United States General Accounting Office

GAO

Report to the Senate Committee on Banking, Housing, and Urban Affairs and the House Committee on Financial Services

July 2003

PUBLIC ACCOUNTING FIRMS

Mandated Study on Consolidation and Competition

GAO

Accountability ★ Integrity ★ Reliability

GAO-03-864

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Highlights

Highlights of GAO-03-864, a report to the Senate Committee on Banking, Housing, and Urban Affairs and the House Committee on Financial Services

July 2003

PUBLIC ACCOUNTING FIRMS

Mandated Study on Consolidation and Competition

Why GAO Did This Study

The audit market for large public companies is an oligopoly, with the largest firms auditing the vast majority of public companies and smaller firms facing significant barriers to entry into the market. Mergers among the largest firms in the 1980s and 1990s and the dissolution of Arthur Andersen in 2002 significantly increased concentration among the largest firms, known as the "Big 4." These four firms currently audit over 78 percent of all U.S. public companies and 99 percent of all public company sales. This consolidation and the resulting concentration have raised a number of concerns. To address them, the Sarbanes-Oxley Act of 2002 mandated that GAO study

- the factors contributing to the mergers;
- the implications of consolidation on competition and client choice, audit fees, audit quality, and auditor independence;
- the impact of consolidation on capital formation and securities markets; and
- barriers to entry faced by smaller accounting firms in competing with the largest firms for large public company audits.

www.gao.gov/cgi-bin/getrpt?GAO-03-864.

To view the full product, including the scope and methodology, click on the link above. For more information, contact Davi M. D'Agostino (202) 512-8678 or d'agostinod@gao.gov.

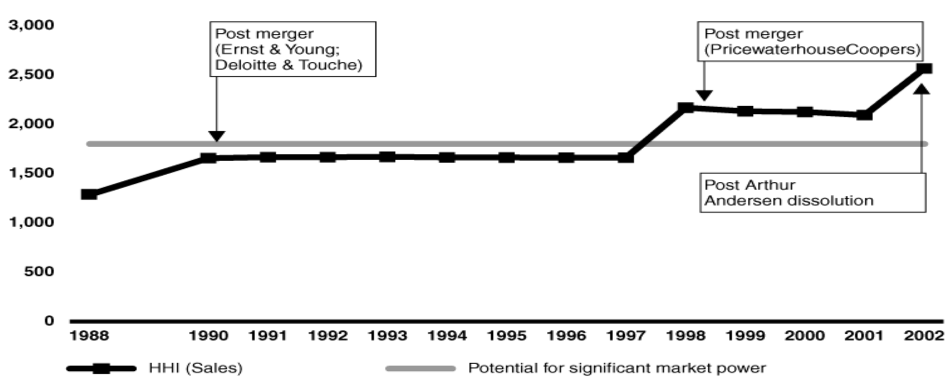
What GAO Found

Domestically and globally, there are only a few large firms capable of auditing large public companies, which raises potential choice, price, quality, and concentration risk concerns. A common concentration measure used in antitrust analysis, the Hirschman-Herfindahl Index (HHI) indicates that the largest firms have the potential for significant market power following mergers among the largest firms and the dissolution of Arthur Andersen (see fig. below). Although GAO found no evidence of impaired competition to date, the significant changes that have occurred in the profession may have implications for competition and public company choice, especially in certain industries, in the future.

Existing research on audit fees did not conclusively identify a direct correlation with consolidation. GAO found that fees have started to increase, and most experts expect the trend to continue as the audit environment responds to recent and ongoing changes in the audit market. Research on quality and independence did not link audit quality and auditor independence to consolidation and generally was inconclusive. Likewise, GAO was unable to draw clear linkages between consolidation and capital formation but did observe potential impacts for some smaller companies seeking to raise capital. However, given the unprecedented changes occurring in the audit market, GAO observes that past behavior may not be indicative of future behavior, and these potential implications may warrant additional study in the future, including preventing further consolidation and maintaining competition.

Finally, GAO found that smaller accounting firms faced significant barriers to entry—including lack of staff, industry and technical expertise, capital formation, global reach, and reputation—into the large public company audit market. As a result, market forces are not likely to result in the expansion of the current Big 4. Furthermore, certain factors and conditions could cause a further reduction in the number of major accounting firms.

Hirschman-Herfindahl Indexes, 1988-2002



Source: *Who Audits America*, 1988-2002.

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Abbreviations

AA	Arthur Andersen LLP
AICPA	American Institute of Certified Public Accountants
Amex	American Stock Exchange
AY	Arthur Young LLP
CEO	chief executive officer
CL	Coopers & Lybrand LLP
DHS	Deloitte Haskins & Sells LLP
DOJ	Department of Justice
DT	Deloitte & Touche LLP
EW	Ernst & Whinney LLP
EY	Ernst & Young LLP
FTC	Federal Trade Commission
GAAP	generally accepted accounting principles
GAAS	generally accepted auditing standards
HHI	Hirschman-Herfindahl Index
KPMG	KPMG (or KPMG Peat Marwick prior to February 1995)
NYSE	New York Stock Exchange
PAR	*Public Accounting Report*
PCAOB	Public Company Accounting Oversight Board
PW	Price Waterhouse LLP
PWC	PricewaterhouseCoopers LLP
SEC	Securities and Exchange Commission
SECPS	SEC Practice Section of AICPA
SIC	Standard Industry Classification
TR	Touche Ross LLP
UAA	Uniform Accountancy Act

United States General Accounting Office
Washington, D.C. 20548

July 30, 2003

The Honorable Richard C. Shelby
Chairman
The Honorable Paul S. Sarbanes
Ranking Minority Member
Committee on Banking, Housing, and Urban Affairs
United States Senate

The Honorable Michael G. Oxley
Chairman
The Honorable Barney Frank
Ranking Minority Member
Committee on Financial Services
House of Representatives

There are hundreds of public accounting firms that audit public companies in the United States. However, a small number of very large firms have traditionally provided audit and attest services for the majority of public companies, particularly large national and multinational companies.[1] The number of firms widely considered capable of providing audit services to large national and multinational companies decreased from eight ("the Big 8") in the 1980s to four ("the Big 4") today.[2] The reduction was the result of mergers involving six of the top eight firms since the late 1980s and the abrupt dissolution of Arthur Andersen LLP (Andersen) in 2002. The Big 4 firms are substantially larger than the other U.S. or international accounting firms, each with thousands of partners, tens of thousands of employees, offices located around the world, and annual revenues in the billions of dollars. These four firms currently audit over 78 percent of all

[1]For the purpose of this report, public companies are defined as those that are listed on the American Stock Exchange (Amex), NASDAQ, or the New York Stock Exchange (NYSE), or with stock traded on other over-the-counter markets such as Pink Sheets. Large public companies generally include those with over $1 billion in annual revenue unless otherwise noted.

[2]For the purpose of this report, we refer to the Big 8 and Big 4 firms as the "top tier," based on total revenue and staff size. The Big 8 were Arthur Andersen LLP, Arthur Young LLP, Coopers & Lybrand LLP, Deloitte Haskins & Sells LLP, Ernst & Whinney LLP, Peat Marwick Mitchell LLP, Price Waterhouse LLP, and Touche Ross LLP. The Big 4 are Deloitte & Touche LLP, Ernst & Young LLP, KPMG LLP, and PricewaterhouseCoopers LLP. Any reference to "smaller firms" includes any of the other more than 700 firms that audit public companies. When we present firm rankings, we do so based on annual total revenues in the United States unless otherwise noted.

U.S. public companies and 99 percent of public company annual sales. Internationally, the Big 4 dominate the market for audit services.

Big 8 mergers and Andersen's sudden dissolution have prompted heightened concerns about concentration among the largest accounting firms and the potential effect on competition and various other factors. As a result, Congress mandated in the Sarbanes-Oxley Act of 2002 that we study these issues.[3] Specifically, we were asked to study (1) the factors leading to the mergers among the largest public accounting firms in the 1980s and 1990s; (2) the impact of consolidation on competition, including the availability of auditor choices for large national and multinational public companies; (3) the impact of consolidation on the cost, quality, and independence of audit services; (4) the impact of consolidation on capital formation and securities markets; and (5) the barriers to entry faced by smaller firms in competing with the largest firms for large national and multinational public company clients.

To evaluate the factors contributing to consolidation among the largest firms, we interviewed current and former partners of large public accounting firms involved in past mergers and Department of Justice (DOJ) and Federal Trade Commission (FTC) officials. However, we did not review any antitrust analyses conducted by DOJ specific to the proposed mergers of the 1980s and 1990s. According to DOJ officials, most of the firm documents had been returned to the relevant parties, and other documents were viewed as "predecisional" by DOJ. While GAO's statute provides us with access to predecisional information absent a certification by the President or the Director of the Office of Management and Budget, we were more interested in the reasons for the mergers than DOJ's analysis in approving the mergers. Therefore, we used other sources to obtain the necessary information for this report. We also collected information from and coordinated with the Securities and Exchange Commission (SEC) and its counterparts from the other six members (Canada, France, Germany, Italy, Japan, and the United Kingdom) of the Group of Seven nations as required in the mandate. To evaluate the impact of consolidation on competition and auditor choice, audit fees, and audit quality and auditor independence, we consulted with academics, researchers, U.S. and foreign

[3]Pub. L. No. 107-204 § 701 (2002), the Sarbanes-Oxley Act significantly overhauled the oversight and regulation of the accounting profession. Its purpose was to strengthen corporate governance requirements and improve transparency and accountability, among other things.

regulators, and trade associations and collected data and descriptive statistics for analysis. We also employed a simple model of pure price competition, in which clients choose auditors based on price, ignoring factors such as quality or reputation, to assess whether the current high degree of concentration in the market for audit services is necessarily inconsistent with a purely price competitive setting. Additionally, as of July 11, 2003, we had received 47 responses to a survey of the 97 largest accounting firms—those with at least 10 corporate clients registered with SEC—on their views of accounting firm consolidation and its potential implications. This report also includes responses from 148 of 250 randomly sampled, Fortune 1000 public companies on their experiences with their auditor of record and their views on the potential implications of consolidation. We plan to issue a subsequent report in September 2003 on client responses received through July 30, 2003. Lastly, we interviewed a judgmental sample of 20 chairs of audit committees for Fortune 1000 companies to obtain their views on consolidation and competition. To address the issue of the impact of consolidation and concentration on capital formation and securities markets, we interviewed representatives from institutional investors, investment banks, self-regulatory organizations, and credit rating agencies, among others, and we consulted with academics and reviewed relevant literature. To identify any barriers to competition faced by accounting firms, we reviewed existing state and federal requirements and interviewed knowledgeable officials. We also employed the previously cited economic model by simulating mergers among smaller firms in order to assess whether, in a purely price competitive environment, such mergers could lead to viable competitors to the Big 4 for large national and multinational clients. We also obtained information from the American Institute of Certified Public Accountants (AICPA).[4] Appendix I contains a full description of our scope and methodology.

We conducted our work in Chicago, Illinois, New York, New York, and Washington, D.C., between October 2002 and July 2003.

[4]Historically, the accounting profession maintained a voluntary, self-regulatory system through AICPA that included setting professional standards, monitoring compliance with professional standards, disciplining members for improper acts and substandard performance, and conducting oversight of the industry. The Sarbanes-Oxley Act established the Public Company Accounting Oversight Board to oversee the audit of public companies, including registering public accounting firms; establishing audit standards; and conducting compliance inspections, investigations, and disciplinary proceedings.

Results in Brief

According to officials involved in mergers among Big 8 firms, consolidation of the largest public accounting firms was driven by many factors but primarily by the need and desire to (1) keep pace with the growing size and global reach of the public companies the firms served, (2) achieve greater economies of scale as they modernized operations and other technological capabilities, and (3) expand industry-specific and technical expertise. Mergers with compatible firms—usually other Big 8 firms—were the quickest way to fill gaps in geographic coverage, expand global reach, and build industry-specific expertise. Moreover, mergers provided firms an opportunity to rapidly increase their capital bases to spread risk and create greater economies of scale as they modernized operations, particularly information technology and training systems. Lastly, some firms merged to maintain their size relative to larger competitors and to maintain their position among the top tier.

While the market for audit services to public companies has become increasingly concentrated—with significant barriers to entry into the market for audit services for large public companies in particular—and the largest accounting firms (domestically and globally) have increasingly had the potential to exercise significant market power, we found no empirical evidence that competition in the audit services market has been impaired to date. However, given the dissolution of Andersen and other significant changes in accounting firm operations, it is unclear whether the Big 4 will exercise any increased market power. To assess whether the current high degree of concentration in the market for audit services is necessarily inconsistent with a price-competitive setting, we employed a simple model of pure price competition in which clients choose auditors based on price.[5] The model's simulation results were very similar to the prevailing actual market shares, a result suggesting that the observed high degree of concentration to date is not necessarily inconsistent with a price-competitive environment. The most observable impact of consolidation appears to be on the limited number of auditor alternatives for large national and multinational companies that require firms with extensive

[5]R. Doogar and R. Easley, "Concentration without Differentiation: A New Look at the Determinants of Audit Market Concentration," *Journal of Accounting and Economics*, vol. 25 (1998): 235-253. The Doogar and Easley model is premised on the assumption of pure price competition, in which clients choose auditors solely based on price, ignoring factors such as quality or reputation. In this framework, audit clients will gravitate to larger and more efficient audit firms, where efficiency is defined by the partner-to-staff, or leverage, ratio. Companies with lower leverage ratios are more efficient and can therefore bid lower prices for audit engagements.

staff resources, industry-specific and technical expertise, geographic coverage, and international reputation. In many cases, the auditor alternatives are further limited due to potential conflicts of interest, Sarbanes-Oxley requirements, including independence rules, or the need for industry-specific expertise—all of which may serve to effectively reduce the number of eligible alternatives to three or in many cases fewer.[6] Given the unprecedented changes occurring in the audit market and potential competitive implications, these issues raise concerns about further consolidation and lack of viable alternatives in certain industries.

Isolating the impact of consolidation on audit fees, audit quality, and auditor independence is difficult, given the significant changes that have occurred and are occurring in the accounting profession. Researchers using small samples of aggregate billings of companies and other proxies for audit fees (such as average audit revenues) found consolidation did not appear to affect audit fees, which generally remained flat or decreased slightly between 1989 and the mid-1990s (inflation adjusted). However, since the late 1990s, audit fees appear to have increased, in part due to the changing audit environment and increased client expectations. Concerning the impact of consolidation on audit quality or auditor independence, we found no research linking changes to consolidation; instead, the research attempted to measure changes in audit quality and auditor independence in general. The existing research and accounting experts we consulted had mixed views on both audit quality and auditor independence. Given the numerous ongoing changes in the market, past behavior may not be indicative of the future and, therefore, we observe that these and other factors may warrant attention given the potential price, quality, and concentration risk implications.

We found no evidence to suggest that consolidation among the firms had directly impacted capital formation or the securities markets, nor did we find research that directly addressed how consolidation might affect capital formation or the securities markets. Given the important assurance role the auditor plays in the capital markets by attesting to the fairness of the financial information presented by company management, market participants often expect public companies to use one of the Big 4. While this expectation or preference is less likely to impact large national and multinational public companies, consolidation may have consequences for

[6]Sarbanes-Oxley requires that SEC enact independence rules, which address areas such as prohibited nonaudit services, audit partner rotation, and conflicts of interest.

smaller, less established companies. For example, to the extent that the Big 4 evaluate the profitability and risk of auditing companies, they might become more selective about retaining their smaller, potentially less-profitable or higher risk audit clients. In turn, these smaller companies might face increasing costs of capital if investors were to react adversely to their not using a Big 4 auditor.

Finally, we found that smaller accounting firms faced significant barriers to entry into the audit market for large national and multinational public companies. First, smaller firms generally lack the staff, technical expertise, and global reach to audit large and complex national and multinational public companies. In this regard, the large public companies that responded to our survey to date indicated that smaller firms lacked the requisite capacity to audit their operations. For example, based on the average number of partners and nonpartner professional staff internationally, the Big 4 had almost three times as many partners and over five times as many nonpartner professional staff as the average for the next three largest firms. We also employed the previously cited economic model by simulating mergers among smaller firms in order to assess whether, in a purely price-competitive environment, such mergers could lead to viable competitors to the Big 4 for large national and multinational clients. We found that, in general, any new firm resulting from such mergers would still lack the resources necessary to compete, to any significant degree, with the Big 4 for larger clients. Second, capital market participants are familiar with the Big 4 and are hesitant to recommend that companies use firms with whom they are not familiar. Third, many of the eight largest firms below the Big 4 with whom we spoke said that litigation risks and insurance costs associated with auditing a large public company made growth into the large public company market less attractive than other growth opportunities. Fourth, raising the amount of capital to build the infrastructure necessary to audit large multinational companies is difficult, in part because the partnership structure of accounting firms limits these firms' ability to raise outside capital. Finally, certain state laws make it difficult for firms to expand nationally. For example, firms face the burden and additional expense of obtaining state licenses for staff across the country. As a result of these barriers, we observe that market forces are not likely to result in the expansion of the current Big 4. However, it is unclear what, if anything, can be done to address these issues.

This report makes no recommendations. We provided copies of a draft of this report to SEC, DOJ, the Public Company Accounting Oversight Board (PCAOB), and AICPA. DOJ provided additional information on the extent to which coordination with antitrust officials and consideration of the competitive implications of the Andersen criminal indictment occurred. As a result, we clarified the language provided in the final report. SEC, DOJ, and AICPA provided technical comments, which have been incorporated where appropriate. PCAOB had no comments.

Background

For over 70 years, the public accounting profession, through its independent audit function, has played a critical role in financial reporting and disclosure, which supports the effective functioning of U.S. capital markets. Over this period, the accounting profession and the accounting firms have undergone significant changes, including changes in the scope of services provided in response to the changing needs of their clients. Following significant mergers among the Big 8 in the 1980s and 1990s and the dissolution of Arthur Andersen in 2002, market share among the accounting firms became more concentrated and dominated by the Big 4.

Full Disclosure Critical for Market Confidence

The Securities Act of 1933 and the Securities Exchange Act of 1934 established the principle of full disclosure, which requires that public companies provide full and accurate information to the investing public. Moreover, these federal securities laws require that public companies have their financial statements audited by an independent public accountant. While officers and directors of a public company are responsible for the preparation and content of financial statements that fully and accurately reflect the company's financial condition and the results of its operations, public accounting firms, which function as independent external auditors, provide an additional safeguard. The external auditor is responsible for auditing the financial statements in accordance with generally accepted auditing standards to provide reasonable assurance that a company's financial statements are fairly presented in all material respects in accordance with generally accepted accounting principles.

Public and investor confidence in the fairness of financial reporting is critical to the effective functioning of U.S. capital markets. Auditors attest to the reliability of financial statements of public companies. Moreover, investors and other users of financial statements expect auditors to bring integrity, independence, objectivity, and professional competence to the financial reporting process and to prevent the issuance of misleading financial statements. The resulting sense of confidence in companies' financial statements, which is key to the efficient functioning of the markets for public companies' securities, can only exist if reasonable investors perceive auditors as independent and expert professionals who will conduct thorough audits.

Repeal of Ban on Advertising and Solicitation Created More Competitive Environment

For many decades, public accountants, like members of other professions, could not advertise, solicit clients, or participate in a competitive bidding process for clients. These restrictions were set by AICPA, which directed the professional code of conduct for its members, and the state accountancy boards for the 50 states, District of Columbia, Guam, Puerto Rico, and U.S. Virgin Islands.[7] Beginning in the 1970s, FTC, DOJ, and individual professionals began to challenge the legality of these restrictions through various court actions. As a result of these challenges, AICPA and state boards adopted new rules that targeted only false, misleading, or deceptive advertising; liberalized restrictions on solicitation; and changed bans on competitive bidding. While large public companies generally did not switch auditors based on price competition, increased competition and solicitations served as incentives for incumbent firms to continually offer competitive fees to retain their clients.

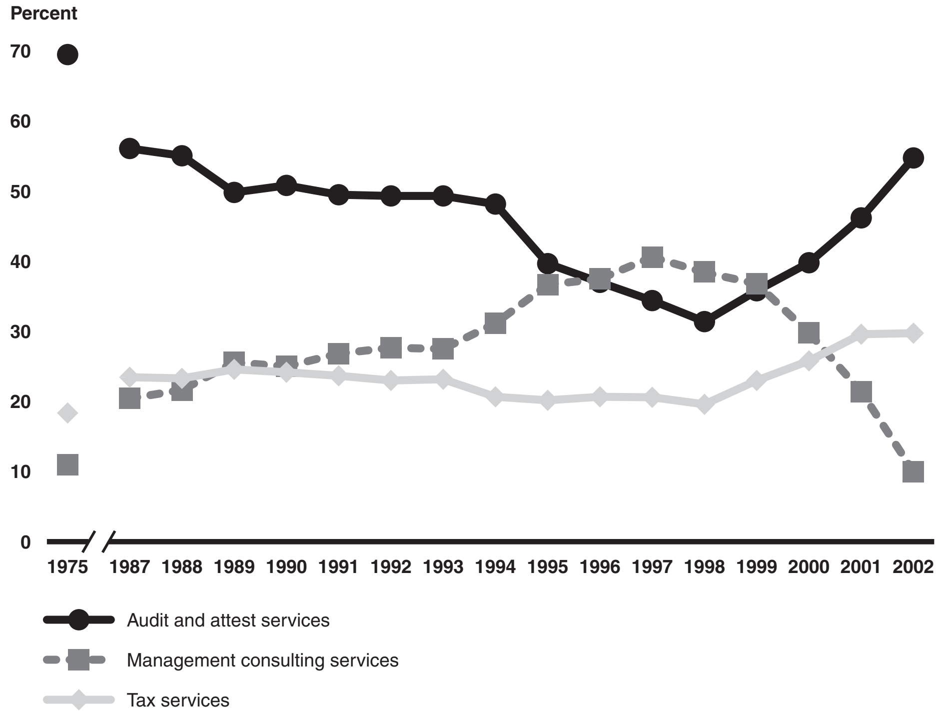
Expansion and Contraction of Management Consulting Services Raised Concerns about Auditor Independence

Historically, accounting firms offered a broad range of services to their clients. In addition to traditional services such as audit and attest services and tax services, firms also offered consulting services in areas such as information technology. As figure 1 illustrates, over the past several decades, the provision of management consulting services increased substantially. For example, in 1975, on average, management consulting services comprised 11 percent of the Big 8's total revenues, ranging from 5 percent to 16 percent by firm. By 1998, revenues from management consulting services increased to an average of 45 percent, ranging from 34 to 70 percent of the Big 5's revenues for that year.[8] However, by 2000, firms had begun to sell or divest portions of their consulting business and average revenue from management consulting services had decreased to about 30 percent of the Big 5's total revenues.

[7]State boards of accountancy, operating under the authority of individual state laws, adopt rules that govern licensing for practice in their jurisdiction, including educational and experience qualifications, continuing professional education requirements, and the manner and use of the title "certified public accountant."

[8]The Big 5 were Andersen, Deloitte & Touche, Ernst & Young, KPMG, and PricewaterhouseCoopers.

Figure 1: Accounting Firm Services as a Percentage of Revenue, 1975, 1987-2002



Sources: Senate Subcommittee on Reports, Accounting and Management, Committee on Government Operations, *The Accounting Establishment*, 95th Congress, 1st Session, March 31, 1977; *Public Accounting Report*, 1987-2002.

Note: The information included in the subcommittee report was based on 1975 data.

Although all of the Big 4 firms continue to offer certain consulting services, three of the Big 4 have sold or divested portions of their consulting businesses. PricewaterhouseCoopers' consulting practice was sold to International Business Machines Corp.; KPMG's consulting practice became BearingPoint; and Ernst & Young sold its practice to Cap Gemini Group S.A. While it has contemplated doing so, Deloitte & Touche has not divested its management consulting practice.

The increase in the provision of management consulting and other nonaudit services contributed to growing regulatory and public concern about auditor independence. Although auditor independence standards have always required that the accounting firm be independent both in fact and in appearance, concern over auditor independence is a long-standing and continuing issue for accounting firms. During the late 1970s, when consulting services represented only a small portion of the Big 8's revenue, a congressional study noted that an auditor's ability to remain independent was diminished when the firm provided both consulting and audit services to the same client.[9] A number of subsequent studies resulted in various actions taken by both the accounting firms and SEC to enhance the real and perceived independence of auditors. By 2000, SEC proposed to amend its rules on auditor independence because of the growing concern that the increase in nonaudit services had impaired auditor independence. The rules that were promulgated in 2001 amended SEC's existing rules regarding auditor independence and identified certain nonaudit services that in some instances may impair the auditor's independence, among other things. The amendments also required most public companies to disclose in their annual financial statements certain information about nonaudit services provided by their auditor. Following the implementation of the Sarbanes-Oxley Act in 2002, SEC issued new independence rules in March 2003.[10] The new rules placed additional limitations on management consulting and other nonaudit services that firms could provide to their audit clients.

Big 8 Mergers and Andersen Dissolution Brought about the Big 4

Although U.S. accounting firms have used mergers and acquisitions to help build their businesses and expand nationally and internationally since the early part of the twentieth century, in the late 1980s Big 8 firms began to merge with one another. As shown in figure 2, the first such merger in 1987 between Peat Marwick Mitchell, one of the Big 8, and KMG Main Hurdman, a non-Big 8 U.S. affiliate of the European firm, Klynveld Main Goerdeler, resulted in the creation of KPMG Peat Marwick.[11] Because of the extensive

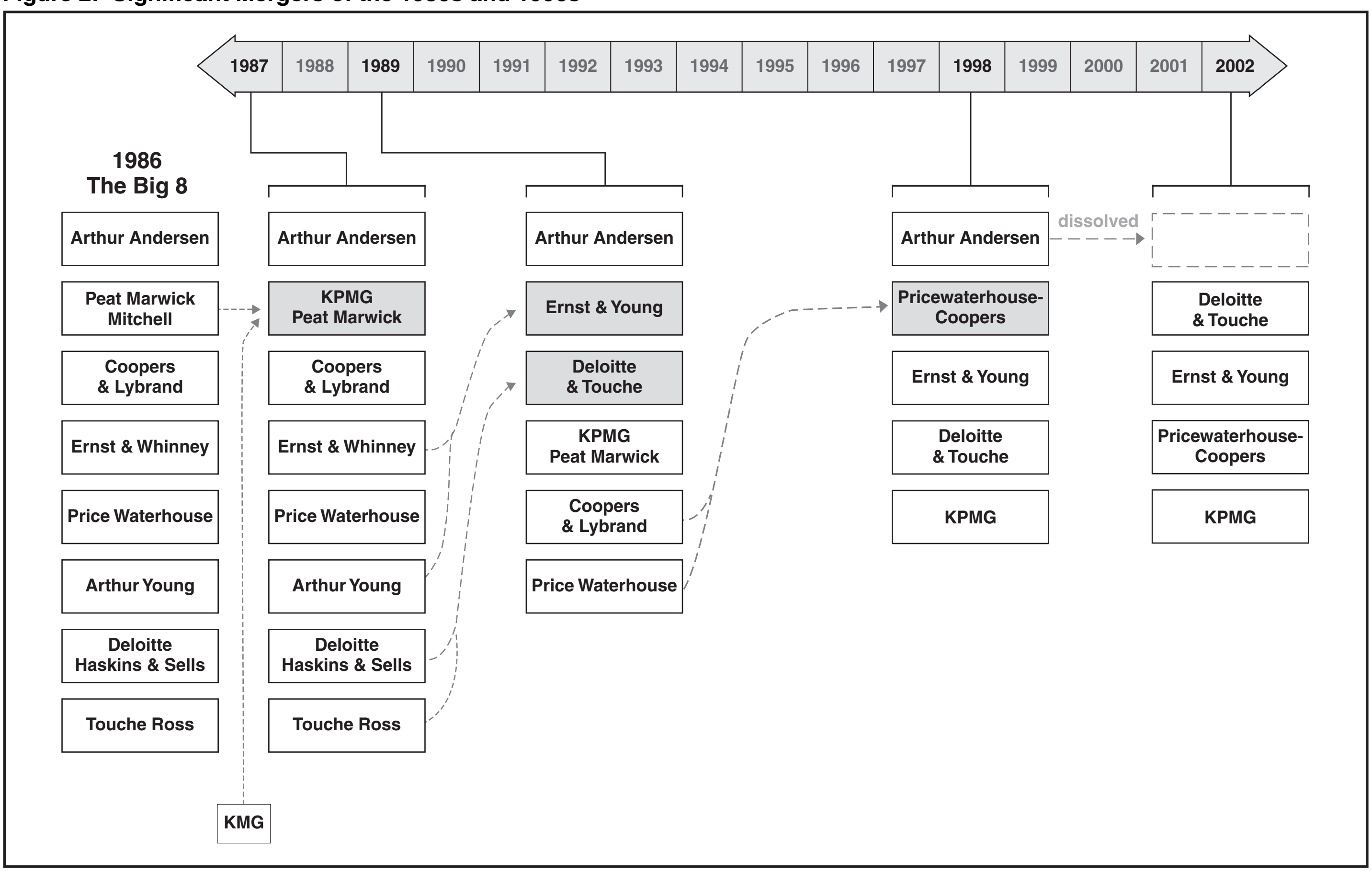
[9]Senate Subcommittee on Reports, Accounting and Management, Committee on Government Operations, *The Accounting Establishment*, 95th Congr.,1st Sess., March 31, 1977. This study is commonly known as the *Metcalf Report*.

[10]Pub. L. 107-204, Title II § 201- §206 and 17 CFR Parts 210 and 240, *Final Rule: Revision of the Commission's Auditor Independence Requirements*.

[11]KPMG Peat Marwick is now known as KPMG.

network Klynveld Main Goerdeler had in Europe, which none of the other Big 8 had, the merged firm became the largest accounting firm worldwide and the second largest U.S. firm until 1989. In 1989, six of the Big 8 firms explored merging. In June 1989, the first merger among the Big 8 involved fourth-ranked Ernst & Whinney and sixth-ranked Arthur Young to form Ernst & Young. The resulting firm became the largest firm nationally (and internationally). In August 1989, seventh-ranked Deloitte Haskins & Sells and eighth-ranked Touche Ross merged to form Deloitte & Touche. The resulting firm became the third largest firm nationally (and internationally). A proposed merger between Andersen and Price Waterhouse was called off in September 1989.

Figure 2: Significant Mergers of the 1980s and 1990s



Sources: Interviews with Big 4 and *Public Accounting Report*, 1986-2002.

Note: Firms are ranked by total U.S. revenue.

In 1997, four firms proposed additional mergers. The first two were Price Waterhouse and Coopers & Lybrand. Soon thereafter, the leaders of Ernst & Young and KPMG Peat Marwick announced a proposal to merge their two firms. DOJ and the European Commission of the European Union initiated studies of both merger requests. However, Ernst & Young and KPMG Peat Marwick subsequently withdrew their proposal. In 1998, sixth-ranked Price Waterhouse merged with fifth-ranked Coopers & Lybrand to become the second-ranked firm, PricewaterhouseCoopers.

To evaluate these mergers, DOJ, as indicated in its *Merger Guidelines*, used various measures to determine whether the mergers were likely to create or enhance market power and should, therefore, be challenged. DOJ assessed whether the merger would result in a concentrated market, increase the likelihood of adverse competitive effects, and whether entry of other competitors into the market would be timely, likely, and sufficient "to deter or counteract the competitive effects of concern." DOJ then evaluated whether the mergers would result in efficiency gains that could not be achieved by other means and whether one of the parties to the merger would be likely to fail and exit the market if the transaction was not approved.

Finally, the market consolidated to the Big 4 in 2002. The criminal indictment of fourth-ranked Andersen for obstruction of justice stemming from its role as auditor of Enron Corporation led to a mass exodus of Andersen partners and staff as well as clients. Andersen was dissolved in 2002.

Several Key Factors Spurred Consolidation in the 1980s and 1990s

Any one or a combination of several key factors were cited by the Big 4 and others as spurring the mergers of the Big 8 in the 1980s and 1990s—notably the immense growth of U.S. businesses internationally, desire for greater economies of scale, and need and desire to build or expand industry-specific and technical expertise, among others. First, the trend toward corporate globalization led to an increased demand for accounting firms with greater global reach. Second, some firms wanted to achieve greater economies of scale as they modernized their operations and built staff capacity and to spread risk over a broader capital base. Third, some firms wanted to build industry-specific or technical expertise as the operations of their clients became increasingly complex and diversified. Finally, some firms merged to increase or maintain their market share and maintain their market position among the top tier.

Globalization of Clients Prompted Need for Greater Global Reach

According to representatives of the Big 4 firms, globalization was a driving force behind the mergers of the 1980s and 1990s. As their clients expanded their operations around the world, the top-tier firms felt pressure to expand as well as to provide service to their clients. The trend toward corporate globalization, which continues today, was spurred in part by the lowering of trade barriers. Moreover, by the mid-1990s, the overall economic environment was changing dramatically as technological and telecommunications advances changed the way businesses operated. As a result, large U.S. companies operated worldwide and more foreign-based companies entered U.S. markets. Although all of the Big 8 had offices in certain countries, they did not have extensive networks that enabled them to provide comprehensive services to large multinational clients. Some of the smaller Big 8 firms had difficulty attracting and retaining strong foreign affiliates. Mergers with compatible firms were the quickest way to fill gaps in geographic coverage. For instance, in the 1980s, Ernst & Whinney had an established network in the Pacific Rim countries while Arthur Young did not. Likewise, Price Waterhouse had a network in South America while Coopers & Lybrand's network was in Europe.

In addition to expanding their reach and staff capacity, firms believed that they needed to establish global networks to stay abreast of country-specific generally accepted accounting principles and regulations. Globalization also had raised a number of tax issues that required firms to have networks able to accommodate clients with operations in a growing number of countries. To have successful global networks, the Big 8 needed affiliations with prominent foreign firms.

Growing Complexity of Client Operations Prompted Need for Greater Industry-Specific and Technical Expertise

In addition to responding to globalization, representatives of the firms told us that some of the mergers served to increase their industry-specific and technical expertise and expand and build management-consulting operations to better serve the complex needs of their rapidly evolving clients. Each of the Big 8 firms had different strengths and industry specializations. Through mergers, firms were able to build expertise across more industries and diversify their operations. For example, the Ernst & Whinney and Arthur Young merger brought together two firms that specialized in healthcare and technology, respectively. Similarly, the Price Waterhouse and Coopers & Lybrand merger brought together two firms that dominated the market for audit services in the energy and gas and telecommunications industries, respectively.

In addition, firm officials said that some of the mergers of the 1980s and 1990s were spurred by the need and desire to build or expand management consulting services, which, as discussed previously, were becoming a larger percentage of revenue. Officials also said that the mergers allowed them to achieve economies of scope by offering a broader range of services to clients.[12] As firms merged, they were able to create synergies and offer their clients extensive services beyond traditional audit and attest services such as tax consulting, internal audit, and information systems support. In order to remain competitive, some firms merged to build upon different operating strengths such as consulting services versus auditing. For example, the Deloitte Haskins & Sells and Touche Ross merger brought together a firm with substantial audit and tax consulting operations and a firm with a strong management consulting business.

In the same era, some firm officials said that they had to build their technical expertise in areas such as derivatives and other complex financial arrangements used by their clients. Firms also needed to build their expertise to address a series of changes to the U.S. tax code and the regulatory requirements faced by their clients in other countries. Strengthening a firm's technical expertise was critical, because some firms believed that clients were increasingly selecting their auditors based on specialized expertise and geographic coverage. Firms began to provide technological support and services to clients that were modernizing their operations.

Mergers Enabled Firms to Achieve Greater Economies of Scale

Like public companies, the accounting firms were undergoing dramatic technological change and innovation in the 1980s and 1990s. According to firm officials, firms were beginning to transition to computer-based accounting systems and develop new auditing approaches that required a considerable capital commitment. By expanding their capital base through mergers, firms planned to create economies of scale by spreading infrastructure costs from modernizing across a broader capital base. Some firm officials said that mergers were critical to the firms' modernization because, unlike their clients, accounting firms could not raise new capital

[12]The term, "economies of scope," refers to the notion that a producer's average total cost of production decreases as a result of increasing the number of different goods it produces.

by issuing securities. Because of their prevailing partnership structures, the firms' capital bases were largely dependent upon partner-generated capital.

In addition to economies of scale, firm officials said that they also expected that mergers would increase overall staff capacity and result in more efficient delivery of services and more effective allocation of resources in order to better respond to market demands. The broader capital bases also allowed firms to invest substantial resources in staff training and development. Big 4 representatives said that staff training and development were critical in attracting and retaining quality staff necessary to offer services demanded by clients. Firm officials said that they also expected that economies of scale would improve operational efficiencies and offset declining profit margins as competition increased.

Mergers Helped Firms Increase Market Share and Maintain Market Position

Many accounting firms also merged to maintain or increase their market share in order to hold their market position among top-tier firms. Furthermore, some firms believed that some of their foreign affiliates would change affiliations if they perceived that greater advantages in seeking and retaining client business could be obtained through affiliation with a larger firm. The mergers of the 1980s resulted in a growing disparity in size between the largest and smallest of the Big 8. Big 4 representatives told us that merging was a practical alternative to trying to build the business through internal growth. For example, when seventh-ranked Deloitte Haskins & Sells and eighth-ranked Touche Ross merged, they became the third-ranked firm. The creation of Deloitte & Touche resulted in Coopers & Lybrand being the second smallest of the top tier until it merged with the smallest top-tier firm, Price Waterhouse, in 1998 to become PricewaterhouseCoopers, the second-largest firm.

