THE IMPACT OF SEC RULING ON THE STOCK RETURNS: THE CASE OF OIL AND GAS COMPANIES

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ABSTRAK

Studi-studi peristiwa (event studies) dalam bidang akuntansi menuntut identifikasi peristiwa yang berkaitan langsung dengan masalah akuntansi. Studi peristiwa tidak sekadar mengambil peristiwa yang monumental atau sensasional dan mengukur pengaruhnya terhadap reaksi pasar modal. Penelitian ini mengidentifikasi peristiwa yang erat kaitannya dengan standar akuntansi yang menyangkut pemilihan metoda akuntansi. Metoda kos penuh atau full cost (FC) dan metoda usaha sukses atau successful efforts (SE) menjadi fokus penelitian ini.

Penelitian ini menguji apakah peristiwa penolakan pemberlakuan kembali standar akuntansi yang telah lama ditunda penerapannya ditanggapi secara berbeda oleh investor perusahaan FC dan SE. Penelitian ini menjawab teori tentang pengaruh balik (reversal effect) dari peristiwa yang sebelumnya ditanggapi pasar secara negatif. Secara khusus, penelitian ini menguji hipotesis apakah investor untuk perusahaan FC menanggapi secara lebih positif terhadap keputusan penolakan pemberlakuan kembali SFAC No. 19 dibanding investor untuk perusahaan SE.

Reaksi pasar diukur atas dasar return abnormal dan return abnormal kumulatif. Pengujian dengan basis return abnormal tidak mendukung hipotesis sedangkan pengujian berbasis return abnormal kumulatif mendukung hipotesis. Hal ini menunjukkan bahwa, dalam jendela peristiwa tertentu, return abnormal kumulatif mungkin lebih banyak mengandung informasi dalam perioda return abnormal.

Kata kunci: *return abnormal, return abnormal kumulatif, kos penuh, minyak dan gas bumi, standar akuntansi, studi peristiwa, usaha sukses.*

BACKGROUND ISSUE

On July 18, 1977, Financial Accounting Standards Board (FASB) released Exposure Draft which required companies using full cost method to switch to successful efforts method. Under full cost (FC) method, all exploratory costs are capitalized and amortized over the discovered reserves on a pro rata basis. Under the successful efforts (SE) method, on the other hand, only prediscovery costs that can be directly related to revenue producing wells are capitalized and the rest are expensed. Following the release of the exposure draft, on December 5, 1977 FASB affirmed the proposal by issuing Statement of Financial Accounting Standard (SFAS) No. 19. Because of political pressure from a group of oil and gas companies which felt that they would be injured by the Statement, Securities and Exchange Commission (SEC) overruled the standard

through Accounting Standard Rulings (ASR) 253 in August 1978. Since the release of the exposure draft, debate over the accounting method has generated tremendous conflicts among accountants, oil companies, and regulators.

Since the overruling of the SFAS No. 19, the SEC has been silent on the issue for almost six years and the industry has been anxious about the uncertainty about the final decision. The issue was reopened in September 1986 when the SEC's accounting staff was recommending a mandatory accounting change as prescribed by FASB. The issue was raised in relation to the sharp drop in energy prices that greatly affected the financial statements of small oil and gas companies (*Wall Street Journal*, October 23, 1986). In the SEC meeting October 30, 1986, the SEC rejected the proposal to make the FASB No. 19 effective. The 4-1 vote against the accounting staff's proposal was announced in *Wall Street Journal* October 31, 1986.

