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The Impact of Product Differentiation on the Collapse of Arthur Andersen

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This study investigates industry specialization during the demise of Arthur Andersen after the Enron scandal. While the literature on industry specialization has centered mainly on the auditing firm's ability to generate fee premiums and increase audit quality, this paper argues that industry specialization is a method of product differentiation that allows firms to be less imitable and therefore, replaceable. Using multinomial logistic regression from a sample of Fortune 500 firms, I find that Arthur Andersen was not fully differentiated with respect to industry specialization when compared with two of their competitors: Deloitte & Touche and KPMG.

Keywords: Audit Markets, Auditor Replacement, Product Differentiation

JEL Classification: M420

I. Introduction

The demise of Arthur Andersen was an event that rocked the global financial accounting community. So significant was the impact of Andersen's decline that legislation was enacted through the Sarbanes-Oxley Act of 2002 to restore public confidence in the U.S. financial markets. Most notably, the Sarbanes-Oxley Act restricts the types of services (referred to as management advisory services or non-audit fees) auditors can provide to their public audit clients. It has been argued that auditor dependence on fees (both audit fees and fees from management advisory services) clouds the auditor's independence and ultimately the judgment auditors use when applying generally accepted accounting principles (Frankel *et al.,* 2002). Because Andersen was so dependent on the fees received from Enron, the fear of losing those fees led them to make suspect judgments or to acquiesce to client demands. While this finding has been debated (Ashbaugh *et al.*, 2003), what remains true is that Andersen is no longer performing audits, and its former competitors have filled the vacancy.

Product differentiation is an important key to having a successful business. Within the context of public accounting, differentiation can be hard to operationalize given the homogenous nature of financial statement audits. Therefore, auditing firms specialize by industry (both nation-wide and city-specific) in order to demand fee premiums (Francis *et al.,* 2005; Ferguson *et al.,* 2006). Product differentiation also acts as protection against competitors as the firm's product becomes less imitable (Matraves and Rondi, 2007). The reasons can explain why Andersen's clients dropped the auditing firm prior to the obstruction of justice indictment. For example, Federal Express, Delta Airlines, and Freddie Mac all dropped Andersen prior to the indictment (Day, 2002)

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which signaled serious problems for the firm. As such, improved knowledge about Andersen's specialization within the audit market provides new insights into the surprising and seemingly overnight disappearance of the firm. This paper investigates whether Andersen properly differentiated itself from its competitors by comparing its client characteristics to the client characteristics of its Big 5 competitors: Deloitte and Touche, Ernst and Young, KPMG, and Pricewaterhouse Coopers.

II. Prior Literature

A. The Homogenous Audit Market

Managers of public firms demand audit services in order to provide credibility to their financial statements. This demand is called audit quality, which refers to the likelihood that auditors detect and report financial statement errors or omissions (DeAngelo, 1981). Higher audit quality protects shareholders and managers by decreasing the chance that errors or omissions will exist in the audited financial statements. Previous research has defined audit quality by firm size—Big 5 versus non Big 5 accounting firms (for example, Simunic and Stein, 1987; Francis and Wilson, 1988; Firth and Smith, 1992). Selection of a Big 5 auditor, therefore, is viewed as a signal of financial statement quality. Thus, audit clients are faced with a dilemma: if the clients want a quality audit, must they choose a Big 5 firm? If so, which Big 5 firm should the clients choose?

First, audit clients demand higher audit quality because of agency frictions in the relationship between shareholders and managers. These frictions are the costs incurred to structure, to implement and to monitor contracts related to the performance of managers. As clients become larger (Francis and Wilson, 1988; DeFond, 1992) and more complex (Dopuch and Simunic, 1982), agency costs increase resulting in a need for a higher quality audit. Auditing provides credibility to financial statements and reliability in their role as a monitoring device; thus, auditing helps to mitigate agency costs (Jensen and Meckling, 1976).

