November 27, 2014

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The Structure of the Public Accounting Industry – Why Existing Market Models Fail

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The structure of the public accounting industry has been the subject of debate for decades. Both empirical and theoretical research has reached contradictory results and conflicting conclusions regarding which model of industrial organization describes the structure of the public accounting industry. Some research has concluded the industry is competitive and other research found it is oligopolistic. Obviously it cannot be both. This paper compares the structure of the public accounting industry with the economic models of industrial organization and discusses the reasons why current models fail to describe the structure of the industry. Previous research has failed to consider that the market for audit services was created by the government which was then subsequently subjected to the simultaneous regulation of both the supply and demand for audit services. The simultaneous regulation of both supply and demand distorts the market thereby rendering current models incapable describing the structure of the public accounting industry.
1.0. Introduction

The structure of the public accounting industry\(^1\) has been the subject of debate for decades. Both empirical and theoretical research has reached contradictory results and conflicting conclusions as to how the public accounting industry is structured. The industry has been described as competitive and oligopolistic. Obviously the industry cannot be both of them. The basic reason for the contradictions observed in the literature is that the structure of the public accounting industry has not been subjected to the same degree of analytical rigor as other industries have been subjected to. Researchers have not even acknowledged the assumptions of the models in which they are positioning the public accounting industry.

This paper discusses the reasons why current economic models of industry structure are inadequate to describe the structure of the public accounting industry. Previous research has failed to consider the simultaneous regulation of both the supply and demand for audit services. The simultaneous regulation of both supply and demand distorts market forces thereby rendering current models unable to describe the structure of the public accounting industry.

The rest of the paper is organized as follows. First, it discusses why the issue of the structure of the public accounting industry is important, the contribution of this paper to the literature, and the importance of the paper to the profession. Second is a brief review of the economics of industry structure. This is followed by a brief literature review of the research of the market structure of the public accounting industry. Fourth is an examination of the distortion of the market for public accounting services. Finally, it concludes by calling for a new model to be developed to describe the industry that fully accounts for the distortion caused by government regulation of both supply and demand.

\(^1\) The terms “public accounting industry” and “public accounting market” are used interchangeably.
2.0. Importance of the structure of the public accounting industry, contribution of the paper to the literature, and the importance of the paper to the profession.

2.1. Importance of the structure of the public accounting industry

The structure of the public accounting industry is important for several reasons. First, the structure of the industry determines, in significant part, the auditing fees that public accounting firms are able to charge their clients. If the public accounting industry is non-competitive, then the assumption arises that, ceteris paribus, the auditing firms within the industry charge higher fees than would be seen in a competitive industry structure.

Second, there is some evidence, although not conclusive, that industry structure affects audit quality. It has been suggested that competition reduces audit fees and thus audit quality (GAO, 2003). If that is accurate, then there are questions that arise concerning the relationship of audit fees, which are assumed to be higher in a non-competitive industry, to audit quality, which may be lower in a competitive industry.

Third, the American public, as well as European and others, has an inherent suspicion for any industry that is anything other than competitive. This has been droned into the American psyche for over a century with the passage of the Sherman Antitrust Act of 1890. There is good reason to be suspicious of industries that are non-competitive since consumer surplus is minimized in non-competitive industries, while producer surplus is maximized. If the public accounting industry is non-competitive, consumer surplus is reduced.

Fourth, although the public accounting profession is already highly regulated, as explained below, the specter of additional regulation of public accounting firms is always looming on the horizon. (GAO, 2003). Threats of imposing some type of regulation, whether

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2 Following the 2003 GAO report, the terms “public accounting firms,” “registered accounting firms,” and “public accounting services” are used here to refer only to those firms registered with PCAOB to audit publicly traded companies, and the audit services provided by those firms. Only the market for audit services is considered here, not all services that public accounting firms provide, since only auditors and auditing services are regulated.
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statutory or by some other mechanism, may be more theatrical than real since the question of how to regulate public accounting firms to make the industry more competitive has never reached the stage of concrete proposals. The impracticality of regulating firms makes it unlikely, but not impossible and should not, therefore, be ignored. The question of the structure of the public accounting industry is important because the structure of the industry would confirm or negate the need for additional, or different, regulation.