FC adopters were certainly the group that would be greatly affected by the standard when it was issued. Therefore, they contended the mandatory change which would cause many of them to restate financial results and write down stockholder equity. This could force some companies into technical breach of debt contract or unfavorable credit rating. Basically, the main argument of FC firms against the SFAS No. 19 was that the switch to SE method would substantially depress reported earnings and significantly increase the volatility of earnings over time (as compared with the smoother earnings series resulting from the FC method). On the average, FC adopters are medium-sized companies and some argue that the mandatory change would also seriously inhibit the ability of those companies to raise capital in the stock and money markets and this would result in new exploration cutbacks and unfavorable competitiveness. Some studies even indicated that the threat of the accounting change was depressing stock prices (see for

example Lev, 1979 and Collins and Dent, 1979). The economic consequence and the opposition to the SFAS No. 19 suggest that the regulation was considered as a bad news for most FC firms and therefore the announcement of the standard had an unfavorable impact on the stock price. Also, FC firms have been facing uncertainty regarding the choice of accounting method for more than six years since the overruling of the standard. With the SEC's decision to reject the enforcement of the accounting change, on October 30, 1986, the SEC somewhat removed the uncertainty about the rules. If the decision had been perceived as a victory (good news) for many full cost adopters, the public announcement of the decision may have some reversal or positive impact on the stock market especially for FC adopters. The issue is whether the market for oil and gas stocks reacts differently to the SEC decision to reject the reenactment of the SFAS No. 19.

This paper examines the reaction of stock prices to the SEC announcement. In particular, the paper analyzes the behavior of stock prices during the announcement period and provides some evidence if the accounting regulation announcement results in abnormal (positive) returns for the affected firms (full cost companies).

This paper is an event study. Unlike studies that merely measure the impact of any political or global events on the stock market in general (for example, Suryawijaya and Setiawan, 1998 and Gunawan, 2001), this paper focuses on an event that directly affect accounting choice issue in a particular industry. Thus, the issue in this paper is relevant to accounting and thus this paper provides some incremental contribution in a meaningful way to the current accounting knowledge-base.

LITERATURE REVIEW

The debate about the merits and consequences of the accounting change for exploration costs has also invoked acade-

micians to conduct economic, financial and accounting studies devoted to the issues. In the area of accounting choice issues, Lilien and Pastena (1982) examine the determinants of intramethod choice and find that the economic incentives influence the choice between FC and SE methods. DeAngelo (1982) provides evidence that oil and gas companies whose financial statements were adversely affected by SFAS No. 19 increased the rate at which they changed auditors during the FC/SE controversy. Lys (1984) investigates whether debt covenants are related to changes in firm value occurring with mandated accounting changes in the case of oil and gas accounting. The general conclusion from these studies is that there are differences in the characteristics and environments between the FC and SE companies. Therefore, given alternative methods available (FC and SE are the two major methods), a company will select a method that best suits to the firm characteristics and objectives. Mandatory change of accounting method will certainly have economic impact on the firms affected (FC users).

In the area of stock price impact, Collins and Dent (1979) find that the shares of oil and gas producing firms using the FC method suffered significant negative abnormal market return subsequent to the release of SFAS No. 19 Exposure Draft. This suggests that the proposed elimination of FC accounting had a negative impact on the equity securities of the FC firms. The impact is due to the anticipated consequences that the change is likely to have on managerial behavior and costs. Using weekly return data as Collins and Dent, Dyckman and Smith (1979) investigate the impact of the mandatory change in the accounting method on the common share valuation of FC firms relative to SE firms. Their results fail to support the hypothesis that the release of SFAS No. 19 Exposure Draft adversely affected the distributions of returns of FC securities.

Unlike the studies by Collins and Dent and by Dyckman and Smith which use weekly data, Lev (1979) examines whether the accounting change would adversely affect the stock price equilibrium using daily return data. He argues that daily observations will allow a more refined analysis of the relationship between stock price behavior and accounting regulation releases. He further argues that the sample selection, statistical techniques, and long event window in the previous studies might have caused the conflicting results. The results of his study indicate that the release of the FASB Exposure Draft was associated with a downward revision of stock prices of oil and gas producers, particularly those using the FC method. His sample was restricted to New York and American Stock Exchange firms. Following Lev's methodology, this paper examines the stock price behavior of full cost firms using market model and daily return data. However, different from previous studies which focus on negative impact of mandatory change threat, this paper focuses on the positive or reversal impact of mandatory change abolishment.

