



MF  
38,7

# Andersen implosion over Enron: an analysis of the contagion effect on *Fortune* 500 firms

Joann Noe Cross

*Department of Accounting, University of Wisconsin Oshkosh,  
Oshkosh, Wisconsin, USA, and*

Robert A. Kunkel

*Department of Finance & Business Law, University of Wisconsin Oshkosh,  
Oshkosh, Wisconsin, USA*

678

---

## Abstract

**Purpose** – The purpose of this paper is to examine how the Andersen implosion over Enron impacted *Fortune* 500 firms that were competitors of Enron and/or audited by Andersen. This event provides an opportunity to study various contagion effects.

**Design/methodology/approach** – An event study methodology is used to analyze the immediate financial impact of the Andersen implosion on competitors of Enron and/or firms audited by Andersen. More specifically, how did the announcement of the implosion impact these firms?

**Findings** – The results support a strong industry contagion effect where Enron's failure benefited the surviving energy/utility firms who could then increase their market shares. The authors find the energy/utility firms not audited by Andersen, on average, experienced an astounding 2.5 percent increase in market capitalization when the audit scandal was announced. In dollar terms, the mean and median market capitalization increases were \$226 million and \$101 million, respectively. In the aggregate, the 21 utility/energy firms gained \$4.76 billion in market capitalization.

**Research limitations/implications** – The results show the importance of the auditing process and the impact of unethical actions on the firm, their auditor, and their competitors. One limitation is the data are limited to large *Fortune* 500 firms.

**Originality/value** – This is the first study, to the authors' knowledge, that evaluates the contagion effect of the Andersen/Enron audit scandal on *Fortune* 500 firms: in the same industry as Enron; audited by Andersen; and operating in the same industry as Enron and audited by Andersen.

**Keywords** United States of America, Financial reporting, Auditing, Energy industry, Banruptcy, Andersen, Enron, Contagion effect, Fortune 500, Event study

**Paper type** Research paper



## 1. Introduction

The whole duty of an auditor may be summed up in a very few words – it is that of verifying balance sheets (*Accountant*, editorial, April 23, 1881 as quoted in Chambers (1995, p. 81)).

[A]uditing, as carried on under the present system, is of no practical concern as evidence of the true financial position of a company [...] auditors' certificates [...] merely certify that the balance sheet is correctly copied from the books, sometimes with the addition that the auditors have counted the cash and inspected the bill case and the security box. Audits under such conditions are a delusion and a snare (*Vanity Fair*, October 6, 1883 as quoted in Chambers (1995, p. 94)).

---

Fundamentally, an audit is viewed as a process of obtaining evidence that the statements made by management about the financial facts of their business are true. Indeed, as early as 1895, Worthington, in a description of the new field of professional accounting, writes that the manager who (Parker, 1986):

[...] fails to adopt this wise precaution against fraud and embezzlement is frequently running as great a risk as he would do in failing to insure his stock against the ravages of fire (Parker 31).

What then do auditors do? Auditors gather evidence to support the assumption that financial statements “fairly” (a different assumption than “accurately”) reflect the activities and current status of the firm. The evidence can be collected by various activities such as examining source documents, observing the counting of inventory, talking to members of management and other staff, and obtaining confirmation of transactions from outside the organization. In most cases, the audit also involves making sure those policies within a firm designed to insure proper reporting of its activities are in place and being followed.

The confusion that arises is in the definition of “true picture”. In essence there are alternative definitions of “true” varying from fairness (which is what auditors believe) to accuracy (which auditors do not claim, but which investors assume). When the management of a Securities Exchange Commission regulated firm issues a report that is believed to be other than a true picture of that firm, investors leap to sue whomever they can to limit their potential losses. It is, then, within the courts that the difference between fair and accurate becomes debated and decided as in the case of the public accounting firm Andersen.

Our study analyzes the contagion effect of the Andersen implosion over Enron on *Fortune* 500 firms:

- operating in the same industry as Enron – an industry contagion effect;
- audited by Andersen – an auditor contagion effect; and
- operating in the same industry as Enron and audited by Andersen – an industry/auditor contagion effect.