Next, audit clients are keenly aware of the risks equity investors incur when investing in the stock of their company: business risk and information risk. Business risk is a measure of general business success or failure. Investors can mitigate this risk by investing in a diversified portfolio of firms. However, diversification can be impaired since it depends on the reliability and adequacy of the financial statement information available to the investor. This risk is known as information risk, the risk or the probability that the financial statements used by the investor are inadequate and unreliable (DeJong and Smith, 1984).

In addition, auditors can be seen as a "deep pocket" (think insurance policy) for any potential lawsuits arising from the performance of the audit and the client's possible financial failure. Audit firms have three mechanisms to mitigate their litigation: audit design, audit pricing and client selection. Audit design refers to creating and executing a sufficient audit that accurately detects and reports the financial statements. Audit pricing refers to pricing the audit higher than normal to compensate for the increased risk. Simunic and Stein (1987) find that firms do not increase price; they increase the amount of audit work. Client selection refers to selecting clients with as little business risk (potential for failure) as possible.

Audit firms competing within the Big 5 have clients with a similar profile regarding the aforementioned characteristics. In fact, Francis *et al.*, (2013) report the Big 4 (the firms remaining after Andersen's failure) have a global market share for publicly listed firms of 55 percent and 61

percent for firms in the United States. This demand for auditing allows multiple types of audit quality to exist and leads to product differentiation within the Big 5.

B. Industry Specialization

One method used in differentiation is industry specialization. KPMG led the advancement to an industry based audit strategy with its restructuring along industry service lines in 1993 (Hogan and Jeter, 1999). Professional audit standards also stress the importance of understanding a client's business. Both U.S. standards (the Public Company Accounting Oversight Board's Audit Standard No. 9, *Audit Planning)* and the International Standard on Auditing 315, *Identifying and Assessing Risks of Material Misstatement through Understanding the Entity and its Environment* require the auditor to have a thorough understanding of matters affecting the industry in which the client operates.

Prior research has attempted to identify the reasons why auditors specialize. Early work by Eichenseher and Danos (1981) and Danos and Eichenseher (1986) argues that auditors specialize in industries where the auditor can use economies of scale to reduce the cost of production. They argue these specializations are more common in regulated industries where auditors have to make large investments in industry-specific knowledge. For example, certain types of transactions such as interest rate swaps, long-term leases, and joint ventures are more common in some industries. Other industries such as banking and healthcare have specialized accounting procedures, reporting requirements and internal control systems. In this regard, the auditor's investments necessary to achieve specialization are similar to those regarding quality in repeat purchase settings (DeAngelo, 1981; Klein and Leffler, 1981).

More recent evidence suggests that auditor specialization has increased in non-regulated industries. Hogan and Jeter (1999) find that auditor specialization in unregulated industries has increased over time during their sample period from 1976-1993. Extending the discussion beyond regulated versus non-regulated industries, Cairney and Young (2006) find auditor specialization in industries where firms have similar operational cost structures. Similarly, Cahan *et al.,* (2008) find that a homogenous investment opportunity set within an industry is positively related to auditor specialization. They refer to this as concentration, not dominance, as firms within a homogenous industry would be reluctant to share an auditor because of concerns regarding the transfer of proprietary information.

O'Keefe *et al.,* (1994) suggest that the provision of audit services to a client includes general, industry-specific, and client-specific knowledge. General knowledge (e.g., knowledge of GAAP and GAAS) and client-specific knowledge are not dimensions of industry specialization. The former is required of all auditors and the latter is acquired as part of a particular engagement and is not transferrable. Gaining industry-specific knowledge and expertise requires considerable investment on the part of auditing firms. Kend (2008) documents Big 5 audit partners' responses by indicating specialist's knowledge requires an understanding of the client's operating environment, key accounting policy issues, business practices, key performance indicators, history, current issues and future direction. This investment, however, allows firms to maximize economies of scales through reductions in costs for technologies, personnel and training (Craswell *et al.,* 1995) as the costs are spread over a larger number of clients.