Lev (1979) uses only NYSE and AMEX firms. The reason for exclusion of OTC firms in Lev's study was the concerns about potential non-synchronous trading problem (which may cause misspecification of market model) and efficiency of the OTC market. In their experimental study, however, Brown and Warner (1985) conclude that the failure to take into account non-synchronous trading in estimating market model does not result in misspecification of event study methodology using OLS market model. To address this issue, this paper will take into consideration the inclusion and exclusion of the OTC firms. The reason to make such an analysis is that it is possible to select OTC firms with nonmissing date or return values from the current data. Moreover, with respect to OTC market efficiency, the event studies are generally concerned with unexpected return so that market efficiency is assumed up to a certain level. As Brown and

Warner (1980) point out, event studies provide a direct test of market efficiency and the magnitude of abnormal performance in an event window period.

HYPOTHESIS

Since the SEC decision is deemed as a good news for FC companies, it is expected that investors for FC firms will favorably react to the SEC rejection announcement. The positive reaction is heightened by the fact that the uncertainty of whether the mandatory change would be made effective had been continuing for an extended period of time. Therefore, the public announcement of the decision may have some reversal impact on the stock prices of FC companies. On the other hand, investors for SE firms would be indifferent to the announcement. Thus, the following alternative hypothesis is proposed:

> Investors for FC firms will react more favorably to the SEC rejection decision with regard to the re-enactment of SFAC No. 19 than will investors for SE firms.

Statistically, the hypothesis can be stated in terms of abnormal returns or cumulative abnormal returns. That is the mean abnormal returns during each announcement period is positive for FC firms and the abnormal returns have different distribution from that of SE firms.

RESEARCH METHOD

The impact of SEC decision on stock market is measured in terms of abnormal returns during the announcement period. To measure abnormal returns, the following standard market model is to be estimated:

$$R_{jt} = \alpha_j + \beta_j R_{mt} + \varepsilon_{jt}$$

where R_{jt} is return of company j at day t and R_{mt} is return of the market at day t. This model is widely used in event studies (e.g. Lev, 1979; Dyckman and Smith, 1979). The idea underlying the market model is that events are classified into two categories: those which affect all securities in the market (reflected in the market return) and those which affect only specific securities (reflected in the residuals). Another reason to use this model is the robustness of the model as suggested by Ball and Brown (1980). In their study of security price performance, they conclude that beyond a simple market model there is no evidence that more complicated methodologies convey any benefit.

Following the method used by Brown and Warner (1985) in their experimental design with market model residuals, the model is estimated by ordinary least square (OLS) regression over pre-announcement period of 229 days (-239 through -11). The results of the estimation are used to predict the value of expected returns during the announcement period. Abnormal return for a particular day for each firm in the estimation period (EP) or announcement period (AP) can be calculated as:

$$AR_{jt} = R_{jt} - (\hat{\alpha}_j + \hat{\beta}_j R_{mt})$$

The comparison of difference in reaction between FC and SE firms is performed by comparing the behavior of cumulative abnormal returns (CAR) during the announcement period. CARs for individual firms are defined as follows:

$$CAR_{jw} = \sum_{w=-AD}^{+AD} AR_j$$

where CAR_{jw} is the cumulative abnormal returns for company j for event window w which span several days before and after announcement date (AD). To analyze the sensitivity of results to unobserved extraneous factors, several event windows will be examined. Since the interest in this paper is the impact on particular industry or group of companies, all analyses are performed in the portfolio level. A week before the announcement of SEC decision on October 31, 1986, *Wall Street Journal* (October 23, 1986)

reported the SEC meeting plan to discuss the matter. Since two consecutive events occurred within a short period, the overall impact will be investigated within 21 days of announcement period from day -10 through day +10. However, to examine the effects of the announcement on shorter event window, analyses will also be performed for announcement periods of -5 through +10, -5 through +5, -1 through +1, and day zero. Normally, the impact of such an announcement like SEC decision announcement in *The Wall Street Journal* does not last very long (but only a few days) because of capital efficiency. Therefore, this paper evaluates the impact of the announcement only up to 10 days.