Audit Market Has Become More Highly Concentrated, Leaving Large Public Companies with Few Choices

Since 1988, the audit market has become increasingly concentrated, especially in the market for large national and multinational company audits, leaving these companies with fewer choices. The 1989 and 1998 mergers led to significant increases in certain key concentration measures typically used by DOJ and FTC to evaluate potential mergers for antitrust concerns. These measures indicate highly concentrated markets in which the Big 4 have the potential to exercise significant market power. In addition to using concentration measures, we employed a simple model of pure price competition to assess whether the current high degree of concentration in the market for audit services was necessarily inconsistent with a purely price-competitive setting. Regardless of the ability of the firms to exercise market power or not, consolidation has limited the number of choices of accounting firms for large national and multinational companies that require firms with requisite staff resources, industry-specific and technical expertise, extensive geographic coverage, and international reputation. In some cases, the choices would be further limited due to conflicts of interest, independence rules, and industry specialization.

Large Public Company Audit Market is a Tight Oligopoly

By any measure, the large public company audit market is a tight oligopoly, which is defined as the top four firms accounting for more than 60 percent of the market and other firms facing significant barriers to entry into the market. In the large public company audit market, the Big 4 now audit over 97 percent of all public companies with sales over $250 million, and other firms face significant barriers to entry into the market. As table 1 illustrates, when comparing the top 25 firms on the basis of total revenues, partners, and staff resources, the Big 4 do not have any smaller-firm competitors, a situation that has given rise to renewed concerns about a possible lack of effective competition in the market for large company audit services.

Table 1: Twenty-five Largest Accounting Firms by Total Revenue, Partners, and Staff Resources (U.S. Operations), 2002

Firm	Total revenue (dollars in millions)	Audit and attest revenue (dollars in millions)	Tax revenue (dollars in millions)	MCS revenue (dollars in millions)	Professional Staff	Partners	Total staff	Offices
Deloitte & Touche	$5,900	$2,124	$1,239	$2,006	19,835	2,618	22,453	81
Ernst & Young	4,515	2,664	1,716	0	15,078	2,118	17,196	86
PricewaterhouseCoopers	4,256	2,596	979	0	16,774	2,027	18,801	113
KPMG	3,200	2,016	1,184	0	10,967	1,535	12,502	122
Grant Thornton	400	200	136	64	2,068	312	2,380	51
BDO Seidman	353	145	145	64	1,229	281	1,510	37
BKD	211	93	65	53	972	193	1,165	26
Crowe, Chizek and Co.	205	45	37	88	936	101	1,037	12
McGladrey & Pullen	203	187	16	0	1,894	475	2,369	86
Moss Adams	163	64	62	37	758	179	937	25
Plante & Moran	161	79	45	37	714	161	875	15
Clifton Gunderson	137	55	36	48	850	140	990	39
Virchow, Krause & Co.	96	35	32	21	536	60	596	11
Larson Allen	79	27	21	23	401	73	474	8
Richard A. Eisner & Co.	69	30	20	18	280	70	350	3
Eide Bailly	62	25	11	13	464	59	523	13
J.H. Cohn	60	30	16	4	193	58	251	8
Reznick Fedder & Silverman	58	33	18	8	350	32	382	4
Cherry, Bekaert & Holland	54	26	19	6	363	45	408	23
Berdon	54	20	19	14	289	38	327	2
Wipfli Ullrich Bertelson	52	27	16	8	335	62	397	16
M.R.Weiser & Co.	51	29	18	4	248	32	280	3
Rothstein, Kass & Co.	50	39	11	1	303	16	319	4
Goodman & Co.	49	26	22	1	450	69	519	9
Schenck Business Solutions	48	16	16	7	267	41	308	12

Sources: *Public Accounting Report*, 2002-2003.

Notes: Revenues from audit and attest, tax, and management consulting services (MCS) may not equal total revenues due to rounding or exclusion of certain nontraditional services offered by firm. Companies are ranked in *Public Accounting Report* by revenues. Figures are self-reported by the audit firms. Note that Deloitte & Touche's relative ranking reflects the fact that it is the only one of the Big 4 with revenues from MSC.

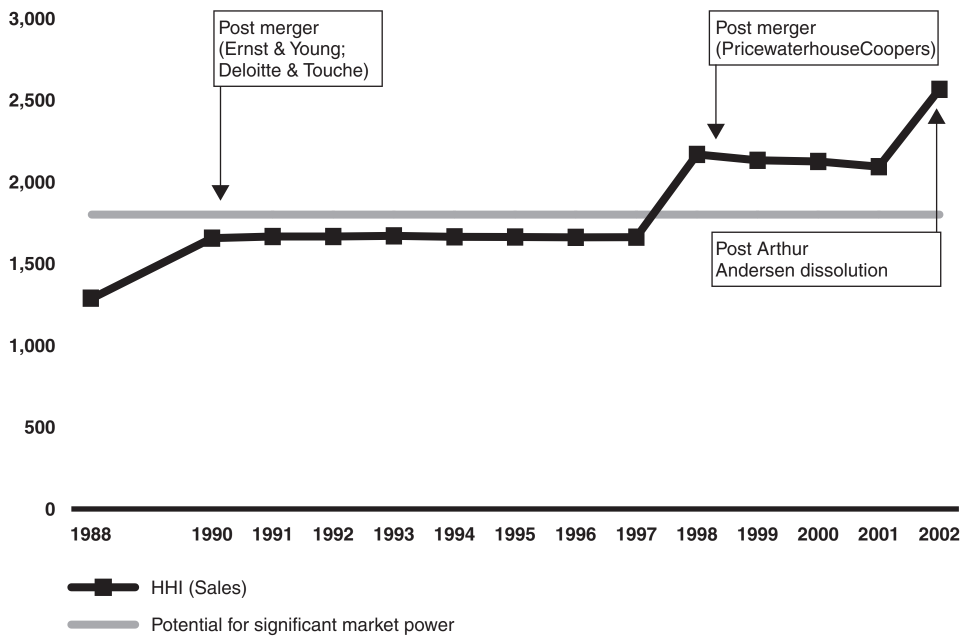
The Big 4 accounting firms dominate internationally as well, with over $47 billion in total global net revenues for 2002, according to a February 2003 edition of *Public Accounting Report*. Moreover, information provided by officials from foreign regulators suggests that the national markets for audit services to large public companies in the other countries tend to be as highly concentrated as they are in the United States, with the Big 4 accounting firms auditing a vast majority of these large public company clients. For example, according to regulatory officials the Big 4 audited over 80 percent of all public companies in Japan and at least 90 percent of all listed companies in the Netherlands in 2002, while the Big 4 firms were the auditors for virtually all major listed companies in the United Kingdom. According to Italian regulators, in 2001 the Big 5 audited over 80 percent of listed companies in Italy.

Moreover, concentration measures, such as the Hirschman-Herfindahl Index (HHI), which are used by DOJ and FTC to aid in the interpretation of market concentration data, raise potential concerns about the level of competition among accounting firms when calculated using recent data.[13] As figure 3 illustrates, following the merger of Price Waterhouse and Coopers & Lybrand and the dissolution of Andersen, the market consisted of firms with the potential for significant market power. As a general rule, an HHI below 1,000 indicates a market predisposed to perform competitively and one that is unlikely to have adverse competitive effects. Conversely, an HHI above 1,800 indicates a highly concentrated market in which firms have the potential for significant market power—the ability to profitably maintain prices above competitive levels for a significant period of time. Sellers with market power may also lessen competition on dimensions other than price such as product quality, service, or innovation. In addition to using concentration measures, DOJ considers barriers to entry and other competitive factors such as coordinated interaction among firms, conditions conducive to establishing coordination among firms, firm-specific price increases, alternative and differentiated products, changing market conditions, and the ability of rival sellers to replace lost competition. As figure 3 also shows, the criminal indictment of Andersen

[13]The HHI is calculated by summing the squared individual market shares of all accounting firms (public company clients). For example, a market consisting of four firms with market shares of 35 percent, 30 percent, 20 percent, and 10 percent has an HHI of 2,625 ($35^2 + 30^2 + 20^2 + 10^2$). The HHI reflects both the distribution of the market shares among top firms and the composition of the market outside of the top firms. We have computed concentration ratios and the HHI based on summary tables included in *Who Audits America* for the relevant years.

and subsequent dissolution resulted in the HHI increasing to 2,566, well above the threshold for significant market power. It is unclear whether and to what extent the Antitrust Division was consulted and to what extent DOJ's Antitrust Division had input into the decision to criminally indict Andersen.

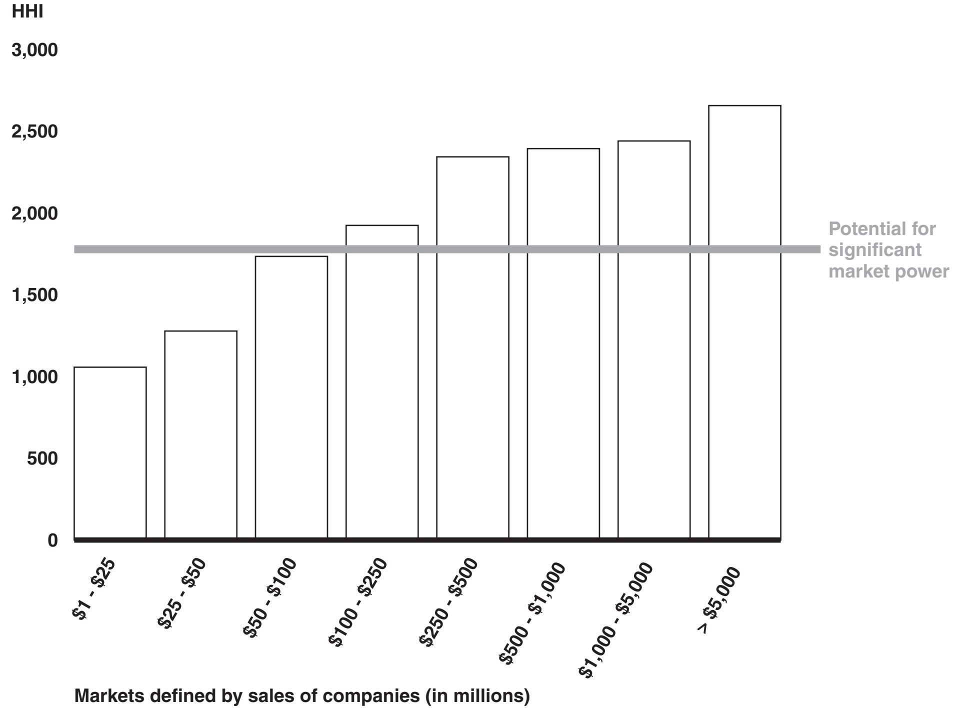
Figure 3: Hirschman-Herfindahl Indexes, 1988-2002



Source: *Who Audits America*, 1988-2002.

In 2002, we found that the most significant concentration among accounting firms was in the large public company market segment. As figure 4 shows, although consistently above 1,000, HHIs (based on number of clients) for firms auditing public companies with total sales between $1 million and $100 million are all below the 1,800 threshold. However, HHIs for companies with sales over $100 million are consistently above the 1,800 threshold, indicating the potential for significant market power in the market for larger company audits.

Figure 4: Hirschman-Herfindahl Indexes (Based on Number of Clients), 2002



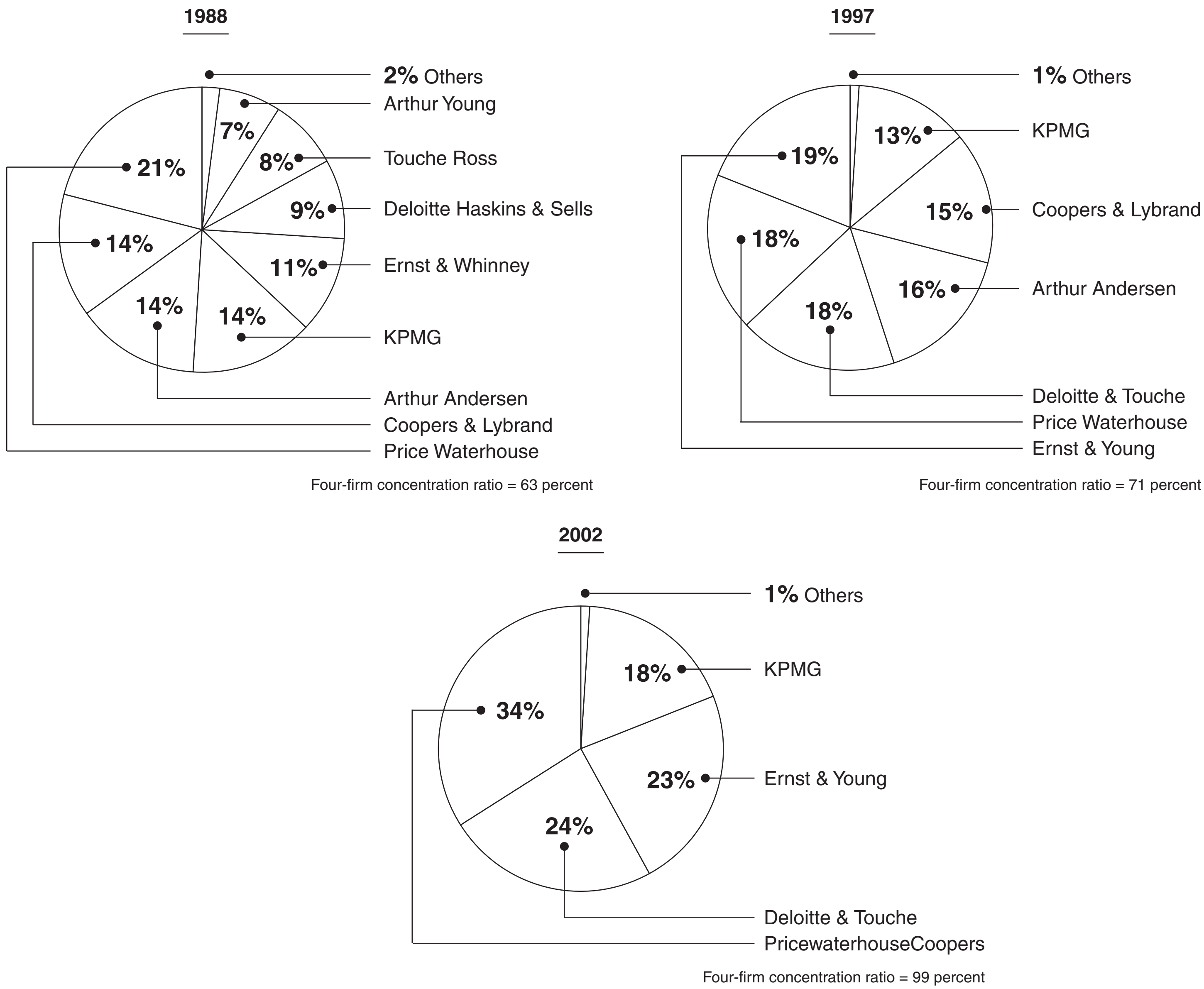
Source: *Who Audits America*, 2002.

Analysis of the four-firm concentration ratio also indicates that concentration among the top four accounting firms has increased significantly since 1988.[14] As shown in figure 5, in 1988 the top four firms (Price Waterhouse, Andersen, Coopers & Lybrand, and KPMG) audited 63 percent of total public company sales. The next four firms (Ernst & Whinney, Arthur Young, Deloitte Haskins & Sells, and Touche Ross) were significant competitors, auditing 35 percent of total public company sales. Also shown in figure 5, by 1997 the top four firms audited 71 percent of public company total sales, with two major competitors (Coopers & Lybrand and KPMG) auditing an additional 28 percent. Finally, by 2002, the

[14]For this measure, the top four firms are determined by the percentage of total sales audited. The four-firm concentration ratio is the aggregate sales audited by the top four firms as a percentage of total sales audited. We have computed concentration ratios based on summary tables included in *Who Audits America* for the relevant years. These summary tables omit certain small auditors that audit small public companies not listed on Amex, NASDAQ, or NYSE.

top four firms audited 99 percent of public company total sales with no significant competitors (see fig. 5).

Figure 5: Percentage of Public Company Audit Market (by Total Sales Audited), 1988, 1997, and 2002

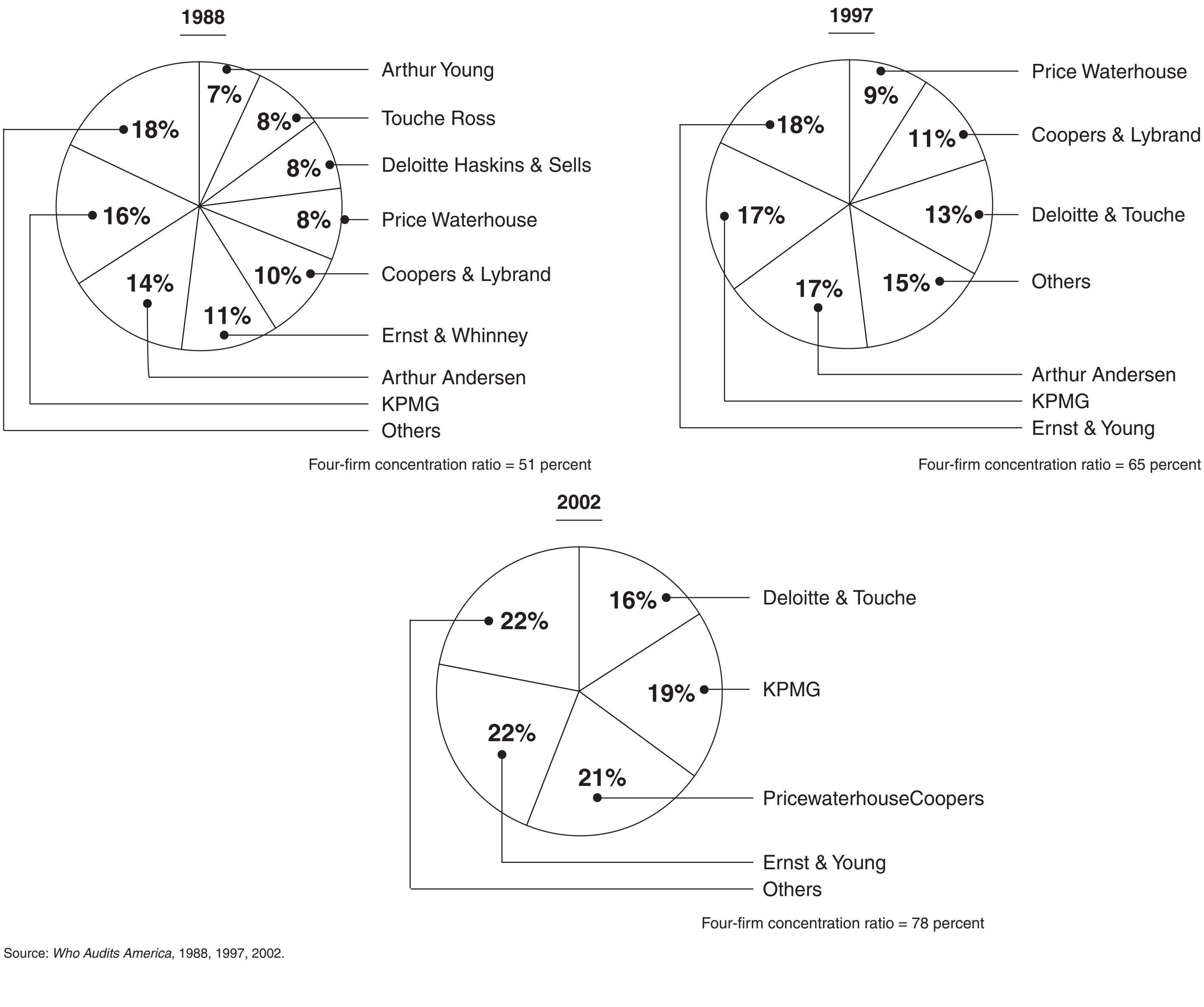


Source: *Who Audits America*, 1988, 1997, 2002.

Likewise, the four-firm concentration ratio based on the total number of public company clients increased from 51 percent in 1988 to 65 percent in 1997 and to 78 percent in 2002 (see fig. 6).[15] Not surprisingly, the larger public company segment of the market is even more concentrated than the overall market. For example, the Big 4 audit roughly 97 percent of all public companies with sales between $250 million and $5 billion and almost all public companies with sales greater than $5 billion.

[15]Market shares are generally calculated using the dollar value of sales as we have done in the text above and as shown in figure 5. FTC and DOJ note that measures such as sales, shipments, or production are the best indicators of future competitive significance. Nevertheless, we have also computed concentration ratios based on the number of clients for descriptive purposes.

Figure 6: Percentage of Public Company Audit Market (by Number of Clients), 1988, 1997, and 2002



Source: *Who Audits America*, 1988, 1997, 2002.

Effective competition does not require pure competitive conditions; however, a tight oligopoly raises concerns because the firms may exercise market power, and the concentrated structure of the market makes successful collusion, overt or tacit, easier.[16] In terms of market concentration, the audit market does not differ from numerous other markets in the United States that are also characterized by high degrees of concentration (see table 2). Although the resulting structures are similar, the factors contributing to the market structures and the competitive environments may be fundamentally different.

Table 2: List of Selected Tight Oligopolies, as of 1996

Market	Leading companies
Cereals	Kellogg, General Mills, General Foods
Beer	Anheuser-Busch, Miller, Coors
Airlines	American, United, Northwest, Delta, USAir
Garbage disposal	Waste-Management, Browning-Ferris
Automobiles	General Motors, Ford, Chrysler, Toyota
Locomotives	General Electric, General Motors
Carbonated drinks	Coca-Cola, PepsiCo
Recordings	Warner, Sony, BMG, Polygram, EMI, MCA
Express delivery	Federal Express, UPS, Airborne Freight
Soaps and detergents	Procter & Gamble, Colgate, Lever
Meat packing	Iowa Beef Packers, Cargill, ConAgra
Automobile rentals	Hertz (Ford), Avis, Budget (Ford), Alamo, National (GM)
Athletic shoes	Nike, Reebok, Adidas
Toys	Mattel, Hasbro

Source: W. Shepherd, *The Economics of Industrial Organization*, 4th ed. (London: Prentice-Hall, 1997).

Notes: This list includes a variety of tight oligopolies, and it does not attempt to compare or infer similarities aside from market concentration. It includes leading companies from the U.S. market perspective. The companies in certain markets may have also changed since 1996.

[16] Collusion refers to a usually secret agreement among competing firms (mostly oligopolistic firms) in an industry to control the market, raise the market price, and otherwise act like a monopoly. While overt collusion involves an explicit formal agreement among the firms, under tacit collusion each firm seems to be acting independently with no explicit agreement, perhaps each responding to the same market conditions, but ultimately the result is the same as it is under an explicit agreement.

Consolidation Does Not Appear to Have Impaired Price Competition to Date

Despite the high degree of concentration among accounting firms, with four firms auditing more than 78 percent of all public companies and 99 percent of all public company sales, we found no evidence that price competition to date has been impaired. As indicated in table 2, much of the economy is concentrated, but U.S. markets are generally considered quite competitive. Thus, market concentration data can overstate the significance of a tight oligopoly on competition. While concentration ratios and HHI are good indicators of market structure, these measures only indicate the potential for oligopolistic collusion or the exercise of market power. As market structure has historically been thought to influence market conduct and economic performance, there is concern that a tight oligopoly in the audit market might have resulted in detrimental effects on both purchasers of audit services and users of audited financial statements.

We employed a simple model of pure price competition to assess whether the high degree of concentration in the market for audit services was necessarily inconsistent with a price-competitive setting. The model is designed to simulate a market driven by pure price competition, in which clients choose auditors on price—neither quality nor reputation, for example, is a factor. The model's simulation results suggest that a market driven solely by price competition could also result in a high degree of market concentration. We found that the model simulated market shares that were close to the actual market shares of the Big 4, which are thought to be driven by a number of other factors including quality, reputation, and global reach. (See app. I for a detailed discussion of the model, results, and limitations.) Specifically, the model predicted that the Big 4 would audit 64 percent of companies in the sampled market, compared with the Big 4 actual market share of 62.2 percent in 2002 for the companies included in the simulation.[17] Moreover, the model predicted that the Big 4 would audit 96.3 percent of companies in the sample with assets greater than $250 million, compared with the 97 percent of these companies actually audited by the Big 4 in 2002. While evidence to date does not appear to indicate that

[17]The simulation is based on 5,448 industrial companies and their auditors. According to data obtained from *Who Audits America*, the Big 4 audited 62.2 percent of these companies. In this simulation, we assigned clients to their current auditor and simulated the market to see if the accounting firms could defend their market share in a purely competitive market. In an alternative simulation, we initiated the process without assigning clients to a particular firm and allowed accounting firms to compete for each client. The results were consistent with the above analysis; in fact, the Big 4 were predicted to audit 1-2 percent more of the 5,448 industrial clients than the actual percentage audited, depending on the cost of switching auditors (see app. I for complete results).

competition in the market for audit services has been impaired, the increased degree of concentration coupled with the recently imposed restrictions on the provision of nonaudit services by incumbent auditors to their audit clients could increase the potential for collusive behavior or the exercise of market power.

Large Public Companies Have Limited Number of Accounting Firm Choices

The most observable impact of consolidation among accounting firms appeared to be the limited number of auditor choices for most large national and multinational public companies if they voluntarily switched auditors or were required to do so, such as through mandatory firm rotation. Of the public companies responding to our survey to date, 88 percent (130 of 147) said that they would not consider using a smaller (non-Big 4) firm for audit and attest services. See appendix II for survey questionnaires and responses. In addition, our analysis of 1,085 former Andersen clients that changed auditors between October 2001 and December 2002 suggested that public companies (especially large companies) overwhelmingly preferred the Big 4. Only one large public company with assets over $5 billion that was audited by Andersen switched to a smaller firm. See appendix III for a detailed analysis.

For most large public companies, the maximum number of choices has gone from eight in 1988 to four in 2003. According to our preliminary survey results, a large majority (94 percent or 137 of 145) of public companies that responded to our survey to date said that they had three or fewer alternatives were they to switch accounting firms. All 20 of the audit chairpersons with whom we spoke believed that they had three or fewer alternatives. Of the companies responding to our survey, 42 percent (61 of 147) said that they did not have enough options for audit and attest services. However, when asked whether steps should be taken to increase the number of available choices, results revealed that 76 percent (54 of 71) of public companies responding to our survey to date said they would strongly favor or somewhat favor letting market forces operate without government intervention.

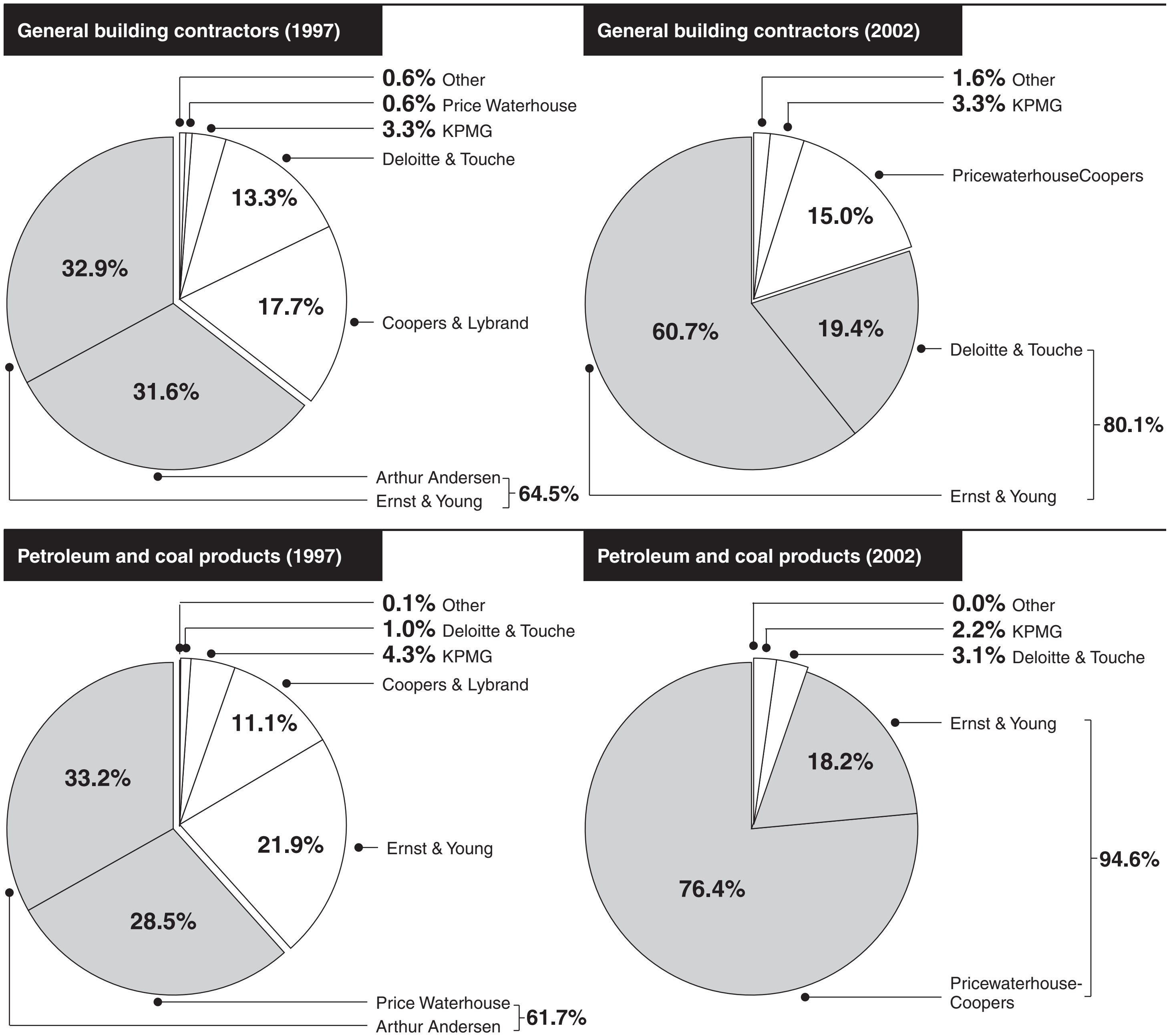
We also found that client choices could be even further limited due to potential conflicts of interest, the new independence rules, and industry specialization by the firms—all of which may further reduce the number of available alternatives to fewer than three. First, the Big 4 tend to specialize in particular industries and, as our preliminary survey results indicated, public companies that responded often preferred firms with established records of industry-specific expertise, which could further reduce a company's number of viable choices.[18] For example, 80 percent (118 of 148) of the public companies responding to our survey to date said industry specialization or expertise would be of great or very great importance to them if they had to choose a new auditor.[19] When asked why they would not consider an alternative to the Big 4, 91 percent (117 of 129) of public companies responding to date cited technical skills or knowledge of their industry as a reason of great or very great importance.

As figure 7 shows, in selected industries, specialization can often limit the number of firm choices to two—in each case, two firms accounted for well over 70 percent of the total assets audited in each industry in 2002. As a result, it might be difficult for a large company to find a firm with the requisite industry-specific expertise and staff capacity. Figure 7 also shows the impact of the Price Waterhouse and Coopers & Lybrand merger and dissolution of Andersen on industry specialization and associated client choice. While two firms also dominated the four selected industries in 1997, this concentration became much more pronounced by 2002, as illustrated in figure 7. See appendix IV for a detailed discussion of industry specialization and further industry-specific examples and limitations of this type of analysis.

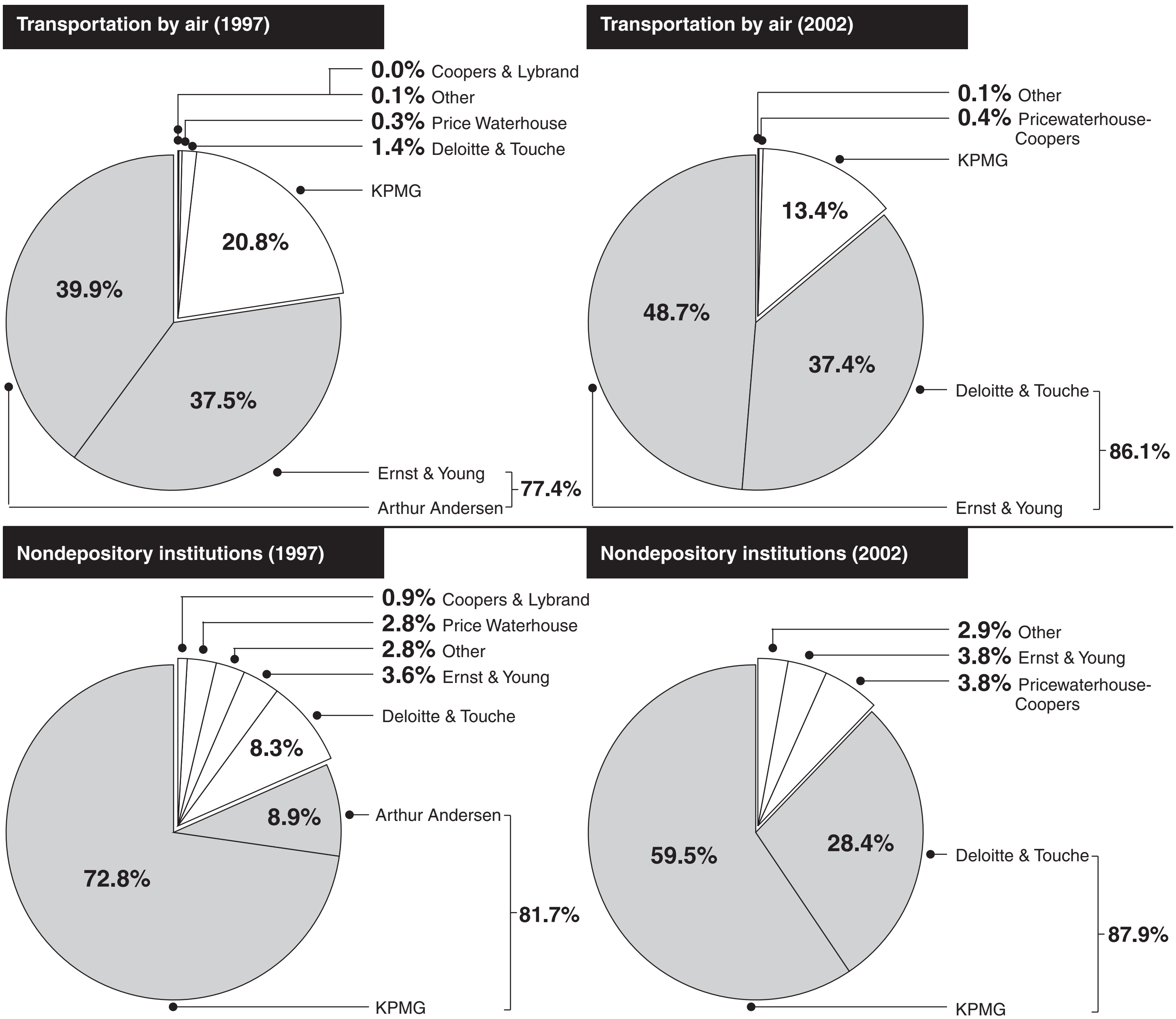
[18]Historically, firm consolidation in particular industries was often driven by the fact that a few largre companies dominated certain industries. Accounting firm "industry specialization" can be captured by a firm's relatively high market share, in terms of client assets or cllient sales, in a given industry. The observation that a few accounting firms audit the vast majority of company assets in a given industry does not necessarily indicate that they audit many companies in that industry—in fact, these few "specialists" may audit only a few very large companies. While firms that are not considered to be specialists in a given indusry may audit a large number of smaller companies, they may not have the requisite excess staff capacity or technical expertise necessary to handle the larger clients in that industry, which is implied by the term specialization. Industries conducive to specialization would tend to preclude other firms from easily entering the market and challenging specialist firms' market share.

[19]Industry specialization or expertise ranked third in importance behind quality of services offered (99 percent) and reputation or name recognition (82 percent).

Figure 7: Percentage of Assets Audited in Selected Industries, 1997 and 2002



Source: *Who Audits America*, 1997 and 2002.



Source: *Who Audits America*, 1997 and 2002.

Note: Selected industries presented for illustrative purposes, and additional examples are included in appendix IV.

Industry specialization, as captured by a relatively high market share of client assets or client sales in a given industry, may also be indicative of a firm's dominance in that industry on a different level. As a hypothetical example, consider a highly concentrated industry, with several very large companies and numerous smaller companies, in which a single accounting firm audits a significant portion of the industry assets. This firm's interpretation of accounting standards specific to the industry could become the prevailing standard practice in that industry due to the firm's dominant role. If, subsequently, these interpretations were found to be inappropriate (by some influential external third party, for example), the firm as well as the companies audited by that firm could be exposed to heightened liability risk, which could potentially have a severe negative impact on that industry as a whole as well as the firm.

Finally, the new independence rules established under the Sarbanes-Oxley Act of 2002, which limit the nonaudit services firms can provide to their audit clients, may also serve to reduce the number of auditor choices for some large public companies. As a hypothetical example, suppose that a large multinational petroleum company that used one Big 4 firm for its audit and attest services and another Big 4 firm for its outsourced internal audit function wanted to hire a new accounting firm because its board of directors decided that the company should change auditors every 7 years. In this case, this company would appear to have two remaining alternatives if it believed that only the Big 4 had the global reach and staff resources necessary to audit its operations. However, one of the remaining two Big 4 firms did not enter a bid because its market niche in this industry was small companies. Consequently, this company would be left with one realistic alternative. Although hypothetical, this scenario spotlights another concern that focuses on the potential exercise of market power, as it is highly probable the remaining firm would be aware of its competitive position. Conceivably, there are other scenarios and circumstances in which such a company would have no viable alternatives for its global audit and attest needs.