Industry specialization also produces a higher quality audit which allows industry specialist auditors to charge a fee premium. The evidence on the benefits of auditor specialization is straight forward. First, specialist auditors detect more errors (Owhoso *et al.,* 2002) and make better

assessments of risk (Low, 2004). Second, firms employing a specialist auditor are associated with better cash flow predictability (Gramling *et al.,* 1999), higher earnings response coefficients (Balsam *et al.,* 2003), higher analyst evaluations of disclosure quality (Dunn and Mayhew, 2004) and lower instances of financial fraud (Carcello and Nagy, 2004).

The evidence regarding fee premiums, however, is mixed. Early work by Craswell *et al.,* (1995) suggests a fee premium for industry specialists when measured at the national level. Their results, however, are sensitive to the cut-off percentage used to define specialization. In contrast, Ferguson and Stokes (2002) also using Australian data, find no evidence of a premium at the national level. Using city-level industry specialization only adds to the inconsistency. Ferguson *et al.,* (2003) find evidence of a fee premium for auditors identified as specialists at both the city and national level. Thus concluding, both levels of specialization are required to achieve a premium. Francis *et al.,* (2005) find evidence of a city-level fee premium, but the relationship fails in two of their robustness tests. The authors conclude their results are mixed and inconclusive.

Additional work has tested the association between industry specialization and fees in the context of Porter's (1985) competitive strategy framework. Here, specialization is viewed as a form of differentiation which leads to greater efficiencies and therefore lower production costs. Once again, the empirical results are mixed. Mayhew and Wilkins (2003) find that auditors who are successful in differentiating themselves from their competitors can charge a fee premium. When they are not successful at differentiation they must offer discounts to attract clients. Casterella *et al.,* (2004) using Porter's (1985) framework find that smaller clients are charged a premium, while larger clients with bargaining power are not charged. Their findings are in contrast with earlier work by Craswell *et al.,* (1995) who find a fee premium for larger clients but not for small companies. They attribute this to large clients having greater agency costs and hence more need for a specialist auditor.

Auditor Switching

While auditing is believed to be a means of reducing agency costs, there is no unifying theory on how companies select a new auditor or weigh the cost/benefit of switching auditors. Prior research suggests three potential costs involved in changing auditors[1]: switching costs, agency costs and implicit insurance costs (Schwartz and Menon, 1985; Francis and Wilson, 1988; DeFond, 1992; Shu, 2000). I hold the latter constant by only comparing Andersen to other Big 5 auditors. This assumption is consistent with Menon and Williams (1994) who find that the implicit insurance provided by Big N audit firms is relatively equal.

Thus, a client must weigh the cost/benefit of switching costs and agency costs when deciding on changing auditors. Switching costs are the costs incurred by the client for a new audit engagement. These costs typically include the following: cost incurred by the client to educate the auditor about the company's operations, systems, financial reporting practices and accounting issues, the costs incurred selecting a new auditor and increased risk of audit failure (Blouin *et al.,* 2007).

Consistent with Jensen and Meckling (1976) agency costs are the costs associated with monitoring by the principal, bonding with the agent, and a loss in welfare experienced by the principal because the agent does not always act in the principal's best interest. Agency problems

[1] This is different from audit mergers that brought the auditing profession from the Big 8 to the Big 5. Those mergers were done to increase the ability of the two new firms to compete for large clients (Sullivan, 2002) in an increasingly competitive market along industry lines (Wootton *et al.,* 2003).

arise when managers have incentives to misallocate or expropriate investor's funds. An independent audit can weaken these incentives by assuring investors that management is properly reporting in accordance with generally accepted accounting principles (Dopuch and Simunic, 1982; Watts and Zimmerman, 1983). The infrequency of auditor switching (the special case of Andersen with-standing) suggests that the marginal agency benefit gained is significantly less than the cost of switching.