Unlike Lev's method that uses log values of security and market returns, this paper uses the original values to estimate the market model. This paper also uses longer period of estimation (229 days instead of 45 days used by Lev) to average out the impact of all events that affect all securities in the market before the announcement period.

Statistical tests

Since SE firms are not expected to be affected by the announcement, they will be used as a comparison or control group with respect to the behavior of abnormal returns around the announcement date. The first test is to examine whether there was a reaction of both groups to the SEC decision. If regulation announcement had contained information (good news), the group affected by the regulation (FC firms) should have a positive mean abnormal returns in the announcement period. To test the statistical significance of the mean abnormal return, crude dependence adjustment *t-test* used by Brown and Warner (1980) is employed. The general formula of the test statistic is given below:

$$\frac{\frac{1}{AP}\sum_{w=BAP}^{EAP}\left[\frac{1}{J}\sum_{i=1}^{J}AR_{iw}\right]}{\left[\frac{\sum_{t=BEP}^{EEP}\left[\left(\frac{1}{J}\sum_{i=1}^{J}AR_{it}\right)-\left(\frac{1}{EP}\sum_{t=BEP}^{EEP}\frac{1}{J}\sum_{i=1}^{J}AR_{it}\right)\right]^{2}}{EP-1}\right]^{\frac{1}{2}}}$$

where

AP = Announcement period of interest (-10/+10, -5/+5, -5/+10, -1/+1, and 0).

BAP = Beginning of announcement period.

EAP = End of announcement period.

EP = Estimation period (229 days in this study).

BEP = Beginning of estimation period (-229 minus number of days before the announcement date depending on the length of event window to be tested).

EEP = End of estimation period (number of days before the announcement date depending on the length of event window to be tested).

J = Number of firms in each group (FC or SE firms).

AR = Abnormal returns for individual firms for each days within the event window.

Basically, the numerator in the above equation reflects the mean of each firm's mean abnormal returns during the announcement period for all firms in FC or SE group (portfolio or cross-sectional mean). The denominator in the equation, likewise, is the standard deviation of sampling distribution of the portfolio means.

The second test is to evaluate whether the two groups react differently with respect to the

SEC announcement. Two approaches will be performed. One approach is to compare the portfolio mean difference of abnormal returns using the t-test and another is to compare the portfolio mean difference of cumulative abnormal returns (CAR). In the second approach, the null hypothesis is that the mean CARs of both groups are the same. To evaluate the sensitivity of results to violation of normality assumption, sign test and Wilcoxon rank sum test will also be performed. Also, to examine the effect of market liquidity, analyses are made to firms both listed in major and over-the-counter (OTC) market. A graphical analyses will be performed as a preliminary evaluation of the market reaction.

Sample Selection and Data

Daily returns and market data are extracted from CRSP 1990 daily and 1992 OTC daily tapes. The CUSIP numbers of sample firms listed by Malmquist (1990) are used to extract the data from CRSP data files. The reason to use Malmquist's list is that the list identifies accounting method (FC or SE) adopted by each firms. There are 316 in the list. Of the companies in the list, 197 are full cost adopters and 119 are successful efforts adopters. Since the list was made for 1985 company data, it is assumed that no company in the list had switched accounting method in 1986.

To enter into the sample in this paper, a company should be listed in major exchanges or OTC market. A company should also have daily returns and market returns for all 250 trading days from 239 days before the event date (October 31, 1986) to 10 days after the event date. A company with a missing value in any single day (even if only in the estimation period) is eliminated from the sample. This selection process results in a sample of 204 companies which consist of 126 FC adopters and 78 SE adopters. Out of the FC group, 82 firms are from major exchanges and out of SE group, 44 firms are from major exchanges.