Linking Consolidation to Audit Price, Quality, and Auditor Independence Is Difficult

We found little empirical evidence to link past consolidation to changes in audit fees, quality, and auditor independence. Given the significant changes that have occurred in the accounting profession since the mid-1980s, we were also unable to isolate the impact of consolidation from other factors. However, researchers (relying on analyses based on aggregate billings of small samples of companies or proxies for audit fees, such as average audit revenues) generally found that audit fees remained flat or increased slightly since 1989. Additionally, although not focused on consolidation, a variety of studies have attempted to measure overall changes in audit quality and auditor independence. The results varied, and we spoke with numerous accounting experts who offered varying views about changes in quality and independence. Like audit fees, a variety of factors, such as the increasing importance of management consulting services provided to clients, make attributing any changes, real or perceived, to any one of the factors difficult.

Research on Changes in Audit Fees Used a Variety of Measures but Did Not Conclusively Determine Effects from Consolidation

Existing research indicated that audit fees (measured in different ways) generally remained flat or decreased slightly from the late 1980s through the mid-1990s but have been increasing since the late 1990s (inflation adjusted). However, we were unable to isolate the effects of consolidation and competition from the numerous other changes that have affected accounting firms and how they conduct business. These changes included evolving audit scope, the growth of management consulting services, technological developments, and evolving audit standards and legal reforms that altered audit firms' litigation exposure. Given potential changes in the scope of the audit, only the public accounting firms themselves can accurately determine whether hourly audit fees have increased or decreased since 1989. In general, the scope of an audit is a function of client complexity and risk.

Although there are very little data on changes in audit fees over time and existing studies used a variety of approaches to measure audit fees, two recent academic studies are widely cited. One used a proxy measure for the audit fee (Ivancevich and Zardkoohi) and the other was based on actual fees charged to a small sample of companies (Menon and Williams).[20] For the period following the mergers of the late 1980s, both studies found that audit fees declined through the mid 1990s. Using audit revenues per accounting firm divided by the dollar value of assets audited as a proxy for the audit fee, Ivancevich and Zardkoohi found that "fees" fell for both the merged firms (Ernst & Young and Deloitte & Touche) and the remaining Big 6 accounting firms from 1989 through 1996.[21] Similarly, Menon and Williams found that the average real audit fee per client declined from $3.4 million in 1989 to $2.8 million in 1997, the year Price Waterhouse and Coopers & Lybrand announced their proposed merger. Moreover, although the results were limited due to the small sample size used in the regression analysis, the study did not find any evidence that the Big 6 mergers resulted in a permanent increase in fees.

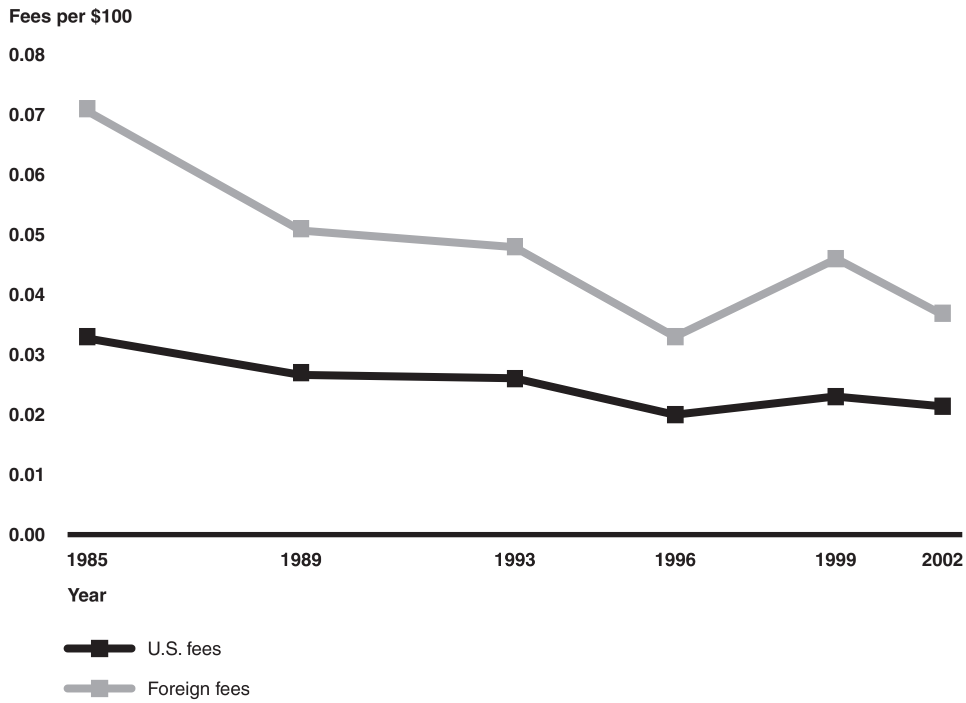
In addition, as figure 8 illustrates, the periodic survey of actual audit fees of about 130 companies conducted by Manufacturers Alliance also found a similar downward trend in audit fees per $100 of public company revenues in 1989 (and earlier) through 1995.[22] In 1995, the Private Securities Litigation Reform Act was enacted, which limited the liability exposure of accounting firms, among others. However, the survey revealed a slight increase from 1995 through 1999 for U.S. and foreign companies. Figure 8 shows that U.S. companies also paid lower fees than their foreign counterparts over the survey period. Separately, using net average audit revenues for the top tier as a percentage of total sales audited as a proxy for audit fees, we found that audit fees declined slightly from 1989 through 1995 and increased from 1995 through 2001 (see fig. 9). However, no determination can be made as to whether consolidation negatively or positively impacted audit fees in either case.

[20]S. Invancevich and A. Zardkoohi, "An Exploratory Analysis of the 1989 Accounting Firm Megamergers," *Accounting Horizons*, vol. 14, no. 4 (2000): 155-136. K. Menon and D. Williams, "Long-Term Trends in Audit Fes," *Auditing: A Journal of Practice and Theory*, vol. 20, no. 1 (2001): 115-136. The samples included cllients of Big 6 audit firms that voluntarily disclosed audit fee data in SEC filings (between 68 and 90 companies for each year). The fee data have been adjusted for inflation.

[21]In 1997, the Big 6 were Arthur Andersen, Coopers & Lybrand, Deloitte & Touche, Ernst & Young, KPMG, and Price Waterhouse. For Ernst & Young and Deloitte & Touche, the researchers found the average audit price fell from $503.6 to $441.84 per million dollars of assets audited. The "fees" for the remaining Big 6 fell from $441.28 to $378.4 per million dollars of assets audited in 1989-1996.

[22]Manufacturers Alliance/MAPI, *Survey on Outside Audit Fees*, 2000. Manufacturers Alliance provides executive education and business research services.

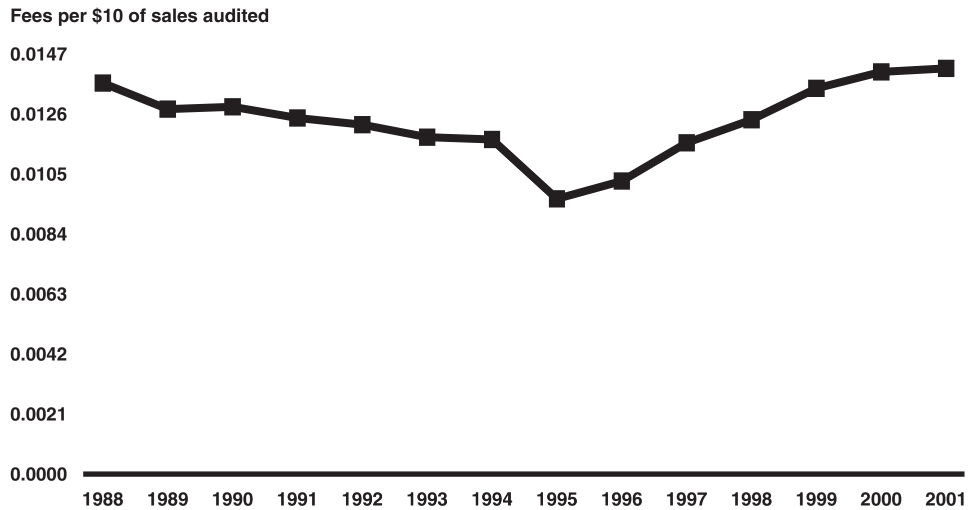
Figure 8: Changes in Audit Fees (Actual), 1984-2000



Source: Manufacturers Alliance.

Note: This graph depicts the average fees for audit services paid by companies as a percentage of the average total revenue of the companies. Given that this fee analysis is based on a small sample of public companies and the results incorporate changing revenue classifications and refinements in the underlying survey questions, the results should be viewed in the context of those companies surveyed and not the market overall.

Figure 9: Net Average Audit Revenues for Big 4, as a Percentage of Total Sales Audited, 1988-2001



Sources: *Public Accounting Report*, various editions; *Who Audits America*, 1988-2001.

Note: This graph depicts average audit revenue for the top-tier accounting firms as a percentage of the average total sales audited by the accounting firms. This estimate is used for trend analysis and should be viewed as only a rough proxy for the audit fee in part because the firms' revenues include clients other than public companies. See appendix I for details.

Although audit fees are generally a relatively small percentage of a public company's revenue, recent evidence suggests audit fees have increased significantly since 2000 and there are indications they may increase further in the future.[23] Some experts believe that during the 1980s and 1990s audit services became "loss leaders" in order for accounting firms to gain entry into other more lucrative professional service markets, primarily management consulting services.[24] Therefore, evidence of flat audit fees since 1989 and the relatively small percentage of company revenue in 2000 may reveal little about the possible market power produced by having

[23]According to an SEC report, in 2000 audit fees for the Fortune 1000 public companies were.03 percent of company revenue on average. Securities and Exchange Commission, Office of the Chief Accountant, "Independence Rule Proxy Disclosures: Independent Accountants Fees," (2001).

[24]The term loss leader implies that the firms bid unrealistically low fees ("low-balling") to obtain a new client. Once the new client is secured, the low audit fee, which alone may not be adequate to cover the cost of an audit and provide the firm with a reasonable margin, is offset by additional fees generated from other services, such as management consulting and tax.

fewer firms. Likewise, historical fees (especially certain proxy measures of audit fees) reveal little about the potential for noncompetitive pricing in the future given the new independence rules and evolving business model.

According to one source, average audit fees for Standard & Poor's 500 companies increased 27 percent in 2002 due primarily to new requirements and changing audit practices in the wake of recent accounting scandals.[25] Moreover, many market participants, experts, and academics with whom we consulted believe prices will increase further due to the implementation of the Sarbanes-Oxley requirements and related changes in the scope of certain audit services and possible changes in auditing standards. Because of these important changes and the potential for market power, it would be difficult to isolate the portion of any price increase resulting from noncompetitive behavior.

Likewise, nearly all accounting firms that responded to our survey said that both costs and fees have increased over the past decade, but that costs have increased more: 24 firms (51 percent) said their costs have "greatly" increased, and another 22 firms (47 percent) said that costs have "moderately" increased. However, when asked about the fees they charge, only 12 of the 47 firms (26 percent) responded that the fees they charge have greatly increased while another 33 firms (70 percent) said that their fees had moderately increased. When public companies were asked about fees, 93 percent (137 of 147) of the public companies that responded to our survey to date said that audit fees had somewhat or greatly increased over the past decade and 48 percent (70 of 147) said that consolidation had a great or moderate upward influence on those fees. Some companies indicated that most of this increase has occurred in the last few years.

Linking Consolidation to Audit Quality and Auditor Independence Is Difficult

Although we identified no research directly studying the impact of consolidation among the accounting firms on audit quality or auditor independence, we did find limited research that attempted to measure general changes in audit quality and auditor independence, and we explored these issues with market participants and researchers. We found that theoretical and empirical research on both issues to date present mixed and inconclusive results as, in general, measurement issues made it difficult to assess changes in audit quality or auditor independence.

[25] L. Kimmel and S. Vazquez, "The Increased Financial and Non-Financial Cost of Staying Public," Foley & Lardner, Attorneys at Law (2003).

Research Offers Competing Theories on Factors Influencing Audit Quality and Auditor Independence

Audit quality and auditor independence are, in general, difficult to observe or measure. Theory suggests that auditor independence and audit quality are inextricably linked, with auditor independence being an integral component of audit quality. One widely cited academic study defined auditor independence as the probability that an auditor would report a discovered problem in a company's financial reports while another widely cited academic study defined audit quality as the joint probability that an auditor would discover a problem in a company's financial reports and, further, that the auditor would report the problem.[26]

Research offers competing theories that address how competition among firms, auditor tenure, and accounting firm size—all factors that could be influenced directly by consolidation—might impact auditor independence and, thus, audit quality.[27] For example, some research hypothesized that increased competition could have a negative effect, as a client's opportunities and incentives to replace an incumbent auditor might increase for reasons ranging from minimizing audit fees to a desire for a more compliant auditor. However, other research hypothesized that increased competition could reduce the probability that some accounting firms could exercise disproportionate influence over the establishment of accounting principles and policies. Likewise, auditor tenure might also have a positive or negative impact. Some research hypothesized that an auditor that served a given client for a longer period of time may be more valuable to that client due to its deeper familiarity with and deeper insight into the client's operations, which would allow the auditor to become less

[26]These definitions are commonly used in the academic literature, reflecting the assessment of capital market participants, and are consistent with those used in the professional literature that describe audit quality in terms of audit risk. This definition of auditor independence is provided in L. DeAngelo, "Auditor Independence, 'Low Balling,' and Disclosure Regulation," *Journal of Accounting and Economics*, vol. 3 (1981): 113-127. This definition of audit quality is provided in L. DeAngelo, "Auditor Size and Audit Quality," *Journal of Accounting and Economics*, vol. 3 (1981): 183-199.

[27]Concern over auditor independence has typically centered on the provision of nonaudit services to a company by its incumbent auditor, a concern based on the assumption that an auditor is willing to sacrifice its independence in exchange for retaining a client that may pay large fees for nonaudit services. Historically, some have argued that the provision of nonaudit services to an audit client can impair auditor independence by creating an economic bond between an auditor and its client. Other researchers note that an economic bond could result from large audit fees, too, and, especially, that auditors also have market-based institutional incentives to act independently and remain independent of their public company clients. Numerous academic studies suggest that auditors face an expected cost for compromising their independence, namely loss of reputation and litigation costs, which is corroborated by historical evidence.

dependent on the client for information about the client's operations. However, other research hypothesized that increased tenure could result in complacency, lack of innovation, less rigorous audit procedures, and a reflexive confidence in the client. Some research hypothesized that an accounting firm's size might also have an impact, as a larger firm might become less dependent on a given client than a smaller firm.

Academic research suggests that larger auditors will perform higher quality audits and there are many studies employing proxies for audit quality that frequently report results consistent with such a notion. However, given its unobservable nature, there does not appear to be definitive evidence confirming the existence of differential audit quality between the Big 4 accounting firms and other auditors. Some researchers have dismissed the notion of differential audit quality, while others have questioned the assumption that the larger firms provide higher quality audits. [28] Some experts with whom we consulted asserted that there was a quality differential, while others were not convinced of this. One academic told us that the question of differential audit quality was difficult to answer, since large accounting firms generally handle most large company audits. This individual also suggested that smaller accounting firms could provide the same audit quality as larger accounting firms, provided that these smaller firms only accepted clients within their expertise and service potential.

[28]For example, the notion of differential audit quality is dismissed in American Institute of Certified Public Accountants, *The Commission on Auditors' Responsibilities: Report, Conclusions, and Recommendations*, New York: AICPA (1978): 111. However, Weiss Ratings Inc., "The Worsening Crisis of Confidence on Wall Street: The Role of Auditing Firms," 2002, reported that smaller accounting firms issued a higher percentage of going-concern warnings on their clients that subsequently went bankrupt than did four of the five largest firms, from January 2001 through June 2002.

Studies Often Use Restatements, Going-Concern Opinions, and Earnings Management to Measure Audit Quality and Auditor Independence

Audit quality is not generally measurable and tends only to be made public when a company experiences financial difficulties and its investors have a reason to question it.[29] Studies addressing audit quality and auditor independence have typically focused on financial statement restatements, going-concern opinions, and earnings management or manipulation.[30]

Financial statement restatements due to accounting improprieties have been used by some as a measure of audit quality.[31] By this measure, there is some evidence suggesting that audit quality may have declined over the 1990s, as several recent studies have found that financial statement restatements due to accounting irregularities have been increasing, and those by larger companies have been increasing as well.[32] As larger companies typically employ larger accounting firms, which have been perceived historically by some as providing higher quality audits, this trend toward larger company financial statement restatements may heighten concerns about potentially pervasive declining audit quality. In addition, in some recent high-profile restatement cases it appeared that the auditors identified problems but failed to ensure that management appropriately addressed their concerns, raising questions about auditor independence.

[29]In such a framework, capturing differential audit quality is particularly elusive: If no problem were found in a given company's financial reports, it is not necessarily the case that the corresponding audit was of high quality.

[30]These studies generally approached the issues from the perspective of capital market participants. Another avenue through which researchers have attempted to assess audit quality was the analysis of data on litigation involving auditors. However, auditor litigation data suffer from more serious measurement issues. For example, see Z. Palmrose, "An Analysis of Auditor Litigation and Audit Service Quality," *The Accounting Review*, vol. 63, no. 1 (1988): 55-73.

[31]Financial statement restatements can be triggered for a variety of reasons, including evolving interpretations of existing accounting standards, and are not necessarily the result of audit failures.

[32]For example, see Huron Consulting Group, "An Analysis of Restatement Matters: Rules, Errors, Ethics," Internet-Based Report, 2003; U.S. General Accounting Office, *Financial Statement Restatements: Trends, Market Impacts, Regulatory Responses, and Remaining Challenges*, GAO-03-138 (Washington, D.C.: October 2002); and M. Wu, "Earnings Restatements: A Capital Market Perspective," Working Paper, New York University, 2002. These studies reported restatements based on when they were announced or reported rather than the periods affected by the restatements. Some restatements announced in the late 1990s could be the result of heightened SEC activity designed to curb earnings manipulation, and the marked decline in the stock market beginning in 2000 may have also contributed to the discovery of many reporting improprieties that had previously gone undiscovered during the stock market expansion.

Another measure that has been employed by researchers to gauge audit quality is whether an auditor issues a going-concern opinion warning investors prior to a company's bankruptcy filing.[33] One study found that during the 1990s accounting firms issued fewer going-concern audit opinions to financially stressed companies prior to bankruptcy.[34] This study found that auditors were less likely to issue going-concern opinions in 1996-1997 than in 1992-1993, and again less likely to issue such opinions in 1999-2000 than in 1996-1997. Moreover, another study that analyzed going-concern opinions found that accounting firms failed to warn of nearly half of the 228 bankruptcies identified from January 2001 through June 2002, despite the fact that nearly 9 out of 10 of these companies displayed at least two indicators of financial stress.[35] However, numerous prior studies also found that approximately half of all companies filing for bankruptcy in selected periods prior to the 1990s did not have prior going-concern opinions in their immediately preceding financial statements either.[36] Another study focusing on going-concern opinions over a relatively short, recent time period examined whether there was an association between nonaudit fees and auditor independence, but it found no significant association between the two using auditors' propensity to issue going-

[33]A going-concern opinion indicates substantial doubt in the audited report regarding the ability of a company to continue as a "going concern." Academic research has noted that there are two types of misclassification in the context of going-concern opinions: (1) a company receives a going-concern opinion but subsequently remains viable or (2) a company enters bankruptcy but did not receive a prior going-concern opinion. The latter is the focus of the studies to which we refer. It is important to note that, technically, neither type of misclassification is a reporting error from the perspective of professional auditing standards, but capital market participants do not necessarily share this view, as they can be impacted by both.

[34]M. Geiger and K. Raghunandan, "Going-Concern Opinions in the 'New' Legal Environment," *Accounting Horizons*, vol. 16, no. 1 (2002): 17-26. The authors define a company as "financially stressed" if it exhibits at least one of the following features: (1) negative working capital, (2) negative retained earnings, or (3) a bottom-line loss. (See Glossary for definitions.)

[35]Weiss Ratings (2002) also found that accounting firms almost universally failed to warn the public of accounting irregularities over this period. Of the 33 instances of accounting irregularities investigated, in only two cases did an accounting firm issue warnings about the companies involved. Because it examined a relatively brief period, this study does not weigh in on whether the propensity to warn investors has increased or decreased over time, however.

[36]Additional references are provided in K. Raghunandan and K. Rama, "Audit Reports for Companies in Financial Distress: Before and After SAS No. 59," *Auditing: A Journal of Practice and Theory*, vol. 14, no. 1 (1995): 50-63.

concern opinions.[37] This study's findings were consistent with market-based institutional incentives dominating expected benefits from auditors compromising their independence.

Corporate earnings reported in companies' annual filings (to which auditors attest fairness) can be an important factor in investors' investment decisions, and can be used by corporate boards and institutional investors in assessing company performance and management quality, and in structuring loans and other contractual arrangements. As such, they can have an impact on securities prices and managers' compensation, among other things. Earnings management or manipulation (captured by, for example, managers' propensity to meet earnings targets) is another measure that has been used by researchers to capture audit quality, although in this case an auditor's influence on its clients' earnings characteristics is likely to be less direct and there can be more significant measurement problems.[38] While there has been growing anecdotal and empirical evidence of earnings management, research using this measure to determine whether audit quality or auditor independence was impaired yielded mixed results. For example, while one recent study suggested that nonaudit fees impair the credibility of financial reports, another cast doubt on its results, and another found evidence consistent with auditors increasing their independence in response to greater financial dependence (that is, for larger clients).[39]

Despite Contrasting Views on Audit Quality, Experts and Professionals Did Not View Consolidation as Cause

Existing research on audit quality and auditor independence presents inconclusive results, suffers from problematic measurement issues, and generally does not consider or compare these factors over extended time periods. Many academics and other accounting experts we contacted

[37]M. DeFond, K. Raghunandan, and R. Subramanyam, "Do Non-Audit Service Fees Impair Auditor Independence? Evidence from Going Concern Audit Opinions," *Journal of Accounting Research*, vol. 40, no. 4 (2002): 1247-1274.

[38]It is also possible that auditors providing nonaudit services to their audit clients are more tolerant of earnings management but draw the line at compromising the integrity of the audit opinion.

[39]R. Frankel, M. Johnson, and K. Nelson, "The Relation between Auditors' Fees for Nonaudit Services and Earnings Management," *The Accounting Review*, vol. 77 (2002): 71-105; W. Kinney, Jr., and R. Libby, "Discussion of 'The Relation between Auditors' Fees for Nonaudit Services and Earnings Management,'" *The Accounting Review*, vol. 77 (2002): 107-114; and J. Reynolds and J. Francis, "'Does Size Matter? The Influence of Large Clients on Office-Level Auditor Reporting Decisions," *Journal of Accounting and Economics*, vol. 30 (2001): 375-400.

indicated that they believed audit quality had declined since 1989. However, others, including small accounting firms and large company clients that responded to our survey to date, believed that audit quality had not decreased. For example, 43 percent (63 of 147) of public companies that responded believed the overall quality had gotten much or somewhat better over the past decade, while 18 percent (27 of 147) felt it had gotten much or somewhat worse. Of the public companies that responded to our survey to date, 60 percent (88 of 147) indicated that their auditor had become much more or somewhat more independent over the last decade. However, some accounting firms acknowledged that achieving auditor independence was difficult: 10 percent (14 of the 147) accounting firms that responded to our survey said that it had become much or somewhat harder to maintain independence at the firm level in the past decade and 19 percent (9 of the 47) indicated that it had become much more difficult or somewhat harder to maintain independence at the individual partner level over the past decade.

Even if audit quality or auditor independence has been affected, it would be difficult to determine any direct link to consolidation among accounting firms because of numerous other structural changes that occurred both within and outside of the audit market. When we asked our survey respondents how consolidation influenced the quality of audit services they received, 64 percent (94 of 147) of the public companies responding to date and 95 percent (41 of 43) of accounting firms said that consolidation had little or no effect. However, some academics we contacted believed that consolidation might have indirectly influenced audit quality during the 1990s, with some suggesting, for example, that concentration among a few firms enabled the largest accounting firms to exercise greater influence over the audit standard setting process and regulatory requirements.

Academics and Other Experts Said Other Factors Affected Audit Quality and Auditor Independence

In general, many of the people with whom we spoke—representing academia, the profession, regulators, and large public companies—believed that other factors could potentially have had a greater effect on audit quality than consolidation. According to knowledgeable individuals with whom we spoke, a variety of factors may have had a more direct impact on audit quality and auditor independence than consolidation. For example, they cited the removal of restrictions against advertising and direct solicitation of clients, the increased relative importance of management consulting services to accounting firms, legal reforms, changing auditing standards, and a lack of emphasis on the quality of the audit by clients and some capital market participants.

Several individuals who were knowledgeable about accounting firm history suggested that when advertising and direct solicitation of other firms' clients began to be permitted in the 1970s, the resulting competitive pressure on audit prices led accounting firms to look for ways to reduce the scope of the audit, resulting in a decline in audit quality. Many of the experts with whom we consulted also suggested that the entry of accounting firms into more lucrative management consulting services led to conflict-of-interest issues that compromised the integrity and quality of the audit service.

Other sources noted that, as a result of several legal reforms during the 1990s, it became more difficult and less worthwhile for private plaintiffs to assert civil claims against auditors and audit quality may also have suffered.[40] This view was supported by a study that concluded that accounting firms were less likely to warn investors about financially troubled companies following the litigation reforms of the 1990s.[41]

Consolidation Appears to Have Had Little Effect on Capital Formation or Securities Markets to Date, and Future Implications Are Unclear

Although accounting firms play an important role in capital formation and the efficient functioning of securities markets, we found no evidence to suggest that consolidation among accounting firms has had an impact on either of these to date. Moreover, we were unable to find research directly addressing how consolidation among accounting firms might affect capital formation or the securities markets in the future.

Capital formation and the securities markets are driven by a number of interacting factors, including interest rates, risk, and supply and demand. Isolating any impact of consolidation among accounting firms on capital formation or the securities markets is difficult because of the complex interaction among factors that may influence the capital formation process, and we were unable to do so. Moreover, most capital market participants

[40]For example, in 1994 the U.S. Supreme Court held that the federal securities laws do not provide a private cause of action for aiding and abetting securities fraud. *Central Bank of Denver v. First Interstate Bank of Denver*, 511 U.S. 164 (1994). The Private Securities Litigation Reform Act made it more difficult for a plaintiff suing a company and its auditor to collect damages from the accounting firm. In 1998 Congress passed the Securities Litigation Uniform Standards Act of 1998, Pub. L. No. 105-353, which restricted class actions and certain consolidated actions that make specific allegations involving the purchase or sale of a security.

[41]Geiger and Raghunandan (2002).

and other experts with whom we spoke were either unsure or did not believe that consolidation had any directly discernible impact on capital formation or the securities markets. Some said that the broader issues facing accounting firms, such as the recent accounting-related scandals involving Enron and WorldCom, might have affected the capital markets by reducing investor confidence, but that these were not necessarily linked to consolidation.

The informational role played by accounting firms is key to reducing the disparity in information between a company's management and capital market participants regarding the company's financial condition, thus enhancing resource allocation. Consequently, to the extent that consolidation might affect audit quality, especially the perception of audit quality, the cost and allocation of capital could be affected. For example, a perceived decline in audit quality for a given company might lead the capital markets to view that company's financial statements with increased skepticism, potentially increasing the company's cost of capital as well as altering the capital allocation decisions of capital market participants.[42] The liability to which accounting firms are subject also creates a form of "insurance" to investors through an auditor's assurance role, which provides investors with a claim on an accounting firm in the event of an audit failure.[43] To the extent that consolidation increased the capital bases of some accounting firms, investors might view this as potentially increasing loss recovery in the event of an audit failure involving those firms. However, it is unclear whether there has been or would be any impact on investor behavior, either positive or negative, due to the increased capital base of some firms.

[42]A recent study of some of Andersen's public company clients reported that their stock prices were adversely impacted by Andersen's admission to shredding documents, providing some empirical evidence of the capital market impact resulting from an auditor's loss of reputation and the subsequent concerns about the quality of its audits in general. See P. Chaney and K. Philipich, "Shredded Reputation: The Cost of Audit Failure," *Journal of Accounting Research*, vol. 40, no. 4 (2002): 1221-1245.

[43]For example, see R. Dye, "Auditing Standards, Legal Liability, and Auditor Wealth," *Journal of Political Economy*, vol. 101, no. 5 (1993): 887-914.

Although there appears to be no direct effect from consolidation of the Big 8 on the capital markets to date, some capital market participants and anecdotal evidence suggested that investment bankers and institutional investors, both of whom are integral to the capital formation process, often prefer that public companies use the Big 4 to audit their financial statements.[44] Although such a preference does not appear to represent much of a constraint to large national and multinational companies, it could have an impact on other, smaller companies accessing the capital markets, as a company's use of a less well-known accounting firm might create added uncertainty on the part of investors and could possibly lead to delays in accessing new capital. For example, some research indicated that there was less initial public offering underpricing for companies that used Big 8 or larger accounting firms, as opposed to those that engaged smaller accounting firms.[45] According to firm officials, as larger accounting firms reevaluate their portfolio of clients, some smaller public companies may no longer be able to engage the Big 4 or other large accounting firms with whom capital market participants are more familiar. Thus, partially as a result of a market with fewer accounting firms able or willing to provide

[44]Some capital market participants suggested that the litigation risk faced by underwriters was a primary reason why underwriters generally prefer that their public company clients engage Big 4 accounting firms for audit services in their securities offering processes. The Securities Act of 1933 assigned certain responsibilities to the auditor and underwriter in connection with their participation in a securities offering, and both may be held liable in the event of a material misstatement or omission in the offering documents. To discharge its "due diligence" responsibilities (the process of investigation into the details of a potential investment, such as an examination of operations and management and the verification of material facts), an underwriter must demonstrate that it has reviewed an issuer's financial information. In performing its due diligence, the underwriter relies on the expertise of professional auditors to review certain financial information and to provide "comfort letters" (an independent auditor's letter, required in securities underwriting agreements, to assure that information in the registration statement and prospectus is correctly prepared and that no material changes have occurred since their preparation) evidencing any reviews. Given its liability risk, an underwriter may prefer that a client in the securities offering process engage a Big 4 accounting firm, which has a larger capital base than any non-Big 4 firm, to more effectively redistribute this risk. Underwriters also prefer the Big 4 because they may have more experience with the capital formation process, more capacity to meet deadlines, and can provide more assistance throughout the process.

[45]Initial public offering underpricing generally refers to the difference between the offering price and the market clearing price at issuance of a company's security, which can be translated directly into the initial market-adjusted return earned by a market participant who buys the security at its offering price and sells it at its first-day closing price. For example, see M. Willenborg, "Empirical Analysis of the Economic Demand for Auditing in the Initial Public Offerings Market," *Journal of Accounting Research*, vol. 37, no. 1 (1999): 225-238, and R. Beatty, "Auditor Reputation and the Pricing of Initial Public Offerings," *The Accounting Review*, vol. 64, no. 4 (1989): 693-709.

audit services to larger public companies, some smaller companies could be hindered in their ability to raise capital.

Because the audit market has become more concentrated, the Big 4 have been increasing their focus on gaining the audit contracts of larger public companies. In the process, the Big 4 shed some of their clients, particularly smaller ones, which they viewed as not profitable or as posing unacceptable risks to their firms. Likewise, smaller firms said that they have undergone similar risk assessment and client retention processes, and they have also shed some clients that no longer satisfied their client criteria. Moreover, the possible reduction in the number of accounting firms willing to audit public companies in the wake of the passage of Sarbanes-Oxley could further impact the availability and cost of capital for some smaller companies, particularly companies for whom the accounting firms may doubt the profitability of the audit engagements. As noted earlier, familiarity with an accounting firm on the part of capital market participants could lead to easier, less expensive access to the capital markets.

Smaller Accounting Firms Face Numerous Barriers to Entry into the Top Tier

Unlike the Big 4, which have established global operations and infrastructure, smaller accounting firms face considerable barriers to entry, such as the lack of capacity and capital limitations, when competing for the audits of large national and multinational public companies. First, smaller firms generally lack the staff resources, technical expertise, and global reach to audit large multinational companies. Second, public companies and markets appear to prefer the Big 4 because of their established reputation. Third, the increased litigation risk and insurance costs associated with auditing public companies generally create disincentives for smaller firms to actively compete for large public company clients. Fourth, raising the capital to expand their existing infrastructure to compete with the Big 4, which already have such operations in place, is also a challenge, in part because of the partnership structure of accounting firms. Finally, certain state laws, such as state licensing requirements, make it harder for smaller firms that lack a national presence to compete. The firms with whom we spoke, including the Big 4, all told us that they did not foresee any of the other accounting firms being able to grow to compete with the Big 4 for large national and multinational public company clients in the near future.

Smaller Firms Generally Lack Staff Resources, Technical Expertise, and Global Reach to Audit Large Public Companies

Perhaps the most difficult challenge facing smaller firms is the lack of staff resources, technical expertise, and global reach necessary to audit most large national and multinational companies and their often complex operations. Moreover, 91 percent (117 of 129) of public companies responding to our survey who would not consider using a non-Big 4 firm as their auditor said that the capacity of the firm was of great or very great importance in their unwillingness to do so.[46] Large multinational companies are generally more complex to audit and require more auditors with greater experience and training. The complexity of a public company audit depends on many factors, such as the number of markets in which the company competes, the size of the company, the nature of the company's business, the variety of revenue streams it has, and organizational changes. It is not uncommon for an audit of a large national or multinational public company to require hundreds of staff.

Most smaller firms lack the staff resources necessary to commit hundreds of employees to a single client, which limits smaller firms' ability to compete with the Big 4 for large audit clients. Yet, without having large clients, it is difficult to build the capacity needed to attract large clients. Even with global networks and affiliations, the capacity gap between the fourth- and fifth-ranked firms is significant. For example, the smallest Big 4 firm in terms of 2002 partners and nonpartner professional staff from U.S. operations, KPMG, is over five times the size of the fifth-largest firm, Grant Thornton. As table 3 illustrates, the gap between the top tier and the next tier has grown significantly since 1988. This gap spans revenue, number of partners, professional staff size, offices, and number of SEC clients. The result is a dual market structure—one market where the Big 4 compete with several smaller accounting firms for medium and small public companies and another market where essentially only the Big 4 compete for the largest public company clients.[47]

[46]Two of the three most frequently cited reasons given for not considering a non-Big 4 firm were capacity of the firm (117 of 129 respondents) and technical skills/knowledge (117 of 129 respondents).

[47]This discussion of markets is limited to the public company audit market and associated competition. Public accounting firms actually compete in a variety of niche markets, such as the audit market for small public companies, nonprofit companies, private companies, and governmental agencies.

Table 3: Big 8 and Big 4 versus Next Largest Tier Accounting Firms (U.S. Operations), 1988 and 2002

Accounting firms	Average real revenue (dollars in millions)	Average number of partners	Average number of professional staff (nonpartner)	Average number of offices	Average number of SEC clients
1988					
Big 8	$1,566	1,126	10,991	105	1,359
Next tier	288	364	2,118	57	234
Gap	**1,278**	**762**	**8,874**	**48**	**1,125**
2002					
Big 4	4,468	2,029	15,664	101	2,046
Next tier	290	292	1,532	47	245
Gap	**4,178**	**1,736**	**14,132**	**54**	**1,801**

Source: *Public Accounting Report,* 1989 and 2003.

Notes: The next tier includes Laventhol & Horwath, Grant Thornton, BDO Seidman, and McGladrey & Pullen in 1988 (based on the next four largest ranked firms by total public company sales audited); for 2002, Laventhol & Horwath is replaced by Crowe, Chizek and Company. Average real revenue figures have been adjusted for inflation. Gap figures may not sum due to rounding.

Although firms of all sizes expressed some difficulty attracting staff with specialized audit or industry-specific expertise, smaller firms said that this was particularly difficult. Further, some smaller firms told us that they had difficulty keeping talented employees, especially those with sought-after expertise, from leaving for jobs with the Big 4. The Big 4 can afford to more highly compensate employees and also offer a wider range of opportunities than smaller firms. Moreover, the public companies that responded to our survey to date ranked industry specialization or expertise as the third most important consideration in selecting an auditor. Some company officials also said that they preferred a firm to have a “critical mass” or depth of staff with the requisite expertise and knowledge, which generally required a firm of a certain size.

In addition to smaller firms having staff resource and technical expertise constraints, some public companies said that their auditor had to have sufficient global reach to audit their international operations. Without extensive global networks, most smaller firms face significant challenges in competing for large multinational clients. As table 4 illustrates, the disparity in capacity between the Big 4 and the next three largest firms’ global operations was even more dramatic than the comparison between their U.S. operations. For example, on average, the Big 4 had over 75,000 nonpartner professional staff and over 6,600 partners compared to the next three largest firms with over 14,000 nonpartner professional staff and around 2,200 partners.

Table 4: Largest U.S. Accounting Firms (Global Operations), 2002

Accounting firms	Revenue (dollars in thousands)	Partners	Professional staff (nonpartner)
Big 4			
PricewaterhouseCoopers	$13,782	7,020	97,109
Deloitte & Touche	12,500	6,714	73,810
KPMG	10,720	6,600	69,100
Ernst & Young	10,124	6,131	60,713
Next tier			
BDO Seidman	2,395	2,182	16,078
Grant Thornton	1,840	2,256	14,019
McGladrey & Pullen	1,829	2,245	12,775

Source: *Public Accounting Report*, 2003.

Notes: This table is limited to U.S.-based firms with global operations. Some foreign firms may have operations comparable to smaller U.S. firms.

While some of the smaller firms have international operations, we found that some public companies and others were either unaware that they had such operations or were uncertain of the degree of cohesive service that these smaller firms could provide through their global affiliations. The various national practices of any given Big 4 firm are separate and independent legal entities, but they often share common resources, support systems, audit procedures, and quality and internal control structures. Market participants said that the affiliates of smaller firms, in contrast, tended to have lower degrees of commonality. Rather than a tight network, they described smaller firms' international affiliations as associations or cooperatives in which there was less sharing of resources and internal control systems. In addition, they said that quality standards, practices and procedures might be less uniform between smaller firm affiliates, which raised concerns for multinational public companies.