Agency costs typically manifest themselves as changes in client characteristics, which are outside the auditor's control (Johnson and Lys, 1990; Krishnan and Krishnan, 1997; Hackenbrack and Hogan, 2002). On the other hand, switching costs, relate to the industry and client specific knowledge of the auditor. Prior research on auditor specialization has typically identified industry specialist auditors by using a market share-based approach where a significant share of the industry's audit fees (or the auditor's share of total assets or total revenues in an industry) is used to designate a specialist auditor (Hay *et al.,* 2006). This measure can be problematic since an auditor can become an industry specialist in two different ways. That is, the auditor can audit a few large clients within an industry or, alternatively, audit many relatively small clients. Thus, the current market share-based definition embraces two strategies.

Based on Porter (1985) there are two basic competitive strategies: product differentiation and cost minimization. To have the largest firms in an industry as clients, an auditor must develop a high level of technical expertise to deal with the scope and complexity of accounting issues that arise in those types of clients. These auditors differentiate themselves as product specialists. On the other hand, auditors who gain market share by auditing a large number of small clients are more likely to be low-cost specialists. Using companies in the *Fortune 500* eliminates the cost minimization strategy to focus on product differentiation.

Industry specialization provides a differentiated service by providing a greater value proposition to the auditor's clients. The audit should be viewed not as a standardized report, but rather as a process. This process requires efforts by both the auditor and the client. An industry specialist auditor should reduce the client's effort by reducing the time the client spends explaining industry-specific practices, procedures and trends. Behn *et al.,* (1997) find that industry specialization is a key component of client satisfaction. Furthermore, research provides evidence that the audit process does not simply produce an audit opinion; it produces audited financial statements to which auditors have substantial impact (Kinney and Martin, 1994; Nelson *et al.,* 2002).

Thus, if auditors are specialists, their clients can incur significant costs to change auditors. In the context of Andersen's decline, previous research investigated the costs associated with changing auditors; specifically, the trade-off between switching costs and agency costs. Chaney and Philipich (2002) find negative market returns for Andersen clients in the three days after Andersen's admission that documents had been shredded. This result implies that investors had downgraded the quality of an Andersen audit thereby negatively impacting the client's agency costs. In a direct test of switching versus agency costs, Blouin *et al.,* (2007) find that clients followed their former Andersen team to a new auditing firm when Andersen was an industry specialist, thus reducing switching costs. On the other hand, they also find that clients with greater agency costs were more likely to sever ties with Andersen. Their results are helpful in understanding the costs and benefits weighed by clients when switching auditors. In a similar study, Barton (2005) investigates the timing of client defections from Andersen. Barton (2005) finds that clients defected prior to Andersen's indictment for criminal misconduct if they were more visible in the capital markets. Measures of agency conflict were not associated with early defections.

To summarize the literature on auditor switching relative to Andersen's criminal indictment implies that once reputational concerns for Andersen arose, the credibility of the financial statements was in doubt. Clients defected because the agency costs simply became too great and switching costs were no longer relevant. Defections prior to the indictment, however, have a different implication. In those situations, clients weighed the agency costs against switching costs and concluded the agency benefit outweighed the switching costs. Perhaps, Andersen had not differentiated its product from its competitors; consequently, there was another auditing firm with comparable technical industry expertise.

This paper's hypothesis tests the differentiation (industry specialization) of Big 5 auditors prior to the bankruptcy of Andersen. Since Big 4 auditors operate almost exclusively in the market for large publically traded firms (Francis *et al.,* 2013), this theory implies that differentiation takes place on a variable other than client size, risk, or complexity. Rather, differentiation occurs through industry specialization. As it relates to Andersen, lack of industry differentiation from their competitors allowed many of their clients to switch auditors prior to any legal indictment. These notions form the basis for H1:

H1: Andersen is not differentiated by industry from its Big 5 competitors.

III. Sample and Research Design

To explore the issue of auditor differentiation, a sample of 183 firms from the April 15, 2002 *Fortune* magazine Fortune 500 list are used. The sample firms were selected from *Fortune's* listing of selected industries. The industries were judgmentally selected to ensure diversity in services and/or products offered. Within each industry, the largest companies (based on revenues) were selected. Financial and auditor data was collected from Research Insight, and the sample was restricted to a December 31, 2001 year-end, the last year-end in which Andersen performed financial statement audits.