Regarding the industry contagion effect, did the market view the implosion as negative whereas Enron competitors may have undertaken similar operations, or as positive in that Enron’s likely bankruptcy would enable competitors to gain market share? Regarding the auditor contagion effect, did the market view the implosion as negative in that other Andersen audited firms may have audit problems similar to Enron’s? Regarding the industry/auditor contagion effect, did the market view the implosion as negative whereas Enron competitors audited by Andersen may have not only undertaken operations similar to those of Enron, but also have audit problems similar to Enron’s?

## 2. Background

### 2.1 Literature review

Aharony and Swary (1983) in their seminal paper examined the contagion effects of three prominent bank failures on the banking industry using an event study model. Two of the three banks suffered from activities specific to the bank. For example, one bank failure was due to fraud and internal irregularities while the other bank failure was due to illegal channeling of loans from a subsidiary to the bank which was an

---

activity specific to the bank. They concluded that if the bankruptcy was due to events specific to the affected bank, then there was no contagion effect. However, if the events were associated with problems that were correlated across all banks in the industry, then a negative contagion effect could be expected. In this case the bank failure was due to large losses related to risky foreign exchange transactions. Since many banks also engaged in risky foreign exchange transactions, the market assumed those banks may likely suffer large losses.

Lang and Stulz (1992) study a sample of 59 bankruptcies in 41 industries and found that bankruptcy announcements could have both a positive and a negative effect on competitors' equity. They found that bankruptcies have moderate contagion effect on competitors in the same industry. Furthermore, the impact increases with stronger competition, higher industry leverage, and similarity of cash flow characteristics between the failed firm and competitors. In general, they found a negative contagion effect with a 2.87 percent decline in market capitalization in highly leveraged industries, while the impact for low leveraged industries was slightly positive. Competitors with high leverage and a high degree of competition had a 3.2 percent decline in market capitalization as a response to bankruptcy in their industry. They also found a significant competitive effect where both leverage and the degree of competition are low.

Fenn and Cole (1994) studied the contagion effect associated with announcements of asset write-downs by two life insurance companies in 1990 by examining the impact on 54 competing insurance companies. They found evidence of a significant contagion effect for companies with an asset composition similar to that of the announcing firm. The results also supported the hypothesis that investors are relatively uninformed regarding the asset composition of life insurance companies due to high monitoring costs, but that an announcement of asset restructuring leads the market to reevaluate the asset composition of all insurance companies.

Cheng and McDonald (1996) studied seven airline and five railroad industry bankruptcy announcements between 1962 and 1991. They found a competitive effect in the airline industry with an abnormal return of 2.80 percent and a contagion effect in the railroad industry with an abnormal return of  $-0.59$  percent. These results conclude the industry's market structure will determine the bankruptcy announcement's impact on the stock prices of the surviving firms. For example, the positive competitive effects in the airline industry can be attributed the failure of one firm gives more market power to the competitors.

Polonchek and Miller (1999) examined the effect of 69 equity offerings by insurance companies between 1977 and 1993. They conclude that equity offerings are market indicators of management belief that the company's stock is overvalued. As such, the offerings reveal information about the quality of both the announcing firm's portfolio and the quality of rival firms' portfolios. Therefore, the market is induced to draw inferences about the future prospects of the entire industry.

Chaney and Philipich (2002) use an event study methodology to study 284 of the 287 Andersen clients included in the S&P 1500 to examine the stock market reaction to various events surrounding Andersen's Enron audit. They employ a market model to calculate abnormal returns and examine four event windows ranging from two days to four days. The first event window is November 8, 2001 when Enron announces restatements. They find other clients of Andersen experience a mean cumulative abnormal return (CAR) of  $+0.94$  percent over the four-day event window surrounding

the restatement of Enron's earnings. This suggests there was no downgrading of other companies audited by Andersen and this was treated as an isolated event. The third event window is January 10, 2002 when Andersen announces documents were shredded. Contrary to the first event, they find other Andersen clients experience a statistically negative mean CAR of  $-2.10$  percent over the four-day event window surrounding Andersen's admission. This suggests that investors downgraded companies audited by Andersen on the basis of a decline in the perceived quality of the Andersen audits.