2.2. Contribution of the paper to the literature

This paper contributes to the literature by showing that previous research has neglected to consider the distortion of the public accounting market due to the simultaneous regulation of both supply and demand. Previous research has reached contradictory results and conflicting conclusions, with some studies describing the industry as competitive and others as oligopolistic.

What has been neglected in prior research is the incorporation of the simultaneous regulation of both the supply and the demand for audit services. This paper demonstrates that attempts to prove theoretically or empirically that the public accounting industry fits into any of the existing models is an exercise in futility. This paper not only identifies the inadequacy of existing models, but also the sources of the distortion that have resulted in the inconsistent descriptions of the public accounting industry.

2.3. Importance of the paper to the profession

Threats of regulating the public accounting profession is a popular topic among politicians and regulators. The threat is not completely unjustified, as proven by Enron and the subsequent enactment in 2002 of Sarbanes-Oxley (SOX). But the regulation of the accounting profession under SOX pertains to auditing standards. Other threats are aimed at the structure of the industry and the firms within the industry (GAO, 2003). It is therefore important to the public
accounting profession to understand the structure of the industry. If it is competitive, regulation would not be necessary. If it is non-competitive then further regulation may be justified.

The following section briefly discusses the economics of industry structure.

3.0 Economic models of industry structure

Market structure, also called industry structure, refers to the degree of competition present in a market. There are four models of market structure: perfect competition, monopoly, monopolistic competition, and oligopoly. The basic assumptions and conditions of the four models are sufficiently well known that an in-depth analysis is unnecessary for purposes of this paper. Therefore only a brief review of the relevant assumptions of the models is presented here in order to provide the background necessary to understand the reasons why they fail to describe the structure of the public accounting industry.

3.1. Perfect competition

First, the common assumption across all models is that all firms are profit maximizing. In a perfectly competitive market (also referred to as pure competition), suppliers\(^3\) are price takers and face a horizontal, perfectly elastic firm and industry demand curve. To maximize profits, prices are set where supply equals demand, which is also at the point where marginal cost equals marginal revenue. Marginal cost includes a normal profit and normal return to capital. Surplus is evenly divided between consumer and producer. There are very many small producers and consumers thus making both producers and consumers anonymous. No single producer or consumer has the ability to influence the market, either by entering or exiting. There are no barriers to entry. All suppliers produce homogeneous products that are perfect substitutes and perfectly elastic. All consumers have perfect knowledge of the market. Goods produced are may

\(^3\) The terms supplier, producer, provider, and seller are used here interchangeably. Likewise the terms buyer, customer and consumer are also used interchangeably.
be normal goods where demand increases as the income of consumers increases, inferior goods where demand decreases as income increases, or luxury goods where there is a bigger percentage increase in demand as the income rises than for a normal good.

3.2. Monopoly

In a monopoly there is only one producer, or at least only one major producer. As noted by Chamberlain (1933), “the essence of monopoly is control over supply.” A natural monopoly is one in which there can be only one supplier as a result of the nature of the product. For example, public utilities (such as gas or electricity) are often considered as natural monopolies. Legally created and protected monopolies are created by, or at least protected by, state or Federal statutes. Patents provide legally created and protected monopolies for the holder of the patent rights.

Suppliers face a downward sloping, relatively steep, inelastic demand curve. Prices are set at the demand price, rather than where marginal revenue equals marginal cost as in a perfectly competitive market thus allowing a monopolist to earn excess profits resulting in above normal profits and return to capital. This in turn results in increased producer surplus and decreased consumer surplus. There are no close substitutes for the products that are produced, and no arbitrage. The market may be national or local, as long as the producer is the sole producer in the market. Factor input prices are competitive and mobile, and may be substituted as a function of cost and technology.

There are barriers to entry, either legal or economic. Legal barriers consist of government prohibition of new entrants to the market such as patent protection. Economic barriers would include prohibitively high costs for investment.
Monopolies are almost always regulated. The most common form of regulation is rate regulation where the monopolist must obtain permission from the government to raise its prices which is generally based on its cost of capital. Other forms of regulation include output restrictions. For example, certain industries have caps on the amount of carbon emissions they are allowed to produce.