Table 1 presents the summary description of the sample.

Table 1. Summary of Firms in the Sample

Market/Method	FC	SE	Total
NYSE/AMEX	82	44	126
OTC	44	34	78
Total	126	78	204

The fact that old data were used in this paper does not mean that this study is obsolete. This is an event study that involves an event in the past to empirically test an accounting theory that explains and predicts accounting practice. A valid theory should be able to predict the phenomena that occurred in the past regardless of how old the historical data are. This nature of theory is described by Watts and Zimmerman (1986) as follows:

> Prediction of accounting practice means that the theory predicts unobserved accounting phenomena. Unobserved phenomena are not necessarily future phenomena; they include phenomena that have occurred but on which systematic evidence has not been collected. For example, an accounting theory can provide hypotheses about the attributes of firms that use LIFO versus the attributes of firms using FIFO. Such predictions can be tested using historical data on the attributes of firms using the two methods (p. 2).

EMPIRICAL RESULTS

The abnormal and cumulative returns are plotted in several figures for both the FC and SE groups to get the overall picture of the impact of SEC decision. Figure 1 suggests that both groups undergo fluctuation in abnormal returns. FC returns fluctuate somewhat more widely than SE returns before the announcement date. On the announcement date, the FC firms undergo a marked positive return relative to SE firms. This price increase of FC stock can be attributed to the SEC decision. After the announcement date, the FC

abnormal returns tend to be positive while those of SE firms tend to fluctuate evenly around zero line. These suggest that the FC firms react differently from SE firms to the regulation change. While the abnormal returns graph of FC firms turns downward sharply on day -5 to -4, the abnormal returns graph of SE firms turns upward between days -5 and -3. The sharp decrease in stock price of FC firms is possibly associated with the fact that one week before the announcement date, the

effective. This incident is the same as time when the FASB released the exposure draft in 1977. Therefore, consistent with the previous findings about the impact of regulation announcement (Lev, 1979 and Collins and Dent, 1979), it is expected that FC firms stock price would be depressed on that day. However, because of prolonged uncertainty since the first announcement of the accounting change, the impact of proposal announcement in *The Wall Street Journal* may not be as
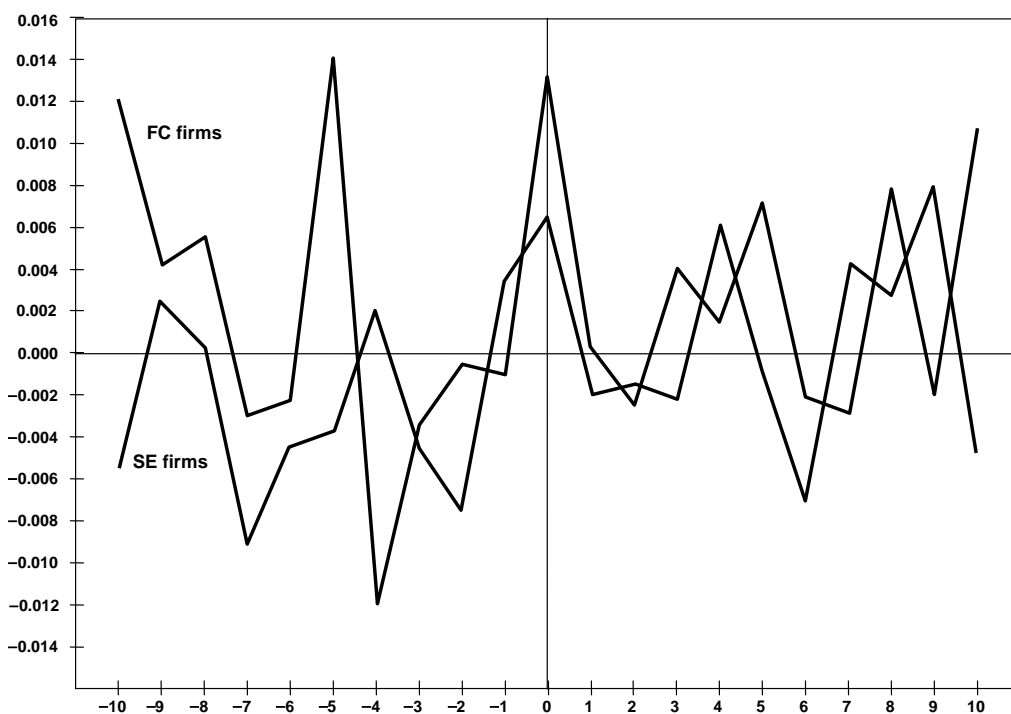
mandatory change was proposed to be made