When using a multinomial regression model, one firm must be the reference firm (i.e., the firm with value 0). All other firms are then compared to this base firm. In this study the reference firm is Andersen because Andersen is the firm that went bankrupt and is no longer providing audit services. In addition, the model was also run with Pricewaterhouse Coopers (PWC) as the base firm. PWC was randomly chosen as an opposite to Andersen (i.e., a firm with no regulatory or legal troubles). I compared the Andersen model with the PWC model by comparing the frequencies of actual and predicted outcomes. The Andersen model correctly predicted the same percentage of outcomes as the PWC model, (70 out of 183 or 38.25 percent)

Based on the discussion above, the paper tests whether Andersen is differentiated with respect to its Big 5 competitors using the following multinomial logistic regression model. Multinomial logistic regression is used to predict a dependent variable on the basis of continuous and categorical independent variables. The model is as follows:

$$\text{AUDITOR} = \alpha_0 + \alpha_1\text{ASSET} + \alpha_2\text{REV} + \alpha_3\text{DE} + \alpha_4\text{OPIN} + \alpha_5\text{FSUB} + \alpha_6\text{DSUB} + \alpha_7\text{D1} + \alpha_8\text{D2} + \alpha_9\text{D3} + \alpha_{10}\text{D4} + \alpha_{11}\text{D5} + \alpha_{12}\text{D6} + \varepsilon,$$

where:

1. AUDITOR= a multinomial variable used to identify each of the Big 5 firms
2. ASSET= the natural log of total assets reported for the year-ended Dec. 31, 2001
3. REV= the natural log of total revenues reported for the year ended Dec. 31, 2001

4. DE= the debt-to-equity ratio as reported on Dec. 31, 2001
5. OPIN= a dummy variable for the type of opinion received on the Dec. 31, 2001 financial statements. A 0 is used for an unqualified opinion, a 1 for all other opinion types
6. FSUB= the number of foreign subsidiaries that are consolidated into the financial statements as of Dec. 31, 2001
7. DSUB = the number of domestic subsidiaries that are consolidated into the financial statements as of Dec. 31, 2001
8. D1-D6 = a series of dummy variables used to represent the industry sector in which a company operates. The dummy variables are as follows: D1- the aerospace/defense industry; D2- equipment manufacturing; D3- chemical and petroleum; D4- health care and health related; D5- energy; and D6- telecommunications

IV. Results and Discussion

A. Univariate Results

Table 1 presents the variable means for the sample by industry. Table 2, panel A presents the variable means by auditor. Panel B presents t-tests for mean differences between Andersen and the other Big 5 auditors for the entire sample. Panel B shows that KPMG clients are significantly larger than Andersen clients (p-value 0.004); all other results are not significant. These results suggest that Andersen is not significantly different from its competitors on variables that measure size, agency costs and complexity. Therefore, it is expected that Andersen would differentiate itself through industry specialization which is the purpose of the multinomial logistic regression.

B. Multivariate Results

Table 3 contains the results of the multinomial logistic regression. The model has a chi-square of 28.732 (significance 0.032) suggesting that the final model (with independent variables) is significantly different from the intercept-only model. The McFadden pseudo R^2 of 0.230 measures the amount of explained variance in the outcome variable. A McFadden value from 0.2 to 0.4 is considered highly satisfactory (Hensher and Johnson, 1981). The table presents each firm's results as compared to Andersen. When comparing PWC to Andersen, it is noted that D5 and D6 are significant, p-values .0234 and .0553, respectively. The coefficients on these variables are negative. Thus, one concludes the following: in comparison to Andersen, the probability of PWC auditing a company in the energy or telecommunications industries is less likely than Andersen. Additionally, since the financial services variable is coded 0, it is represented in the constant term. The constant term is negative and significant (p-value .0175). Thus, PWC is less likely to have a financial services client than Andersen. The REV variable is also positive and significant (p-value of .0216). From that p-value, one concludes that PWC clients are more profitable than Andersen's, but this is more a function of industry specialization than a systematic auditor-client characteristic.