3.3. Monopolistic competition

In industries characterized by monopolistic competition there are many buyers and sellers. Firms produce differentiated products that are close, but not perfect, substitutes. Firms face both individual and industry downward sloping, elastic demand curves. Firms are price setters and have some control their prices, but demand is relatively. Firms compete on the basis of non-price differences in products such as brand name or advertising. A normal return to capital is part of the cost. Firms can earn excess profit in the short-run, but not the long run. Production is not set at lowest cost and firms generally operate below full capacity. Thus there is a net loss of surplus for both producer and consumer, but producers often capture a greater percentage than consumers. There are low or no barriers to entry or exiting, but firms have the power to influence the market (Robinson, 1959; Chamberlain, 1965; Waldman and Jensen, 2006; Baye, 2010).

Deserving special consideration here is the observation that “the possibilities of monopoly profits are increased by the presence of advertising” (Chamberlain, 1965, p. 173). The role and importance of advertising in the public accounting industry is discussed below.

Industries characterized by monopolistic competition are common.
3.4. Oligopoly

An oligopoly is characterized in large part by the existence of a large few firms that control the market. The presence of an oligopoly is measured by the Herfindahl–Hirschman Index (HHI) (GAO, 2013). Quintessential examples of oligopolies are the petroleum industry, mobile phone carriers, and the soft drink and beer industries.

An oligopolistic market is more complicated than the previous three. Firms in an oligopoly are not price takers; they have at some, but not total, control over prices. They face a downward sloping demand curve, but the slope of the demand curve is complicated, as discussed below. Barriers to entry exist in all models which are often economic such as high entrance costs. Firms operate below full capacity. Additionally, consumers are knowledgeable about the market but more importantly, consumers have no power in the market.

There are several models of an oligopolistic industry. Each model is based on different assumptions and conditions, and involves the application of high-level mathematics. A mathematical analysis is not necessary for purposes of this paper. It is necessary only to discuss some of the basic assumptions and conditions in order to demonstrate that the public accounting industry does not fulfill the assumptions and conditions of an oligopolistic structure as discussed in Section 4.0.

In one model of oligopoly there are a few firms that produce differentiated products and serve many consumers. There is an industry leader that sets prices. In another model there are a few firms that produce either differentiated or homogenous products and serve many customers. Each firm believes other producers will hold their output constant if it changes its own output. A third model assumes there are a few firms that produce differentiated products that serve many consumers. There is an industry leader that sets its output and others set their output based on the
leader’s output. According to a fourth model there are a few firms that produce identical products that serve many consumers. Firms engage in price competition and react to prices set by other firms. Overall, rivals will follow price decreases but will not follow price increases. (See Cournot, 1838; Sweezy, 1939; Friedman, 1983; Waldman and Jensen, 2006; Baye, 2010; Stackelberg, 2011; for a more in-depth discussion of the assumptions and conditions as well as a mathematical analysis of the various models.)

In oligopolistic markets competition within the oligopoly is not anonymous. Each producer is fully aware of all other producers in the market, as well as potential entrants. Individual producers are strategically linked; they necessarily have an interdependent, symbiotic relationship with other producers (Ried, 1981; Friedman, 1983).

Producers face a “kinked demand curve” which is not present in perfect competition, monopoly, or monopolistic competition. As explained by Reid (1981) the kinked demand curve is a discontinuity in the quantity demanded at a point where the elasticity of demand changes and where price is not defined within a relevant range. Furthermore, the kink is more pronounced when the products are more homogeneous in both normal and recession economies, but is more pronounced when the products are more differentiated in boom economies.

The kinked demand curve interferes with firms’ ability to maximize profits (Hall & Hitch, 1939; Sweezy, 1939; Waldman & Jensen, 2006; Baye, 2010) and results in firms in an oligopoly using strategic game theories in making marketing and production decisions. Game theory is concerned with decision making where each participant chooses his actions based on how he anticipates other participants to act. The firms in an oligopolistic market can maximize
profits by engaging in collusive behavior or forming cartels, both of which are illegal in the United States and most other countries. 4

While the usefulness of the kinked demand theory has been questioned by Stigler (1947, 1978) because, he believes, it is only explanatory and not predictive, explanation is the purpose of research on the structure of the public accounting industry. The structure of the industry must be understood in order to guide legislative and regulatory decisions.

The following section reviews the literature on research on the structure of the public accounting industry.

4.0. Review of the public accounting industry structure research

4.1. A brief history of the evolution of the market structure

Regardless what the market structure of the public accounting industry is, market structure determines the behavior and performance of firms within the industry (Yeardley, Kauffman, Cairney, and Albrecht, 1992; Pong and Turley, 1997; GAO, 2003). It is important, therefore, to understand the market structure of the industry in order to understand how public accounting firms behave with respect to their clients, each other, and the public, particularly concerning audit fees and audit quality.