Smaller Firms Lack Global Reputation

Smaller firms face a challenge to establish recognition and credibility among large national and multinational public companies and, as discussed previously, capital market participants. One reason capital market participants often prefer a Big 4 auditor is because of their higher level of familiarity with the Big 4. For example, some large public companies said that some of the smaller accounting firms could provide audit services to certain large national public companies, depending on the complexity of the companies' operations. These individuals added, however, that boards of directors of these companies might not consider this option. Others said that despite recent accounting scandals involving the Big 4, many capital market participants continued to expect the use of the Big 4 for audit services. Thus, companies seeking to establish themselves as worthy investments may continue to engage one of the Big 4 to increase their credibility to investors. Eighty-two percent (121 of 148) of the public companies that responded to our survey indicated that reputation or name recognition was of great or very great importance to them in choosing an auditor. This was the second-most-cited factor, exceeded only by quality.

Increased Litigation Risk and Insurance Costs Make Large Company Audit Market Less Attractive Than Other Options

Increased litigation risk presents another barrier for smaller firms seeking to audit larger public companies as they face difficulties managing this risk and obtaining affordable insurance. Like many of the challenges faced by smaller firms, this is a challenge for all firms. However, assuming that smaller firms were able to purchase additional insurance to cover the new risk exposure, most smaller firms lacked the size needed to achieve economies of scale to spread their litigation risk and insurance costs across a larger capital base. According to 83 percent of firms (38 of the 46) that responded to our survey, litigation and insurance factors have had a great or moderate upward influence on their costs, which they indicated have increased significantly.[48] Specifically, some of the firms with whom we spoke said that their deductibles and premiums have increased substantially and coverage had become more limited. Given the recent high-profile accounting scandals and escalating litigation involving accounting firms, some firms said that insurance companies saw increased risk and uncertainty from insuring firms that audited public companies. As a result, some of the smaller firms with whom we spoke said they had or

[48]The other two most-cited factors having an upward influence on costs were changing accounting principles and standards/complexity of audits (47 of 47) and price of talent or training (43 of 47).

were considering limiting their practices to nonpublic clients. Others said that the greater risk associated with auditing large public companies was a key factor in their decisions not to attempt to expand their existing operations in the public company audit market.

Finally, many of the largest non-Big 4 firms said that they had ample opportunities for growth in the mid-sized public company segment of the public company audit market and in the private company audit market. In addition, smaller firms said that they could attract large companies as clients for other audit-related and nonaudit services such as forensic audits, management consulting services, and internal audits. In their efforts to maximize profits, these smaller firms said they were targeting market segments in which they were best positioned to compete, which generally did not include the large public company audit market.

Raising Capital for Growth Is Difficult

Access to capital is another critical element to an accounting firm's ability to generate the capacity needed to establish the network and infrastructure to audit large multinational companies. Several firms cited the lack of capital as one of the greatest barriers to growth and the ability to serve larger clients. They said that the partnership structure of most public accounting firms was one factor that limited the ability of all firms to raise capital but posed a particular challenge for smaller firms. Under a partnership structure, accounting firms are unable to raise capital through the public markets. To expand their operations, accounting firms must look to other options, such as borrowing from financial institutions, merging with other accounting firms, growing the business without merging, or tapping the personal resources of their partners and employees. Raising capital through borrowing may be difficult because accounting firms as professional service organizations may lack the collateral needed to secure loans.

While mergers provide a way for firms to grow and expand their capital base, the smaller firms with whom we spoke indicated that they were not interested in merging with other similarly sized firms. Some firms said that they did not see the economic benefits or business advantages of doing so while others said that they wanted to maintain their unique identity.

We also employed the Doogar and Easley (1998) model by simulating mergers among smaller firms in order to assess whether, in a purely price competitive environment, such mergers could lead to viable competitors to the Big 4 for large national and multinational clients. In particular, we merged the five largest firms below the Big 4 in terms of the number of partners (Grant Thornton, BDO Seidman, Baid Kurtz & Dobson, McGladrey & Pullen, and Moss Adams) and simulated the market to see if the newly merged firm could attract public companies (of any size) away from the Big 4. We first assumed that the newly merged firm would become as efficient as the Big 4, as measured by the staff-to-partner ratio. Under this best-case scenario, we projected this firm's market share would be 11.2 percent, compared with the five firms' actual collective 2002 market share of 8.6 percent, indicating a 2.6 percentage-point gain in market share. However, when we assumed lesser efficiency gains, the merged firm's projected market share ranged from 4.5 percent (no efficiency gains) to 6.4 percent (some efficiency gains), indicating that the merged firm's market share would be lower than their collective market share (see app. II). Even ignoring many real world considerations, such as reputation and global reach, these results illustrated the difficulty faced to date by any potential competitor to the Big 4 firms in the market for large public company audits.

State Requirements Pose Obstacles for Smaller Firms in Particular

While all accounting firms must comply with state requirements such as licensing, smaller firms that lack an existing infrastructure of national offices face increased costs and burden to establish geographic coverage needed for auditing most large public companies. All 50 states, the District of Columbia, Guam, Puerto Rico, and the U.S. Virgin Islands have laws governing the licensing of certified public accountants, including requirements for education, examination, and experience.

While each jurisdiction restricts the use of the title "certified public accountant" to individuals who are registered as such with the state regulatory authority, the other licensure requirements are not uniform. State boards have been working toward a more uniform system based on the Uniform Accountancy Act (UAA), which is a model licensing law for state regulation within the accounting profession. The UAA seeks adoption of the idea of "substantial equivalency" with regard to education, examinations, and experience, so that states recognize each other's certification as "substantially equivalent" to their own. According to National Association of State Boards of Accountancy and AICPA officials, fewer than half (23) of the jurisdictions had agreed to the equivalency practice as of July 1, 2003.

Some firms expressed concerns that potential state and federal duplication of oversight could pose more of a burden for smaller firms than the Big 4 and might induce some smaller firms to stop auditing public companies altogether. Specifically, to mirror the federal oversight structure, most states (37) implemented statutorily required peer reviews for firms registered in the state. Until 2002, these requirements were generally consistent with the peer review process conducted by AICPA's SEC Practice Section.[49] However, Sarbanes-Oxley created PCAOB to establish auditing standards and oversee firms' compliance with those standards. Unlike the old peer review that focused on a firm's overall operations, PCAOB plans to conduct inspections of a firm's public company practice. Whether this inspection will be sufficient to satisfy the peer review requirements under state law or whether firms with private clients would have to be subject to both state- and federal-level reviews is unclear at this time.

Observations

The audit market is in the midst of unprecedented change and evolution. It has become more highly concentrated, and the Big 4, as well as all accounting firms, face tremendous challenges as they adapt to new risks and responsibilities, new independence standards, a new business model, and a new oversight structure, among other things. In many cases it is unclear what the ultimate outcome will be and our findings about past behavior may not reflect what the situation will be in the future. Therefore, we have identified several important issues that we believe warrant additional attention and study by the appropriate regulatory or enforcement agencies at some point. First, agencies could evaluate and monitor the effect of the existing level of concentration on price and quality to see if there are any changes in the firms' ability to exercise market power. This is especially important as the firms move to a new business model with management consulting becoming a less significant source of revenue. Second, the issue of what, if anything, can or should be done to prevent further consolidation of the Big 4 warrants consideration. Such an analysis could determine the possible impact of increased concentration through the voluntary or involuntary exit of one of the current Big 4 firms. If the effects were seen as detrimental, regulatory and enforcement agencies could evaluate the types of actions that could be taken to mitigate the impact or develop contingency plans to deal with the impact of further

[49]The AICPA's SEC Practice Section (SECPS) was a part of the former self-regulatory system. SECPS was overseen by the Public Oversight Board (POB), which represented the public interest on all matters affecting public confidence in the integrity of the audit process. SECPS required AICPA member accounting firms to subject their professional practices to peer review and oversight by POB and SEC.

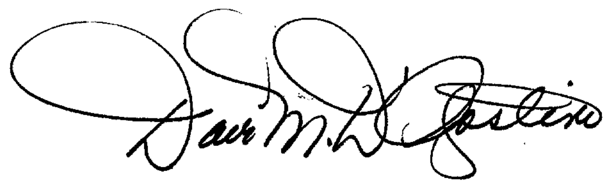
consolidation. Part of this analysis would be to evaluate the pros and cons of various forms of government intervention to maintain competition or mitigate the effects of market power. Third, it is important that regulators and enforcement agencies continue to balance the firms' and the individuals' responsibilities when problems are uncovered and to target sanctions accordingly. For example, when appropriate, hold partners and employees rather than the entire firm accountable and consider the implications of possible sanctions on the audit market. However, it is equally important that concerns about the firms' viability be balanced against the firms' believing they are "too few to fail" and the ensuing moral hazard such a belief creates. Fourth, Big 4 market share concentration, particularly in key industries, may warrant ongoing and additional analysis, including evaluating ways to increase accounting firm competition in certain industries by limiting market shares. Finally, it is unclear what can be done to address existing barriers to entry into the large public company market. However, it may be useful to evaluate whether addressing these barriers could prevent further concentration in the top tier. Part of this evaluation could include determining whether there are acceptable ways to hold partners personally liable while reasonably limiting the firms' exposure, but at the same time increasing the firms' ability to raise capital.

Agency Comments and Our Evaluation

We provided copies of a draft of this report to SEC, DOJ, PCAOB, and AICPA for their comment. We obtained oral comments from DOJ officials from the Antitrust and Criminal Divisions, who provided additional information on the extent to which coordination with antitrust officials and consideration of the competitive implications of the Andersen criminal indictment occurred. As a result, we clarified the language provided in this report. SEC, DOJ, and AICPA provided technical comments, which have been incorporated into this report where appropriate. PCAOB had no comments.

We are sending copies of this report to the Chairman and Ranking Minority Member of the House Committee on Energy and Commerce. We are also sending copies of this report to the Chairman of SEC, the Attorney General, the Chairman of PCAOB, and other interested parties. This report will also be available at no cost on GAO's Internet homepage at http//www.gao.gov.

This report was prepared under the direction of Orice M. Williams, Assistant Director. Please contact her or me at (202) 512-8678 if you or your staff have any questions concerning this work. Key contributors are acknowledged in appendix V.



Davi M. D’Agostino
Director, Financial Markets and
Community Investment

Scope and Methodology

As mandated by Section 701 of the Sarbanes-Oxley Act of 2002 (P.L. 107-204) and as agreed with your staff, our objectives were to study (1) the factors leading to the mergers among the largest public accounting firms in the 1980s and 1990s; (2) the impact of consolidation on competition, including the availability of auditor choices for large national and multinational public companies; (3) the impact of consolidation on the cost, quality, and independence of audit services; (4) the impact of consolidation on capital formation and securities markets; and (5) the barriers to entry faced by smaller firms in competing with the largest firms for large national and multinational public company clients.

We conducted our work in Chicago, Illinois, New York, New York, and Washington, D.C., from October 2002 through July 2003.

Identifying the Factors for Consolidation

To identify the factors contributing to consolidation among accounting firms, we interviewed past and current partners of public accounting firms involved in Big 8 mergers, and officials from the Department of Justice (DOJ) and Federal Trade Commission (FTC). Specifically, we conducted in-depth interviews with senior partners of the Big 4 firms and, to the extent possible, the former partners, chairmen, and chief executive officers (CEO) of the Big 8 who were instrumental in their firms' decisions to consolidate. We asked these officials to recount in detail their firms' histories of consolidation and their views on the impetus for merging. We also conducted interviews with senior DOJ officials about the studies and investigations they had undertaken to determine whether the mergers would raise antitrust issues. We did not, however, review any of the antitrust analyses conducted by DOJ specific to any of the proposed mergers during the 1980s and 1990s. We requested DOJ's antitrust analysis and related documentation from the mergers among the largest firms in 1987 and 1997. According to DOJ officials, most of the firm documents had been returned to the relevant parties, and other documents were viewed as "predecisional" by DOJ. While GAO's statute provides us with access to predecisional information absent a certification by the President or the Director of the Office of Management and Budget, we were more interested in the reasons for the mergers than DOJ's analysis in approving the mergers. Therefore, we used other sources to obtain the necessary information for this report. To the extent possible, we obtained copies of public decisions made by FTC in the 1970s and 1980s concerning the ability to advertise by professional service firms, including the accounting firms. As directed by the mandate, we coordinated with the Securities and Exchange Commission (SEC) and SEC's counterparts from the Group of

Seven nations (Canada, France, Germany, Italy, Japan, United Kingdom, and United States). To do this, we met with the representatives of the appropriate regulatory agencies under the auspices of the International Organization of Securities Commissions and obtained additional information relevant to their countries. We also conducted a literature review of existing studies on the history of the accounting profession and consolidation.

Impact of Consolidation on Competition, Auditor Choices, Audit Fees, and Audit Quality and Auditor Independence

To evaluate the impact of consolidation on competition, auditor choices, audit fees, and audit quality and auditor independence, we consulted with academics and other researchers, U.S. and foreign regulators, and trade associations, and we reviewed relevant academic literature. Most of the research studies cited in this report have been published in highly regarded, refereed academic journals. These studies were also reviewed by GAO's economists, who determined that they did not raise serious methodological concerns. However, the inclusion of these studies is purely for research purposes and does not imply that we deem them definitive. We sent out 26 structured questionnaires regarding the impact of consolidation on choice, price, and quality to a cross section of academics and other experts (with backgrounds in accounting, securities, and industrial organization) and received 14 responses. We also collected data and calculated our own descriptive statistics for analysis. Using audit market data from various sources, we computed concentration ratios and Hirschman-Herfindahl indexes and conducted trend analyses and tests of statistical independence. We also employed a simple model of pure price competition, in which clients choose auditors based on price, ignoring factors such as quality or reputation, to assess whether the current high degree of concentration in the market for audit services is necessarily inconsistent with a purely price competitive setting. To augment our empirical findings, we conducted two surveys. Finally, we interviewed a judgmental sample of 20 chairpersons of audit committees of Fortune 1000 companies to obtain their views on consolidation and competition.

Data Analysis Used a Variety of Sources

To address the structure of the audit market we computed concentration ratios and Hirschman-Herfindahl indexes for 1988 to 2002 using the *Who Audits America* database, a directory of public companies with detailed information for each company, including the auditor of record, maintained by Spencer Phelps of Data Financial Press. We used *Public Accounting Report (PAR)* and other sources for the remaining trend and descriptive analyses, including the analyses of the top and lower tiers of accounting firms, contained in the report.[1] Data on audit fees were obtained from a variety of academic and other sources, including Manufacturers Alliance. The proxy for audit fees that we constructed was based on numerous issues of *PAR* and *Who Audits America*. Given the data used and the manner in which our proxy was constructed, this should be considered to be a rough proxy and is used for illustrative trend analysis in this report. To verify the reliability of these data sources, we performed several checks to test the completeness and accuracy of the data. Random samples of the *Who Audits America* database were crosschecked with SEC proxy filings and other publicly available information. Descriptive statistics calculated using the database were also compared with similar statistics from published research. Moreover, Professors Doogar and Easley (see next section for fuller discussion), who worked with us on the modeling component of the study, compared random samples from *Compustat*, *Dow-Jones Disclosure*, and *Who Audits America* and found no discrepancies. Because of the lag in updating some of the financial information, the results should be viewed as estimates useful for describing market concentration. We performed similar, albeit more limited, tests on *PAR* data. However, these data are self-reported by the accounting firms and it should be noted that the firms are not subject to the same reporting and financial disclosure requirements as SEC registrants.

[1]Top-tier firms would include the Big 8 in 1988 and the Big 4 in 2002. Likewise, the next-tier firms would include Grant Thornton, BDO Seidman, BKD, Crowe, Chizek and Co., McGladrey & Pullen, Moss Adams, Plante & Moran and Clifton Gunderson in 2002.

We Used the Doogar and Easley (1998) Model of Audit Market Structure to Assess Concentration in a Purely Price Competitive Framework

We also employed a simple model of pure price competition, in which clients choose auditors based on price, ignoring factors such as quality or reputation, to assess whether the current high degree of concentration in the market for audit services is necessarily inconsistent with a price-competitive setting.[2] We worked with Professor Rajib Doogar, University of Illinois at Urbana-Champaign, and Professor Robert Easley, University of Notre Dame, to expand and update their 1998 model using 2002 data. Our sample consisted of 5,448 companies listed on the American Stock Exchange, NASDAQ, and New York Stock Exchange, and other companies with stock traded on other over-the-counter markets identified from *Who Audits America*. To ensure consistency with Doogar and Easley (1998), we limited the market studied to only industrial companies. The information on accounting firms, such as number of partners and staff, was obtained from *PAR*. Professors Doogar and Easley performed the simulations.

To determine whether the tight oligopoly in the audit market in 2002 could be explained with a model of pure price competition, we ran three market simulations. In the first simulation, we allowed the firms to compete for clients to determine market share in a simulated price-competitive market. For the second simulation, we assigned companies to their current auditor and simulated the market to see if the accounting firms could defend their market share in a purely price-competitive market. Finally, we combined several smaller firms to see if they could successfully compete with the Big 4 for larger clients. In each simulation, the computer-generated market mimicked a process of pure price competition in which firms bid for each client, based on the short-term cost of performing the audit.

Model Assumptions

The model makes several principal assumptions. First, the model assumes that firms produce audits with a constant returns-to-scale technology using a fixed number of partners and a variable number of staff.[3] Second, it assumes that firms seek to minimize cost (maximize profits), which determines each firm's optimal staff-to-partner, or leverage, ratio. Third, the model assumes that firms compete in a market characterized by perfect price competition—firms bid their incremental costs for audits and clients

[2] R. Doogar and R. Easley, "Concentration without Differentiation: A New Look at the Determinants of Audit Market Concentration," *Journal of Accounting and Economics*, vol. 25 (1998): 235-253.

[3] This assumption implies that the model's results are not driven by economies of scale.

choose auditors solely on price so that firm expertise, quality, and reputation, among other things, are not considered. In the model, firms with lower leverage ratios are more efficient and can therefore bid lower prices for audit engagements than less efficient firms, and thus clients will gravitate to more efficient accounting firms. Because data on partners and staff published by *PAR* are reported at the consolidated level for the entire accounting firm, not just the audit division, some error may be introduced into the measure of leverage. In this model and simulation framework, a client's size is captured by the natural logarithm (log) of its total assets, which has been shown to be a good predictor of audit hours and thus audit effort. The model ignores all client characteristics that may influence audit fees but not "out-of-pocket" costs of audit production. Liability and litigation costs are assumed to be zero.

Although our survey responses revealed that other factors such as expertise, global reach, and reputation play an important role in selecting an accounting firm, it is notable that a simple model, which does not take these factors into consideration, is able to simulate actual market shares that currently exist. Our work shows how publicly available data and the Doogar and Easley (1998) model can be combined to address important audit market concentration issues that are not easily addressed, especially given limited data on audit fees.

Simulation One

A short-run equilibrium is obtained when accounting firms compete on price until every client seeking an auditor is satisfied (that is, it has received the lowest price possible).[4] After all clients have been assigned to an auditor, the incumbent firm charges its client a fee equal to the second-lowest bid. The results are then generated based on various assumed levels of switching costs (the cost of changing auditors). As table 5 illustrates, the model of price competition was able to closely predict the actual 2002 market shares, regardless of the level of switching cost assumed. Of the 5,448 industrial companies, the Big 4 audited 68 percent of the log of assets

[4] In the "short run," each accounting firm's size, as captured by the number of partners, is fixed. The algorithm allows companies to switch auditors whenever they can find a lower price, and clients who gain the most from a change are allowed to switch first. As long as there is a dissatisfied client, the model resigns the client, recalculates costs for all clients, and looks to identify any newly dissatisfied clients. This process is repeated until equilibrium is reached.

in 2002, and the model of price competition consistently predicted that this tier of firms would audit 68 percent or more of the total.[5] In fact, collectively the Big 4 firms are predicted to audit 1-2 percent more than the actual percentage audited, depending on the cost of switching auditors. As table 5 also illustrates, we found that if switching costs are prohibitively expensive (20 percent or above) companies will not switch auditors and price competition will have no impact on the Big 4's market share.

[5]While the Big 4 audited over 95 percent of the total assets of these industrial companies, they audited 68 percent of the log of total assets.

Table 5: Simulation One—Market Shares, Actual and Simulated with Various Switching Costs, 2002

		Switching cost (percent)					
Accounting firms	Actual market share (percent)	25	20	15	10	5	0
Deloitte & Touche	14.94	14.94	14.94	15.58	17.24	19.09	22.00
Ernst & Young	19.73	19.73	19.73	19.73	19.73	18.78	14.90
PricewaterhouseCoopers	18.98	18.98	18.98	18.98	18.98	19.15	22.37
KPMG	14.38	14.38	14.38	14.38	14.38	13.76	10.91
McGladrey & Pullen	0.82	0.82	0.82	0.84	0.88	0.93	1.01
Grant Thornton	4.21	4.21	4.21	3.93	2.95	2.25	1.81
BDO Seidman	3.13	1.72	1.42	1.14	0.96	0.79	0.69
BKD	0.10	0.40	0.46	0.48	0.52	0.55	0.61
Moss Adams	0.30	0.30	0.33	0.35	0.36	0.38	0.42
Plante & Moran	0.14	0.28	0.31	0.32	0.35	0.38	0.40
Clifton Gunderson	0.01	0.41	0.46	0.49	0.54	0.59	0.66
Crowe, Chizek and Co.	0.15	0.78	0.95	1.08	1.23	1.37	1.64
Richard A. Eisner & Co.	0.37	0.35	0.28	0.23	0.20	0.17	0.15
Goodman & Co	0.04	0.23	0.26	0.28	0.31	0.34	0.38
Wipfli Ullrich Bertelson	0.02	0.14	0.16	0.18	0.19	0.21	0.23
Virchow, Krause & Co.	0.13	0.42	0.49	0.58	0.64	0.72	0.85
Eide Bailly	0.02	0.29	0.34	0.38	0.43	0.47	0.56
J.H. Cohn	0.24	0.19	0.17	0.14	0.12	0.11	0.09
Parente Randolph	0.03	0.10	0.11	0.12	0.12	0.12	0.14

Source: Doogar and Easley (1998). The simulations were conducted by R. Doogar, University of Illinois, and R. Easley, University of Notre Dame.

Notes: Market share is based on the log of total company assets. Partner-to-staff (leverage) ratios for two outliers (small regional firms) were replaced with the market average. The simulated market shares vary depending on the assumed switching costs, which range from no costs associated with switching to a 25 percent increase in costs associated with switching.

Simulation Two

In the second market simulation, we assigned clients to their current auditor and simulated the market to see if the accounting firms could defend their market share in a purely competitive market. As table 6 shows, the model predicted that the Big 4 would audit 64.0 percent of the total market, compared with the Big 4 actual market share of 62.2 in 2002. Moreover, the model predicted that the Big 4 would audit 96.3 percent of companies in the sample with assets greater than $250 million compared with the 97.0 percent actually audited by the Big 4 in 2002. Additionally, Doogar and Easley (1998) found that the model of pure price competition could explain the pattern of market shares in 1995.

Table 6: Simulation Two—Market Shares, Actual and Simulated by Client Assets, 2002

	Client asset class (millions)									
Accounting firms	**Over $5,000**	**$1,000-5,000**	**$500-1,000**	**$250-500**	**$100-250**	**$50-100**	**$25-50**	**Less than $25**	**Total (number)**	**Total (percent)**
Panel A: Actual number of clients (2002)										
Big 4	271	489	353	394	493	353	336	697	3,386	62.2%
Middle 15	1	8	8	15	50	51	86	343	562	10.3
Fringe 754	0	4	2	8	28	42	91	1,325	1,500	27.5
Total	**272**	**501**	**363**	**417**	**571**	**446**	**513**	**2,365**	**5,448**	**100.0**
Panel B: Simulated number of clients (2002)										
Big 4	265	482	353	395	515	376	368	731	3,485	64.0%
Middle 15	6	12	7	12	34	30	65	386	552	10.1
Fringe 754	1	7	3	10	22	40	80	1,248	1,411	25.9
Total	**272**	**501**	**363**	**417**	**571**	**446**	**513**	**2,365**	**5,448**	**100.0**

Source: Doogar and Easley (1998). The simulations were conducted by R. Doogar, University of Illinois, and R. Easley, University of Notre Dame.

Notes: For Simulation Two, companies were placed in one of eight asset classes, depending on size: (1) assets greater than $5 billion, (2) assets between $1 and $5 billion, (3) assets between $500 million and $1 billion, (4) assets between $250 million and $500 million, (5) assets between $100 million and $250 million, (6) assets between $50 million and $100 million, (7) assets between $25 million and $50 million, and (8) assets less than $25 million. Market share is based on total number of clients. Partner-to-staff (leverage) ratios for two outliers (small regional firms) were replaced with the market average.

Simulation Three

Finally, we merged the five largest firms below the Big 4 in terms of the number of partners (capacity)—Grant Thornton, BDO Seidman, Baid Kurtz & Dobson, McGladrey & Pullen, and Moss Adams—and simulated the market to see if the newly merged firm could successfully win clients from the Big 4 (see table 7). Measured by the log of assets, these firms collectively audited 8.6 percent of the actual market in 2002. However, when we simulated the market to begin the process, the model predicted these firms would collectively audit only 4.5 percent of the market, while the Big 4 would audit 70.1 percent. When we simulated the merger of the five firms and assumed no efficiency gains would result, the merged firm's market share declined slightly. When modest efficiency gains were permitted, the merged firm gained market share, to 6.4 percent, and was able to attract a few of the Big 4's larger clients. Finally, in the best-case scenario in which we allowed the newly merged firm to become as efficient as the Big 4 (strong efficiency gains), the market share increased to 11.2 percent, and both the Big 4 and remaining accounting firms lost market share to the merged firm. However, since the five firms actually audited 8.6 percent of the market in 2002 collectively, the simulated mergers only resulted in a market share increase of 2.6 percentage points in the best-case scenario.

Table 7: Simulation Three—Market Shares, Merger Analysis with Various Efficiency Assumptions, 2002

	Simulated market shares			
Efficiency assumption	Merged firms (percent)	Remaining 10 middle firms (percent)	Big 4 firms (percent)	Other firms (percent)
No merger				
Simulated 2002	4.5%	5.1%	70.1%	20.2%
Merger				
No efficiency gains	4.2	5.2	70.4	20.2
Some efficiency gains	6.4	5.0	68.9	19.7
Strong efficiency gains	11.2	4.8	65.4	18.7

Source: Doogar and Easley (1998). The simulations were conducted by R. Doogar, University of Illinois, and R. Easley, University of Notre Dame.

Notes: Market share is based on the log of total company assets. Partner-to-staff (leverage) ratios for two outliers (small regional firms) were replaced with the market average.

Survey Data

To augment our empirical analysis, we conducted two sample surveys to get information from the largest accounting firms and their clients. First, we surveyed representatives of each of the 97 largest accounting firms—those with 10 or more corporate clients that are registered with SEC—about their experience consolidating with other firms, their views on consolidation's effects on competition, and what they thought were the potential implications of consolidation for auditor choice, audit fees, audit quality, and auditor independence within their industry. We identified the 97 firms and obtained name and address information for the executive to be contacted primarily from the membership list of the American Institute of Certified Public Accountants' (AICPA) SEC Practice Section. To develop our questionnaire, we consulted a number of experts at SEC, AICPA, and others knowledgeable about the accounting profession. We also pretested our questionnaire with two of the Big 4 firms, four other firms among the largest 97, and two small firms. We began our Web-based survey on May 23, 2003, and included all usable responses as of July 11, 2003, to produce this report. One of the 97 firms was found to be ineligible for the survey because the answers of another responding firm comprised the activity of the former, so the final population surveyed was 96 firms. We received 47 usable responses from these 96 firms, for an overall response rate of 49 percent. However, the number of responses to individual questions may be fewer than 47, depending on how many responding firms were eligible to or chose to answer a particular question.

Second, we surveyed a random sample of 250 of the 960 largest publicly held companies. We created this population from the 2003 list of the Fortune 1000 companies produced by Fortune, a division of Time, Inc., after removing 40 private firms from this list. We mailed a paper questionnaire to the chief financial officers, or other executives performing that role, requesting their views on the services they received from their auditor of record, the effects of consolidation on competition among accounting firms, and its potential implications. To develop this questionnaire, we consulted with AICPA and SEC and pretested with six large public companies from a variety of industries. The survey began on May 6, 2003. We removed one company that had gone out of business, and received 148 usable responses as of July 11, 2003, from the final sample of 249 companies, for an overall response rate of 59 percent. Again, the number of responses to individual questions may fluctuate, depending on how many respondents answered each question. We plan to issue a subsequent report in September 2003 on client responses received through July 30, 2003.

While the public company survey results came from a random sample drawn from the population of Fortune 1000 companies and thus could be weighted to statistically represent that larger group, we are reporting totals and percentages only for those companies (and accounting firms) actually returning questionnaires. Since the small number of respondents to both surveys at the time of publication could significantly differ in their answers from the answers nonrespondents might have given had they participated, it is particularly risky to project the results of our survey to not only the nonrespondents, but also to the part of the public company population we did not sample. There are other practical difficulties in conducting any survey that may also contribute to errors in survey results. For example, differences in how a question is interpreted or the sources of information available to respondents can introduce unwanted variability into the survey results. We included steps in both the data collection and data analysis stages to minimize such errors. In addition to the questionnaire testing and development measures mentioned above, we followed up with the sample firms and clients with e-mails and telephone calls to encourage them to respond and offer assistance. We also checked and edited the survey data and programs used to produce our survey results.

Finally, we conducted structured interviews with a judgmental sample of 20 chairs of audit committees for Fortune 1000 companies to obtain their views on audit services, consolidation, and competition within the audit market. Our selection criteria included geographic location, the company's industry, and the chairperson's availability. The audit chairpersons whom we interviewed all had a background in business and most had been or were currently serving as CEOs of a Fortune 1000 company. On average, the chairpersons we interviewed served on over two boards in addition to the board on which they sat for purposes of the interview. On average, they served as chairpersons of the audit committee for just over 2 years, served as a member on the audit committee for over 5 years, and served on that Fortune 1000 company's board of directors for over 7 years.

Impact of Consolidation on Capital Formation and Securities Markets

To address the issue of the impact of consolidation and concentration among large accounting firms on capital formation and securities markets, we interviewed representatives from accounting firms, investment banks, institutional investors, SEC, self-regulatory organizations, credit agencies, and retail investors, among others. We also consulted with numerous academics and reviewed relevant economic literature.

Identifying Barriers to Entry

To identify the barriers to entry that accounting firms face in the public company audit market, we discussed competition and competitive barriers with representatives of a cross section of public accounting firms, large public companies, various government agencies, the accounting profession and trade associations, institutional investors, securities underwriters, self-regulatory organizations, credit rating agencies, and other knowledgeable officials. We obtained information from the National Association of State Boards of Accountancy and AICPA. We also reviewed existing state and federal requirements. Finally, we used the Doogar and Easley (1998) model to roughly assess whether mergers between non-Big 4 firms could potentially increase the number of accounting firms capable of auditing large national and multinational companies.

GAO Surveys of Public Accounting Firms and Fortune 1000 Public Companies

Survey of U.S. Public Accounting Firms[1]

U.S. General Accounting Office

Introduction

To provide a thorough, fair and balanced report to Congress on these issues, it is essential that we obtain the experiences and viewpoints of a representative sample of public accounting firms. Your firm has been selected from a group of public accounting firms comprising the American Institute of Certified Public Accountants' (AICPA) SEC Practice Section member firms and other public accounting firms that performed audits of public companies registered with the SEC, which are not members of the AICPA's SEC Practice Section. In conducting these studies, the GAO is asking for your cooperation and assistance by providing the views of your public accounting firm on industry consolidation and the potential effects of mandatory audit firm rotation. This survey should be completed by the senior executive of your firm (e.g. the Chief Executive Officer/Managing Partner) or their designated representative(s) who can respond for the firm on matters of industry consolidation and mandatory firm rotation.

Definitions

· **"Public company"** refers to issuers of securities subject to the financial reporting requirements of the Securities Exchange Act of 1934, the Investment Company Act of 1940, and registered with the Securities and Exchange Commission (SEC). For purposes of this survey, mutual funds and investment trusts that meet the statutory definition of issuer of securities are considered public companies.
· **"Multinational or foreign public company"** is a public company with significant operations (10 percent or more of total revenue) in one or more countries outside the United States.
· **"Domestic public company"** is a public company with no significant operations (10 percent or more of total revenue) outside the United States.
· **"auditor," "auditor of record" and "public accounting firm"** refer to an independent public accounting firm registered with the SEC that performs audits and reviews of public company financial statements and prepares attestation reports filed with the SEC. In the future, these public accounting firms must be registered with the Public Company Accounting Oversight Board (PCAOB) as required by the Sarbanes-Oxley Act.

[1] This questionnaire is a reproduction of the actual web-based survey instrument. Instructions, help screens and menus are not displayed. Response numbers, percentages or other statistics for each numeric question have been superimposed on the questionnaire, but percentages may not sum to 100% due to rounding. The appearance of * in place of a statistic indicates that there were 3 or fewer responses to that question.

1

Public Accounting Firm Background

Please provide the following information so that we can contact you if we have any questions:

Name of Primary Contact: ______________________
Title: ______________________
Firm Name: ______________________
Telephone: ______________________
E-mail Address: ______________________

1. Is your public accounting firm currently a member of the AICPA's SEC Practice Section?
N=47
   1. ☐ Yes **100%**
   2. ☐ No **0%**
   3. ☐ No Answer

2. At this time, does your public accounting firm plan to register with the PCAOB?
N=47
   1. ☐ Yes **96%**
   2. ☐ No **0%**
   3. ☐ Uncertain **4%**
   4. ☐ No Answer

3. In total and for each of the following categories, approximately how many public companies **did your public accounting firm serve as auditor of record during your firm's last fiscal year?** *Enter numeric digit in each box.*

Total Audit Clients
Total number of public companies for which firm served as auditor of record last fiscal year : ☐ **N=45 Mean=116 Median=18 Range=2 - 2,528**

Multinational or Foreign Public Company Audit Clients
Revenue of $5 billion or more: ☐ **N=***
Revenue of more than $1 billion but less than $5 billion: ☐ **N=***
Revenue of more than $100 million but less than $1 billion: ☐ N=*
Revenue of less than $100 million: ☐ **N=12 Mean=3 Median=2 Range=1 - 15**

Domestic Public Company Audit Clients
Revenue of $5 billion or more: ☐ N=*
Revenue of more than $1 billion but less than $5 billion: ☐ N=*
Revenue of more than $100 million but less than $1 billion: ☐ **N=13 Mean=6 Median=2 Range=1 - 50**
Revenue of less than $100 million: ☐ **N=44 Mean=32 Median=17 Range=2 - 232**

2

4. With respect to your public company audit, review, and attest clients during your firm's last fiscal year, did you serve as auditor of record for a public company or number of public companies that together represent over 25% of the market share of a specific industry?
N=47
   1. ☐ Yes (click to go to Question 5.) **6%**
   2. ☐ No (click to go to Question 6.) **94%**
   3. ☐ No Answer

5. Please identify each industry for which your public company audit, review, and attest clients during your firms last fiscal year represented, in the aggregate, at least 25% of the public company market share in the industry. In addition for each industry identified please also provide your firm's estimate of the aggregate market share your public company clients represent and the basis your firm used for estimating market share (for example, share of number of public companies in an industry, share of industry revenue, share of industry market capitalization, etc.)

6. With respect to your firm's public company audit, review, and attest clients during your firm's last fiscal year, please indicate those industries for which 5 percent or more of your public company audit, review, and attest practice resources (based on hours, staff, etc.) were devoted to public companies whose primary business activity was in a specific industry. (Note: the following industry classification is based on the North American Industry Classification System (NAICS). Generally, we have included classifications covering each NAICS industry sector and, with respect to the Manufacturing sector, selected sub-sectors.)

   1. ☐ Accommodations and Food Services **N=2**
   2. ☐ Administrative and Support Services and Waste Management and Remediation Services **N=2**
   3. ☐ Agricultural, Forestry, Fishing, and Hunting **N=0**
   4. ☐ Ambulatory Health Care Services **N=1**
   5. ☐ Arts, Entertainment, and Recreation **N=5**
   6. ☐ Construction **N=2**
   7. ☐ Educational Services **N=0**
   8. ☐ Finance and Insurance **N=19**
   9. ☐ Information Services **N=13**
   10. ☐ Management of Companies and Enterprises **N=0**
   11. ☐ Manufacturing--Chemical **N=2**
   12. ☐ Manufacturing-Computer and Electronic Products **N=9**
   13. ☐ Manufacturing-Food **N=1**
   14. ☐ Manufacturing-Paper **N=0**
   15. ☐ Manufacturing-Primary Metal **N=1**
   16. ☐ Manufacturing-Transportation Equipment **N=2**
   17. ☐ Manufacturing-Other **N=14**
   18. ☐ Mining **N=5**

3

19. ☐ Professional, Scientific, and Technical Services **N=10**
20. ☐ Public Administration **N=0**
21. ☐ Real Estate and Rental and Leasing **N=6**
22. ☐ Trade--Retail **N=4**
23. ☐ Trade--Wholesale **N=4**
24. ☐ Transportation and Warehousing **N=2**
25. ☐ Utilities **N=2**
26. ☐ Other - please specify in box below **N=21**

If you checked "Other" industries - specify below:

☐

7. Approximately what percentage of your firm's total revenue (from U.S. operations) came from each of the following types of services during your firm's last fiscal year? *Please fill in the percentages so that they add up to 100%.*

Audit, review, and attest	☐	**N=45 Mean=53 Median=49 Range=25 - 100**
Tax	☐	**N=43 Mean=30 Median=30 Range=10 - 55**
Management Consulting	☐	**N=25 Mean=14 Median=10 Range=2 - 40**
Other services	☐	**N=37 Mean=14 Median=10 Range=1 - 40**

8. Approximately what percentage of your firm's **audit, review, and attest** revenue from U.S. operations came from each of the following categories of clients during your firm's last fiscal year? *Please fill in the percentages so that they add up to 100%.*

Large (revenue of $5 billion or more) domestic and multinational or foreign public company audit, review, and attest clients	☐	**N=***
Mid-sized and small (revenue less than $5 billion) domestic or multinational or foreign public company audit, review, and attest clients	☐	**N=43 Mean=36 Median=25 Range=1 – 100**
All private company audit, review, and attest clients	☐	**N=42 Mean=52 Median=55 Range=8 – 98**
All government audit, review, and attest clients	☐	**N=23 Mean=14 Median=10 Range=1 – 60**
Other audit, review, and attest clients	☐	**N=18 Mean=16 Median=12 Range=1 - 90**

4

9. Does your firm plan to offer audit, review, and attestation services to large public companies during the next 5 years?
N=47
   1. ☐ Yes (Click to go to Question 10.) **19%**
   2. ☐ No **79%**
   3. ☐ Uncertain **2%**
   4. ☐ No Answer

   Please explain why your firm currently does not plan to offer audit, review, and attest services to large (revenues of $5 billion or more) public companies during the next 5 years?

