The Impact of Antitrust Laws on Concentration

I. Introduction

The purpose of this paper is to explore the effect U.S. antitrust policy has on concentration. To date, and to my knowledge, no literature has thoroughly researched the overall impact of social welfare economics on that. The paper begins in Section II with a brief historical review of US Antitrust Laws since 1890.The historical perspective is important because it allows one to see the extent to which anti-collusion laws have been created and how competition has reacted to this over the last century. Section III outlines a brief review of commentary by economists since 1966. The three papers reviewed are important because each, at the time of writing, delved into the mystery of the effect of antitrust laws on concentration. Each paper used current data, methodology, and analysis to further the author's view that antitrust laws had an adverse impact on concentration. Section IV concludes the discussion.

II. A review of Antitrust History

In order to get a better picture of the effect that the Sherman Act of 1890, the Clayton and Federal Trade Commission Acts of 1914 antitrust laws had on concentration ratio, a few important facts about the United States must be taken into account. Corporations, made possible by the Marshall Supreme Court in the early 1800s, were suited for business in America because they allowed a business to be efficient and serve its customers in any nook and cranny of the country. Johnson writes that J.P. Morgan thought that the process of industrial concentration, in the form of a corporation, created an environment of high efficiency, economies of scale and marketing, and that it protected the general populace from chaos in industry. (1997)

From 1870 through 1915 the railroad and other unique inventions enabled the US to explode industrially. Johnson explains that railroads were subsidized by the government and granted special privileges: banking privileges to raise money, the right of eminent domain, state and federal tax exemptions, monopoly protection against competitors, federal, state and municipal capital. The economic panic of 1873, initiated by unrestrained speculation of railroad and related companies led to a depression from which few companies emerged. (1997)

Johnson's research found that one of the results of the panic of 1873 was a movement by businesses in the formation of Trusts, which were viewed as instruments of protection for firms. Under a trust agreement, many sub-corporations organize into a single company, stockholders (the actual owners of sub-companies and stock and bond holders) deposit a controlling portion of their stock with a board of trustees, who would then make sure that the proper mix of producer, consumer and competition occur. In this manner companies could avoid competition, which they feared would drive them all into bankruptcy. Lower costs of production, passed on to the consumer in the form of lower product price, were the result of these Trusts. (1997)

The political system in the 1890s, which at the time functioned as the enabler, was supposed to exist to remove obstacles to business, both natural and man-made. Johnson tells the story of Standard Oil as an illustration that temporary monopolies may actually serve the public interest, rather than hurt it. For example, the per-barrel cost of refined oil at a plant (c.1900) with a 500-barrel daily throughput was $.06 a gallon, but fell to $.03 a gallon when the throughput was increased to 1500-barrels. (1997)

Johnson exposes historical evidence that the general populace mistrusted these forms of corporations and eventually led to the passing of the Sherman Act in 1890. The Sherman Act, authored by Senator John Sherman of Ohio, was the result of opposition in Congress to the

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concentration of economic power in large corporations. Congress' intention was to limit and regulate interstate commerce and foreign trade. The 1890 breaking of the North River Sugar Refining Company by the New York Court of Appeals and the dissolution of the Standard Oil Trust[1] by Ohio courts in 1892 was done on the grounds that their original charters had been violated, not because they were monopolies. The Supreme Court Judge, Louis D. Brandeis wrote, "I have considered and do consider that the proposition that mere bigness cannot be an offense against society is false, because I believe that our society, which rests upon democracy, cannot endure under such conditions." (p.603) He was referring specifically to the Standard Oil and chain-stores like A&P, which because of their vertical integration could deliver to consumers more efficiently and cheaply, goods from all over the world. To him, "quantity discounts" were "fraught with very great evil," even if accompanied by cost-savings to the supplier and the consumer. (1997)

A closer look at the Sherman Act of 1890, in William E. Kovacic and Carl Shapiro's 2000 article, *Antitrust Policy: A Century of Economic and Legal Thinking,* reveals that it categorically banned every contract restraining trade and required judges to develop principles to distinguish between collaboration that suppressed rivalry, and cooperation that promoted growth. From 1890 to 1915 the following principles were established:

1. Define market dominance via restriction on interstate commerce. (1895)
2. Distinguish between naked trade restraints (in which rivals agreed to restrict output and raise price) and reasonable "ancillary" restraints (a restriction on output only enough for expansion, or introduction of new product). (1899)
3. No resale price fixing by retailers. (1911)
4. Ruling in the Standard Oil Company case that dominant firm conduct included 90% share of refining output is proof of monopoly, "rule of reason" is method of antitrust analysis, unreasonably exclusionary behavior was evidence of monopoly, and the court could break apart any firm found to be a monopoly. (1911)
5. Railroad companies could not exclude rivals from using the terminals they built. (1912)

The 1914 Congress, Kovacic and Shapiro put forward, feared that the court was becoming too lenient and passed the Clayton Act, which "helped the court carry out its decisions" by specifically forbidding tying arrangements, exclusive dealing arrangements, interlocking directorates, and mergers by stock purchases. (2000)

Until 1914, it was the president's job to bring companies that may be unduly monopolistic to the court's attention. Congress eliminated the possibility that the president would be swayed by big business in 1914 by enacting the Federal Trade Commission Act (FTC), which formed a separate administrative body that had sole prerogative to bring companies to court. So from 1915 to 1936 the following rulings took place (2000):

1. After-hour's trading upheld the pricing limits on commodities exchange. (1918)
2. Producers were allowed to favor product distribution policies and unilaterally refuse to deal with downstream firms that didn't comply with said policy. (1919)
3. US Steel proved it wasn't a monopoly because its market share had fallen to just over 40% in 1920 from over 80% in 1910. (1920)
4. Agreements to set prices by competitors were prohibited. (1927)

[1] The Standard Oil Company of Ohio was reorganized in 1881 as the Standard Oil Trust. The famous US Supreme Court case of 1911, which resulted in the actual break-up of the Trust, declared the company to be an "unreasonable" monopoly under the Sherman Act of 1890. From Wikipedia, the free encyclopedia. http:/en.wikipedia.org/wiki/Standard_Oil

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5. An output restriction scheme in the coal industry was allowed to occur. (1933)

Kovacic and Shapiro noted that in these first 45 years of monopoly rulings the court used no economic theory to aid their decisions. Basically the court used market share as an indicator of market power, but it is unclear what the court defined as market share.

In 1936 the Robinson-Patman Act, while passed to prevent large national retail chains from expanding at the expense of smaller mom & pop stores, was actually designed to break apart A&P.[2] Kovacic and Shapiro found that the Robinson-Patman Act actually did more damage than it prevented because the lower courts interpreted it as a ban on trade associations. So, from 1936 to 1972, more changes took place in court rulings. (2000)

1. Circumstantial evidence of horizontal conspiracy was allowed as conclusive to convict firms of illegal activity. (1939)
2. Horizontal price fixing, no matter how beneficial to consumers, was outlawed. (1940)
3. Fulfillment of new demand via preemptive addition of capacity was banned. (1945)

Then, in 1950, the Cellar-Kefauver Act was passed in order to increase merger control by banning asset or stock consolidations and enabling aggressive attacks against both horizontal and vertical transactions.[3] Kovacic and Shapiro note that from 1951 to 1972 business was influence by the following rulings (2000):

1. Horizontal agreements to allocate customers or markets-banned. (1951)
2. Proof of conscious parallelism without more concrete evidence was not enough to prove illegal agreements existed between firms. (1954)
3. Tying arrangements-the sale of a product conditioned on the buyer purchasing another product-was ruled against using *per se* rules. (1958)
4. Group boycotts by a full-service retailer that could threaten upstream manufacturers were banned. (1959)
5. Court allowed the government to establish prima facie case of illegality by proving an untoward increase in concentration. (1963)
6. A firm's market share may be low nationwide, but in certain "submarkets" if market share was too high the company held monopoly control. (1964) In 1966 Justice Potter moaned that the sole consistency in merger decisions was that "the government always wins."
7. The court refused to let firms limit retailers to specific geographic areas. (1967)
8. The court condemned a national bakery of using localized price cuts to challenge a leading local bakery…apparently, superior performance leading to lower prices could never explain dominance. (1967)
9. Exclusive sales territories for participants in marketing joint ventures were illegal. (1972)

And from 1973 to 1991 the following rulings were made (2000):

1. All non-price vertical restrictions (like location clauses) had to be proved to exist (1977) and most of the cases heard by the high court concentrated on ease of entry to permit

[2] Johnson said that the Great Atlantic and Pacific Tea Company, A&P, from 1859 to 1936 had had as its prime objective to deliver at the lowest possible price tea, coffee, and other goods to housewives all over the nation. By 1936 it owned 15,427 stores with a backwards-integration list of wholly owned suppliers, including 111 warehouses, 40 bakeries, 13 milk plants, 8 coffee roasting plants, 6 canneries, 9 general food-factories, and a printing plant. (1997) It didn't seem to matter to Congress that housewives were voting with their purses and shopping where prices were lowest.