Currently, the public accounting industry is dominated by what is known as the “Big 4,” but the industry was for decades dominated by the “Big 8” – Arthur Andersen, Arthur Young & Co., Coopers & Lybrand, Ernst & Whinney, Deloitte Haskins & Sells, Peat Marwick Mitchell, Price Waterhouse, and Touche Ross. While they are commonly referred to as “firms,” a more

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4 Oligopolists can maximize profits through collusion, which is here assumed without argument not to occur within the public accounting industry. Sikka (2008) takes a contrary view.
accurate description is “professional services networks.” The term does not change the analysis or the conclusion.

The Big 8 became the Big 8 as a result of a series of mergers of smaller firms over a series of decades and culminating in 1988. (GAO, 2003). Then in June, 1989, a series of what is referred to by Invancevich and Zardkoohi, (2000) as “megamergers” began with the merger of Ernst & Whinney with Arthur Young to form Ernst & Young. This was soon followed by the merger of Deloitte, Haskins & Sells with Touche Ross to form Deloitte & Touche in August of the same year. Less than a decade later, Price Waterhouse merged with Coopers & Lybrand in 1998 and PricewaterhouseCoopers was born leaving the “Big 5” as they became known. (GAO, 2003).

In 2002 Arthur Andersen was forced to exit the public accounting industry due to its association with Enron’s fraudulent activities and reporting. The story of the fall of Arthur Andersen need not be repeated here. What is important is that after the disappearance of Arthur Andersen from the public accounting industry the Big 4 acquired 87% the market share of audit clients which are referred to as the “top-tier” (GAO, 2003).

4.2. Research of the structure of the public accounting industry

This section discusses research on the structure of the public accounting industry and the failure of existing models to describe accurately the public accounting industry. This is followed by an explanation of the distortion of the industry by government regulation. However, prior to

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5 For example, KPMG’s website states, “2013 KPMG LLP, a Delaware limited liability partnership and the U.S. member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative (“KPMG International”), a Swiss entity…Member firms of the KPMG network of independent firms are affiliated with KPMG International. KPMG International provides no client services. No member firm has any authority to obligate or bind KPMG International or any other member firm vis-à-vis third parties, nor does KPMG International have any such authority to obligate or bind any member firm.” (KPMG, 2013)

6 The next tier includes Laventhol & Horwath, Grant Thornton, BDO Seidman, and McGladrey & Pullen. The next tier is “all others.”

7 “Government” is used here in the broad sense encompassing both state and Federal governments
examining the research on the structure of the public accounting industry a problem common to all research on the structure of the public accounting industry must be considered, and that is the insurmountable task of separating cost, revenue, and production functions of auditing services, from all other services provided by accounting firms such as management advisory services and tax.

While revenue generated from audit services are reported separately from revenue generated from management advisory services and tax revenues from each source cannot be matched with the costs of producing that revenue. Marginal costs and marginal revenues cannot be calculated based on available information. Any attempt to align the structure of the public accounting industry with any model of industrial organization without considering marginal costs and marginal revenues of auditing services only, is little more than speculation.

For example, Banker, Chang and Cunningham (2003) estimated the public accounting industry production function and determined that merger activities among accounting firms were justified by the scale economies obtained from the mergers, and that the public accounting industry improved its productivity in delivering all services—Accounting and Auditing, Tax, and Management Advisory Services—over the period 1995–1999\(^8\). Ignored in their study, as well as all others however, were costs associated with each service. Other studies have obtained similar results. Thus, those results offer little in the way of providing empirical support for defining the structure of the public accounting industry as any one particular model as it is narrowly defined by Federal securities laws, the PCAOB, and states laws; namely, the auditing of the financial statements of publicly traded companies.

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\(^8\) Sarbanes-Oxley severely curtailed the services registered accounting firms could provide to clients for whom they also offered auditing services.
4.2.1. The public accounting industry as perfectly competitive

No theory of the public accounting industry conceives of the industry as perfectly competitive. Nevertheless it is useful to consider some of the more salient reasons why the public accounting industry is not perfectly competitive since many of those reasons reappear in recognizing that the public accounting industry is also not a monopoly, not monopolistic competitive, and not oligopolistic.

