's cash register to break his contract;
2. engaging in corporate espionage or inducing a competitor's employee to disclose trade secrets or to leave the service of the competitor in return for employment at N.C.R.;
3. manufacturing cash registers made to resemble competing cash registers or selling a rival's cash registers for the dominant purpose of driving a competitor from business;
4. employing competition men, whose dominant purpose is to prevent the sales of competitors, and not to promote sales for N.C.R.;
5. following rival salesmen for the purpose of either hindering their ability to sell cash registers or ascertaining the names of potential customers;
6. intimidating any competitor or potential competitor by maintaining a display room showing models of competitors or placards purporting to show the amounts lost by various competitors;
7. operating an ostensible competitor without disclosing their connection with N.C.R.;
8. making statements about a competitor's solvency or responsibility or about the efficiency of a competing cash register for the purpose of preventing the sale of competing cash registers;
9. intimidating purchasers of rival cash registers with threats of patent infringement lawsuits, unless such claim have been sustained by a court of competent jurisdiction; and
10. acquiring a competitor's business without first obtaining the Court's permission.

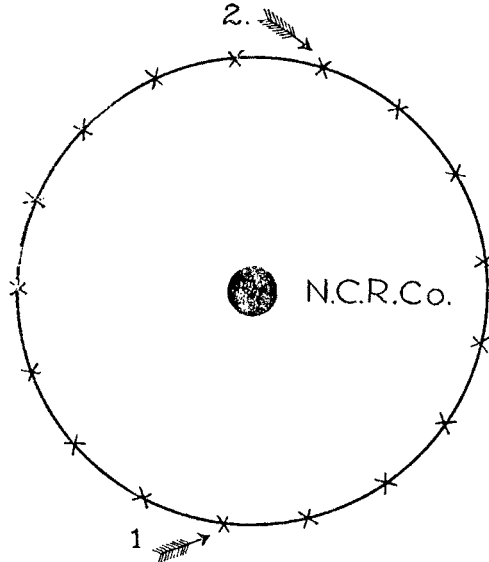
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Figure 1: NCR's view of cross-subsidization

Losses on opposite side of the globe
made up by gains here, while all the
rest of the company's offices are
making a profit.



Temporary loss here on account of competition.

Table 1: Cash Register Manufacturers Acquired by National Cash Register

Date of Acquisition	Company Acquired	Purchase Price
February 4, 1893	The Kruse Cash Register Co.	\$23,500
March 2, 1893	The Lamson Cash Register Co.	\$325,000
August 15, 1900	The Boston Cash Indicator and Recorder Co.	\$30,000
September 26, 1900	The Osborn Cash Register Co.	\$90,000
June 5, 1902	The Toledo Cash Register Co.	\$75,000
June 5, 1902	Henry Theobald	\$40,000
November 17, 1902	Luke Cooney, Manager	\$10,000
October 12, 1903	The Ideal Cash Register Co.	\$12,000
1904 or 1905	The Metropolitan Cash Register Co.	\$8,000
April 28, 1904	The Sun Cash Register Co. \$4,855	
October 31, 1904	Cash register companies operated by McGraw: Detroit Cash Register Co., Globe Cash Register Co., Century Cash Register Co.	\$25,000
October 2, 1905	The Chicago Cash Register Co. (same as the Navy Cash Register Co.)	\$8,000
December 28, 1905	The Weiler Cash Register Co. ⁶	\$9,000
November 1, 1906	The Union Cash Register Co.	\$80,000

Table 2: Second-Hand Register Stores Acquired by National Cash Register

Date of Acquisition	Company Acquired	Purchase Price
1903 or 1904	The Brainin Cash Register Exchange	\$30,000 ^a
June 29, 1905	Isaac Freeman	\$15,000 ^b
June 15, 1905	The Foss Novelty Co.	\$8,000 ^c
January 31, 1906	The Southern Cash Register Co.	\$12,364 ^d
March 29, 1906	A.J. Thomas Register Exchange	\$17,122

^aBrainin had been in business in New York for about ten years, dealing principally in used N.C.R. registers. Watson bought the company “under the name of The Watson Cash Register Company,” paying with N.C.R. money funneled through “an outside party at Rochester, N.Y., whom Mr. Watson told us to pay to. Testimony of Hugh Chalmers, *Transcript*, at 487.

^bSecond-hand register store, San Francisco, Crandall and Robins (1988), p. 46.

^cSecond-hand register store, Cleveland, Crandall and Robins (1988), p. 46. Foss Novelty is also referred to in the *James* opinion, p. 119: “There was also evidence that the respondent carried upon its pay roll one Ellingwood, who was acting as bookkeeper for the Foss Novelty Company, a competing company, and that this employee furnished inside information to the respondent with reference to the business of said rival company.”

^dSouthern, in Atlanta, GA, sold Hallwood registers. It brought suit against N.C.R. when its Hallwood sales were successfully knocked by N.C.R. The Southern acquisition was agreed to one day before the published date of an interim Southern victory in the litigation. *Southern Cash Register Co. v. National Cash Register Co.*, 143 F. 659 (February 1, 1906).