10. Approximately how many times did your firm succeed another public accounting firm as auditor of record for a public company client **during your firm's last three fiscal years?**

    ___________________ **N=45 Mean=39 Median=10 Range=1 - 414**

11. Since December 31, 2001 approximately how many times did your firm succeed Arthur Andersen as auditor of record for a public company client?

    ___________________ **N=17 Mean=49 Median=2 Range=1 - 308**

12. **When your answers to the "Public Accounting Firm Background" part of this survey are final and ready to be used by GAO, please click the "Completed This Part of Survey" button below.**
N=47
   1. ☐ Completed This Part of Survey **100%**
   2. ☐ Not completed **0%**

13. Please click the "Next Section" button at the bottom of the page to continue with the questionnaire, or click the link below to return to the main menu.

    Click here

5

CONSOLIDATION IN THE PUBLIC ACCOUNTING PROFESSION

We are focusing on the trend towards consolidation in the public accounting profession starting in 1987, when consolidation activity among the largest accounting firms began.

Your Firm's Consolidation History

Please consider whether your firm has combined with another to form a new entity or has restructured in any way that involved the assumption of new assets and services. Please include any mergers or acquisitions as consolidation events.

14. Has your firm been involved in one or more consolidations since 1987? *Please check one box.*
N=47
    1. ☐ Yes **64%**
    2. ☐ No (Click to go to Question 16.) **36%**
    3. ☐ No Answer

15. IF YES: What size firm(s) did your firm merge with or acquire? *Please check all that apply.*
N=30
    1. ☐ Firm(s) with larger net revenue **N=3**
    2. ☐ Firm(s) with similar net revenue **N=7**
    3. ☐ Firm(s) with smaller net revenue **N=25**
    4. ☐ Other - please describe in box below **N=2**

    If you checked "Other" - please describe below:

16. Starting in 1987, has your firm declined any opportunities to participate in consolidation activity that would have significantly increased its market share? *Please click one button.*
N=45
    1. ☐ Yes **60%**
    2. ☐ No **40%**
    3. ☐ No Answer

    Please explain:

6

17. Apart from consolidations, has your firm entered into any affiliations - such as networks, alliances, global organizations, or other arrangements - with other accounting firms in the U.S. or internationally to provide audit, review, and attest services since 1987? *Please click one button.*

N=46

1. ☐ Yes - we joined an affiliation since 1987	**50%**
2. ☐ No - but we joined an affiliation before 1987	**17%**
3. ☐ No - we once were a member of an affiliation but are no longer	**4%**
4. ☐ No - never	**28%**
5. ☐ No Answer	

Please explain:

If your firm HAS been involved in any form of consolidation activity, please answer the following questions; otherwise click below to skip to the next applicable question.

Click here

7

18. How important was each of the following reasons in your firm's decisions to consolidate?
Click one button in each row.

	Very Great Importance	Great Importance	Moderate Importance	Some Importance	Little or No Importance	No Answer
To increase market share/to increase revenue **N=30**	**20%**	**33%**	**30%**	**0%**	**17%**	
To establish presence in new geographic areas **N=30**	**17%**	**33%**	**13%**	**10%**	**27%**	
To decrease costs/achieve economies of scale **N=30**	**13%**	**23%**	**27%**	**13%**	**23%**	
To gain talented staff **N=30**	**20%**	**27%**	**33%**	**10%**	**10%**	
To expand audit, review, and attest services **N=30**	**7%**	**40%**	**30%**	**10%**	**13%**	
To enhance audit, review, and attest services **N=30**	**3%**	**40%**	**30%**	**10%**	**17%**	
To expand management consulting services **N=30**	**7%**	**13%**	**27%**	**13%**	**40%**	
To enhance management consulting services **N=30**	**7%**	**17%**	**30%**	**7%**	**40%**	
To gain certain clients **N=30**	**0%**	**10%**	**13%**	**20%**	**57%**	
To establish presence in new client industries **N=30**	**3%**	**23%**	**23%**	**33%**	**17%**	
To gain prestige **N=30**	**3%**	**20%**	**33%**	**17%**	**27%**	
To gain access to capital **N=30**	**7%**	**3%**	**7%**	**13%**	**70%**	
To compete more successfully against rivals **N=30**	**17%**	**43%**	**3%**	**23%**	**13%**	
For succession planning/ retirement options for partners **N=30**	**7%**	**7%**	**17%**	**17%**	**53%**	
To improve the quality of the audit **N=30**	**0%**	**23%**	**23%**	**13%**	**40%**	
Other reason - *describe in the box below* **N=4**	**N=1**	**N=1**	**N=0**	**N=0**	**N=2**	

If "Other reason" -- Please describe:

19. Has your consolidation activity enabled your firm to provide or increase audit, review, and attest services to large domestic or multinational clients?
N=30

1. ☐ Yes, previously unable to provide, but are now able **0%**
2. ☐ Yes, previously able to provide and increased our ability **27%**
3. ☐ No, our ability remained unchanged **73%**
4. ☐ No Answer

8

Please continue with the next question if your firm has ever DECLINED AN OPPORTUNITY to participate in a consolidation activity that would have significantly increased its market share **OR** if has NOT been involved in a consolidation since 1987; otherwise click on the link below to skip to the next applicable question.

Click here

20. To what extent does each of the following reasons explain why your firm did NOT participate in a consolidation activity? *Click one button in each row.*

	Very Great Extent	Great Extent	Moderate Extent	Some Extent	Little or No Extent	No Answer
Not a good financial arrangement **N=27**	**37%**	**44%**	**11%**	**0%**	**7%**	
Timing was not right **N=27**	**19%**	**15%**	**15%**	**26%**	**26%**	
Potential firm(s) available to consolidate with did not have the right mix of services **N=27**	**15%**	**30%**	**19%**	**4%**	**33%**	
Risk profile of potential firm(s) available to consolidate **N=25**	**12%**	**20%**	**20%**	**20%**	**28%**	
Wanted to maintain existing clientele **N=26**	**12%**	**23%**	**19%**	**4%**	**42%**	
Wanted to stay specialized in existing niche market **N=26**	**19%**	**8%**	**8%**	**12%**	**54%**	
Wanted to maintain autonomy **N=29**	**52%**	**21%**	**10%**	**7%**	**10%**	
Wanted to maintain identity **N=30**	**43%**	**20%**	**20%**	**7%**	**10%**	
Not enough **market-based pressure** to make consolidation necessary **N=28**	**11%**	**21%**	**32%**	**11%**	**25%**	
Not enough **competitive pressures** to make consolidation necessary **N=28**	**14%**	**21%**	**21%**	**18%**	**25%**	
Pension issues **N=25**	**12%**	**4%**	**4%**	**8%**	**72%**	
Not interested **N=22**	**23%**	**9%**	**36%**	**5%**	**27%**	
Other reason - *describe in the box below* **N=3**	**N=1**	**N=2**	**N=0**	**N=0**	**N=0**	

If "Other reason" -- Please describe:

Consolidation in the Accounting Profession

ALL FIRMS: This next section asks you to consider the relative role that the consolidation activity of the largest accounting firms, among other things, has played in influencing certain aspects of the accounting profession in the past decade. **Please base your response on your experience in the past decade, or if this is not possible, on the time frame that reflects your experience.**

9

21. How have your costs for performing audit, review, and attest services changed in the past decade? (Please adjust for inflation and volume of business.)
N=47
   1. ☐ Greatly increased **51%**
   2. ☐ Moderately increased **47%**
   3. ☐ Remained the same **2%**
   4. ☐ Moderately decreased **0%**
   5. ☐ Greatly decreased **0%**
   6. ☐ No Answer

22. Many factors impact **costs** in different ways. In which way have each of the following influenced your audit, review, and attest operating costs, if at all, over the past decade? (Please adjust for inflation and volume of business where appropriate.) *Click one button in each row.*

	Great Upward Influence	Moderate Upward Influence	Little or No Influence	Moderate Downward Influence	Great Downward Influence	No Answer
Changing accounting principles and auditing standards/complexity of audits and accounting standards **N=47**	**49%**	**51%**	**0%**	**0%**	**0%**	
Litigation/insurance **N=46**	**39%**	**43%**	**17%**	**0%**	**0%**	
Price of talent/training **N=47**	**40%**	**51%**	**9%**	**%**	**%**	
Marketing **N=47**	**4%**	**28%**	**66%**	**2%**	**0%**	
Technology **N=46**	**17%**	**37%**	**15%**	**28%**	**2%**	
The consolidation activity that has occurred starting in 1987 among the largest accounting firms **N=43**	**0%**	**23%**	**74%**	**2%**	**0%**	
The consolidation activity that has occurred within your firm (leave "No Answer" checked if your firm has not consolidated) **N=29**	**0%**	**17%**	**69%**	**10%**	**3%**	
Other factor - *describe in the box below* **N=3**	**N=1**	**N=1**	**N=1**	**N=0**	**N=0**	

If "other factor" – please describe:

23. How have your audit, review, and attest **fees** (for example, net rate per billable hour) changed in the past decade? (Please adjust for inflation and volume of business.)
N=47
   1. ☐ Greatly increased **26%**
   2. ☐ Moderately increased **70%**
   3. ☐ Remained the same **4%**
   4. ☐ Moderately decreased **0%**
   5. ☐ Greatly decreased **0%**
   6. ☐ No Answer

10

24. In which way has each of the following influenced your audit, review, and attest **fees**, if at all, in the past decade? (Please adjust for inflation and volume of business where appropriate.)

	Great Upward Influence	Moderate Upward Influence	Little or No Influence	Moderate Downward Influence	Great Downward Influence	No Answer
Changing accounting principles and auditing standards/complexity of audits and accounting standards **N=47**	**28%**	**64%**	**9%**	**0%**	**0%**	
Litigation/insurance **N=47**	**21%**	**57%**	**21%**	**0%**	**0%**	
Price of talent/training **N=47**	**34%**	**60%**	**6%**	**0%**	**0%**	
Marketing **N=47**	**2%**	**21%**	**74%**	**2%**	**0%**	
Technology **N=47**	**11%**	**38%**	**19%**	**30%**	**2%**	
The consolidation activity that has occurred starting in 1987 among the largest accounting firms **N=43**	**0%**	**26%**	**70%**	**5%**	**0%**	
The consolidation activity that has occurred within your firm (leave "No Answer" checked if your firm has not consolidated) **N=29**	**0%**	**7%**	**90%**	**3%**	**0%**	
Other factor - *describe in the box below* **N=1**	**N=1**	**N=0**	**N=0**	**N=0**	**N=0**	

If "Other factor" -- Please describe:

25. Has it become harder or easier for your firm to maintain **audit quality** in the past decade? **N=47**

1. ☐ Much Harder **11%**
2. ☐ Somewhat Harder **68%**
3. ☐ Little or No Change **17%**
4. ☐ Somewhat Easier **2%**
5. ☐ Much Easier **2%**
6. ☐ No Answer

11

26. In which way has each of the following contributed to making it harder or easier for your firm to maintain **audit quality** in the past decade?

	Made Much Harder	Made Somewhat Harder	Little or No Effect	Made Somewhat Easier	Made Much Easier	No Answer
Ability to recruit and retain qualified staff **N=46**	**0%**	**63%**	**20%**	**2%**	**2%**	
Skills of staff members **N=46**	**9%**	**50%**	**35%**	**4%**	**2%**	
Technology **N=46**	**0%**	**17%**	**24%**	**59%**	**0%**	
Changing accounting principles and auditing standards/complexity of audits and accounting standards **N=46**	**37%**	**57%**	**7%**	**0%**	**0%**	
Risk factors **N=46**	**26%**	**59%**	**15%**	**0%**	**0%**	
The consolidation activity that has occurred starting in 1987 among the largest accounting firms **N=43**	**0%**	**2%**	**95%**	**2%**	**0%**	
The consolidation activity that has occurred within your firm (leave "No Answer" checked if your firm has not consolidated) **N=30**	**3%**	**10%**	**80%**	**3%**	**3%**	
Other factor - *describe in the box below* **N=1**	**N=0**	**N=1**	**N=0**	**N=0**	**N=0**	

If "Other factor" -- Please describe:

27. Has it become harder or easier for your firm to maintain **independence** as an auditor at the firm level in the past decade?
N=47
1. ☐ Much Harder **4%**
2. ☐ Somewhat Harder **26%**
3. ☐ Little or No Change **66%**
4. ☐ Somewhat Easier **4%**
5. ☐ Much Easier **0%**
6. ☐ No Answer

Please explain:

12

28. In which way has each of the following contributed to making it harder or easier to maintain **independence** as an auditor at the firm level in the past decade?

	Made Much Harder	Made Somewhat Harder	Little or No Effect	Made Somewhat Easier	Made Much Easier	No Answer
Profitability of non-audit services **N=43**	**0%**	**12%**	**88%**	**0%**	**0%**	
Tenure of relationship with client **N=43**	**0%**	**9%**	**86%**	**5%**	**0%**	
Increased regulations **N=43**	**12%**	**40%**	**44%**	**5%**	**0%**	
The consolidation activity that has occurred starting in 1987 among the largest accounting firms **N=42**	**0%**	**7%**	**90%**	**2%**	**0%**	
The consolidation activity that has occurred within your firm (leave "No Answer" checked if your firm has not consolidated) **N=28**	**7%**	**11%**	**79%**	**4%**	**0%**	
Other factor - *describe in the box below* **N=4**	**N=0**	**N=2**	**N=2**	**N=0**	**N=0**	

If "Other factor" -- Please describe:

29. Has it become harder or easier to maintain **personal independence** as an auditor in the past decade?
N=47
1. ☐ Much Harder **2%**
2. ☐ Somewhat Harder **17%**
3. ☐ Little or No Change **77%**
4. ☐ Somewhat Easier **4%**
5. ☐ Much Easier **0%**
6. ☐ No Answer

Please explain:

13

30. Has it become harder or easier for your firm to successfully **compete to be the auditor of record** for large domestic or multinational public clients in the past decade?
N=23

1. ☐ Much Harder **26%**
2. ☐ Somewhat Harder **17%**
3. ☐ Little or No Change **48%**
4. ☐ Somewhat Easier **9%**
5. ☐ Much Easier **0%**
6. ☐ No Answer

Please explain:

31. In which way has each of the following contributed to making it harder or easier for your firm to successfully **compete to be the auditor of record** for large domestic or multinational public clients in the past decade?

	Made Much Harder	Made Somewhat Harder	Little or No Effect	Made Somewhat Easier	Made Much Easier	No Answer
Insurance costs **N=21**	**19%**	**14%**	**67%**	**0%**	**0%**	
Quality/skill of staff **N=21**	**5%**	**19%**	**67%**	**10%**	**0%**	
Advertising/Name recognition **N=21**	**38%**	**0%**	**48%**	**14%**	**0%**	
Threat of litigation to your firm **N=21**	**19%**	**14%**	**67%**	**0%**	**0%**	
Threat of litigation to clients **N=20**	**15%**	**5%**	**75%**	**5%**	**0%**	
Offering non-audit services **N=21**	**10%**	**5%**	**76%**	**10%**	**0%**	
Tenure of relationship with client **N=21**	**10%**	**14%**	**57%**	**19%**	**0%**	
Changing independence standards **N=21**	**0%**	**14%**	**81%**	**5%**	**0%**	
The consolidation activity that has occurred starting in 1987 among the largest accounting firms **N=21**	**0%**	**24%**	**62%**	**14%**	**0%**	
The consolidation activity that has occurred within your firm (leave "No Answer" checked if your firm has not consolidated) **N=15**	**7%**	**0%**	**67%**	**20%**	**7%**	
Other factor - *describe in the box below* **N=5**	**N=0**	**N=1**	**N=3**	**N=1**	**N=0**	

If "Other factor" -- Please describe:

14

32. Please indicate whether you have experienced a net increase or decrease over the past decade in the following types of clients for whom your firm performs audit, review, and attest services.

	Great Increase	Some Increase	Little or No Change	Some Decrease	Great Decrease	Not Applicable
Large public companies **N=38**	**0%**	**11%**	**21%**	**0%**	**0%**	**68%**
Mid-sized public companies **N=39**	**0%**	**21%**	**26%**	**0%**	**3%**	**51%**
Small public companies **N=47**	**38%**	**49%**	**4%**	**2%**	**6%**	**0%**
Other/private companies **N=45**	**22%**	**60%**	**16%**	**0%**	**2%**	**0%**

33. Has your firm lost any audit, review, and attest clients to other accounting firms specifically because the client(s) wanted another firm to help them prepare for an initial public offering or subsequent issuance of securities?
N=47
1. ☐ Yes - client went to a Big 4 firm for IPO or other securities issuance **47%**
2. ☐ Yes - client went to a NON-Big 4 firm for IPO or other securities issuance **17%**
3. ☐ No **36%**
4. ☐ No Answer

34. In the past five years, has your firm accepted any new clients specifically to assist their initial public offerings or subsequent issuance of securities?
N=47
1. ☐ Yes - *Please enter approximate number in the box below* **72%**
2. ☐ No **28%**
3. ☐ No Answer

If "Yes" -- enter an approximate number of clients, using numeric digits:
☐

Competition in the Accounting Profession

35. Based on your experience, how would you describe the **current level of competition** among public accounting firms as a whole in providing audit, review, and attest services to the following types of companies?

	Very Great Competition	Great Competition	Moderate Competition	Some Competition	Little or No Competition	Don't Know
Large public companies **N=37**	**19%**	**16%**	**5%**	**11%**	**11%**	**38%**
Mid-sized public companies **N=39**	**18%**	**26%**	**15%**	**10%**	**3%**	**28%**
Small public companies **N=47**	**9%**	**49%**	**40%**	**2%**	**0%**	**0%**
Other/private companies **N=46**	**33%**	**48%**	**17%**	**0%**	**0%**	**2%**

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36. Based on your experience, how has the overall level of competition to provide audit, review, and attest services to each of the following types of companies changed in the past decade **as a result of the consolidation activity that has occurred in the accounting profession?**

	Great Increase in Competition	Some Increase in Competition	Little or No Change	Some Decrease in Competition	Great Decrease in Competition	Don't Know
Large public companies **N=38**	**8%**	**18%**	**11%**	**16%**	**5%**	**42%**
Mid-sized public companies **N=40**	**10%**	**20%**	**20%**	**15%**	**3%**	**33%**
Small public companies **N=47**	**4%**	**26%**	**43%**	**23%**	**2%**	**2%**
Other/private companies **N=47**	**9%**	**21%**	**51%**	**11%**	**2%**	**6%**

37. How, if at all, has the consolidation activity of the largest accounting firms affected each of the following areas?

	Greatly Increased	Somewhat Increased	Little or No Effect	Somewhat Decreased	Greatly Decreased	Don't Know
Opportunity for your firm to provide service to **large** public companies **N=37**	**3%**	**11%**	**54%**	**8%**	**5%**	**19%**
Opportunity for your firm to provide service to **small and mid-sized** public companies **N=47**	**15%**	**53%**	**30%**	**2%**	**0%**	**0%**
Opportunity for your firm to provide service to **private** companies **N=47**	**17%**	**43%**	**34%**	**0%**	**2%**	**4%**
Other area - *describe in the box below* **N=1**	**N=0**	**N=0**	N=1	**N=0**	**N=0**	**N=0**

If "Other area" -- Please describe:

38. Overall, how do you think that the consolidation activity that has occurred in the accounting profession in the past decade has affected competition?
N=46
1. ☐ Greatly increased competition **2%**
2. ☐ Moderately increased competition **39%**
3. ☐ Little or no effect **28%**
4. ☐ Moderately decreased competition **22%**
5. ☐ Greatly decreased competition **7%**
6. ☐ Don't know **2%**
7. ☐ No Answer

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Impediments to Competition (Barriers to Entry)

39. To what extent do you think that each of the following is an impediment for accounting firms wishing to provide audit, review, and attest service to large domestic or multinational public companies that are subject to the securities laws?

	Very Great Extent	Great Extent	Moderate Extent	Some Extent	Little or No Extent	Don't Know
Start-up costs **N=42**	**21%**	**29%**	**31%**	**7%**	**7%**	**5%**
Globalization of markets **N=41**	**27%**	**27%**	**27%**	**7%**	**5%**	**7%**
Not being a "Big 4" firm **N=42**	**74%**	**21%**	**2%**	**0%**	**0%**	**2%**
Potential liability costs/risk exposure/Insurance **N=42**	**43%**	**33%**	**12%**	**5%**	**5%**	**2%**
Credibility with financial markets and investment bankers **N=42**	**64%**	**26%**	**7%**	**0%**	**0%**	**2%**
Cost of obtaining/maintaining appropriate personnel **N=42**	**19%**	**33%**	**29%**	**14%**	**2%**	**2%**
Technology **N=42**	**7%**	**21%**	**33%**	**29%**	**7%**	**2%**
Complexity **N=42**	**19%**	**40%**	**19%**	**12%**	**7%**	**2%**
Other impediment - *describe in the box below* **N=8**	**N=5**	**N=1**	**N=0**	**N=1**	**N=0**	**N=1**

IF "OTHER IMPEDIMENT" -- Please describe:

40. Are there any federal or state regulations that impede competition among public accounting firms to provide audit, review, and attest services to public companies?
N=43
   1. ☐ Yes **70%**
   2. ☐ No **30%**
   3. ☐ No Answer

41. For each of the following federal or state regulatory requirements, please indicate how much of an impediment, if any, that requirement is to competition among public accounting firms in the United States. Please also list any additional federal and/or state regulations that impede competition.

	Very Great Impediment	Great Impediment	Moderate Impediment	Some Impediment	Little or No Impediment	Don't Know
The Sarbanes-Oxley Act of 2002 **N=46**	**24%**	**26%**	**28%**	**9%**	**9%**	**4%**
State licensing requirements **N=45**	**2%**	**4%**	**31%**	**20%**	**38%**	**4%**
Other regulation - *describe in the FIRST box below* **N=14**	**0%**	**7%**	**21%**	**7%**	**21%**	**43%**
Other regulation - *describe in the SECOND box below* **N=9**	**N=0**	**N=0**	**N=1**	**N=0**	**N=1**	**N=7**

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If "Other regulation" -- Please describe FIRST additional regulation:

If second "Other regulation" -- Please describe SECOND additional regulation:

42. Would you favor or oppose the following actions to increase competition to provide audit, review, and attest services for large domestic or multinational public clients?

	Strongly Favor	Moderately Favor	Neither Favor nor Oppose	Moderately Oppose	Strongly Oppose	Don't Know
Government action to break up the Big 4 **N=45**	**4%**	**13%**	**16%**	**20%**	**47%**	**0%**
Government action to assist the non-Big 4 firms **N=45**	**13%**	**11%**	**18%**	**20%**	**38%**	**0%**
Let market forces operate without intervention **N=45**	**53%**	**16%**	**22%**	**7%**	**2%**	**0%**
Other action - *describe in the FIRST box below* **N=7**	**N=2**	**N=2**	**N=0**	**N=0**	**N=0**	**N=3**
Other action - *describe in the SECOND box below* **N=5**	**N=1**	**N=1**	**N=0**	**N=0**	**N=0**	**N=3**

If "Other action" -- Please describe FIRST additional action:

If second "Other action" -- Please describe SECOND additional action:

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43. Do you have any additional comments on any of the issues covered by this survey? Please use the space below to make additional comments or clarifications of any answers you gave in this survey.

44. **When your answers to the "Consolidation in the Public Accounting Profession" part of the survey are final and ready to be used by GAO, please click the "Completed This Part of Survey" button below.**
N=47
1. ☐ Completed This Part of Survey **100%**
2. ☐ Not completed **0%**

45. Please click the "Next Section" button at the bottom of the page to continue with the questionnaire, or click the link below to return to the main menu.

Click here

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United States General Accounting Office

Survey of Public Companies

Introduction

The Sarbanes-Oxley Act of 2002 mandated that the U.S. General Accounting Office (GAO), the independent research and investigative arm of Congress, study the impact of the recent consolidation of firms in the accounting profession.

To provide a thorough, fair, and balanced report to Congress, it is essential that we obtain the experiences and viewpoints of a representative sample of public companies.

Your company was selected randomly from the 2002 list of Fortune 1000 companies. It is important for every selected firm to respond to ensure the validity of our research.

The results of the survey will be compiled and presented in summary form only as part of our report, and GAO will not release individually identifiable data from this survey, unless compelled by law or required to do so by the Congress.

Instructions

Please complete this questionnaire specifically for the company named in the cover letter, and not for any subsidiaries or related companies.

This questionnaire should be completed by the Chief Financial Officer (CFO) or other executive of this organization who can provide historical information on mergers, operations and finance, as well as report the corporate policy of this firm.

Please return the completed questionnaire in the enclosed envelope within 10 business days of receipt. If the envelope is misplaced, our address is:

U. S. General Accounting Office
Attn: Cecile Trop
200 W. Adams Street, #700
Chicago, IL 60606

If you have any questions or concerns about this survey, please contact:

Michelle Pannor
Telephone: (202) 512-3608
Email: pannorm@gao.gov

Thank you for participating in this survey.

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Background

1. Approximately what percentage of your company's total revenues are derived from operations within and outside of the United States?
Please enter percentages totaling 100%.

_____% of our revenues are derived from operations within the United States
N=148 Mean=82.3 Median=95 Range=12-100

_____% of our revenues are derived from operations outside of the United States
N=106 Mean=24.7 Median=20 Range=0-88

100 % Total revenues

2. If your company was founded in the past decade, in what year was it founded?
Please enter 4-digit year.

_______________ Year founded

3. What is the name of your company's current auditor of record and when did this firm become your auditor of record? *Please enter name of auditor and 4-digit year hired.*

______________________________ Name of auditor

______________________________ First year employed as auditor

4. What type of services does your auditor of record currently provide to your company? *Please check all that apply.*

1. ☐ Only audit and attest services **N=8**
2. ☐ Tax-related services (e.g., tax preparation) **N=123**
3. ☐ Assistance with company debt and equity offerings (e.g. comfort letters) **N=98**
4. ☐ Other services - please describe: ____

____

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5. Approximately how much were the total annual fees that your company paid to your auditor of record for audit and attest services during your last fiscal year?
Please enter approximate dollar figure.
N=146

$_________________ Annual fees

Mean=$3,343,726
Median=$1,500,000
Range=$13,807-$62,000,000

6. Starting in 1987, when consolidation of the largest accounting firms began, or since your company was founded (if that occurred after 1987), has your company employed more than one auditor of record? *Please check one box.*
N=147

1. ☐ Yes - how many: ________	**37%**
2. ☐ No ➡ SKIP TO NEXT PAGE	**63%**

7. What were the names and tenures of the most recent previous auditor(s) of record your company has employed since 1987? *Please name up to two of the most recent previous auditors and years employed.*

________________________ Name of auditor from (year)_____ to (year)_______

________________________ Name of auditor from (year)_____ to (year)_______

8. Which of the following reasons explain why your company changed auditor of record one or more times since 1987? *Please check all that apply.*

1. ☐ Our company had a mandatory rotation policy	**N=0**
2. ☐ Expansion of our company required an auditor of record that could meet new demands	**N=6**
3. ☐ New regulations forbidding use of auditor for management consulting and other services	**N=2**
4. ☐ Fees for audit and attest services	**N=7**
5. ☐ Concern about reputation of our auditor of record	**N=9**
6. ☐ Our auditor of record was going out of business	**N=29**
7. ☐ Our auditor of record resigned	**N= 0**
8. ☐ Relationship with our auditor of record was no longer working	**N=4**
9. ☐ Other – please describe: ____	

____

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9. If your company previously employed Arthur Andersen as your auditor of record and switched to another firm in the past two years, did you switch to the firm to which your previous Arthur Andersen partner moved? *Please check one box.*
N=50

1. ☐ Not applicable – did not employ Arthur Andersen	**32%**
2. ☐ Yes, switched to partner's new firm	**34%**
3. ☐ No, switched to other firm –	**34%**

please explain: ____

Consolidation in the Accounting Profession

We are focusing on the trend toward consolidation that has occurred in the public accounting profession starting in 1987, when consolidation activity among the largest firms began, primarily the consolidation of the "Big 8" into the "Big 4." This section asks you to consider how your company's relationship with its auditor of record, and the audit services it provides, has changed over this time frame. Although a number of factors may have influenced these changes, we would like you to assess the influence of consolidation in the accounting profession in particular. Please base your answers on your experience in the past decade or, if this is not possible, on the time frame that reflects your experience.

10. How have the fees that your company pays for audit and attest services changed over the past decade? *If it is not possible for you to answer for the past decade, please base your answer on the time frame that best reflects your experiences. Please check one box.*
N=147

1. ☐ Greatly increased	**33%**
2. ☐ Somewhat increased	**60%**
3. ☐ Little or no change	**2%**
4. ☐ Somewhat decreased	**4%**
5. ☐ Greatly decreased	**1%**

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11. If your company changed auditors within the last two years, how have the fees your company pays your current auditor of record changed compared to the fees paid to your previous auditor? *Please check one box.*
N=145

1. ☐ Not applicable – have not changed auditors	**72%**
2. ☐ Greatly increased	**5%**
3. ☐ Somewhat increased	**14%**
4. ☐ Little or no change	**6%**
5. ☐ Somewhat decreased	**2%**
6. ☐ Greatly decreased	**0%**

12. In your opinion, how has the consolidation of the largest accounting firms over the past decade influenced the fees that your company pays for auditing and attest services?
N=147

1. ☐ Great upward influence	**7%**
2. ☐ Moderate upward influence	**41%**
3. ☐ Little or no influence	**46%**
4. ☐ Moderate downward influence	**1%**
5. ☐ Great downward influence	**0%**
6. ☐ Don't know	**5%**

13. Audit quality is often thought to include the knowledge and experience of audit firm partners and staff, the capability to efficiently respond to a client's needs, and the ability and willingness to appropriately identify and surface material reporting issues in financial reports.

Do you believe that the overall quality of audit services your company receives has gotten better or worse over the past decade? *Please check one box.*
N=147

1. ☐ Much better	**10%**
2. ☐ Somewhat better	**33%**
3. ☐ Little or no change	**37%**
4. ☐ Somewhat worse	**16%**
5. ☐ Much worse	**3%**
6. ☐ Don't know	**1%**

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14. If your company changed auditors within the last two years, do you believe that the overall quality of audit services your company receives from your current auditor is better or worse than the overall quality of audit services your company received from its previous auditor? *Please check one box.*
N=143

1. ☐ Not applicable – have not changed auditors	**73%**
2. ☐ Much better	**4%**
3. ☐ Somewhat better	**10%**
4. ☐ Little or no change	**8%**
5. ☐ Somewhat worse	**4%**
6. ☐ Much worse	**1%**
7. ☐ Don't know	**0%**

15. In your opinion, how has the consolidation of the largest accounting firms over the past decade influenced the quality of audit and attest services that your company receives?
N=147

1. ☐ Very positive influence	**2%**
2. ☐ Somewhat positive influence	**14%**
3. ☐ Little or no influence	**64%**
4. ☐ Somewhat negative influence	**16%**
5. ☐ Very negative influence	**0%**
6. ☐ Don't know	**4%**

16. If you have experienced a change in audit quality, please explain:
If you have not experienced a change, please enter "none."

____

____

____

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17. Auditor independence is often thought to relate to the accounting firm's ability and willingness to appropriately deal with (a) financial reporting issues that may indicate materially misstated financial statements; (b) the appearance of independence in terms of the other services a firm is allowed to and chooses to provide to their clients; and (c) how much influence clients appear to have in the audit decisions.

Do you believe that your company's auditor(s) has become more or less independent over the past decade? *Please check one box.*
N=147

1. ☐ Much more independent	**12%**
2. ☐ Somewhat more independent	**48%**
3. ☐ Little or no change	**38%**
4. ☐ Somewhat less independent	**1%**
5. ☐ Much less independent	**1%**
6. ☐ Don't know	**1%**

18. If your company changed auditors within the last two years, do you believe that your current auditor is more or less independent than your previous auditor?
Please check one box.
N=144

1. ☐ Not applicable – have not changed auditors	**73%**
2. ☐ Much more independent	**5%**
3. ☐ Somewhat more independent	**11%**
4. ☐ Little or no change	**11%**
5. ☐ Somewhat less independent	**0%**
6. ☐ Much less independent	**0%**
7. ☐ Don't know	**0%**

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19. In your opinion, how has the consolidation of the largest accounting firms over the past decade influenced the ability of your auditor of record to maintain independence in the audit and attest services it provides to your company? *Please check one box.*
N=147

1. ☐ Very positive influence	**3%**
2. ☐ Somewhat positive influence	**5%**
3. ☐ Little or no influence	**72%**
4. ☐ Somewhat negative influence	**15%**
5. ☐ Very negative influence	**1%**
6. ☐ Don't know	**4%**

20. How satisfied are you with your current auditor of record?
Please check one box
N=147

1. ☐ Very satisfied	**44%**
2. ☐ Somewhat satisfied	**36%**
3. ☐ Neither satisfied nor dissatisfied	**8%**
4. ☐ Somewhat dissatisfied	**11%**
5. ☐ Very dissatisfied	**1%**
6. ☐ Don't know	**0%**

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Competition in the Public Accounting Profession

21. Would you consider using a non-Big 4 firm for audit and attest services?
Please check one box
N=147

1. ☐ Not applicable – already use a non-Big 4 firm ➡ SKIP TO QUESTION 23 **3%**
2. ☐ Yes ➡ SKIP TO QUESTION 23 **8%**
3. ☐ No **88%**

22. IF NO: How important are the following reasons in explaining why you would not consider using a non-Big 4 firm? *Please check one box in each row.*

	Very Great Importance (1)	Great Importance (2)	Moderate Importance (3)	Some Importance (4)	Little or No Importance (5)	Don't Know (6)
Geographic presence that our company requires of an auditor **N=128**	**38%**	**27%**	**17%**	**9%**	**9%**	**0%**
Technical skill/knowledge of industry **N=129**	**63%**	**28%**	**6%**	**3%**	**0%**	**0%**
Capacity of audit firm **N=129**	**50%**	**41%**	**8%**	**1%**	**1%**	**0%**
Reputation of audit firm **N=129**	**58%**	**33%**	**9%**	**0%**	**0%**	**0%**
Contractual obligation to use a Big 4 firm (e.g., with banks, lenders, or landlords) **N=128**	**7%**	**13%**	**15%**	**10%**	**48%**	**7%**
Inferred obligation to use a Big 4 firm (e.g., with banks, lenders, or landlords) **N=127**	**19%**	**25%**	**18%**	**12%**	**21%**	**5%**
Our Board of Directors would not allow it **N=125**	**25%**	**34%**	**15%**	**4%**	**4%**	**18%**
Other - please describe: **N=19**	**N=9**	**N=3**	**N=0**	**N=0**	**N=0**	**N=7**

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23. If you had to switch your auditor of record, how easy or difficult would each of the following stages be? *Please check one box in each row.*

	Very Difficult (1)	Somewhat Difficult (2)	Neither Easy nor Difficult (3)	Somewhat Easy (4)	Very Easy (5)	Don't Know (6)
Identifying eligible candidates **N=147**	**1%**	**12%**	**7%**	**14%**	**67%**	**0%**
Reviewing proposals and selecting the new auditor **N=146**	**3%**	**38%**	**29%**	**21%**	**10%**	**0%**
Transitioning to the new auditor (e.g., training) **N=147**	**38%**	**54%**	**5%**	**1%**	**1%**	**1%**
Other - please describe: **N=19**	**N=11**	**N=2**	**N=0**	**N=0**	**N=0**	**N=6**

24. Aside from your current auditor of record, how many firms do you think your company would have as options if you needed to change auditors?
Please enter the number of firms to which your company could switch.
N=145
__________________ firm(s)

Range of responses=0–3	**N=137**	**94%**
Range of responses=4–8	**N=8**	**6%**

Please explain: ____

____

25. Do you think the number of firms your company has as options for auditing and attest services is enough? *Please check one box.*
N=147

1. ☐ Yes **58%**
2. ☐ No **42%**

Please explain: ____

____

____

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26. Would your company choose as your auditor of record an accounting firm that currently audits one of your competitors? *Please check one box.*
N=146

1. ☐ Yes **91%**
2. ☐ No **9%**

Please explain**:** ____

____

____

27. If you had to choose a new auditor of record, how important would each of the following factors be to your decision? *Please check one box in each row.*

	Very Great Importance (1)	Great Importance (2)	Moderate Importance (3)	Some Importance (4)	Little or No Importance (5)	Don't Know (6)
Price N=146	**15%**	**39%**	**36%**	**8%**	**2%**	**0%**
Number of services offered N=147	**5%**	**33%**	**32%**	**20%**	**10%**	**1%**
Quality of services offered N=148	**76%**	**23%**	**1%**	**0%**	**0%**	**0%**
Industry specialization or Expertise N=148	**51%**	**29%**	**16%**	**4%**	**0%**	**0%**
Reputation or name recognition of the auditor N=148	**43%**	**39%**	**12%**	**5%**	**1%**	**0%**
Auditor's proximity to your company's headquarters N=148	**7%**	**27%**	**40%**	**9%**	**16%**	**0%**
Ability of auditor to handle your company's international operations N=144	**33%**	**18%**	**7%**	**8%**	**34%**	**1%**
Chemistry/perceived ability to effectively work with engagement team N=148	**32%**	**43%**	**18%**	**5%**	**2%**	**0%**
Other - please describe: **N=12**	**N=5**	**N=2**	**N=0**	**N=0**	**N=0**	**N=5**

28. Has the consolidation of the largest accounting firms over the past decade made it harder or easier for your company to satisfactorily select an auditor and maintain a relationship with that auditor? *Please check one box.*
N=148

1. ☐ Much harder	**5%**
2. ☐ Somewhat harder	**18%**
3. ☐ Little or no effect	**69%**
4. ☐ Somewhat easier	**3%**
5. ☐ Much easier	**0%**
6. ☐ Don't know	**5%**

29. How, if at all, has the consolidation of the largest accounting firms over the past decade affected competition in the provision of audit and attest services? *If it is not possible for you to answer for the past decade, please base your answer on the time frame that best reflects your experiences. Please check one box.*
N=148

1. ☐ Greatly increased competition	**1%**
2. ☐ Somewhat increased competition	**9%**
3. ☐ Little or no effect → SKIP TO QUESTION 31	**50%**
4. ☐ Somewhat decreased competition	**24%**
5. ☐ Greatly decreased competition	**11%**
6. ☐ Don't know	**4%**

30. How, if at all, has this change in competition affected each of the following areas?

	Greatly Increased (1)	Somewhat Increased (2)	Little or No Effect (3)	Somewhat Decreased (4)	Greatly Decreased (5)	Don't Know (6)
Costs N=71	**13%**	**61%**	**14%**	**6%**	**0%**	**7%**
Quality of service N=71	**1%**	**15%**	**42%**	**34%**	**0%**	**7%**
Auditor independence at the overall firm level N=71	**1%**	**11%**	**66%**	**15%**	**0%**	**6%**
Auditor independence at the individual partner level N=71	**4%**	**10%**	**69%**	**8%**	**0%**	**8%**
Other - please describe: **N=5**	**N=2**	**N=1**	**N=1**	**N=0**	**N=0**	**N=1**

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31. What do you believe is the minimum number of accounting firms necessary to provide audit and attest services to large national and multinational public companies? *Please enter a number.*

______________ number of firms

N=126

Range of responses=0–3	**N=29**	**23%**
Range of responses=4–5	**N=71**	**56%**
Range of responses=6–8	**N=26**	**21%**

Please explain: ____

____

____

____

32. What do you believe is the optimal number of accounting firms for providing audit and attest services to large national and multinational public companies? *Please enter a number.*

______________ number of firms

N=112

Range of responses=0–2	**N=5**	**5%**
Range of responses=3–4	**N=13**	**12.5%**
Range of responses=5–8	**N=81**	**72%**
Range of responses=10+	**N=13**	**12.5%**

Please explain: ____

____

____

____

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33. Do you suggest that any actions be taken to increase competition in the provision of audit and attest services for large national and multinational public companies? *Please check one box.* **N=148**

1. ☐ Yes	**22%**
2. ☐ No	**62%**
3. ☐ Don't know	**16%**

Please explain: ____

____

____

____

34. Would you favor or oppose the following actions to increase competition to provide audit and attest services for large national and multinational clients? *Please check one box in each row.*

	Strongly Favor (1)	Somewhat Favor (2)	Neither Favor nor Oppose (3)	Somewhat Oppose (4)	Strongly Oppose (5)	Don't Know (6)
Government action to break up the Big 4 **N=72**	**3%**	**8%**	**13%**	**21%**	**54%**	**0%**
Government action to assist the non-Big 4 firms **N=72**	**3%**	**21%**	**11%**	**15%**	**50%**	**0%**
Let market forces operate without intervention **N=71**	**48%**	**28%**	**14%**	**4%**	**3%**	**3%**
Other - please describe: **N=8**	**N=7**	**N=1**	**N=0**	**N=0**	**N=0**	**N=0**
Other - please describe: **N=2**	**N=1**	**N=0**	**N=0**	**N=0**	**N=1**	**N=0**
Other - please describe: **N=0**	**N=0**	**N=0**	**N=0**	**N=0**	**N=0**	**N=0**

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35. Do you have any additional comments on any of the issues covered by this survey?
Please use the space below to make additional comments or clarifications of any answers you gave in this survey.