strong as that of the first-time release.

Figure 1 Daily Abnormal Returns During Announcement Period

The difference reaction of the announcement impact is also indicated in the cumulative abnormal returns plot in Figure 2. On the average, FC firms tend to react positively to the SEC decision while SE firms tend to react negatively. One possible reason for the negative reaction of the SE firms is that

the proposal by the accounting staff of the SEC imposed more stringent requirements for SE firms as pointed out by Lev (1979). Another possible reason is that with the abolishment of the proposal, SE firms may become less competitive in terms of exploration activities because FC firms will be expected to be more

aggressive. However, whether the negative reaction is true or just a matter of chance is subject to significance test discussed later. A further look at the graphs on Figure 2 shows that before the announcement date, the CAR of FC firms are not well behaved and no trend is

observed but then after the announcement date there is a slight upward trend. SE firms graph shows a slight downward trend but the trend levels off after the announcement date. The best that can be said from the analysis is that both groups react differently.
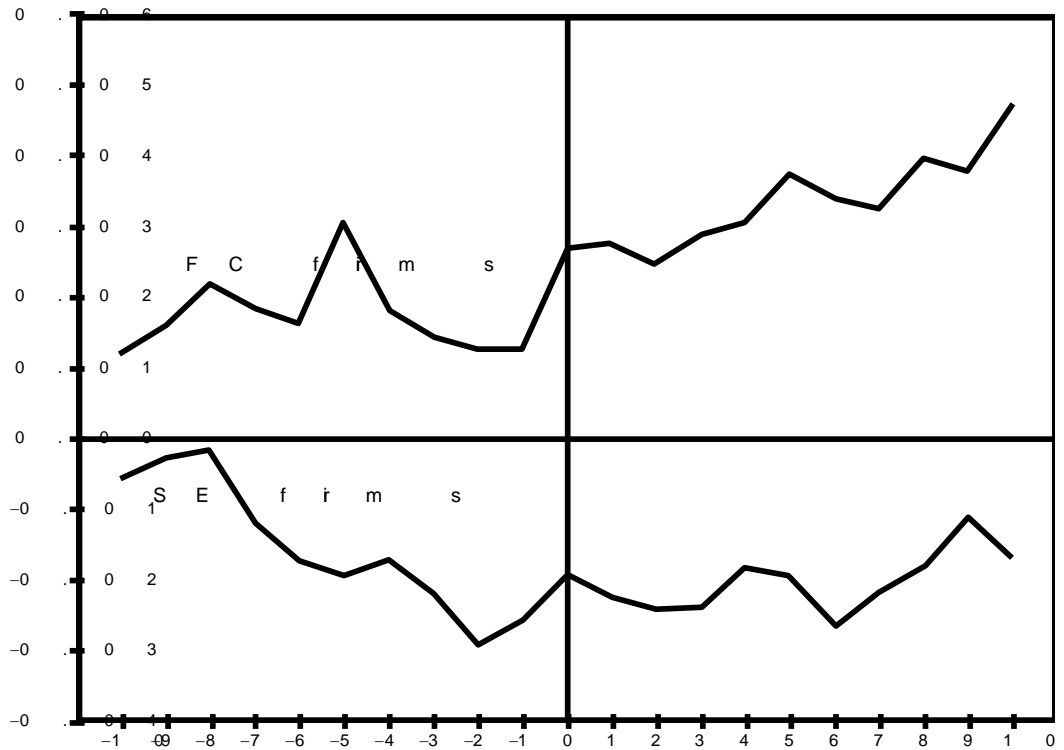