Barton (2005) examined the defections of Andersen's clients after the Enron bankruptcy case in order to determine whether firms act upon changes in an audit firm's public reputation. They reviewed the defection rate of 1,229 Andersen's clients, finding that 95 percent of them did not switch their auditing firm until after Andersen was indicted for criminal misconduct regarding its Enron audit. Findings further show that the firms that left earlier were those more visible in the capital markets. These results suggest that public firms that are visible in capital markets and are closely followed by the press are more concerned about using a highly reputable public accounting firm.

### 2.2 The Big Five accounting firms

The term Big Eight originated in the 1970s when the ranking by size of US public accounting firms showed that there was a significant difference between the top eight and the ninth largest firm. By the late 1990s, mergers had reduced the number of such public accounting firms to five and had increased the difference between the top five and the firm that ranked sixth. By 2000 the Big Five firms (Andersen, Deloitte & Touche, Ernst & Young, KPMG Peat Marwick, and PricewaterhouseCoopers) had cornered the market on audits for most major publicly traded firms. In 2001 the Big Five audited almost 90 percent of the *Fortune* 500 firms and maintained 523 global offices which generated \$63 billion of global revenues with \$26 billion generated within the USA. In 2001 Andersen operated 81 offices which generated over \$9 billion of global revenue, of which over \$4 billion was generated within the USA. At that time, Andersen audited 91 of the *Fortune* 500 firms. Upon the collapse of Andersen, the majority of their clients were absorbed by other public accounting firms. Table I reports each Big Five's market shares of the *Fortune* 500 firms along with revenues and offices.

### 2.3 Event date

The first major *Wall Street Journal* announcement regarding the Andersen/Enron audit scandal appeared on November 5, 2001: "Enron transaction raises new questions."

Big Five accounting firms	<i>Fortune</i> 500 audits	Revenues (\$ billions) <sup>a</sup>		Global <sup>a</sup> offices
		US	Global	
1. PricewaterhouseCoopers	120 (24%)	8.058	19.831	151
2. Deloitte & Touche	83 (17%)	6.130	12.400	97
3. KPMG	52 (10%)	3.171	11.700	111
4. Ernst & Young	101 (20%)	4.485	9.900	83
5. Andersen	91 (18%)	4.300	9.300	81
Other public accounting firms	53 (11%)			

**Source:** <sup>a</sup>Public Accounting Report (2001) (data for fiscal years ending in 2001)

**Table I.**  
Big Five accounting firms, *Fortune* 500 audits, revenues, and offices in 2001

This announcement reported inconsistencies in the financial reports of Enron and explained how, in order to minimize reported debt, Enron created companies which would bring in equity and allow borrowing to occur without the debt being reflected on Enron's balance sheet. It was at this time that it became clear that Andersen might face scrutiny regarding Enron's financial reports. Later in November, Enron released its restated financial results, lowering reported earnings for the prior four years by \$586 million. Over the following months it became clear that Andersen auditors had failed to fulfill their responsibilities in their oversight of Enron.

Figure 1 reports the calendar dates of the seven-day event window from November 2-12, 2001. The announcement date of November 5 is labeled (event day 0), the first trading day prior to the announcement is labeled (event day - 1), the first trading day following the announcement is labeled (event day +1), and so forth with the fifth trading day following the announcement labeled (event day +5).

### 3. Data

To be included in the study, a firm must:

- have been ranked as a *Fortune* 500 firm at least once from 1997 through 2000;
- have been publicly traded with daily stock returns and a beta reported for the event window on *Compustat* (North America) data definition; and
- have not had a major news announcement in the *Wall Street Journal* within a ten day window from -5 to +5 to avoid contaminating the daily returns in the seven-day event window.

Three samples of firms were created and are shown in Figure 2 with the firms identified in the Appendix. The first sample includes energy/utility firms that were audited by a non-Andersen Big Five firm from 1997 to 2000. The second sample includes non-energy/non-utility firms that were audited by Andersen from 1997 to 2000. The third sample includes energy/utility firms that were audited by Andersen from 1997 to 2000. The energy/utility industry included primary SIC codes of 1311, 1389, 2911, 4911, 4922, 4923, 4931, 4932, and 5172.