[3] In other words, as noted by George Stigler, horizontal mergers were forbidden if the two companies were considered to be in the same industry and market, even though their sales overlapped by a small percentage. (1966)

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mergers that yielded high market shares. Predatory pricing and game theory came to dominate the court's thinking.

2. The exception to this era of ease of mergers was the break up of the Bell system, wherein the court proved single firm dominance. (1982)
3. In 1999 the high court acknowledged that the conceptual validity of analytical models lay somewhere between *per se* rules and 'rule of reason,' but did not specify how to structure such cases.

In the early 1990s the government began a policy of 'no secrets' to combat collusion. Kovacic and Shapiro expose the details that the first person of a cartel to admit criminal activity could receive immunity, but the rest of the cartel would face criminal charges. In addition to prosecuting the real collusion activity, the government also began persecuting 'coordinating activity,' *any* activity the facilitated collusion. In most recent years, the courts have begun to recognize that innovation may actually impact economic performance and growth to a much greater degree than mergers or collusion. (2000)

This ends the historical section. I turn now to economic commentary and perspective from a few economists across time.

III. Effect of Antitrust Laws on Concentration: A Review

A. George Stigler

"No type of legislative endeavor is harder to measure in its effects than a prohibition of actions which can be concealed," noted George Stigler in his 1966 paper, *The Economic Effects of Antitrust Laws*. The question of policy effectiveness to prevent monopoly and high concentration is answered by a policy that results in a concentration level lower than it would be otherwise. But in order to determine if the law actually carried out these goals, its necessary to have a measure of concentration and a measure of the effect merger has on concentration. Stigler used the Herfindahl index-the sum of the squares of the shares of industry output by each firm. (p227) But he immediately rejects this measure as inadequate because in the direct calculation of the contribution of internal growth and mergers on the growth of the leading firm, Stigler noticed that this calculation could end up being a negative number. In addition, he notes that the sum of 'shares acquired by merger' by all firms is rendered meaningless due to duplication. (1966)

In attempting to carry out his test on concentration, Stigler compares the US with a few other countries which have no antitrust law, both in periods before and after the laws were enacted, and compared industries required to follow the law with those that were not. He bumps up against the analysts' dismay: lack of data. The undaunted Stigler analyzes a comprehensive set of data to look at the impact of the 1950 Clayton Act on horizontal mergers. His analysis reveals that the fraction of horizontal mergers had fallen to low levels, but that this merger type was biased by the Federal Trade Commission's definition of merger: namely two companies were considered in the same industry and market even if their sales overlapped by a small fraction. All in all, Stigler concludes that the effects of the 1890 Sherman Act and the 1950 Clayton Act were thus:

1. The Sherman Act has had very modest impact on the reduction of concentration.
2. The Clayton Act appears to have a strong impact in reducing the number of horizontal mergers.

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3. The Sherman Act played a role in reducing the availability of the most efficient methods for firms to collude, and thus reduced the amount and effects of collusion.

Finally, Stigler reaffirms that in order for tests of collusion to be effective, two tests are needed:

1. a test that verifying oligopoly theory and,
2. a test confirming efficient and non-efficient forms of collusion exist.

Stigler notes that, realistically, he had not proven beyond a shadow of a doubt that the Antitrust Acts had done the job they had be enacted to do, but that some impact had been observed. (1966)

B. B. Curry and K.D. George

An interesting empirical study in 1983 by B. Curry and K.D. George, *Industrial Concentration: A Survey,* looks at industry structure for individual industries to determine the impact on concentration. They contrast British and US data for individual industry concentrations from 1909 to 1970 (for the UK) and 1990 (for the US).[4] The most remarkable part of their study, for our purposes, is the empirical data showing a significant rise in industry concentration in both the US and the UK over the last century. They observe that average concentration level increased in Britain from 1935 to 1968, and changed little from 1968 to the mind 1970s. In addition, the US average concentration levels increased during the following periods: 1947-54, 1958-63, and 1967-72, but were interspersed with periods of decline: 1954-58 and 1963-67. Curry and George discount the higher concentration of industry in the US as the result of the increase in merger activity at the end of the nineteenth century. They do not, however, take into explicit account the Supreme Court's busy years eliminating monopolies and reducing firm's market power between 1940 and 1970. The significant increase in industry concentration happened during and after that period of time.

