

Standard Oil and the Potential for Price Predation

An Honors Paper for the Department of Economics

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In this study I analyzed a situation encountered by the Standard Oil Company during the early stages of its ascent to a virtual monopoly in the oil refining industry. The use of game theory allowed me to explain the role of particular strategies employed by Standard Oil during Standard's rapid growth within the oil industry in the late 19th century. I began by researching the market in which Standard Oil operated in the latter part of the 19th century. In addition to understanding the structure of the market, I researched the strategies and situations faced by Standard in this period. Once I had an understanding of the path that Standard took to become dominant in the oil industry, I was able to focus my energies on analyzing a specific situation along this path. I proceeded to examine economic literature that is relevant to the modeling of this situation. After familiarizing myself with the relevant literature, I was able to model some of Standard's acquisition dealings using both original and borrowed techniques.

My model examines a situation that would have occurred during Standard's rapid expansion in the latter half of the 19th century. The model attempts to incorporate the informational and efficiency differences between Standard and its independent competitors that created a unique environment for takeover in the refining industry. In the refining industry during the period in question, 1865 to 1885, Standard operated its holdings both openly and under the guise of independents. My model examines the role of Standard's clandestinely operating subsidiaries. In a market where such firms were present, non-Standard refiners would not know whether their opponents were other independents or Standard owned entities. Standard, though, could always be assured that their opponents were independents of a less efficient nature than themselves. Standard's low rail rates and sheer size gave it cost advantages over all of its competitors. These advantages gave it a larger profit margin and greater cushion for losses during periods of predation.

Game theory uses mathematics and rationality to determine what people would decide to do in a particular situation. Using games, human behavior is modeled and interpreted.

This model examines the potential role of predation in acquisitions by Standard's clandestine holdings. I study the interactions between Standard and independents when takeover is attempted, with predation being used as a means with which to coerce exit. One author claimed that specific incidents of predation, though widely rumored, were never confirmed; is this because the *threat* of predation was strong enough that it never had to be realized? Would it be advantageous for independents to predate in an attempt to masquerade as one of Standard's subsidiaries? By constructing a model specific to Standard and its competitors, I am able to examine aspects of predation's role in the rise of the Standard Oil Company.

The model that I constructed suggests that predation could have been used by one of Standard's subsidiaries without betraying the firm's ties to Standard. This result is contrary to McGee's much disputed argument, formalized first in 1958. McGee, though, assumed complete information, a factor that is certainly not present or relevant in my model. Burns (1986) empirical analysis of the American Tobacco Company demonstrates that price predation lowered acquisition cost. My model theoretically supports his empirical findings. The threat of Standard predating against an independent opponent significantly lowered sale price and made sale occur without prolonged periods of predation. Standard's opponents would never have sold at a distress price had predation not been the alternative.

This study has demonstrated that Standard and independents alike could have used predatory pricing to induce hasty exit from their opponents. Hence, this study reinforces the claim that price predation is an effective strategy. Our original conjecture that Standard's holdings were kept from the public in order to keep strategies of predation from being traced to the parent company has been supported by the model contained within this paper.