First, public accounting firms are not price takers. They do not face an industry or firm horizontal demand curve. Public accounting firms, particularly the Big 4, have the ability to influence the market and audit fees, as seen by the exit of Arthur Andersen from the market in 2002.9

Second, there are high barriers to entry into the public accounting industry, including limiting entrance into the profession by state law, and restrictions by Federal law and regulations of who can perform audits of publicly traded companies. (GAO, 2003). Third, there are not many small consumers. The number of consumers of auditing services is determined by the number of publicly traded corporations which must meet minimum capital requirements in order to receive SEC authorization to sell shares to the public and many are global in size. Fourth, the market does not consist solely of many small providers. The market is dominated by the Big 4.

It can be concluded with certainty that the structure of the auditing industry is not one of perfect competition.

4.2.2. The public accounting industry as a monopoly

The public accounting profession is often described sociologically as a monopoly. State laws grant a legal monopoly to those who are allowed to practice public auditing (Fogarty and

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9 Evidence that an increase in auditing fees were attributed in part to the market becoming more concentrated is inconclusive (GAO, 2003)
Parker, 2010). However, statutes creating and protecting the public accounting profession as a monopoly for conducting financial statement audits of publicly traded corporations do not necessarily translate into a monopoly economic structure. Since within the public accounting industry there is more than one firm, including a few very large firms and hundreds of smaller firms, the firms in the industry do not have complete control over prices. Therefore, monopoly is automatically eliminated as a potential market structure for the public accounting industry.

4.2.3. The public accounting industry as monopolistic competition

While not perfect competition, attempts have been made nevertheless to impose a competitive model on the public accounting industry, which must be interpreted as a monopolistic competition model (Banker, Chang, and Cunningham, 2003; Simunic, 1980). It is not asserted that the competition takes place within the entire industry. Rather, the competition is among the firms in a given Tier.

For example, Bierstaker, Houston, and Wright (2006) found that “over the past 25 years the audit environment has experienced intense competition” and that there is competition between the Big 4. In 2003 the GAO conducted a simulation “To assess whether the current high degree of concentration in the market for audit services is necessarily inconsistent with a price-competitive setting” (p. 4). The GAO found that the observed high degree of concentration in the public accounting industry “is not necessarily inconsistent with a price-competitive environment.”

The problem with these and similar studies that have found the public accounting industry to be competitive, however, is that they failed to incorporate the basic assumptions and

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10 For example, see New York State Education Law Article 149, Public Accountancy, §7400: “public accountancy services which all require the independence of licensees: a. any audit to be performed in accordance with generally accepted auditing standards or other similar standards, developed by a federal governmental agency, commission or board or a recognized international or national professional accountancy organization, that are acceptable to the department in accordance with the commissioner's regulations.”
conditions of the monopolistic competition model. It has not been established theoretically or empirically that either firms or the industry face a downward sloping demand curve for audit services—a necessary condition of the monopolistic competition model—and as demonstrated below, they in fact do not.

Second, there is only one product every firm in the industry produces—the audit report (opinion). Yet research that finds the public accounting industry to be competitive omits any consideration as to whether the product of one firm—the audit report—is a close substitute for the product of another firm. If the product is not a close substitute, there can be no monopolistic competition, another necessary condition of the model.

As noted above, the possibility of monopoly profits is increased by the presence of advertising. Yet, some studies have found that advertising in the public accounting industry decreased fees (Hay and Knechel, 2010). Furthermore, Pearson and Trompeter (1994) concluded that high levels of concentration, as suggested by oligopoly theory. Their evidence supported intense competition among the market leaders (Big 8), and high levels concentration result in high levels of price competition

It must, therefore, be concluded that monopolistic competition fails to describe the structure of the public accounting industry.