Thank you for your assistance with this survey!
Please return it in the envelope provided.

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Arthur Andersen Case Study

Background

In 2001, Arthur Andersen LLP (Andersen) was the fourth-largest public accounting firm in the United States, with global net revenues of over $9 billion. On March 7, 2002, Andersen was indicted by a federal grand jury and charged with obstructing justice for destroying evidence relevant to investigations into the 2001 financial collapse of Enron. At the time of its indictment, Andersen performed audit and attest services for about 2,400 public companies in the United States, including many of the largest public companies in the world. In addition, Andersen served private companies and provided additional professional services such as tax and consulting services.

This appendix is an analysis of 1,085 former Andersen public company clients that switched to a new public accounting firm between October 1, 2001, and December 31, 2002.[1] In addition to identifying the new public accounting firms of the former Andersen clients, we determined which firms attracted the largest clients and how many Andersen clients switched to non-Big 4 firms.[2]

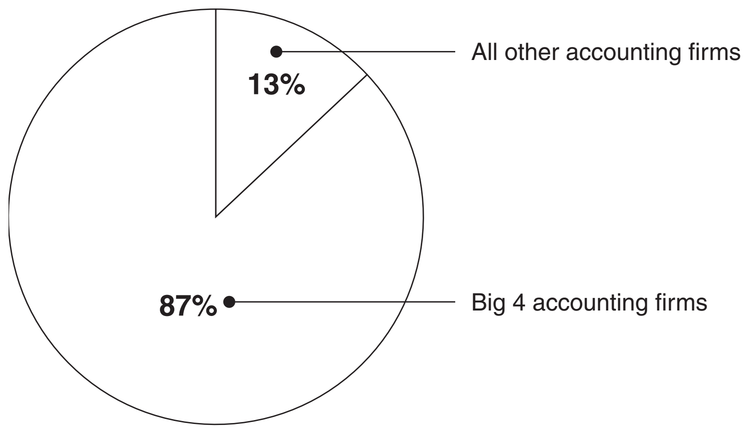
Most Andersen Clients Switched to a Big 4 Firm

Between October 2001 and December 2002, 1,085 public companies audited by Andersen switched to a new auditor of record. As figure 10 illustrates, of the 1,085 companies reviewed, 938 switched to one of the Big 4 (87 percent), and 147 switched to a non-Big 4 firm (13 percent). Among the Big 4, Ernst & Young attracted the largest number of former Andersen clients, followed by KPMG, Deloitte & Touche, and PricewaterhouseCoopers (see fig. 11). Of the former Andersen clients who switched to a non-Big 4 firm, 45 switched to Grant Thornton (4 percent) and 23 switched to BDO Seidman (2 percent).

[1]The data we analyzed are from *Who Audits America*, 2001- 2002. We tracked the companies that left Andersen, beginning with the last quarter of 2001 because some companies began leaving Andersen once the firm came under suspicion.

[2]We also administered a survey to a random sample of 250 Fortune 1000 public companies, of which 148 companies responded, and 34 of the 148 respondents were former Andersen clients. We found that half of the 34 former Andersen clients switched to the new firm of the former Andersen partner who was in charge of their audit.

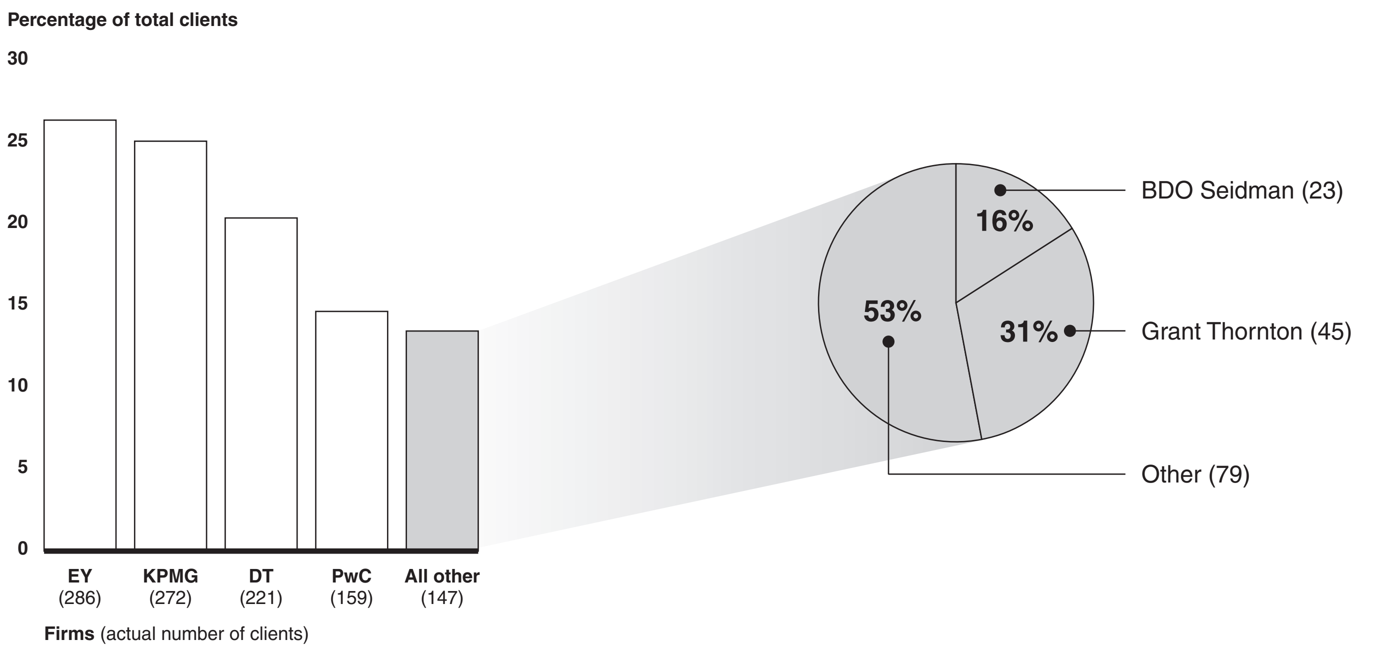
Figure 10: Where Andersen's Public Company Clients Went, 2001-2002



Source: *Who Audits America*, 2001-2002.

Note: Numbers are rounded and adjusted to equal 100.

Figure 11: New Firms for Former Andersen Public Company Clients, 2001- 2002



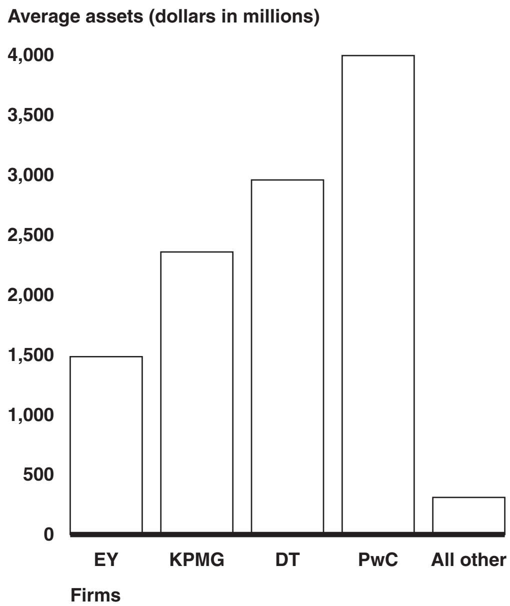
Source: *Who Audits America*, 2001-2002.

Note: Percentages are rounded and adjusted to equal 100.

Largest Clients Switched to Big 4 Firms

We found that almost all former Andersen clients with total assets above $5 billion switched to a Big 4 firm. The one exception, Global Crossing, switched to Grant Thornton. We found that the Big 4 audited approximately 98 percent of the total assets of the 1,085 former Andersen clients that switched auditors between October 1, 2001, and December 31, 2002. As illustrated in figure 12, PricewaterhouseCoopers, although attracting the smallest number of Andersen clients (159), tended to attract the largest clients based on average total company asset size ($3.9 billion). Comparatively, former Andersen clients that switched to Deloitte & Touche and KPMG averaged total assets of $3.0 billion and $2.4 billion, respectively. In addition, Ernst & Young, although attracting the largest number of Andersen clients, tended to attract smaller clients based on average total company asset size ($1.5 billion).

Figure 12: Average Assets of Former Andersen Pubic Company Clients by New Firm, 2001-2002



Source: *Who Audits America,* 2001-2002.

We also analyzed former Andersen clients by asset size and determined how many of its clients switched to Big 4 versus other firms. As table 8 illustrates, the vast majority of the largest former Andersen clients switched to one of the Big 4 firms. With the exception of the smallest asset class, 90 percent or more of the former Andersen clients switched to one of the Big 4 firms.

Table 8: Former Andersen Public Company Clients (Actual and Percentage) Categorized by Assets, Big 4, and Other Firms, as of December 2002

	Asset ranges (millions)					
Accounting firm	**Greater than $5,000**	**$5,000-1,000**	**$1,000-500**	**$500-100**	**Less than $100**	**Total**
Actual public company clients						
Big 4	85	180	111	291	271	**938**
Other	1	5	5	26	110	**147**
Total	**86**	**185**	**116**	**317**	**381**	**1,085**
Percentage of public company clients						
Big 4	99%	97%	96%	92%	71%	**87%**
Other	1	3	4	8	29	**13**
Total	**100**	**100**	**100**	**100**	**100**	**100**

Source: *Who Audits America*, 2001– 2002.

We also looked at the movement of former Andersen clients to the Big 4 firms within the asset range groups. As table 9 shows, KPMG was hired by the highest percentage of former Andersen clients in both the largest and smallest asset groups, while Ernst & Young was hired by the highest percentage of former Andersen clients with assets between $100 million and $5 billion.

Table 9: Former Andersen Public Company Clients (Number and Percentage) Categorized by Assets and Big 4 Firm, as of December 31, 2002

	Asset ranges (millions)					
Accounting firm	**Greater than $5,000**	**Between $5,000-1,000**	**$1,000-500 million**	**$500-100 million**	**Less than $100 million**	**Total**
Number of company clients						
DT	21	54	28	70	48	**221**
EY	19	61	32	96	78	**286**
KPMG	25	43	31	75	98	**272**
PwC	20	22	20	50	47	**159**
Total	**85**	**180**	**111**	**291**	**271**	**938**
Percentage of public company clients						
DT	25%	30%	25%	24%	18%	**24%**
EY	22	34	29	33	29	**30**
KPMG	29	24	28	26	36	**29**
PwC	24	12	18	17	17	**17**
Total	**100**	**100**	**100**	**100**	**100**	**100**

Source: *Who Audits America*, 2001- 2002.

Notes: Deloitte & Touche (DT), Ernst & Young (EY), KPMG, and PricewaterhouseCoopers (PwC). Percentages may not sum to 100 due to rounding.

Thirteen Percent of Former Andersen Clients Switched to Non-Big 4 Firms

Of the former Andersen clients, 147 (13 percent) switched to a non-Big 4 firm. Of the 147 firms, 31 percent switched to Grant Thornton and 16 percent switched to BDO Seidman (fig. 11). The average asset size of a company that switched to a non-Big 4 firm was $309 million, which is approximately $2.2 billion less than the average asset size of a company that switched to a Big 4 firm. As table 10 illustrates, the average asset size of a company that switched to Grant Thornton was $644 million, and the average asset size of a company that switched to BDO Seidman was $54 million. The 147 public company clients that did not engage a Big 4 firm switched to one of 52 non-Big 4 firms.

Table 10: Former Andersen Clients Hired by Other Firms, as of December 31, 2002

Accounting firm	Number of former Andersen clients	Percentage of total clients	Average assets (millions)
Big 4	938	87%	$2,508
Grant Thornton	45	4	644
BDO Seidman	23	2	54
Other	79	7	193
Total	**1,085**	**100**	**2,210**

Source: *Who Audits America,* 2001–2002.

Former Andersen Clients by Industry Sectors

Of the 1,085 former Andersen clients, we were able to classify 926 companies into 56 different industry sectors.[3] We observed that former Andersen clients in 22 industry sectors stayed with a Big 4 firm, while former Andersen clients in 34 industry sectors switched to a non-Big 4 firm. Within some industries certain accounting firms were hired more often than others. For example, Ernst & Young attracted former Andersen clients in more industry sectors overall than any other firm (49 of the 56 industry sectors). We also observed that within 16 industries KPMG attracted more former Andersen clients than other firms (see table 11).

It is important to review this analysis in the context of its limitations. Specifically, defining markets by SIC codes can exaggerate the level of concentration because, like the audit market, a few large companies dominate many industry sectors (see table 2). To mitigate the potential for bias, we limited our analysis to the 2-digit SIC codes rather than the 4-digit codes. There are additional methodological issues with defining markets by SIC codes. First, the audited companies' lines of business, not the business of the accounting firms, defines the markets. Second, some companies that could be included in a particular industry are not included because no SIC code identifier was provided in the database that we used. Moreover, assignment of a company to a particular SIC code sometimes involves judgment, which may create bias.

[3]One hundred fifty-nine companies that did not have SIC codes reported in *Who Audits America* were excluded from this analysis.

Table 11: New Firms for Former Andersen Clients by SIC Code, as of December 31, 2002

		New accounting firm				
SIC code	Economic group	DT	EY	KPMG	PwC	Other
10	Primary metals		1	1		
13	Oil and gas extraction	2	1	5	1	3
15	General building contractors	2	3	1		2
17	Special trade contractors	1	3		1	
20	Food and kindred products	2	1	5	1	3
22	Textile mill products	1			4	2
23	Apparel and other textile products	3	1	1	1	1
24	Lumber and wood products	1	3	2		1
25	Furniture and fixtures	1	3		2	
26	Paper and allied products	3		1		
27	Printing and publishing	2	4	3		2
28	Chemicals and allied products	7	13	16	11	4
29	Petroleum and coal products		2		1	
30	Rubber and miscellaneous plastics	1	4	3	2	1
31	Leather and leather products	2				
32	Stone, clay and glass products	1	3	1	2	
33	Primary metal industries	7	3	1		2
34	Fabricated metal products	3	3	2	1	
35	Industrial machinery and equipment	8	16	13	11	9
36	Electronic and other electric equipment	9	13	16	9	10
37	Transportation equipment	4	7	4	1	3
38	Instruments and related products	10	12	19	6	8
39	Miscellaneous manufacturing industries	1	3	2		1
41	Local and interurban passenger transit				1	
42	Trucking and warehousing	4	1	6		
45	Transportation by air	4	2	1		
48	Communications	8	12	14	11	5
49	Electric, gas and sanitary services	22	5	3	9	2
50	Wholesale trade – durable goods	2	4	5	2	3
51	Wholesale trade – nondurable goods	4	4	5	1	2
53	General merchandise stores	3		1	2	
54	Food stores			2	1	1
55	Automotive dealers and service stations	1	1			2
56	Apparel and accessory stores	1	2	4		

(Continued From Previous Page)

		New Accounting Firm				
SIC code	**Economic Group**	**DT**	**EY**	**KPMG**	**PwC**	**Other**
57	Furniture and home furnishings stores	1				
58	Eating and drinking places	1	3	4	2	3
59	Miscellaneous retail	8	2	7	1	3
60	Depository institutions	8	9	18	10	7
61	Nondepository institutions	1	1	5	2	2
62	Security and commodity brokers		1	3	1	
63	Insurance carriers	1	3		1	2
64	Insurance agents, brokers and service	1	3		2	
65	Real estate	2	3	3	1	1
67	Holding and other investment services	4	20	13	1	7
70	Hotels and other lodging places	5	5	1	1	
72	Personal services	1	3			2
73	Business services	24	34	35	14	28
75	Auto repair, services, and parking		2	2		
76	Miscellaneous repair services			1		1
78	Motion pictures		2			
79	Amusement and recreation services	7	1		1	3
80	Health services	2	7	2	1	3
82	Educational services		2		1	
83	Social services		1		1	
86	Membership organizations		1			
87	Engineering and management services	2	8	3	6	7

Source: *Who Audits America*, 2002.

Note: The Big 4 are Deloitte & Touche (DT); Ernst & Young (EY); KPMG; and PricewaterhouseCoopers (PwC).

Analysis of Big 4 Firms' Specialization by Industry Sector

The concentration that exists across accounting firms that audit public companies is even more pronounced in certain industry sectors. For example, in certain industry sectors, two firms audit over 70 percent of the assets. Because public companies generally prefer auditors with established records of industry expertise and requisite capacity, their viable choices are even more limited than the Big 4. This appendix provides additional descriptive statistics on selected industries in the U.S. economy using U.S. Standard Industry Classification (SIC) codes—numerical codes designed by the federal government to create uniform descriptions of business establishments.[1]

Limitations of SIC Analysis

The purpose of this analysis is to illustrate that certain firms dominate particular industries or groups, and companies may consider only these firms as having the requisite expertise to provide audit and attest services for their operations. However, it is important to review this analysis in the context of its limitations. Specifically, defining markets by SIC codes can exaggerate the level of concentration because, like the audit market, a few large companies dominate many industry sectors (see table 2). For example, in the petroleum industry, we were able to identify only 25 publicly listed companies in 2002, 20 of which were audited by the Big 4. Because PricewaterhouseCoopers and Ernst & Young audit the six largest companies, they audit 95 percent of the assets in this industry. To mitigate the potential for bias, we limited our analysis to the 2-digit SIC codes rather than the more specific 4-digit codes.

There are additional methodological issues with defining markets by SIC codes. First, the audited companies' lines of business, not the business of the accounting firms, defines the markets. Second, some companies that could be included in a particular industry are not included because no SIC code identifier was provided in the database that we used. Moreover, assignment of a company to a particular SIC code sometimes involves judgment, which may create bias. Finally, the methodology assumes different accounting firms are in separate markets and cannot easily move from auditing one type of industry to another.

[1]SIC codes are arranged in a very structured, hierarchical manner; and for the purposes of this report, we have focused on the 2-digit SIC code; the *first digit* designates a major *Economic Division*, such as agriculture or manufacturing; the *second digit* designates an *Economic Major Group*, such as crop production.

The total assets data come from the 1997 and 2002 editions of *Who Audits America*, which has detailed information on public companies, including current and former auditor and SIC code.[2] Because some companies are not classifiable establishments, others do not list SIC codes because they operate in many lines of business, or the necessary information might have been missing in some cases, the data only include companies that had a 4-digit, 3-digit or 2-digit SIC code in the 1997 and 2002 versions of the database (8,724 companies in 1997 and 9,569 companies in 2002). All SIC codes were converted to 2-digit codes (major group) for analysis. Table 12 lists and defines each SIC major economic group analyzed here and in the body of the report. In computing concentration ratios for each accoounting firm in the various industry groups, we used total assets audited. However, the results generally are not sensitive to the use of a different measure (such as total sales).

[2]To test the reliability of this database, we preformed various checks on random samples of the data, compared results we obtained using the data to published work in the area and relied on previous academic research, which verified the completeness and accuracy of the data. For example R. Doogar and R. Easley, "Concentration without Differentiation: A New Look at the Determinants of Audit Market Concentration," *Journal of Accounting and Economics*, vol. 25 (1998): 235-253, compared auditor information contained in the *Compustat*, *Dow-Jones Disclosure* and *Who Audits America* and found no discrepancies. The data issues are also discussed in appendix I.

Table 12: Description of Selected SIC Groups

Major group (SIC code)	Description
10	*Metal mining* This major group includes establishments primarily engaged in mining, developing mines, or exploring for metallic minerals (ores). This major group also includes all ore dressing and beneficiating operations, whether performed at mills operated in conjunction with the mines served or at mills, such as custom mills, operated separately.
13	*Oil and gas extraction* This major group includes establishments primarily engaged in (1) producing crude petroleum and natural gas, (2) extracting oil from oil sands and oil shale, (3) producing natural gasoline and cycle condensate, and (4) producing gas and hydrocarbon liquids from coal at the mine site.
15	*General building contractors* This major group includes general contractors and operative builders primarily engaged in the construction of residential, farm, industrial, commercial, or other buildings. General building contractors who combine a special trade with the contracting are included in this major group.
24	*Lumber and wood products* This major group includes establishments engaged in cutting timber and pulpwood; merchant sawmills, lath mills, shingle mills, cooperage stock mills, planting mills, and plywood mills and veneer mills engaged in producing lumber and wood basic materials; and establishments engaged in manufacturing finished articles made entirely or mainly of wood or related materials.
25	*Furniture and fixtures* This major group includes establishments engaged in manufacturing household, office, public building, and restaurant furniture; and office and store fixtures.
26	*Paper and allied products* This major group includes establishments primarily engaged in the manufacture of pulps from wood and other cellulose fibers, and from rags; the manufacture of paper and paperboard; and the manufacture of paper and paperboard into converted products, such as paper coated off the paper machine, paper bags, paper boxes, and envelopes.
27	*Printing and publishing* This major group includes establishments engaged in printing by one or more common processes, such as letterpress; lithography (including offset), gravure, or screen; and those establishments that perform services for the printing trade, such as bookbinding and platemaking. This major group also includes establishments engaged in publishing newspapers, books, and periodicals, regardless of whether they do their own printing.
28	*Chemicals and allied products* This major group includes establishments producing basic chemicals, and establishments manufacturing products by predominantly chemical processes. Establishments classified in this major group manufacture three general classes of products: (1) basic chemicals, such as acids, salts, and organic chemicals; (2) chemical products to be used in further manufacture, such as synthetic fibers, plastics materials, dry colors, and pigments; and (3) finished chemical products to be used for ultimate consumption, such as drugs, cosmetics, and soaps; or to be used as materials or supplies in other industries, such as paints, fertilizers, and explosives.
29	*Petroleum and coal products* This major group includes establishments primarily engaged in petroleum refining, manufacturing paving and roofing materials, and compounding lubricating oils and greases from purchased materials.

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Major group (SIC code)	Description
33	*Primary metal industries* This major group includes establishments engaged in smelting and refining ferrous and nonferrous metals from ore, pig, or scrap; in rolling, drawing, and alloying metals; in manufacturing castings and other basic metal products; and in manufacturing nails, spikes, and insulated wire and cable.
34	*Fabricated metal products* This major group includes establishments engaged in fabricating ferrous and nonferrous metal products, such as metal cans, tinware, handtools, cutlery, general hardware, nonelectric heating apparatus, fabricated structural metal products, metal forgings, metal stampings, ordnance (except vehicles and guided missiles), and a variety of metal and wire products, not elsewhere classified.
35	*Industrial and commercial machinery and computer equipment (Industry machinery and equipment)* This major group includes establishments engaged in manufacturing industrial and commercial machinery and equipment and computers. Included are the manufacture of engines and turbines; farm and garden machinery; construction, mining, and oil field machinery; elevators and conveying equipment; hoists, cranes, monorails, and industrial trucks and tractors; metalworking machinery; special industry machinery; general industrial machinery; computer and peripheral equipment and office machinery; and refrigeration and service industry machinery. Machines powered by built-in or detachable motors ordinarily are included in this major group, with the exception of electrical household appliances. Power-driven handtools are included in this major group, whether electric or otherwise driven.
37	*Transportation equipment* This major group includes establishments engaged in manufacturing equipment for transportation of passengers and cargo by land, air, and water. Important products produced by establishments classified in this major group include motor vehicles, aircraft, guided missiles and space vehicles, ships, boats, railroad equipment, and miscellaneous transportation equipment, such as motorcycles, bicycles, and snowmobiles. Establishments primarily engaged in manufacturing equipment used for moving materials on farms; in mines and on construction sites; in individual plants; in airports; or on other locations off the highway are classified in Major Group 35.
42	*Trucking and warehouse* This major group includes establishments furnishing local or long-distance trucking or transfer services, or those engaged in the storage of farm products, furniture and other household goods, or commercial goods of any nature.
44	*Water transportation* This major group includes establishments engaged in freight and passenger transportation on the open seas or inland waters, and establishments furnishing such incidental services as towing, and canal operation. This major group also includes excursion boats, sight-seeing boats, and water taxis.
45	*Transportation by air* This major group includes establishments engaged in furnishing domestic and foreign transportation by air and also those operating airports and flying fields and furnishing terminal services including air courier services and air passenger carriers.
48	*Communications* This major group includes establishments furnishing point-to-point communications services, whether intended to be received aurally or visually; and radio and television broadcasting. This major group also includes establishments primarily engaged in providing paging and beeper services and those engaged in leasing telephone lines or other methods of telephone transmission, such as optical fiber lines and microwave or satellite facilities, and reselling the use of such methods to others.

(Continued From Previous Page)

Major group (SIC code)	Description
49	*Electric, gas, and sanitary services* This major group includes establishments engaged in the generation, transmission, and/or distribution of electricity or gas or steam. Such establishments may be combinations of any of the above three services and also include other types of services, such as transportation, communications, and refrigeration. Water and irrigation systems, and sanitary systems engaged in the collection and disposal of garbage, sewage, and other wastes by means of destroying or processing materials, are also included.
60	*Depository institutions* This major group includes institutions that are engaged in deposit banking or closely related functions, including fiduciary activities.
61	*Nondepository institutions* This major group includes establishments engaged in extending credit in the form of loans, but not engaged in deposit banking.
62	*Security and commodity brokers* This major group includes establishments engaged in the underwriting, purchase, sale, or brokerage of securities and other financial contracts on their own account or for the account of others; and exchanges, exchange clearinghouses, and other services allied with the exchange of securities and commodities.
67	*Holding and other investment offices (holding and other investment companies)* This major group includes investment trusts, investment companies, holding companies, and miscellaneous investment offices.
70	*Hotels and other lodging places* This major group includes commercial and noncommercial establishments engaged in furnishing lodging, or lodging and meals, and camping space and camping facilities.
73	*Business services* This major group includes establishments primarily engaged in rendering services, not elsewhere classified, to business establishments on a contract or fee basis, such as advertising, credit reporting, collection of claims, mailing, reproduction, stenographic, news syndicates, computer programming, photocopying, duplicating, data processing, services to buildings, and help supply services.
80	*Health services* This major group includes establishments primarily engaged in furnishing medical, surgical, and other health services to persons. Establishments of associations or groups, such as Health Maintenance Organizations, primarily engaged in providing medical or other health services to members are included; but those, which limit their services to the provision of insurance against hospitalization or medical costs, are classified in Insurance, Major Group 63.

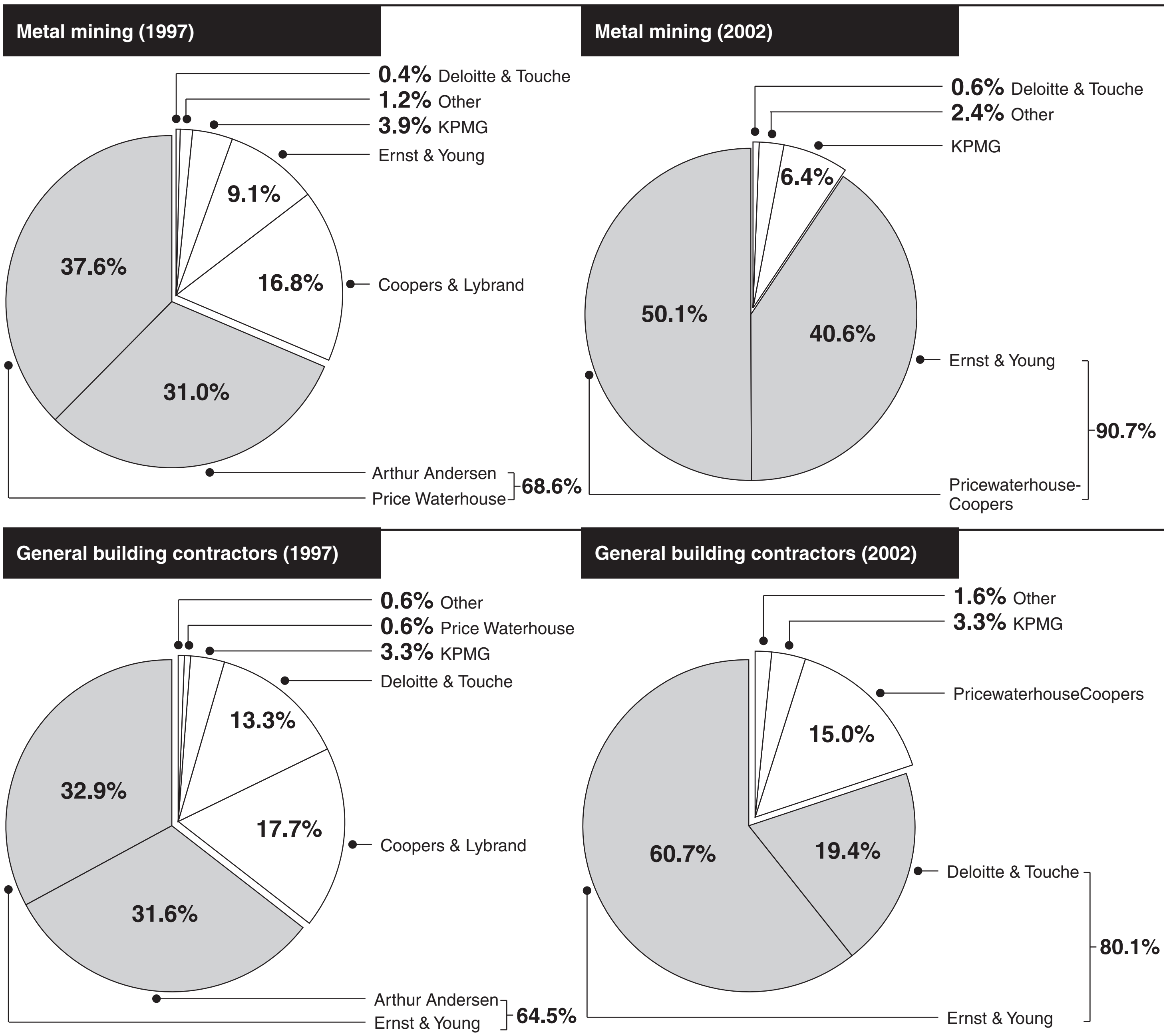
Source: U.S. Bureau of Census, http://www.census.gov/epcd/www/naicstab.htm (7/20/2003) and U.S. Department of Labor, http://www.osha.gov/oshstants/oshstats.(7/20/2003)

Industry Specialization Can Limit Public Company Choice

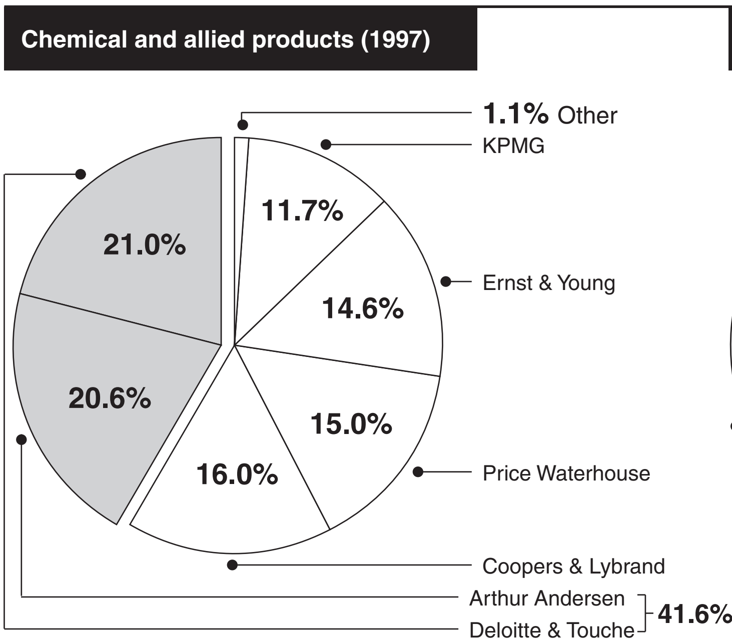
As figure 13 shows, in selected industries specialization can often limit the number of auditor choices to two—in each case, two auditors account for over 70 percent of the total assets audited in 2002. As a result, it might be difficult for a large company to find an auditor with the requisite industry expertise and staff capacity.[3] Figure 13 also shows that while a few firms dominated certain industries in 1997 before the merger of Price Waterhouse and Coopers & Lybrand and dissolution of Arthur Andersen, there were fewer industries where two firms accounted for more than 70 percent of the total sales audited; and in most cases, at least one of the remaining Big 6 firms audited a significant share (greater than 10 percent) of the industry.