### 4. Methodology

An event study methodology is utilized to examine the contagion effect of the Andersen and Enron audit scandal on other *Fortune* 500 companies (Brown and Warner, 1985;

**Figure 1.**  
Announcement and event window

Exhibit 1. Announcement and Event Window							
Event Day	-1	0	+1	+2	+3	+4	+5
	----- ----- ----- ----- ----- -----						
Calendar Date (2001)	11/2	11/5	11/6	11/7	11/8	11/9	11/12

**Figure 2.**  
Sample classification

Exhibit 2. Sample Classification		
	Andersen Audited	Other Big Five Audited
Energy/utility Industry	14	21
Non-energy/non-utility Industry	44	

Peterson, 1989; Wells, 2004). The three contagion effects examined as described in Table II.

An event study is used to measure abnormal returns in the stock prices of publicly traded firms as a reaction to an announcement of an event. The fluctuation of stock prices caused by an event can be isolated because of two unique characteristics of stock prices. One, a firm's stock price is a function of the firm's expected future earnings. Two, a firm's stock price reacts to an event announcement quickly and effectively under the efficient markets hypothesis. Therefore, any announcement of an event that has an impact on future earnings of a firm should be reflected rapidly in the stock price. The changes in stock return can be attributed to two components: the normal return (the change in a stock return that results from overall stock market movement) and the abnormal return (the change in a stock return that results from a specific event).

To calculate the normal return, we employ a modified market model where the normal return is equal to market return multiplied by the average beta of the firms in the sample. Thus, when the systematic risk of the sample is low as with energy and utility firms, then there will be smaller adjustment to the daily return. The abnormal return is then calculated by subtracting the normal return from each firm's daily return. Thus, the daily abnormal return,  $AR_{it}$ , for each firm  $i$  on day  $t$  is defined as:

$$AR_{it} = R_{it} - B_{\text{sample}}R_{mt} \quad (1)$$

where  $R_{it}$  is the stock return of firm  $i$  on day  $t$ ,  $B_{\text{sample}}$  is the average beta of the sample, and  $R_{mt}$  is the stock market return of the S&P 500 Index on day  $t$ .

The CAR for each firm is calculated for a seven-day window. Since information about an event may leak prior to the public announcement, a one-day return prior to the public announcement is included in the CAR. For example, when the *Wall Street Journal* learned of the inconsistencies in Enron's financial statements, the *Wall Street Journal* would have published the news as soon as possible. This means the *Wall Street Journal* had to learn of the inconsistencies prior to November 5 which may have been on Friday. Likewise, there is a reasonable chance that investors learned of the inconsistencies on Friday as well and then traded on that information. Similarly, the impact of an event on a firm could linger over several days as the market evaluates the potential influence of the event on the firm's future earnings. Thus, the five-day return after the public announcement is included in the CAR. The cumulative abnormal return,  $CAR_i$ , for each firm  $i$  for the seven-day window, day  $-1$  through day  $+5$ , is defined as:

$$CAR_i = \sum_{t=-1}^5 AR_{it} \quad (2)$$

where  $AR_{it}$  is the abnormal return for firm  $i$  on day  $t$ .

The average CAR summarizes the CARs of all the firms in the sample. The average CAR is used to eliminate unique individual stock returns that may not be a result of the

---

Industry effect	Did the scandal impact other energy/utility firms?
Auditor effect	Did the scandal impact other Andersen audited firms?
Industry/auditor	Did the scandal impact other Andersen audited energy/utility firms?

---

**Table II.**  
Contagion effects

event studied. While some stocks will have random positive returns, other stocks will have random negative returns so summing the returns will offset these random positive and negative returns. The average cumulative abnormal return (ACAR), for the sample is defined as:

$$ACAR = \frac{\left[ \sum_{i=1}^N CAR_i \right]}{N} \tag{3}$$

where  $CAR_i$  is the CAR for firm  $i$  over the seven-day window, and  $N$  is the number of firms in the sample. If the public announcement of the Andersen/Enron audit scandal had a contagion effect on the sample of firms, then the event should result in an ACAR that is significantly different than zero.

**5. Results**

The first set of results will evaluate the industry contagion effect. The second set of results will evaluate the auditor contagion effect and the third set of results will evaluate the combined industry/auditor contagion effect.