4.2.4. The public accounting industry as an oligopoly

Describing the public accounting industry as an oligopoly is tempting. Oligopoly is the “go to” model to describe the industry because the industry does exhibit oligopolistic characteristics in two, but only two, aspects—the domination of the market by a few large firms and high barriers to entry. But while the industry has the appearance of an oligopoly, it does not behave as an oligopoly. It has the form, but not the substance, of an oligopoly.
Frequently, it is merely asserted as a definition that the industry is an oligopoly without a rigorous examination whether the industry fulfills the necessary conditions of an oligopoly. According to the HHI, Tier 1 has a concentration ratio of over 1,800, which is the threshold definition for a tight oligopoly.\footnote{A tight oligopoly is “an oligopolistic market structure where the four firms hold over 60 percent of the market. A loose oligopoly is a market structure with 8-15 firms and a four-firm concentration ratio below 40 percent.”} After acknowledging that price competition exists among the Big 4, the GAO report states “By any measure, the large public company audit market is a tight oligopoly” (p. 16, emphasis added). Yet, the only measure the GAO Report used to support its assertion that the public accounting industry is an oligopoly is market concentration. It provides no evidence that the industry behaves as an oligopoly, whether loose or tight. In fact, the Report found that price competition exists within the Tier I firms.

Granted that the industry fits the definition of a tight oligopoly on the basis of numbers of firms alone, whether it fulfills the behavioral conditions of an oligopoly is problematic at best. In fact, Cahan, Jeter and Naiker (2011) failed to find evidence that the Big 4 operate “as a tight oligopoly either in the overall audit market or within industry markets, whether defined at the national or local level.” Simply defining the industry as an oligopoly according so some arbitrary measure provides little understanding of the nature of the market or the behavior of the market participants. It becomes an oligopoly in name only. To look only at prices and market concentration while ignoring all other necessary conditions of an oligopolistic market renders invalid any conclusions that the public accounting industry is an oligopoly.

Absent from the GAO Report is an analysis of the nature of demand for audit services (whether demand is elastic or inelastic, whether the product is a normal good, or whether the product is homogeneous). As noted earlier, it has not been established that either firms or the
industry face a downward sloping demand curve for audit services—a condition that also applies to all oligopolistic models—and again, as explained below, they do not.

A factor ignored by the GAO Report as well as other studies claiming the public accounting industry is an oligopoly is the presence or absence of a kinked demand curve. While Hermanson, Dykes and Turner (1987) assert that a kinked demand curve does exist in the auditing industry they offer no evidence in support. Whether the kinked demand curve exists in the auditing industry has not yet been demonstrated.

On the one hand, as noted by Reid (1981), if there is information asymmetry then if the price of a good is increased, customers may purchase less whereas if it is decreased, they may purchase more. Neither condition exists within the public accounting industry. Customers may not purchase more or less of a good. Federal law requires that each customer demand and purchase one unit of the good produced—the audit report.

On the other hand, however, if there is no information asymmetry, i.e., if customers have substantially equivalent information about the market and producers, then a necessary condition of an oligopoly is violated. In the public accounting industry customers (publicly traded corporations) have substantially equivalent information about the market and producers and at least global corporations are able to exercise power in the market by bargaining (Hay and Knechel, 2010).

Another factor ignored in the GAO Report is any reference to whether auditing firms engage in strategic game theories regarding price or output decisions. There is no evidence either in the GAO Report or other studies that auditing firms base their price or output decisions on the actions of other firms in the industry.
Reid (1981) observes that a weakness in available evidence is that no link has been established between price and cost variations, which implies that when demand is stable, as it is in the public accounting industry, then if costs do not change prices would not change. This raises the question whether the public accounting industry can absorb changes in cost without changing price, as suggested by the kinked demand curve, or whether prices would change as costs change as suggested by monopolistic competition.

Also missing from the GAO Report, as well as other studies finding the presence of an oligopoly in the public accounting industry, is a consideration of the nature of the product. There is only one product for every firm in the industry—the audit report (opinion). Yet whether the product is homogeneous or differentiated is important in determining if the industry is an oligopoly since it would narrow the choices of which model of oligopoly would apply, and in turn whether the industry meets the necessary conditions for the model.

The GAO report recognizes high barriers to entry are present in the public accounting industry. States prohibit the practice of public accounting unless the individual is licensed. Obtaining a license to practice requires a bachelors degree with 150 credit hours of study and passing an examination. Many states also require individuals to have one or more years of supervised auditing experience prior to receiving a license to practice. Obtaining a license to practice from a state, however, does not entitle the licensed individual to audit publicly traded companies. The Federal government imposes a further restriction that only auditors and auditing firms registered with the PCAOB can audit publicly traded companies.