While Curry and George regard concentration as endogenous, they theorize that the size distribution of firms at any moment in time must mirror past behavior. In other words, a firm's size is not determined instantaneously; its size is influenced over time by the behavior of the firm. Curry and George agree with Williamson's theories on managerial innovations: the development of multi-divisional organizations may have indirectly contributed to higher concentration level. Curry and George endorse the Williamson theories on managerial techniques used by firms to reallocate resources that, theoretically, companies have been able to increase size without decreasing efficiency. (1983)

Finally, Curry and George remark that firms respond to environmental industrial changes and give the example of Britain's 1956 Restrictive Trade Practices Act, which forced firms to change their collusive behavior. The Act attempts to restore some balance between competition and market power, the result of which was a wave of mergers and consequently an increase in concentration from the mid-1950s to the end of the 1960s.

C. George Symeonidis

In *Price Competition, Innovation and Profitability: Theory and UK Evidence,* George Symeonidis (2001) states that the result and intention of antitrust policy is more competition. He also states that one of the implicit assumptions in many studies is that market power is greater in concentrated markets. Symeonidis theorizes that *if* the market structure is endogenous, then

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[4]Curry and George's definition of market concentration is the K-firm concentration ratio, the cumulative share of the Kth firm and use s_i to denote the share of the ith firm: CRK = ${}^{k}\Sigma_{i=1}\, s_i$. [p207]

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analyzing the effect of market power on innovation by examining concentration *is not valid*.[5] He sites evidence that intense price competition results in increased concentration, so market structure should not be used as a proxy for market power, and both innovation and market structure must be jointly determined. So that's what Symeonidis does. He models innovative output and concentration as jointly determined variables that are determined by an exogenous measure of competition and other variables. (2001) In remarkable results, extending Stigler's and Curry & George's analyses, Symeonidis finds the short-run effects to be decline in profitability, which preceded any market structure adjustment, and price reductions across industries—which led to an increase in concentration, thereby restoring profitability. (2001)[6]

The particular period of time that Symeonidis uses is unique for empirical studies. In 1956 the British government enacted the Restrictive Trade Practices Act, which required all firms with restrictive agreements between themselves to register these agreements with the government. The intention was to eliminate all collusion between firms. What resulted was the intensification of price competition across a range of manufacturing industries. What makes this period unique is that prior to the enactment of this law, industry concentration was well documented, which allows Symeonidis to verify his theory that antitrust policy actually leads to higher concentration, not more competition. Like George Stigler and Curry & George, Symeonidis corroborates that firms change their behavior in order to keep maximizing profits, any way they can. (2001)[7] He concludes that in the long-run, and in the absence of institutional barriers to entry, cartels do not result in higher profits, rather allow for excessive entry. Therefore prohibiting collusion actually reduces the number of firms and increased concentration. (2001)

IV. Conclusion

There are unintended effects to every action. The three empirical articles I surveyed, which cover a period of time of roughly forty-four years, should not be used exclusively and conclusively to say that US antitrust policy has actually increased industry concentration. The curious researcher notes that in each of the articles the evidence presented leads one to believe that the antitrust acts have had a double whammy effect in markets. The first effect, immediately post enactment, was to increase competition, driving down market price: the exact impact the law was supposed to have. But the long-term, hand-in-hand, result of antitrust policy appears to be an increase in collusive efforts to increase market price, driving up the concentration ratio: the exact opposite effect that the law was intended to have. The emerging result appears to be an infinite loop of antitrust laws being enacted, increasing competition, driving down price, resulting in an increase in collusion, which in turn causes more antitrust policy to be enacted. The inquiring researcher would use this as a springboard for new empirical research into the unintended effects antitrust policy has on competition and social welfare.

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[5] Emphasis mine.

[6] Symeonidis says that equilibrium involves the joint determination of market structure, research and development expenditure, innovative output, and profits. His exogenous factors are short-run conduct, price competition, where price competition is an inverse measure of the degree of collusion, but not equivalent to the price-cost margin, which is an endogenous factor.

[7] Symeonidis has a very interesting theoretical framework, using a three-stage game, and does not include a measure of market structure among his regressors in his empirical simultaneous equations model in reduced form. He wants to allow market structure to change to restore long-run equilibrium via the profit equation. The result of his model is a significant positive effect on concentration between 1963 and 1968, a full seven to eleven years after the enactment of the Restrictive Trade Practices law.

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