Figure 2 Daily Mean Cumulative Abnormal Returns for -10 to +10 Announcement Period

Lev (1979) argues that OTC market is less efficient than the major exchange because of a lower volume of trading and less frequent trading days. Moreover, the trading system of OTC is different from that of major exchange. In that situation, the relationship between OTC stocks and market returns is non-synchronous which potentially leads to misspecified market model. Therefore, Lev did not include OTC firms in his sample. This argument suggests that OTC market will react differently from major market to the SEC decision and

therefore combining both firms in event studies may result in unreliable conclusions. To examine the validity of this argument with respect to the issue in this paper, the OTC firms are taken out from the sample and analyzed as a separate group in each FC or SE firms.

It can be seen from Figure 3 that before -2 of the announcement date, FC firms in OTC market are not different from FC firms in major market with respect to their reaction to the

mandatory accounting change. After that, both markets appear to show somewhat different reactions. In particular, during -1 through +1 announcement period, major market reacts in opposite direction to the OTC market. After day +1, the OTC market abnormal returns tend to fluctuate more sharply than the major market, even though no consistent direction is noticeable. The differences in the reaction may suggest that the OTC market is slower in capturing the public information and hence less efficient. This is consistent with what was suspected by Lev (1979). Combining the two market may results in underestimation of the true abnormal returns of FC firms. Again, the true impact of this understatement is subject to a statistical significance test discussed later in this section. Since it is expected that SE firms do not react in a meaningful way to the SEC decision, any specific pattern of abnormal returns in SE firms in both major market and in OTC market is not expected. This is evident from the graphs in Figure 4. Abnormal returns from both markets fluctuate almost evenly around zero line. Nevertheless, from CAR graph in Figure 5, it is apparent that SE firms investors from OTC market react more negatively than that from major market. No trend in CAR is observed in the major market while negative trend is noticeable in the CAR of OTC market. Consistent with Lev's argument, combining both market in the event studies may likewise cause understatement of average cumulative abnormal return.
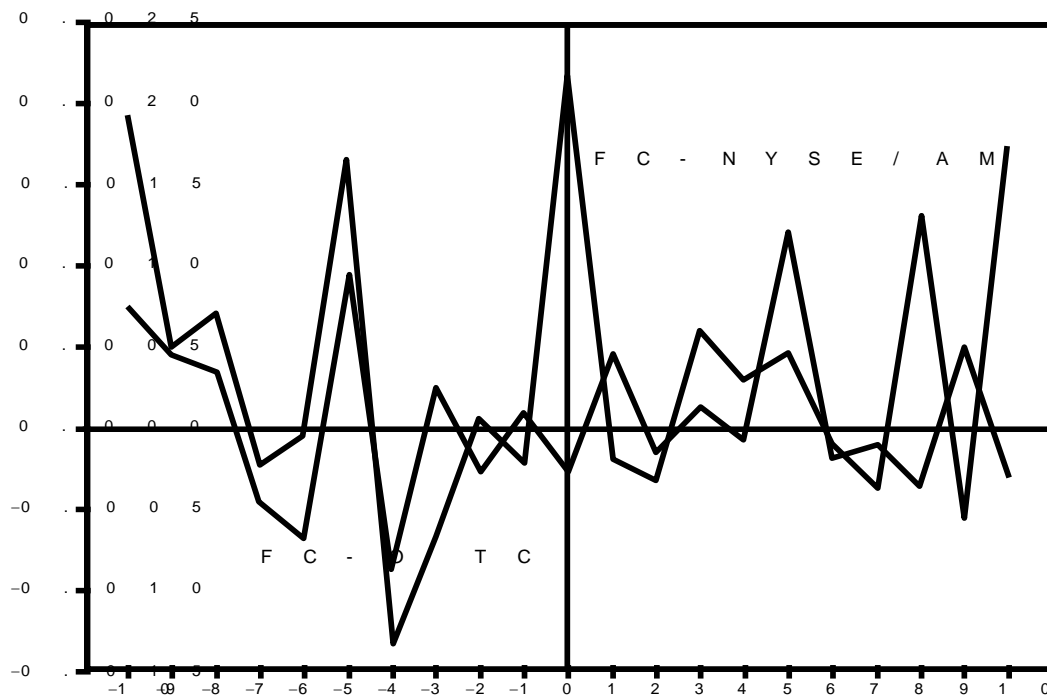