The effectiveness of these barriers is debated. Dopuch and Simunic (1980) believe that neither individual nor firm barriers are effective in limiting the supply of auditors. Individual licensing barriers, they claim, are less restrictive than in medicine or law. However, it is not the

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12 See, e.g., New York State Education Law Article 149, Public Accountancy, §7400, fn. 7.
licensing alone that creates the barrier, but the cost of education, both out-of-pocket costs for education (e.g., tuition and textbooks) and opportunity costs (e.g., foregone income) which can be a major obstacle to individuals, particularly after the adoption of the 150-hour requirement to be eligible for obtaining a license to practice. (GAO, 2003)

Furthermore, while the fee for registration with PCAOB is negligible, the fee itself is not the barrier. To be able to audit a publicly traded company that complies with SOX and PCAOB auditing standards, the auditor or auditing firm requires an investment in both human capital and physical capital that is prohibitive for smaller firms. The required investment is an effective barrier for potential entrants into the public accounting industry (GAO, 2003).

Auditing publicly traded companies introduces litigation risks under Federal Securities laws that do not exist in that part of the accounting profession that is not a part of the public accounting industry. Firms must have the resources to manage that risk by purchasing malpractice insurance or self-insuring, both of which impose high costs on a firm and contribute to the high barriers to entry. (GAO, 2003).

In addition to litigation risk, SOX and the PCAOB introduced a new risk to registered accounting firms—sanction risk. Registered accounting firms now risk incurring either monetary or non-monetary sanctions for the manner in which they conduct an audit. Smaller firms are less able to absorb such sanctions further adding to the barriers to entry. 13

An oligopolistic market structure is much more complicated than the existence of a few large, dominant firms. An industry cannot truly be considered an oligopoly on the basis of the size and the degree of concentration alone (Yeardley, et al, 1992). It must also behave as an oligopoly and there is no evidence that the public accounting industry actually behaves like an oligopoly.

13 Sanctions may also be imposed by the SEC. See Beasley, Carcello, Hermanson, and Neal, 2013.
The claim that the public accounting industry is an oligopoly suffers from additional flaws. First, there is no guessing the output of other firms in order for one firm to adjust its output. Each firm already knows the output of all other firms and output cannot be adjusted. Each firm knows who the clients are of all other firms. This, too, is public knowledge. Each firm also knows what the prices (audit fees) are of all other firms. This, too, is public. This knowledge negates the employment of strategic game theory. There is no symbiotic relationship as required in an oligopolistic industry. Furthermore, each firm knows its own limitations; i.e., each firm is aware that it is precluded from auditing certain companies due to, e.g., the presence of conflicts of interest (GAO, 2003).

On the one hand, the product (audit reports/opinions) can be considered homogenous in that they all follow the same basic format and contain the same basic type of information since they are prescribed by the Reporting Standards of Generally Accepted Auditing Standards and the PCAOB (Hermanson, Dykes, and Turner, 1987; Pong and Turley, 1997). Not only are audit reports homogeneous when seen from that perspective, there is no substantial differentiation within the auditing profession itself (Hermanson, Dykes, and Turner, 1987; Cohen Commission, 1978; DiGabriele, 2013). On the other hand the product can also be seen as differentiated. Each audit report is unique to the company audited (Yeardley, et al, 1992), and audit reports obviously cannot be traded or re-sold on the market.

Since audit reports are the result of professional opinions, they are not close substitutes, let alone perfect, substitutes. The opinion of one auditor may differ from the opinion of another auditor. Differences in opinion have in fact led to the charge that companies often engage in “opinion shopping” (Lennox, 2000; DiGabriele, 2013).
As discussed above, in some models of oligopoly firms compete on the basis of quantity of output. But auditing firms have no choice regarding the quantity of output regardless of cost or price other than to decline an audit engagement, resign from an engagement (e.g., KPMG recently resigned from the audit of Herbalife), or to exit the industry entirely. Output cannot be adjusted. It is discrete. The quantity of output is fixed across the industry by Federal Securities laws that require the financial statements of publicly traded companies be audited on an annual basis, and the total number of publicly traded companies. Output decisions are thus constrained by very narrow parameters so that the only output decision is whether to perform or not perform an audit.

In other models of oligopoly one firm, the largest, sets prices and others follow. That phenomenon has not been witnessed in the public accounting industry and it is highly unlikely that it is even possible.