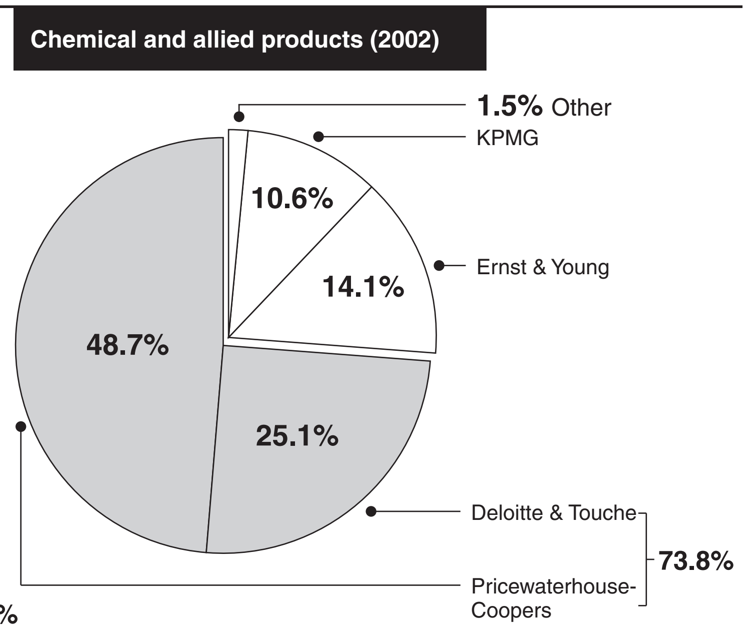
[3]This assumes that a firm does not have sufficient expertise and staff resources if it audits only a small share of industry assets (defined here by major economic group).

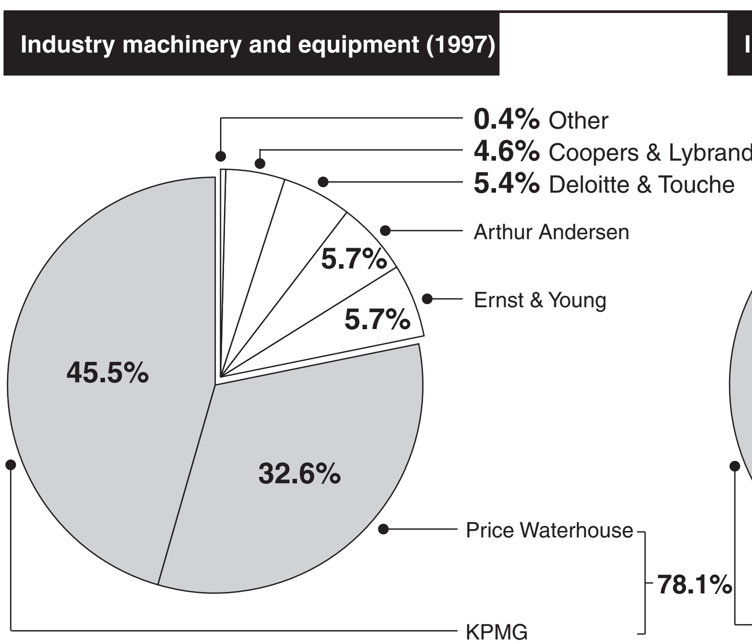
Figure 13: Percentages of Assets Audited by the Big 4 in Selected Industries, 1997 and 2002

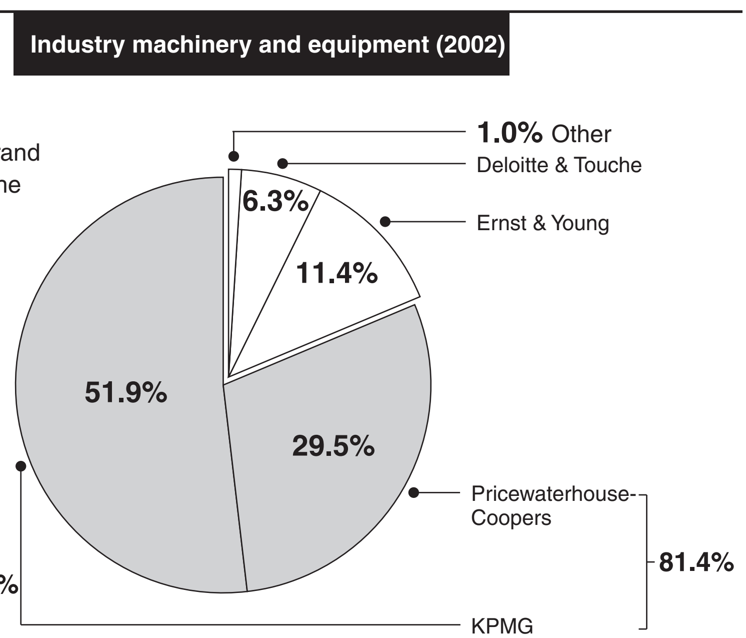


Source: *Who Audits America*, 1997 and 2002.



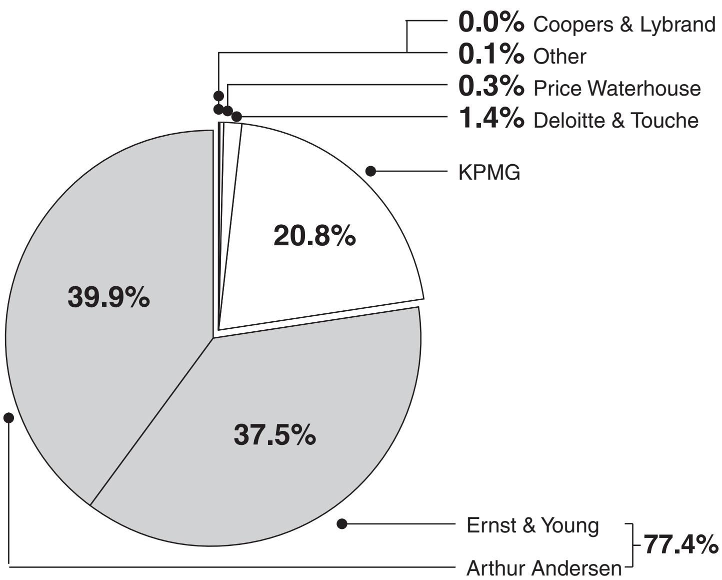




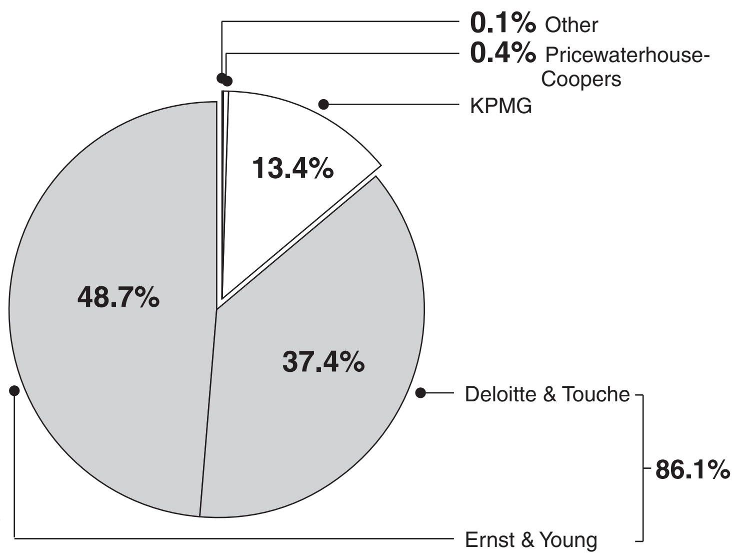


Source: *Who Audits America*, 1997 and 2002.

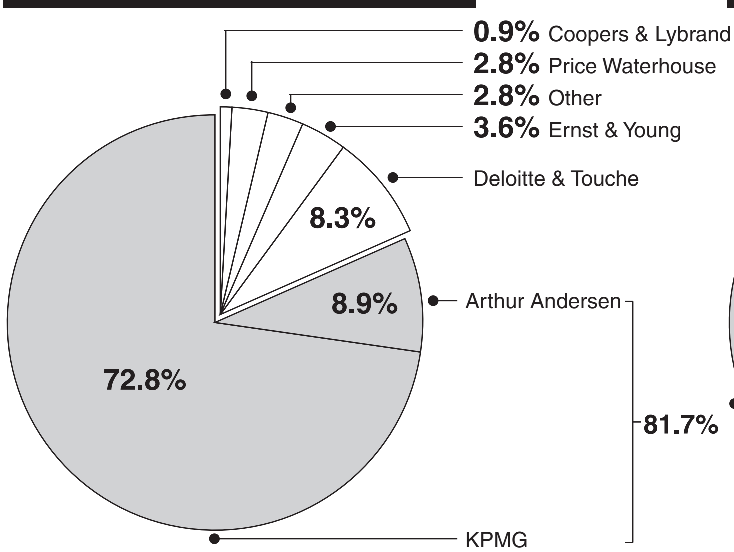
Transportation by air (1997)



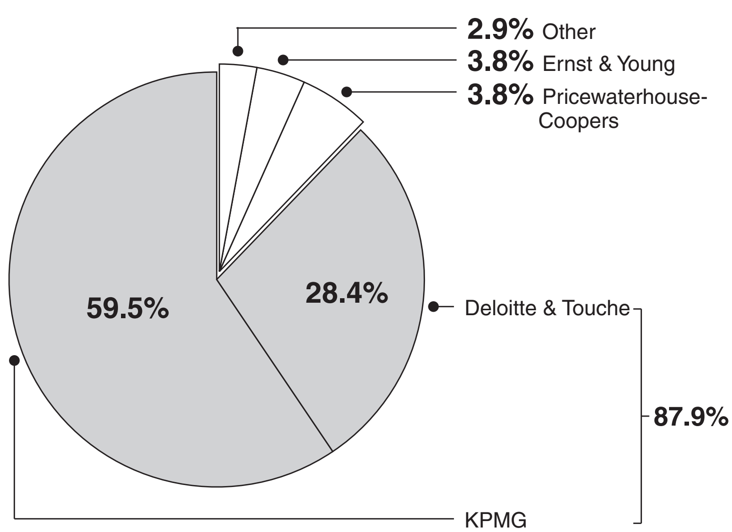
Transportation by air (2002)



Nondepository institutions (1997)

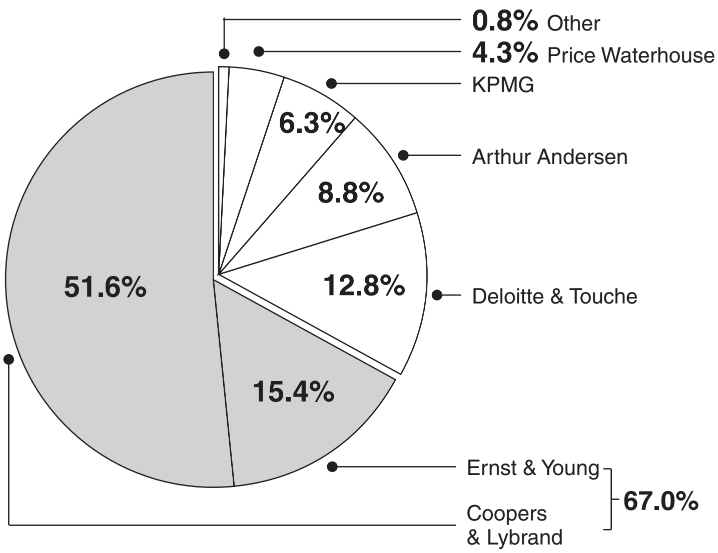


Nondepository institutions (2002)

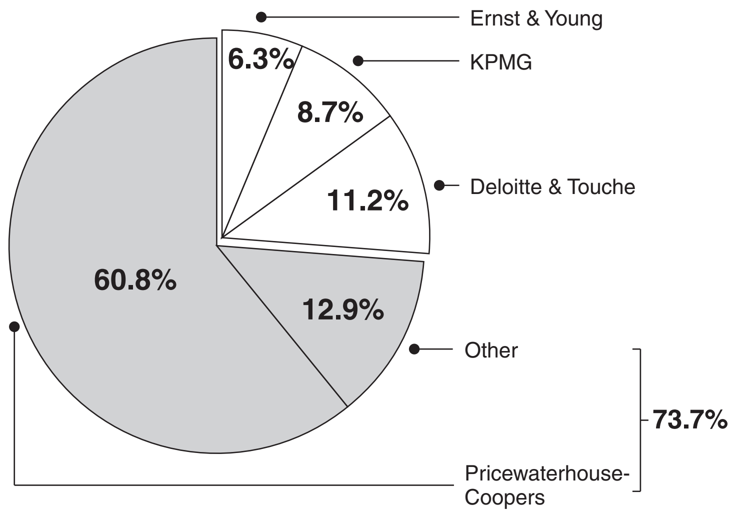


Source: *Who Audits America*, 1997 and 2002.

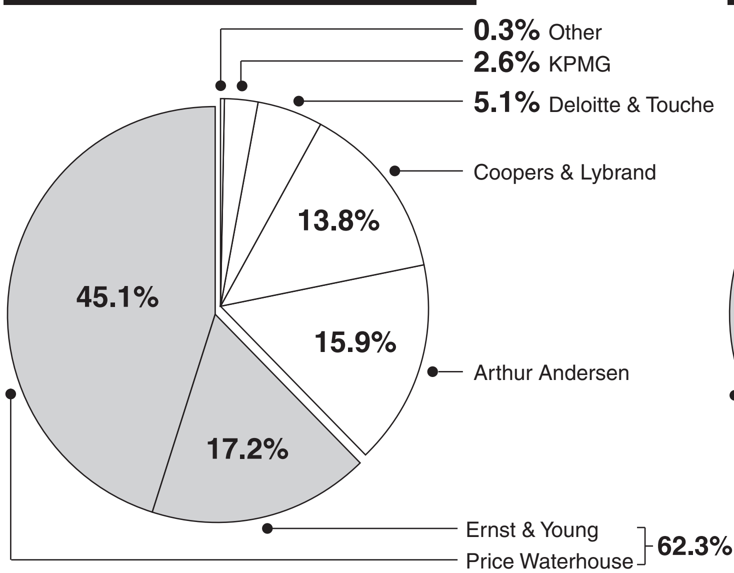
Business services (1997)



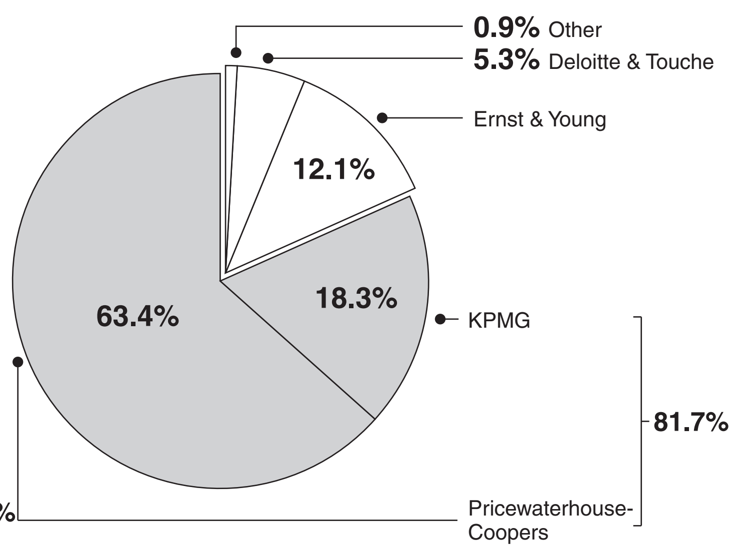
Business Services (2002)



Oil and gas extraction (1997)

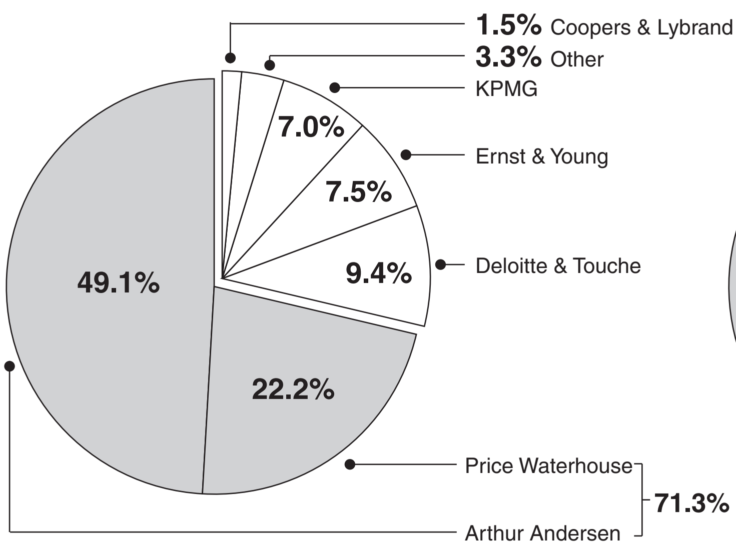


Oil and gas extraction (2002)

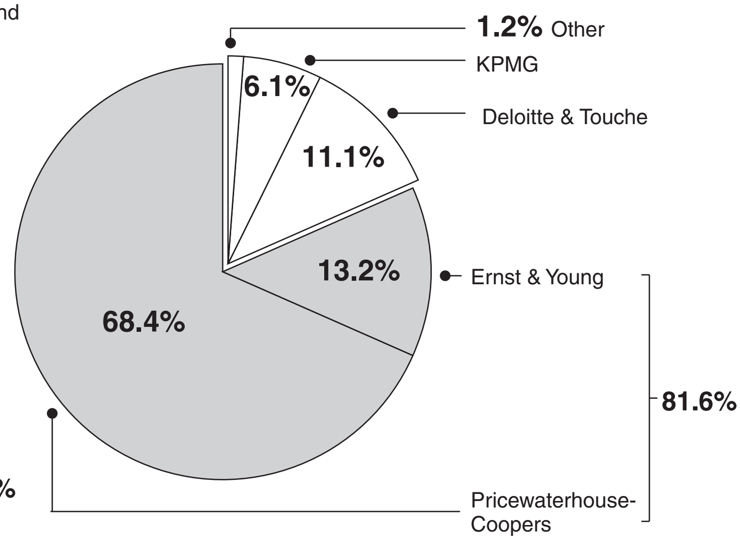


Source: *Who Audits America*, 1997 and 2002.

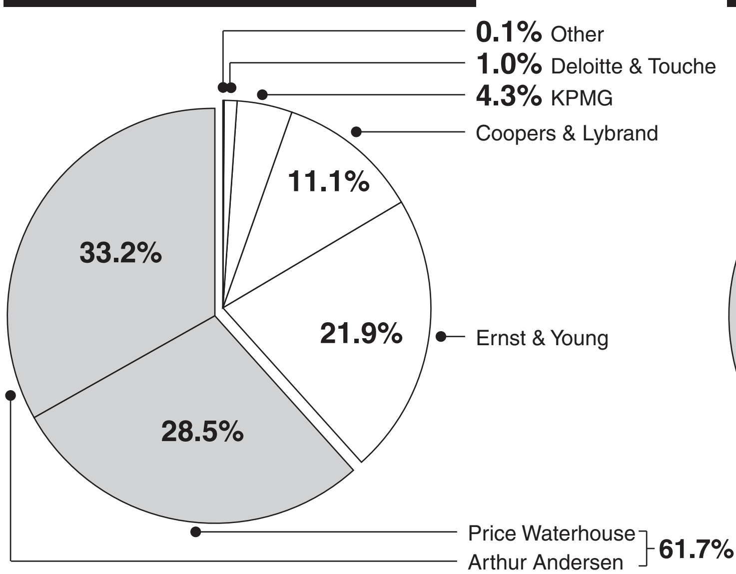
Furniture and fixtures (1997)



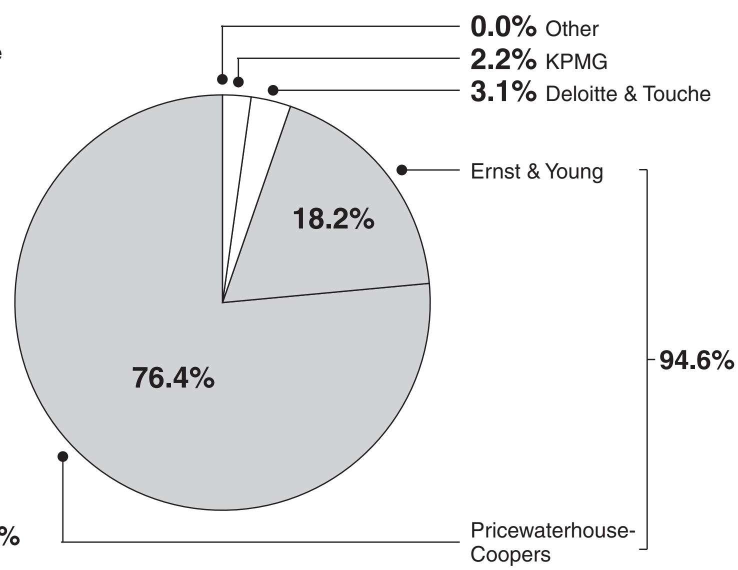
Furniture and fixtures (2002)



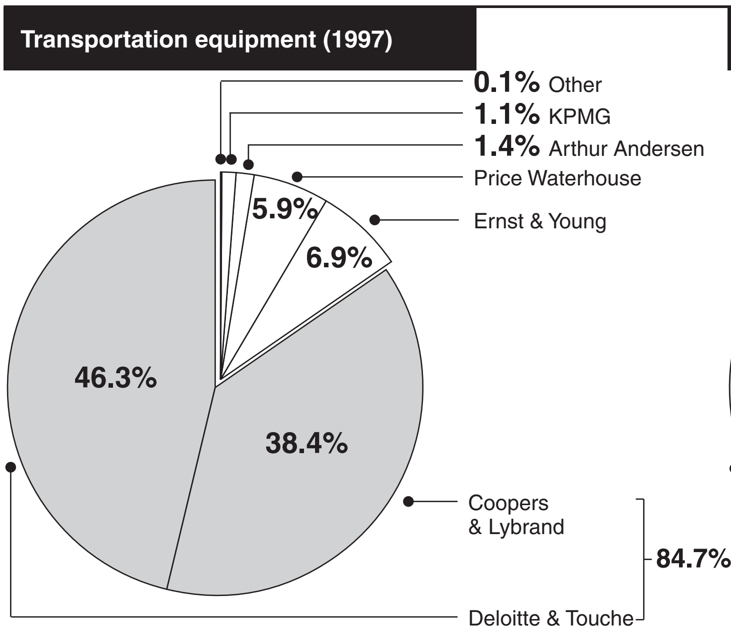
Petroleum and coal products (1997)

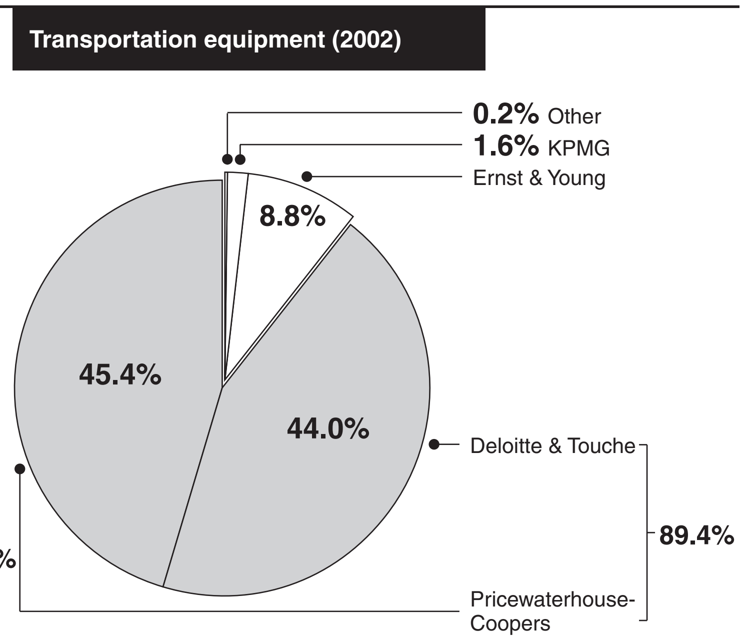


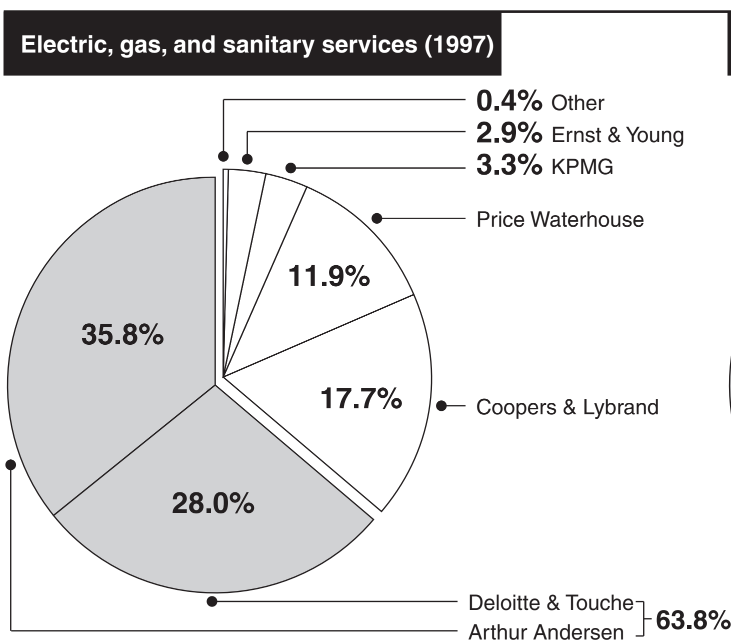
Petroleum and coal products (2002)

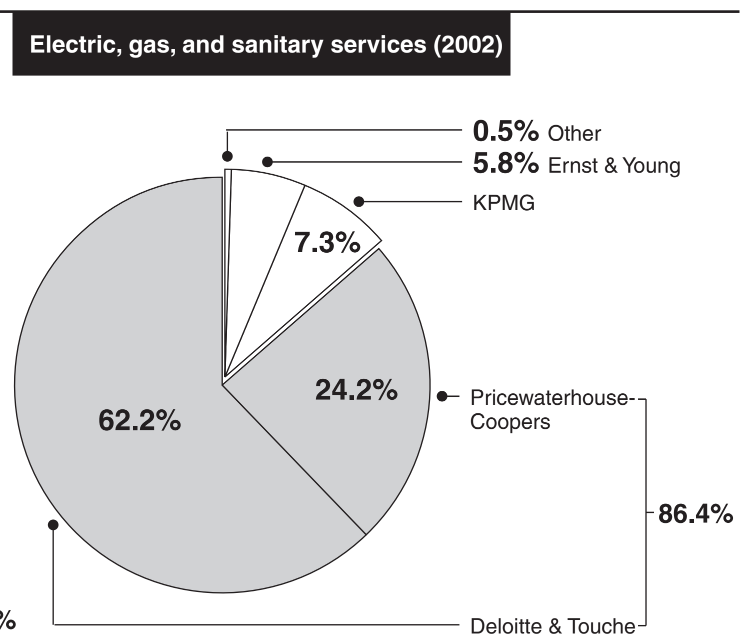


Source: *Who Audits America*, 1997 and 2002.



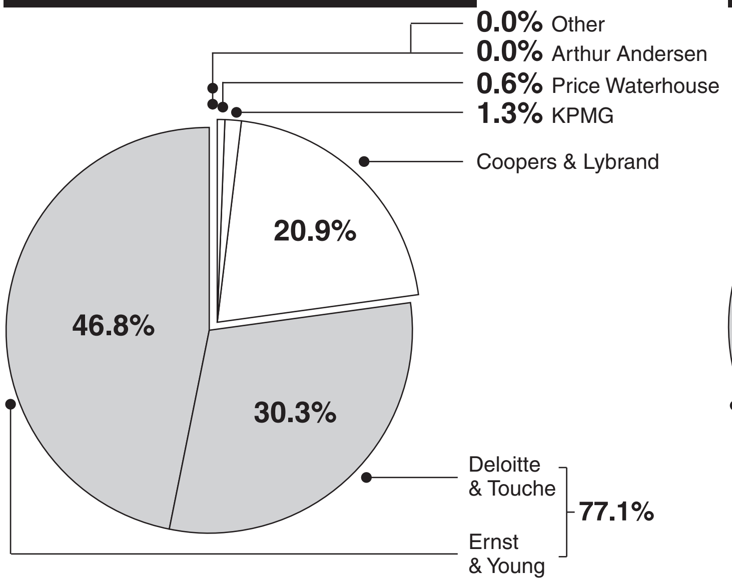




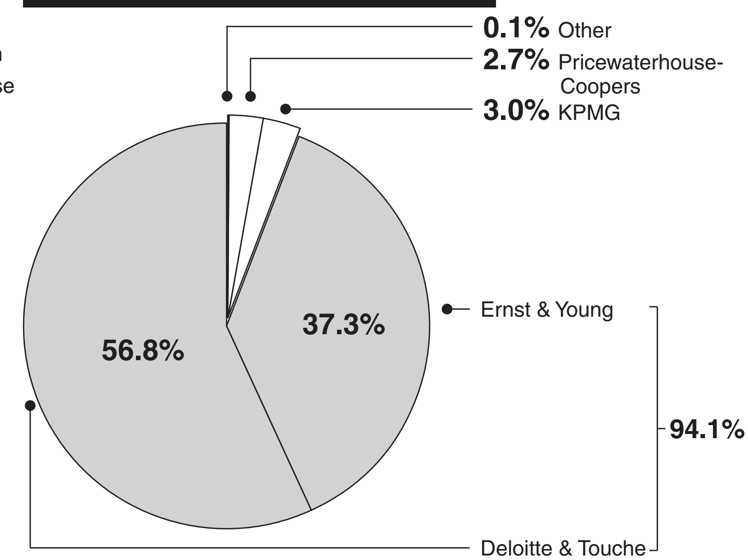


Source: *Who Audits America*, 1997 and 2002.

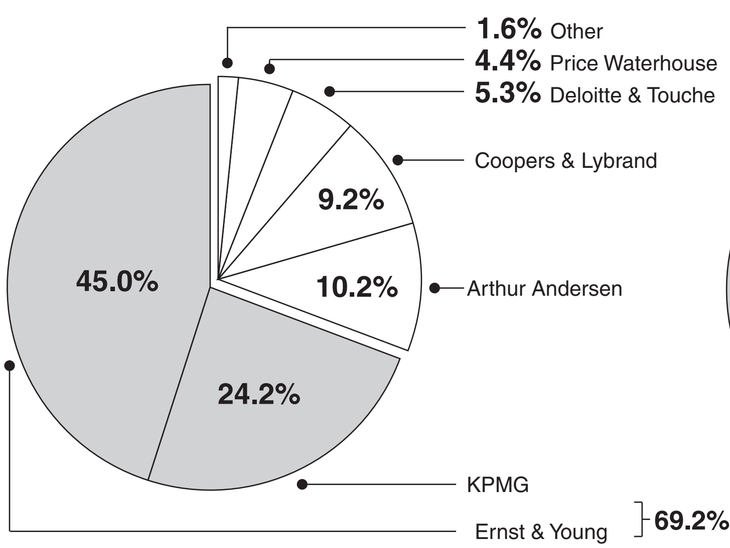
Security and commodity brokers (1997)



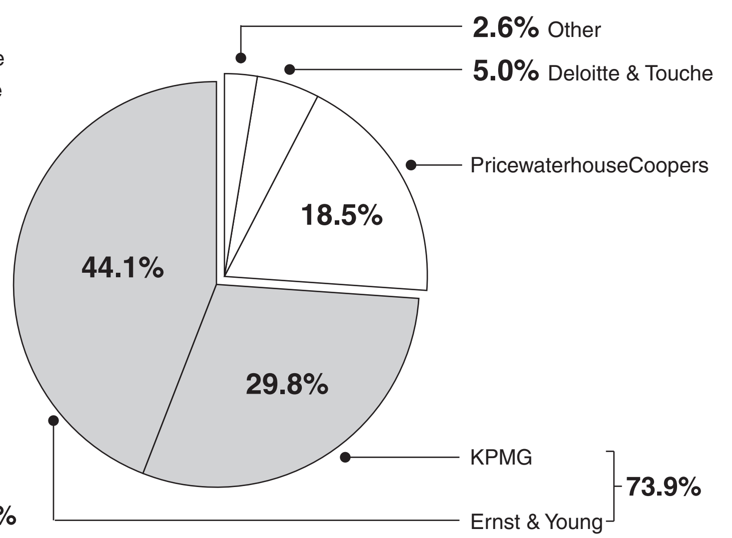
Security and commodity brokers (2002)



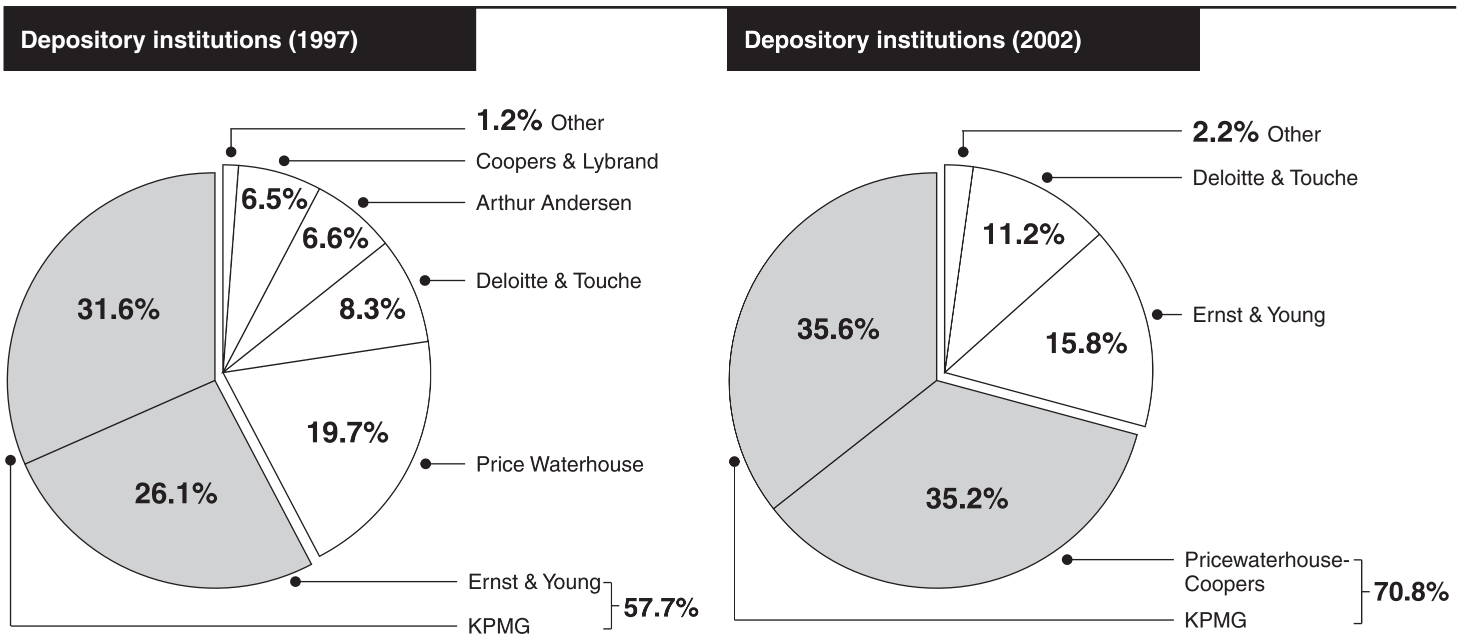
Health services (1997)



Health services (2002)



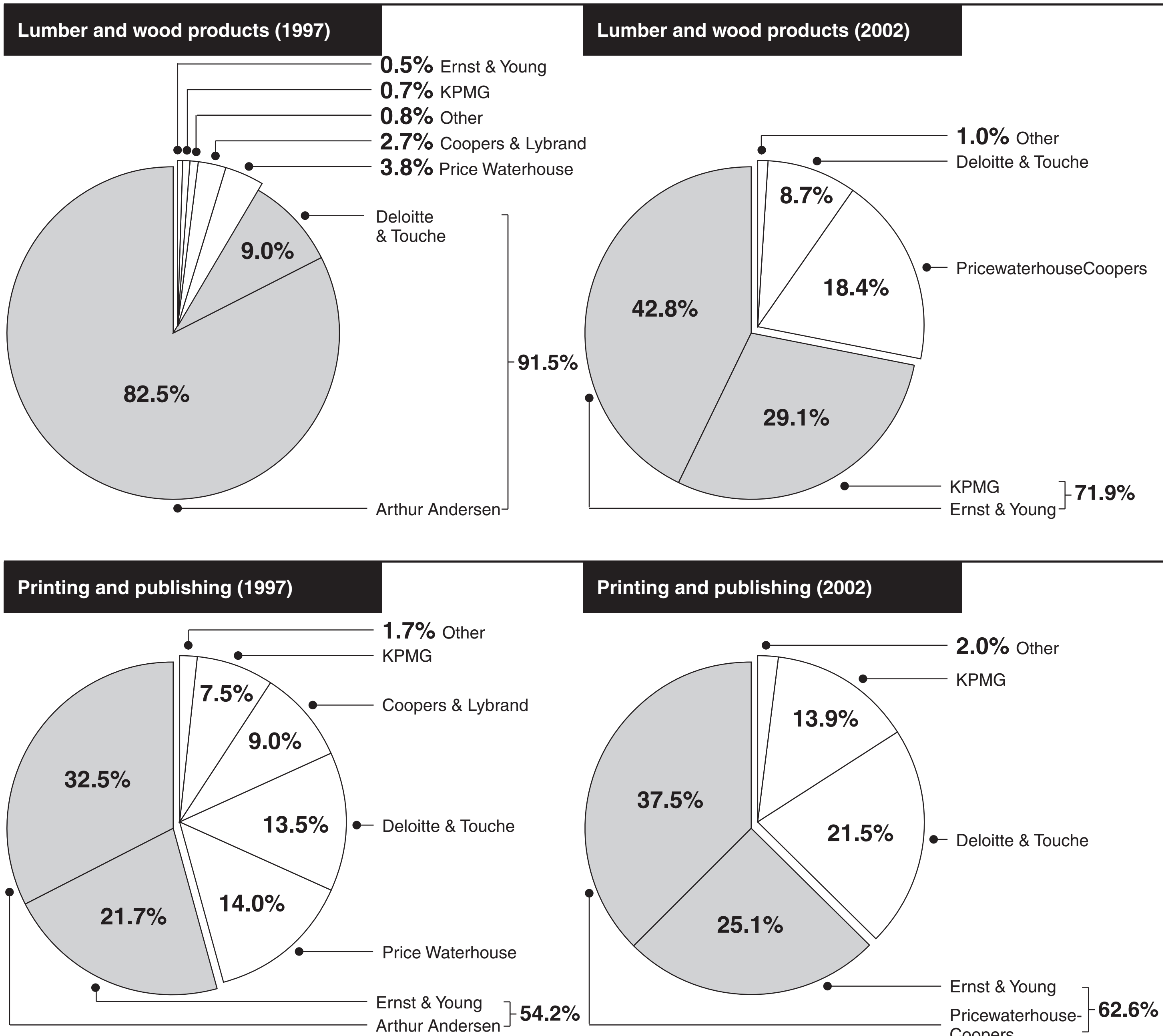
Source: *Who Audits America*, 1997 and 2002.