Table 1: Descriptive Statistics of Variables by Industry (n=183)

	Mean (standard deviation)				
Industry	Assets (in millions $)	Revenue (in millions $)	Debt to Equity	Foreign subsidiaries	Domestic subsidiaries
Financial Services	56,914.50 (99,653.49)	10,319.74 (10,068.40)	128.03 (121.28)	13 (45)	81 (143)
Aerospace	19,011.64 (11,370.57)	17,261.50 (12,797.83)	57.24 (28.86)	31 (37)	95 (96)
Manufacturing	28,798.01 (75,182.99)	20,660.68 (42,623.73)	76.48 (38.50)	107 (98)	153 (140)
Chemical	17,370.38 (30,321.34)	23,055.75 (41,279.55)	46.11 (16.37)	70 (101)	115 (143)
Health Care	15,978.08 (20,500.44)	14,517.18 (10,980.19)	52.92 (106.20)	44 (84)	223 (430)
Energy	18,516.03 (17,814.16)	24,510.40 (22,361.37)	68.97 (21.88)	24 (54)	85 (130)
Telecommunications	54,567.66 (51,970.93)	20,364.63 (21,097.22)	63.55 (23.76)	26 (54)	113 (129)

When comparing Andersen to Ernst & Young (EY), the results indicate that D1, D2, and D3 are all positive and significant (p-values of .0275, .0079, and .0430) suggesting that EY is more likely to have clients in the aerospace, equipment manufacturing, and petroleum industries. The ASSET variable is also positive and significant (p-value .0266). This difference may be the result of larger firm sizes for EY specializations than Andersen specializations. Additionally, the FSUB variable is negative and significant (p-value of .0128). It seems counterintuitive that the industries that EY has specialized in, especially petroleum and equipment manufacturing would have fewer foreign subsidiaries than other industries. Thus, this result may be the sign of an auditor characteristic in firm selection.

Table 2: Descriptive Statistics of Variables by Auditor (n=183)

Panel A	Mean (standard deviation)				
Auditor	*Assets*	*Revenues*	*Debt to Equity*	*Foreign Subsidiaries*	*Domestic Subsidiaries*
Arthur Andersen	$20,538.52 (24,356.57)	$11,661.67 (10,308.37)	82.44 (90.24)	45.47 (81.56)	110.31 (121.69)
Ernst & Young	29,675.60 (36,632.39)	11,875.87 (12,548.51)	79.45 (77.34)	21.00 (41.58)	134.11 (364.25)
Deloitte & Touche	32,476.67 (53,686.49)	19,231.77 (30,341.34)	89.01 (74.69)	34.69 (86.46)	88.85 (132.24)
KPMG	71,516.29 (102,114.44)	12,511.07 (10,476.09)	131.11 (179.46)	42.14 (96.51)	121.71 (159.02)
Pricewaterhouse Coopers	41,836.96 (101,590.04)	24,758.48 (37,409.33)	63.18 (45.28)	57.64 (76.88)	120.94 (155.05)
Panel B	t-test of Differences (p-value)				
Andersen–EY	-1.325 (.189)	-.084 (.933)	.158 (.874)	1.646 (.104)	-.399 (.691)
Andersen-Deloitte	-1.302 (.196)	-1.526 (.131)	-.355 (.723)	.578 (.565)	.761 (.449)
Andersen-KPMG	-3.046 (.004)	-.273 (.786)	-1.355 (.181)	.126 (.900)	-.281 (.780)
Andersen-PWC	-1.325 (.189)	-2.196 (.031)	1.293 (.199)	.565 (.468)	-.358 (.721)

Consistent with my predictions are the non-significant differences when comparing Andersen to Deloitte & Touche (DT) and KPMG. Thus, when the legal troubles ensued for Andersen, their clients and the market, in general, likely viewed them as easily imitable and thus replaceable. The assumption is that Andersen did not adequately protect its product from its competitors. This result and prediction are consistent with the data in Hoitash *et al.*, (2007) and Barton (2005). Hoitash *et al.,* (2007) indicate that as of February 2007, 280 of the 540 (51.8 percent) Andersen clients who had switched firms had switched to either DT or KPMG, while Barton (2005) indicates 12.3 percent of former Andersen clients chose a non-Big 5 auditor.