Research concluding that the public accounting industry is an oligopoly not only fails to account for the basic assumptions and conditions of the model, it ignores the question whether fulfilling those assumptions and conditions is even possible. Beyond a small number of large firms dominating the public accounting industry, and the existence of barriers to entry, there are no conditions that the public accounting industry fulfills in order to be considered an oligopoly. There is insufficient evidence that the public accounting industry behaves as an oligopoly with respect to prices, output, or strategy. Thus, it must be concluded that oligopoly fails to describe the structure of public accounting industry.

The following section discusses the reasons why existing models of industrial organizations are incapable of describing the public accounting industry.
5.0. The distortion of the market in the public accounting industry

Regulation of supply may take the form of price controls (public utilities), output quantity limitations (carbon emission), or limitations on the percentage of market share (e.g. mergers of mobile phone carriers must be approved by various government agencies). Demand may also be regulated. For example, every state requires drivers to purchase automobile insurance thus creating a demand for insurance.

The public accounting industry is unique, however. The market for auditing services is distorted because the demand for auditing services is created by the government, while supply is simultaneously limited by the government.

5.1. The distortion in the supply of the public accounting industry

The regulation of supply is multifaceted. Distortion in the supply of the public accounting industry is the result of two separate but related factors. The supply of auditing services is limited first at the state level by education and licensing requirements. It is further limited at the federal level by the requirement that publicly traded companies register with the PCAOB which creates barriers to entry due to the high level of investment required in order to fulfill the auditing standards required by the PCAOB. The supply of auditing firms available to a given publicly traded company is also restricted by prohibitions against conflicts of interest. This combination of factors creates an almost perfectly horizontal, highly inelastic supply curve. Shifts in supply are non-existent in the short term, and very narrow in the long term. Similarly, shifts in quantity supplied are non-existent in the short term, and very narrow in the long term.

5.1.2. The distortion in the demand of the public accounting industry

The demand for auditing services is created by the government, not by the consumers of auditing services. This distortion in the market for the demand for audit services results from the
statutory requirements that publicly traded companies issue financial statements that have been audited by independent auditors. Sarbanes-Oxley created additional government mandated demand for audit services (Bierstaker, Houston, and Arnold, 2006). This essentially creates an almost perfectly inelastic demand for auditing services (Yeardley, et al, 1992). Shifts in demand are non-existent in the short term, and very narrow in the long term since demand is solely a function of the number of publicly corporations. Likewise shifts in quantity demanded are non-existent in the short term, and very narrow in the long term.

5.2. The implications of simultaneous regulation of supply and demand.

That government regulation and intervention in the market distorts market forces is well known. When the government creates the market and then simultaneously regulates both supply and demand of the market it created, it distorts the market even more.

In the case of the public accounting industry, the simultaneous regulation of both supply and demand in essence produces an almost perfectly horizontal supply curve while at the same time creates an almost perfectly vertical demand curve. Neither the supply nor the demand can be changed in the short run either by the government or by the market, and they can only be changed in the long run not by market forces, but by changes in the number of companies required to have their financial statements audited pursuant to the Federal securities laws, and the slow process of new entrants into the industry limited by licensing and the ability to raise sufficient capital.  

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14 The actual number of new firms entering into the industry is somewhat stable. Smaller firms are absorbed by larger firms already in the industry, which does not change the number of firms in the industry; merely the number of individual auditors. Furthermore, smaller firms already in the industry merge thereby decreasing the number of firms, while holding constant the number of individual auditors.
6.0. Conclusions

It is clear that the market structure of the public accounting industry is determined by government laws and regulations which artificially create, control, and manipulate the market and cause almost perfectly inelastic demand and supply curves. The almost perfectly inelastic demand and almost perfectly inelastic supply are ignored by existing research on the structure of the public accounting industry and renders existing evidence invalid. Research has failed to explain how the industry behaves like an oligopoly. It has failed to explain how the structure of the industry fulfills the conditions of monopolistic competition.

The market structure of the public accounting industry does not fit into any current model of industrial organization, suggesting an entirely new model must be developed to describe the public accounting industry. If the industry structure does not fit into any existing model, then what is the structure? Unless a new model is developed, continued research using current models is futile. It will be met with frustration. It will continue to find contradictory evidence and arrive at conflicting conclusions.

This is not to argue that there should be no regulation of either supply or demand. Both are necessary. But it is incredulous that legislators and regulators not only create a market but then prevent normal market forces from operating by regulating the supply and demand in the market they created, and then criticize the market participants for the conditions of the market.
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References


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