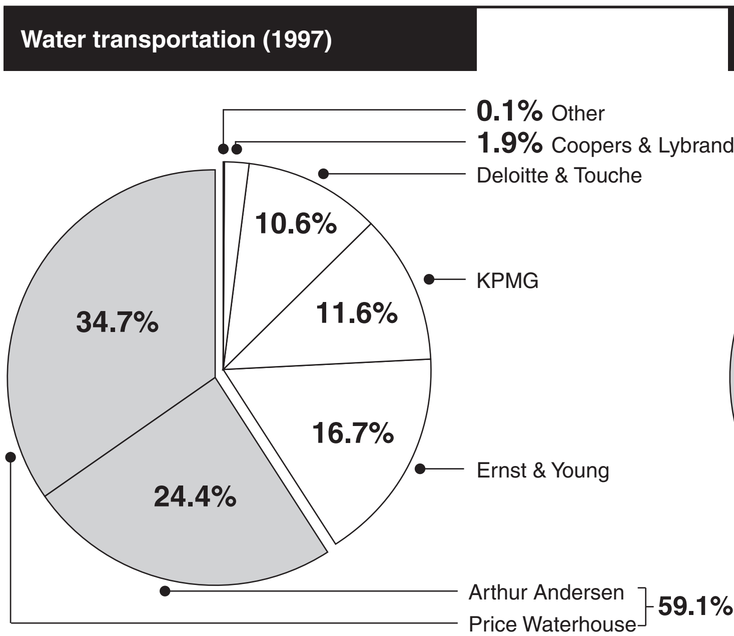
Source: *Who Audits America*, 1997 and 2002.

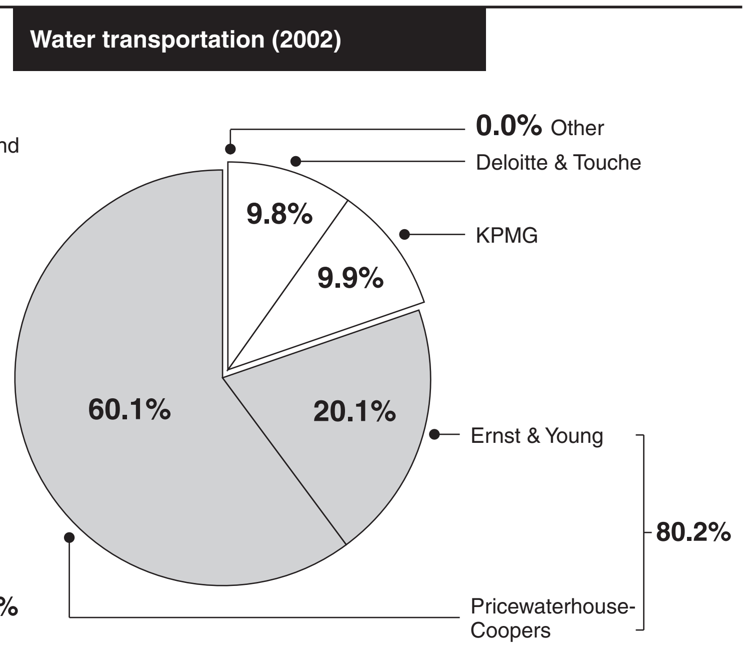
The dissolution of Andersen in 2002 and the merger of Price Waterhouse and Coopers & Lybrand in 1998 appear to have impacted many industries, including those in the primary metals, general building contractors, furniture and fixtures, petroleum and coal products, transportation by air, and electric, gas, and sanitary services groups included in figure 13. Moreover, figure 14 shows the remaining major economic groups with 20 or more companies for which Andersen audited roughly 25 percent or more of the total assets in the industry or Price Waterhouse and Coopers & Lybrand both had significant presence in 1997. As the figure indicates, in many of these sectors Ernst & Young and Deloitte & Touche acquired significant market share by 2002. Because the Big 4 firms have increased their presence in these industries formerly dominated by Andersen or Price Waterhouse and Coopers & Lybrand, the number of firms with industry expertise appears to have remained unchanged in most cases. The mergers between Price Waterhouse and Coopers & Lybrand did not impact choice in most industries because the firms generally dominated different industries as figure 13 and figure 14 show. This highlights that one of the factors contributing to the mergers was the desire to increase industry expertise. However, there are some industries (petroleum and coal products, communications, primary metals, and fabricated metals among others) that may have experienced a reduction in the number of viable alternatives for companies that consider industry expertise important when choosing an auditor.

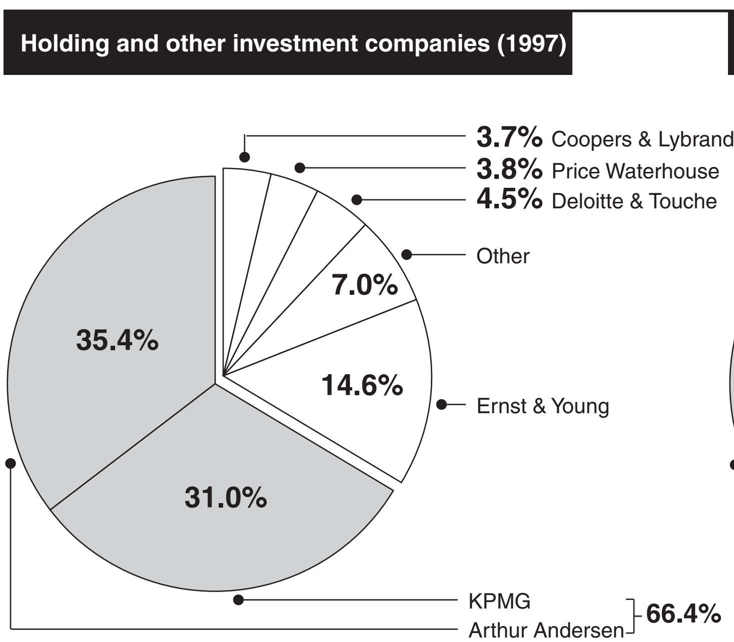
Figure 14: Percentages of Assets Audited in Industries Potentially Impacted by the PriceWaterhouseCoopers Merger and Dissolution of Andersen, 1997 and 2002

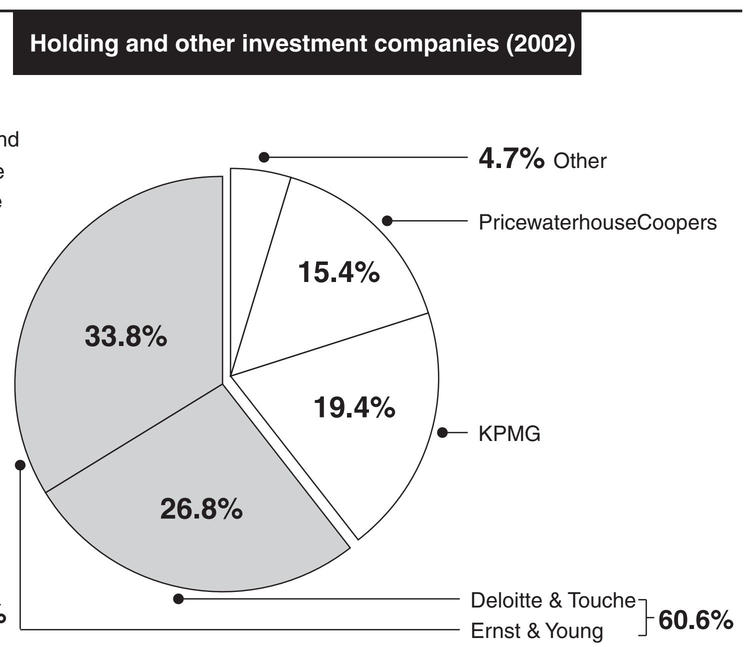


Source: *Who Audits America*, 1997 and 2002.



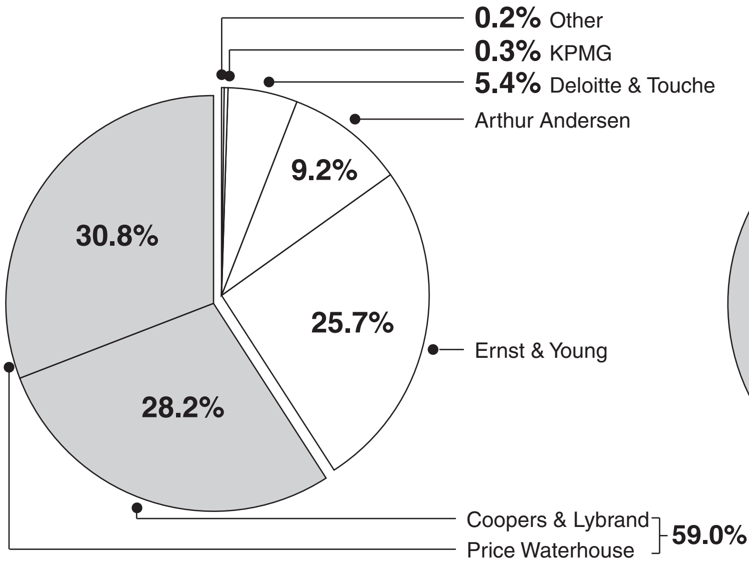




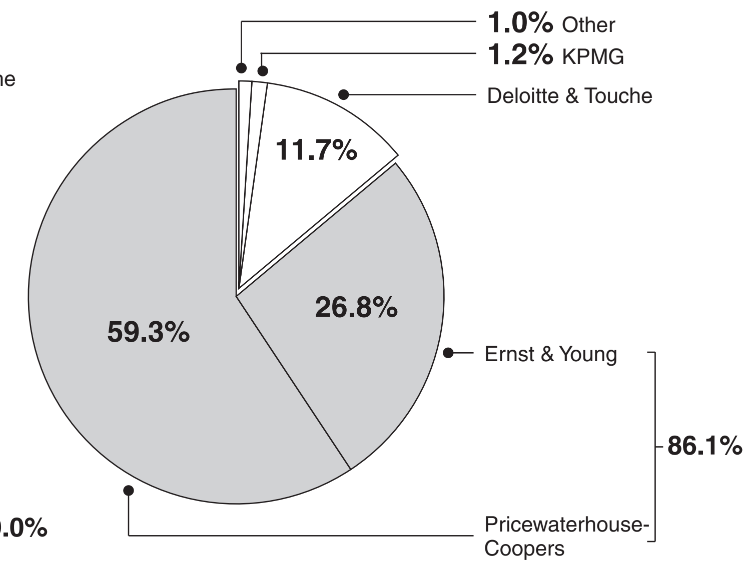


Source: *Who Audits America*, 1997 and 2002.

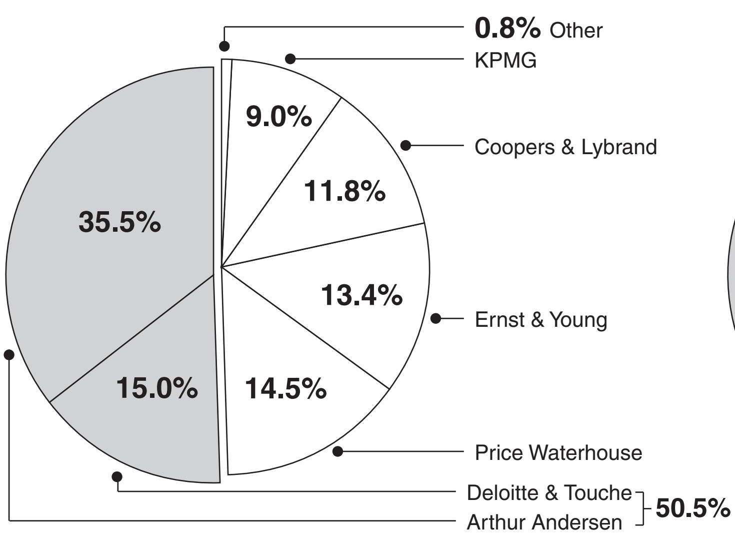
Primary metals (1997)



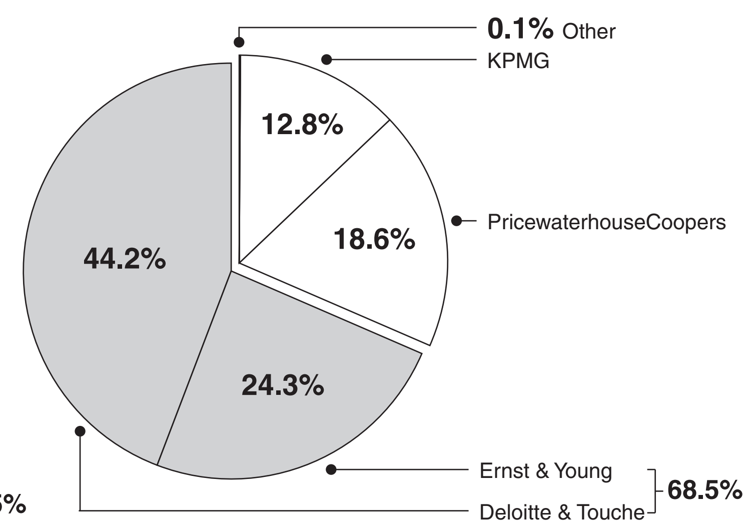
Primary metals (2002)



Paper and allied products (1997)

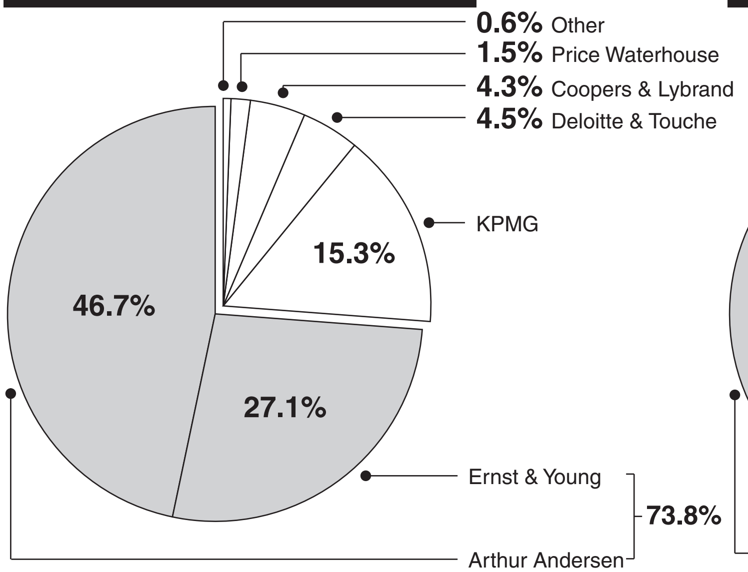


Paper and allied products (2002)

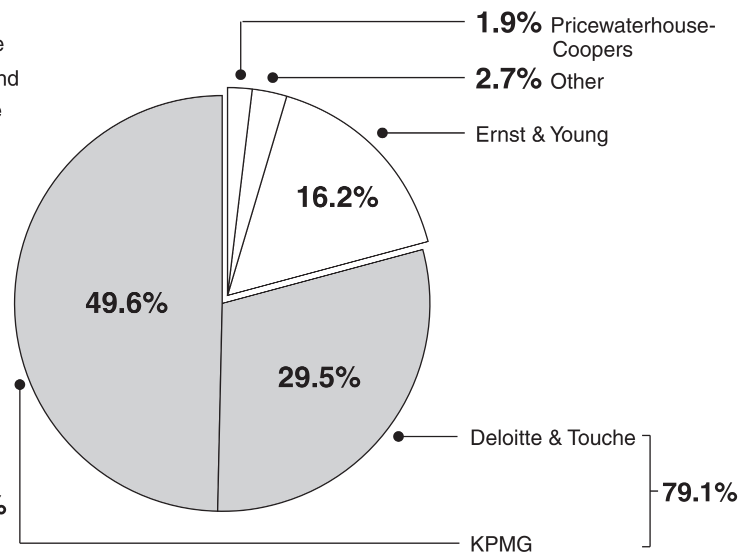


Source: *Who Audits America*, 1997 and 2002.

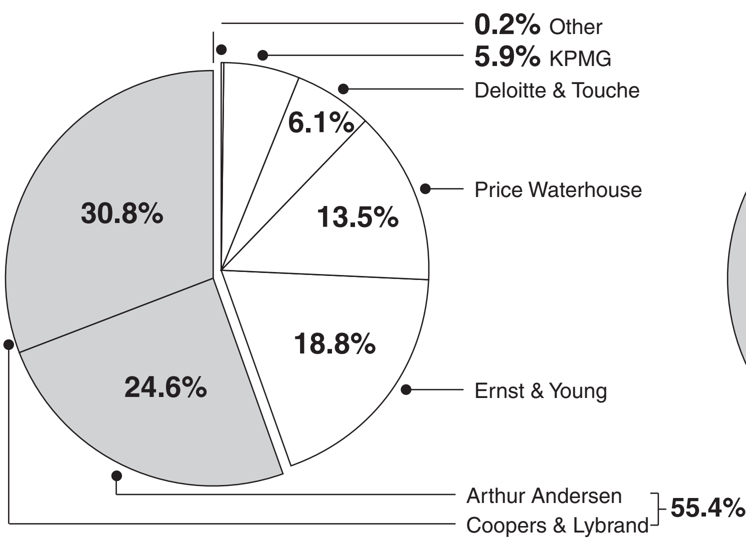
Trucking and warehousing (1997)



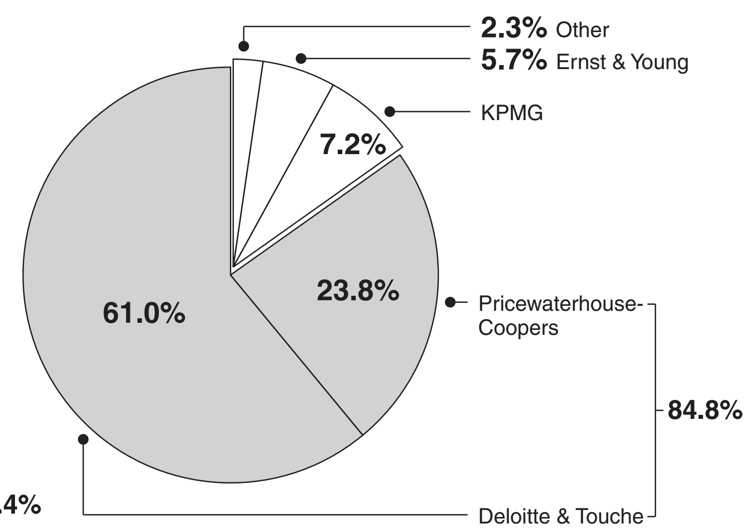
Trucking and warehousing (2002)



Communications (1997)

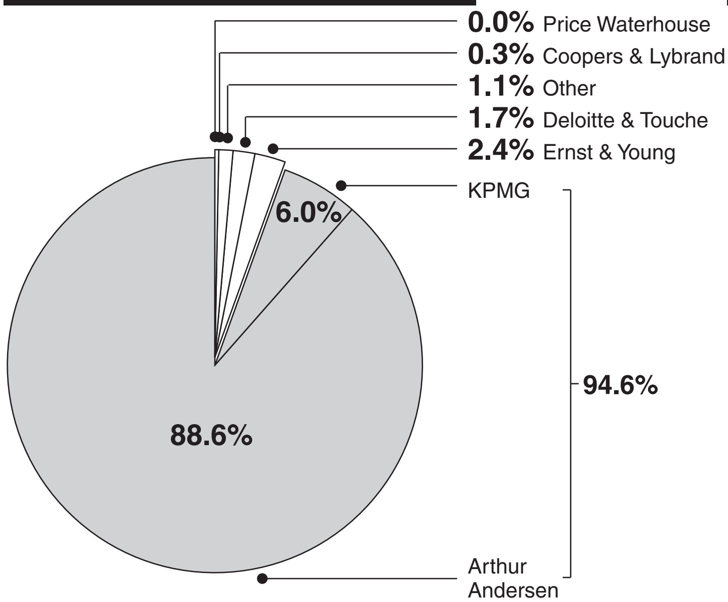


Communications (2002)

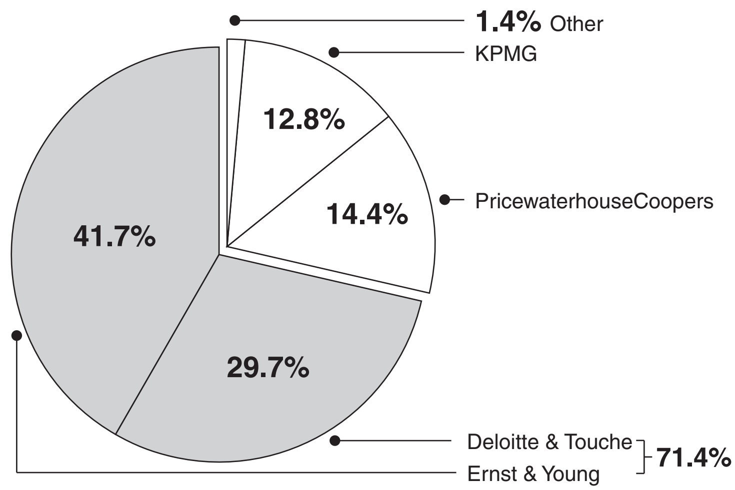


Source: *Who Audits America*, 1997 and 2002.

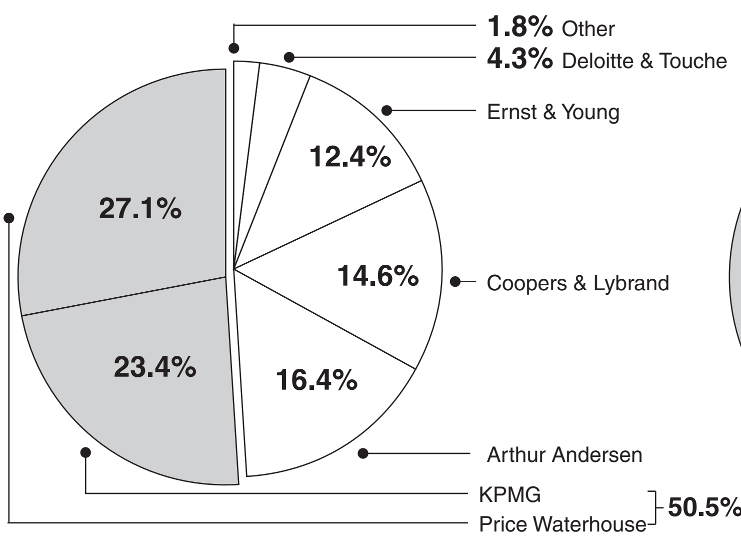
Hotels and other lodging (1997)



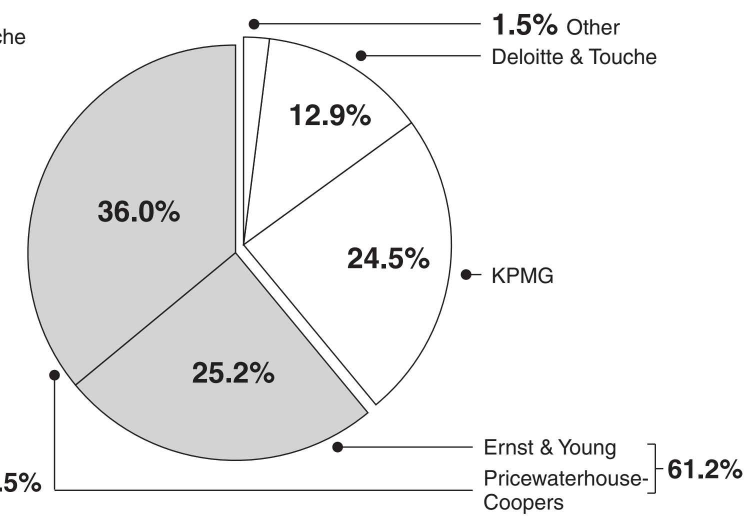
Hotels and other lodging (2002)



Fabricated metal products (1997)



Fabricated metal products (2002)



Source: *Who Audits America*, 1997 and 2002.

Table 13 provides a list of industries defined by 2-digit SIC codes with 25 or more companies and also indicates where each of the Big 4 firms audit at least 10 percent of the total industry assets. As the table illustrates, there are very few industries where all four of the top-tier firms have a major presence. In many industries, only two or three of the Big 4 firms audit 10 percent or more of the total assets in an industry. Of the 49 industries represented, less than one-third (16) have a significant presence (10 percent or more) of all four firms. Moreover, as table 14 illustrates, if the threshold is increased to 25 percent or more of total assets audited, then almost all (48 of 49) of the industries have a significant presence of only one or two firms.

Table 13: Industries in Which the Big 4 Have a Significant Presence (10 percent or More)

		Firms with 10 percent of more of the industry			
SIC	Economic group	DT	EY	KPMG	PwC
10	Primary metals		✔		✔
13	Oil and gas extraction		✔	✔	✔
15	General building contractors	✔	✔		✔
17	Special trade contractors	✔	✔		✔
20	Food and kindred products	✔	✔	✔	✔
22	Textile mill products		✔		✔
23	Apparel and other textile products	✔			✔
24	Lumber and wood products		✔	✔	✔
25	Furniture and fixtures	✔	✔		✔
26	Paper and allied products	✔	✔	✔	✔
27	Printing and publishing	✔	✔	✔	✔
28	Chemicals and allied products	✔	✔	✔	✔
29	Petroleum and coal products		✔		✔
30	Rubber and miscellaneous plastics		✔	✔	✔
31	Leather and leather products	✔	✔		✔
32	Stone, clay and glass products	✔	✔		✔
33	Primary metal industries	✔	✔		✔
34	Fabricated metal products	✔	✔	✔	✔
35	Industrial machinery and equipment		✔	✔	✔
36	Electronic and other electric equipment		✔	✔	✔
37	Transportation equipment	✔			✔
38	Instruments and related products	✔	✔		✔

(Continued From Previous Page)

SIC	Economic group	Firms with 10 percent of more of the industry			
		DT	EY	KPMG	PWC
39	Miscellaneous manufacturing industries		✔	✔	✔
42	Trucking and warehousing	✔	✔	✔	
45	Transportation by air	✔	✔	✔	
48	Communications		✔	✔	✔
49	Electric, gas and sanitary services	✔			✔
50	Wholesale trade – durable goods		✔	✔	✔
51	Wholesale trade – nondurable goods	✔	✔	✔	✔
53	General merchandise stores	✔	✔	✔	✔
54	Food stores	✔		✔	✔
56	Apparel and accessory stores	✔	✔	✔	✔
57	Furniture and homefurnishing stores		✔	✔	
58	Eating and drinking places	✔	✔	✔	✔
59	Miscellaneous retail	✔	✔	✔	
60	Depository institutions	✔	✔	✔	✔
61	Nondepository institutions	✔		✔	
62	Security and commodity brokers	✔	✔		
63	Insurance carriers	✔	✔	✔	✔
64	Insurance agents, brokers and service			✔	✔
65	Real estate	✔	✔	✔	✔
67	Holding and other investment offices	✔	✔	✔	✔
70	Hotels and other lodging places	✔	✔	✔	✔
72	Personal services	✔			✔
73	Business services	✔			✔
78	Motion pictures		✔		✔
79	Amusement and recreation services	✔	✔	✔	✔
80	Health services		✔	✔	✔
87	Engineering and management services	✔	✔	✔	✔

Source: *Who Audits America*, 2002.

Note: We have arbitrarily defined significant presence as auditing 10 percent or more of the total assets within an industry.

Table 14: Industries in Which the Big 4 Have a Significant Presence (25 percent or more)

		Firms with 25 percent of more of the industry			
SIC code	Economic group	DT	EY	KPMG	PwC
10	Primary metals		✔		✔
13	Oil and gas extraction				✔
15	General building contractors		✔		
17	Special trade contractors	✔	✔		
20	Food and kindred products		✔		✔
22	Textile mill products		✔		✔
23	Apparel and other textile products	✔			✔
24	Lumber and wood products		✔	✔	
25	Furniture and fixtures				✔
26	Paper and allied products	✔			
27	Printing and publishing		✔		✔
28	Chemicals and allied products	✔			✔
29	Petroleum and coal products				✔
30	Rubber and miscellaneous plastics		✔		✔
31	Leather and leather products				✔
32	Stone, clay, and glass products		✔		
33	Primary metal industries		✔		✔
34	Fabricated metal products		✔		✔
35	Industrial machinery and equipment			✔	✔
36	Electronic and other electric equipment		✔		✔
37	Transportation equipment		✔		✔
38	Instruments and related products				✔
39	Miscellaneous manufacturing industries		✔		
42	Trucking and warehousing	✔		✔	
45	Transportation by air	✔	✔	✔	
48	Communications		✔		✔
49	Electric, gas, and sanitary services	✔			
50	Wholesale trade – durable goods		✔		✔
51	Wholesale trade – nondurable goods		✔		
53	General merchandise stores	✔	✔		
54	Food stores	✔			✔
56	Apparel and accessory stores	✔			

(Continued From Previous Page)

		Firms with 25 percent of more of the industry			
SIC code	Economic group	DT	EY	KPMG	PwC
57	Furniture and homefurnishing stores		✔	✔	
58	Eating and drinking places		✔	✔	
59	Miscellaneous retail	✔	✔		
60	Depository institutions			✔	✔
61	Nondepository institutions	✔		✔	
62	Security and commodity brokers	✔	✔		
63	Insurance carriers	✔	✔		
64	Insurance agents, brokers, and service				✔
65	Real estate	✔		✔	✔
67	Holding and other investment offices	✔	✔		
70	Hotels and other lodging places	✔	✔		
72	Personal services	✔			✔
73	Business services				✔
78	Motion pictures		✔		✔
79	Amusement and recreation services	✔			
80	Health services		✔	✔	
87	Engineering and management services		✔		

Source: *Who Audits America.*

Note: We have arbitrarily defined significant presence as auditing 25 percent or more of the total assets within an industry.

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Acknowledgments

In addition to those individuals named above, Martha Chow, Edda Emmanuelli-Perez, Lawrance Evans, Jr., Marc Molino, Michelle Pannor, Carl Ramirez, Barbara Roesmann, Derald Seid, Jared Stankosky, Paul Thompson, Richard Vagnoni, and Walter Vance made key contributions to this report.

Glossary

Antitrust	The general process of preventing monopoly practices or breaking up monopolies that restrict competition. The term antitrust derives from the common use of the trust organizational structure in the late 1800s and early 1900s to monopolize markets.
Federal antitrust laws	A series of federal laws intended to maintain competition and prevent businesses from getting a monopoly or unfairly obtaining or exerting market power. The first of these, the Sherman Antitrust Act, was passed in 1890. Two others, the Clayton Act and the Federal Trade Commission Act, were enacted in 1914. These laws impose restrictions on business ownership, control, mergers, pricing, and how businesses go about competing (or cooperating) with each other.
Audit and attest services	Services provided for professional examination and verification of a company's accounting documents and supporting data for the purpose of rendering an opinion on the fairness with which they present, in all material respects, the financial position, results of operations, and its cash flows, and conformity with generally accepted accounting principles.
Audit fee	Fee paid by a company to an audit accounting firm for the professional examination and verification of its accounting documents and supporting data.
Auditor, auditor of record, and public accounting firm	Generally refers to an independent public accounting firm registered with SEC that performs audits and reviews of public company financial statements and prepares attestation reports filed with SEC. In the future, these public accounting firms must be registered with Public Company Accounting Oversight Board (PCAOB) as required by the Sarbanes-Oxley Act of 2002.
Auditor independence	The idea that the auditor of record is exclusively concerned with examination and verification of a company's accounting documents and supporting data without bias or conflicts of interest. Professional auditing standards require an auditor to be independent and avoid situations that may lead others to doubt its independence, referred to as being

independent in fact as well as in appearance. Auditor independence is an important factor in establishing the credibility of the audit opinion.

Audit market

The organized exchange of audit and attest services between buyers and sellers within a specific geographic area and during a given period of time.

Barriers to entry

Institutional, governmental, technological, or economic factors that limit the flow of new entrants into profitable markets. Possible barriers to entry may include resources, patents and copyrights or technical expertise, reputation, litigation and insurance risks, and start-up costs. Barriers to entry are a key reason for market power. In particular, monopoly and oligopoly often owe their market power to assorted barriers to entry.

Bottom line loss

Occurs when gross sales minus taxes, interest, depreciation, and other expenses are negative. Also called negative net earnings, income, or profit.

Capital formation

The transfer of savings from households and governments to the business sector, resulting in increased output and economic expansion. The transfer of funds to businesses for investment can occur through financial intermediaries such as banks or through financial markets such as the stock market. (For the purpose of this report, we focus on public capital markets.)

Competition

In general, the actions of two or more rivals in pursuit of the same objective. In the context of markets, the specific objective is selling or buying goods. Competition tends to come in two varieties -- competition among the few, which is a market with a small number of sellers (or buyers), such that each seller (or buyer) has some degree of market control, and competition among the many, which is a market with so many buyers and sellers that none is able to influence the market price or quantity exchanged.

Concentration ratio

The proportion of total output in an industry that is produced by a given number of the largest firms in the industry. The two most common concentration ratios are for the four largest firms and the eight largest firms. The four-firm concentration ratio is the proportion of total output produced by the four largest firms in the industry and the eight-firm concentration ratio is the proportion of total output produced by the eight largest firms in the industry

Due diligence

The process of investigation performed by investors, accountants and other market participants into the details of a potential investment, such as an examination of operations and management and the verification of material facts. Obtaining a comment letter written by independent accountants to an underwriter is part of that underwriter's due diligence.

Economies of scale

Declining long-run average costs that occur as a firm increases all inputs and expands its scale of production, realized through operational efficiencies. Economies of scale can be accomplished because as production increases, the cost of producing each additional unit falls.

Economies of scope

Declining long-run average costs that occur due to changes in the mix of output between two or more products. This refers to the potential cost savings from joint production – even if the products are not directly related to each other. Economies of scope are also said to exist if it is less costly for one firm to produce two separate products than for two specialized firms to produce them separately.

Hirschman-Herfindahl Index (HHI)

A measure of concentration of the production in an industry that is calculated as the sum of the squares of market shares for each firm. This is an alternative method of summarizing the degree to which an industry is oligopolistic and the relative concentration of market power held by the largest firms in the industry. The HHI gives a better indication of the relative market power of the largest firms than can be found with the four-firm and eight-firm concentration ratios.

Going-concern opinion

Opinion that expresses substantial doubt about whether or not a company will continue to operate for 1 year beyond the financial statement date or go out of business and liquidate its assets. Indicated when there are substantial doubts about whether the company will be able to generate and/or raise enough resources to stay operational.

Industry

A collection of firms that produce similar products sold in the same market. The concept of industry is most often used synonymously with market in most microeconomic analysis.

Loss Leader

The term loss leader implies that the firms bid unrealistically low fees ("low-balling") to obtain a new client. Once the new client is secured, the low audit fee, which alone may not be adequate to cover the cost of an audit and provide the firm with a reasonable margin, is offset by additional fees generated from other services, such as management consulting and tax.

Market

The organized exchange of commodities (goods, services, or resources) between buyers and sellers within a specific geographic area and during a given period of time.

Market power

The power to profitably maintain prices above competitive levels for a significant amount of time. More generally, if it is the ability of sellers to exert influence over the price or quantity of a good, service, or commodity exchanged in a market. Market power depends on the number of competitors.

Market structure

The manner in which a market is organized, based largely on the number of firms in the industry. The four basic market structure models are perfect competition, monopoly, monopolistic competition, and oligopoly. The primary difference between each is the number of firms on the supply side of a market. Both perfect competition and monopolistic competition have a large number of relatively small firms selling output. Oligopoly has a small number of relatively large firms. Monopoly has a single firm.

Peer review

A part of the accounting profession's former self-regulatory system whereby accounting firms reviewed other firm's quality control systems for compliance with standards and membership requirements. The Sarbanes-Oxley Act of 2002 significantly overhauled the oversight and regulation of the accounting profession. Among other things, it established the Public Company Accounting Oversight Board to oversee the audit of public companies, including registering public accounting firms, establishing standards, and conducting compliance inspections, investigations, and disciplinary proceedings.

Predatory pricing

The process in which a firm with market power reduces prices below average total cost with the goal of forcing competitors into bankruptcy. This practice is most commonly undertaken by oligopolistic firms seeking to expand their market shares and gain greater market control. Antitrust laws have outlawed predatory pricing, but this practice can be difficult to prove.

Publicly listed companies (public companies)

A company which has issued securities (through an offering) that are traded on the open market. Used synonymously with public company. For the purposes of this report public companies include companies listed on the New York Stock Exchange, American Stock Exchange, NASDAQ or traded on other over-the-counter markets such as Pink Sheets.

Retained earnings

Earnings not paid out as dividends but instead reinvested in the core business or used to pay off debt. Also called earned surplus, accumulated earnings, or unappropriated profit.

Tight oligopoly

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.

Working capital

Current assets minus current liabilities. Working capital measures how much in liquid assets a company has available to build its business. The number can be positive or negative, depending on how much debt the company is carrying. In general, companies that have a lot of working capital will be more successful since they can expand and improve their operations.

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