Table 3. Multinomial Logistic Regression Results (n=183) Coefficient (p-value)

Variables	PWC	EY	DT	KPMG
Constant	-6.8299 (.0175)*	-4.0617 (.2054)	2.6398 (.3000)	-.6844 (.8845)
ASSET	.0299 (.8799)	.8275 (.0266)*	.1925 (.4281)	-.4200 (.8648)
REV	.8424 (.0216)*	-.5052 (.3142)	.5009 (.1905)	-.6246 (.9086)
DE	-.0065 (.2084)	-.0013 (.6830)	.0004 (.9052)	.0036 (.1791)
OPIN	.0644 (.9275)	.2866 (.7117)	.0836 (.9075)	1.3394 (.1120)
FSUB	-.3363 (.2926)	-.0163 (.0128)*	-.0051 (.1976)	.0005 (.9096)
DSUB	-.0007 (.7453)	.0011 (.4565)	-.0005 (.8369)	.0011 (.5581)
D1	.1523 (.9062)	3.0256 (.0275)*	.5599 (.6806)	.6857 (.6666)
D2	.1327 (.8707)	2.9219 (.0079)*	.5988 (.5050)	-.7496 (.5964)
D3	.2486 (.7817)	2.3162 (.0430)*	.5237 (.5928)	.5990 (.6107)
D4	-.4163 (.6056)	1.54440 (.1447)	-.9465 (.3500)	-.2578 (.8158)
D5	-2.8244 (.0234)*	-28.0608 (1.0000)	-.4028 (.8670)	-1.0543 (.4213)
D6	-1.9558 (.0553)*	-.0744 (.9366)	-.8829 (.3304)	-.70892 (.5815)
McFadden R^2 = .230 Chi-square = 28.732 (p-value of 0.032) *significant at the .05 level				

V. CONCLUSION

In this study, a sample of *Fortune 500* companies is examined regarding the differentiation of Andersen relative to its Big 5 competitors prior to their indictment for obstruction of justice. Results indicate little difference between Andersen and its competitors when comparing along measures of size, agency cost and complexity. Differences are discovered when testing along industry specialization. Specifically, Andersen is more likely than PWC to audit a firm in the

energy and telecommunications industry, while EY is more likely than Andersen to audit a firm in the aerospace, equipment manufacturing and petroleum industries. There were no differences between Andersen and either DT or KPMG. This result is consistent with the auditor switching results of Hoitash *et al.*, (2007) who find that over half of Andersen's former clients switched to DT and KPMG and Barton (2005) who finds that 12.3 percent of former Andersen clients switched to a non-Big 5 firm.

Audit firms have incentives to perform audit services for clients that are not easily replicated (Porter, 1985). The results from this study provide modest evidence to suggest that industry specialization (or lack thereof in Andersen's case) allowed competitors to easily court Andersen's clients prior to Andersen's obstruction of justice conviction, as reported by Day (2002) in which FedEx, Delta Airlines and many other larger clients switched firms. Generalizing these results to the audit market as a whole is problematic since the data came from the largest publicly traded companies in the U.S., where the Big 5 (now Big 4) overwhelmingly dominate the market. Perhaps industry specialization at the lower end of the size continuum will yield different results given the impact size plays on audit efficiency and effectiveness.

The results from the present study warrant the following conclusion: in the large audit market, Arthur Andersen did not sufficiently differentiate itself from its competitors. This is consistent with the theory that product differentiation acts a protection against competitors.

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