*5.1 Industry contagion effect*

We examined the energy/utility firms that were not Andersen audited and find an ACAR of 2.51 percent which is significant at the 1 percent level. We also find that 90 percent of the firms in the sample experience a positive return over the seven-day event window which is also significant at the 1 percent level. Table III reports both results along with the sample beta. It is clear that the market did not perceive the announcement as negative news and was not concerned with other energy/utility companies undertaking operations similar to Enron. On the contrary, the market perceived the announcement as positive news where there was a competitor effect. It is likely the market perceived Enron as moving toward bankruptcy and surviving firms in the industry would benefit with the elimination of Enron, a large competitor[1].

*5.2 Auditor contagion effect*

We examine the non-energy/non-utility firms that were audited by Andersen and find an ACAR of 1.14 percent while the percent of positive CARs was 41 percent. Neither figure is significant at even the 10 percent level. Thus, we conclude there is no auditor contagion effect on other non-energy firms audited by Andersen. Table III reports the ACAR and percent of CARs that are positive.

**Table III.**  
Average CARs, percent positive CARs, number of firms in the sample, and betas of the sample

	ACAR (%)	Positive CAR (%)	Firms	$\beta$
<i>Industry contagion effect</i>				
Energy/utility firms with non-Andersen audit	2.513***	90***	21	0.16
<i>Auditor contagion effect</i>				
Non-energy/non-utility firms with Andersen audit	1.141	41	44	0.96
<i>Combined auditor/industry contagion effect</i>				
Energy/utility firms with Andersen audit	0.064	50	14	0.24

**Notes:** Significant at: \*10, \*\*5 and \*\*\*1 percent levels; all significance levels are for one-tailed tests

---

Given the independent structure of audit firm offices and the tendency within public accounting firms for offices of a firm to specialize in a particular industry, there appears to be no market perception that the failure of one office contaminates the results of other offices. Thus, from an auditing perspective, it appears that the market is unaware of the similarity in the manner of conducting an audit among auditing firms. Alternately, it is possible that the market is already so cynical about the ability of the audit to detect irregularities that a scandal of the Andersen magnitude has no impact upon their awareness. Certainly, the passage of the Sarbanes-Oxley Act which tightened regulation of all auditors of publicly traded firms gives credence to this explanation.

### *5.3 Combined auditor/industry contagion effect*

We examine the firms that were both:

- (1) audited by Andersen; and
- (2) classified as energy/utility firms and find an ACAR of 0.06 percent while the percent of positive CARs was 50 percent.

Neither figure is significant at even the 10 percent level. Thus, we find no auditor/industry contagion effect. However, unlike our first sample of competitors, this sample of competitors did not experience a positive impact on their stock price. It appears the good news of Enron's likely bankruptcy was offset by the increased likelihood that these firms audited by Andersen may have similar problems with their audits.

### *5.4 Dollar impact of the industry contagion effect*

To determine the financial impact in dollars of the industry contagion effect, we calculate the market capitalization gain for the sample of energy and utility firms that were not audited by Andersen. When each firm's market capitalization is multiplied by its CAR, we find the average dollar gain is an astounding \$226 million and the median gain is \$101 million. The aggregate gain of the 20 firms in the sample is \$4.76 billion.

These results support there is a strong positive competitor effect where these firms' audits likely represent the firms' actual financial pictures and that Enron's bankruptcy will likely lead to greater market share in their industry. Only Andersen was viewed as exhibiting an inability to appropriately monitor the complex transactions and opaque reporting practices of Enron.

## **6. Conclusions**

When a firm-specific event is publicly announced such as the Enron scandal, other firms may suffer or even benefit from being in the same industry. If an industry contagion effect is present, then those other firms in the industry may suffer adversely from a negative news announcement regarding an isolated firm such as Enron, even though there was no negative news about them. There is also the possibility that firms in the industry may benefit from the failure of a competitor. Likewise, when a firm-specific event is publicly announced such as about Andersen's connection with Enron, other Andersen audited firms may suffer. If an auditor contagion effect is present, then those firms will suffer adversely from a negative news announcement, even though there was no negative news about them specifically. Furthermore, a combined industry/auditor

contagion effect may result from the news announcement that Andersen may have enabled Enron to issue improperly presented financial statements. In this case, Andersen audited firms in the energy/utility industry would be doubly affected negatively.

The results of this study reveal a strong industry-only contagion effect. However, the impact is a positive one where the failure of a large competitor will increase market share for the remaining firms in the industry. Our study evaluates 21 energy and utility firms that were not audited by Andersen and we find these firms, over average, experienced an astounding 2.5 percent increase market capitalization over a seven-day window surrounding the announcement of the Andersen/Enron audit scandal. In dollar terms, the mean increase in market capitalization was \$226 million while the median increase in market capitalization was \$101 million dollars. In the aggregate, the 21 firms gained \$4.76 billion in market capitalization.

We examine a sample of non-energy/utility firms that were audited by Andersen and find no financial impact on these firms when the Enron-Andersen scandal was announced. Likewise, we also examine a sample of energy and utility firms that were audited by Andersen and again, there is no financial impact on these firms when the Enron-Andersen scandal was announce. However, while these firms did not suffer when the scandal was announced, nor did they benefit like the other sample of energy and utility firms without Andersen audits. It appears the positive news of a strong competitor going bankrupt was offset by the concerns that the financial statements of these energy/utility firms that were audited by Andersen might also be inaccurate.

#### Note

1. The authors also employed a market-adjusted model to evaluate cumulative abnormal returns. The results for the sample of non-energy and non-utility firms are similar to those in Table III because the market-adjusted model assumes each firm has a beta of 1.00 and our modified market model used an industry beta of 0.96 for each firm. However, the results for the two samples of energy and utility firms are much different than the results in Table III because the industry betas are 0.16 for the non-Andersen audited sample and 0.24 for the Andersen audited sample versus a beta of 1.00 in the market-adjusted model. Results are available from the authors. We thank an anonymous referee for suggesting an industry beta be used in a modified market model.

#### References

- Aharony, J. and Swary, I. (1983), "Contagion effects of b failures: evidence from capital markets", *Journal of Business*, Vol. 56, pp. 305-22.
- Barton, J. (2005), "Who cares about auditor reputation?", *Contemporary Accounting Research*, Vol. 22, pp. 549-86.
- Brown, S.J. and Warner, J.B. (1985), "Using daily stock returns: the case of event studies", *Journal of Financial Economics*, Vol. 14, pp. 3-32.
- Chambers, R.J. (1995), *An Accounting Thesaurus: 500 Years of Accounting*, Pergamon Press, London.
- Chaney, P.K. and Philipich, K.L. (2002), "Shredded reputation: the cost of audit failure", *Journal of Accounting Research*, Vol. 40, pp. 1221-45.
- Cheng, L. and McDonald, J. (1996), "Industry structure and ripple effects of bankruptcy announcements", *The Financial Review*, Vol. 31, pp. 783-807.

- Fenn, G. and Cole, R. (1994), "Announcements of asset-quality problems and contagion effects in the life insurance industry", *Journal of Financial Economics*, Vol. 35, pp. 181-98.
- Lang, L. and Stulz, R. (1992), "Contagion and competitive intra-industry effects of bankruptcy announcements: an empirical analysis", *Journal of Financial Economics*, Vol. 32, pp. 45-60.
- Parker, R.H. (1986), *The Development of the Accountancy Profession in Britain to the Early Twentieth Century*, The Academy of Accounting Historians, Atlanta, GA.
- Peterson, P. (1989), "Event studies: a review of issues and methodology", *Quarterly Journal of Business and Economics*, Vol. 28, pp. 36-66.
- Polonchek, J. and Miller, R.K. (1999), "Contagion effects in the insurance industry", *Journal of Risk and Insurance*, Vol. 66, pp. 459-75.
- Public Accounting Report (2001), *Top 100 for 2001*, Strafford Publications, Atlanta, GA.
- Wells, H.W. (2004), "A beginner's guide to event studies", *Journal of Insurance Regulation*, Vol. 22, pp. 61-70.

### Further reading

- Emshwiller, J.R. (2001), "Enron transaction raises new questions – a company executive ran entity that received \$35 million in March", *Wall Street Journal*, November 5, p. A3.
- Mautz, R.K. and Sharaf, H.A. (1961), *The Philosophy of Auditing*, American Accounting Association, New York, NY.

(The Appendix follows overleaf.)

Energy/utility firms, non-Andersen audited (beta)	Andersen audited, non-energy/utility firms (beta)
1. Allegheny Energy, Inc. (0.322)	1. ADC Telecommunications, Inc. (1.851)
2. Ameren Corp. (0.022)	2. AGCO Corp. (0.689)
3. American Electric Power (−0.111)	3. Air Products & Chemicals, Inc. (0.876)
4. ConocoPhillips (0.609)	4. Allied Waste Industries, Inc. (0.941)
5. Consolidated Edison, Inc. (−0.038)	5. Ames Dept Stores, Inc. (3.767)
6. Dominion Resources, Inc. (0.097)	6. AutoNation, Inc. (0.729)
7. DTE Energy Co. (−0.157)	7. Avnet, Inc. (1.182)
8. Duke Energy Corp. (−0.056)	8. Budget Group, Inc. (0.510)
9. FPL Group, Inc. (−0.008)	9. Costco Wholesale Corp. (1.097)
10. Hess Corp. (0.481)	10. Cummins, Inc. (1.153)
11. Murphy Oil Corp. (0.478)	11. Danaher Corp. (1.104)
12. ONEOK, Inc. (0.465)	12. Dole Food Co. Inc. (0.412)
13. Pinnacle West Capital Corp. (−0.076)	13. Donnelley (RR) & Sons Co. (0.617)
14. PPL Corp. (0.344)	14. EMCOR Group, Inc. (0.999)
15. Progress Energy, Inc. (−0.032)	15. Fed Home Loan Mort Corp. (0.519)
16. Public Service Enterprise Group Inc. (0.001)	16. Fleetwood Enterprises (1.273)
17. SCANA Corp. (−0.011)	17. Group 1 Automotive, Inc. (1.137)
18. Sempra Energy (−0.092)	18. Halliburton Co. (1.204)
19. Tesoro Corp. (0.752)	19. Hershey Co. (−0.353)
20. Western Gas Resources, Inc. (0.320)	20. Hilton Hotels Corp. (0.906)
21. Wisconsin Energy Corp. (−0.015)	21. HSBC Finance Corp. (0.342)
<i>Energy/utility firms, Andersen audited (beta)</i>	22. Illinois Tool Works (0.882)
1. Adams Resources & Energy, Inc. (0.629)	23. International Paper Co. (1.026)
2. Aquila Resource & Energy, Inc. (0.195)	24. Lauder (Estee) Cos. Inc. (0.895)
3. Cinergy Corp. (−0.186)	25. Lear Corp. (1.256)
4. CMS Energy Corp. (0.413)	26. Lennox International, Inc. (−0.005)
5. Edison International (−0.163)	27. Manpower, Inc. (0.858)
6. FirstEnergy Corp. (−0.052)	28. Marriott International, Inc. (0.770)
7. Kerr-McGee Corp. (0.848)	29. MAXXAM, Inc. (0.468)
8. NiSource, Inc. (0.108)	30. MCI, Inc. (1.458)
9. Northeast Utilities (0.428)	31. Merck & Co. (0.484)
10. Northwestern Corp. (−0.098)	32. OfficeMax, Inc. (1.050)
11. Occidental Petroleum Corp. (0.608)	33. Omnicom Group (1.092)
12. OGE Energy Corp. (−0.001)	34. Owens Corning (0.975)
13. Southern Co. (−0.354)	35. Sanmina – SCI Corp. (2.582)
14. Valero Energy Corp. (0.990)	36. ServiceMaster Co. (0.236)
	37. SLM Corp. (0.607)
	38. Tenneco, Inc. (0.984)
	39. Thermo Electron Corp. (1.020)
	40. UnitedHealth Group, Inc. (0.975)
	41. USG Corp. (1.313)
	42. Weyerhaeuser Co. (1.120)
	43. Wyeth (0.493)
	44. YRC Worldwide, Inc. (0.847)

**Table AI.**  
Firm classification for  
the three samples and  
firm betas

### Corresponding author

Robert A. Kunkel can be contacted at: [kunkel@uwosh.edu](mailto:kunkel@uwosh.edu)

To purchase reprints of this article please e-mail: [reprints@emeraldinsight.com](mailto:reprints@emeraldinsight.com)  
Or visit our web site for further details: [www.emeraldinsight.com/reprints](http://www.emeraldinsight.com/reprints)

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.