Figure 3 Daily Abnormal Returns of FC Firms: Major Exchange and OTC

S E -   N Y S E / A M   E X
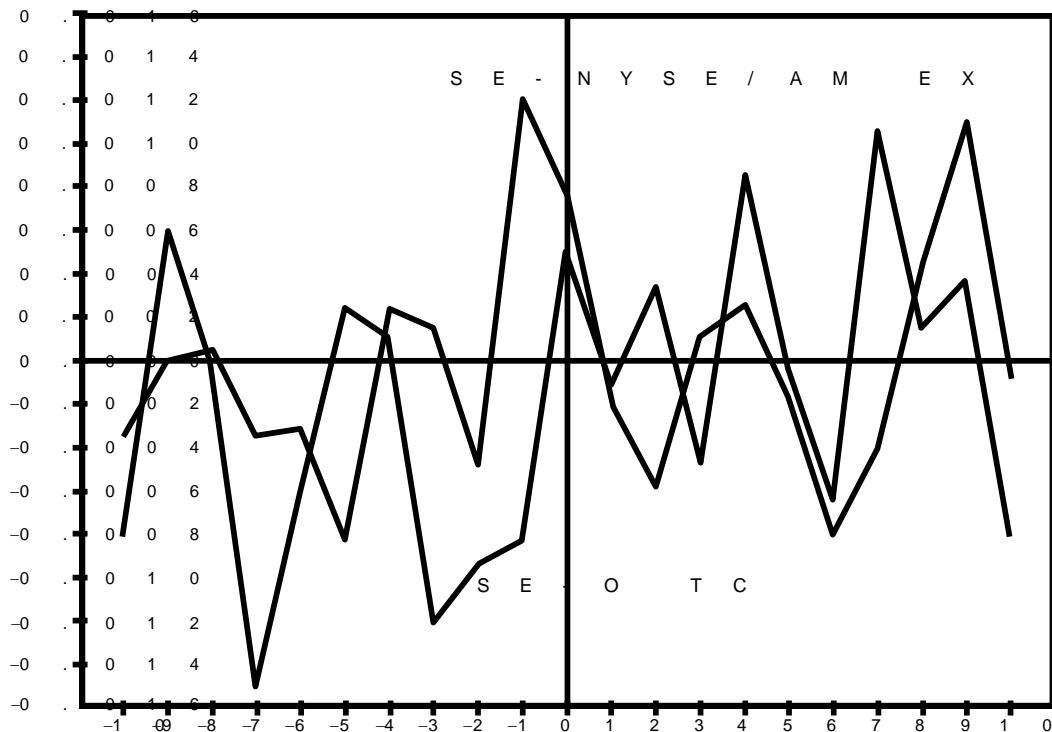
S E -   O   T C

Figure 4 Daily Abnormal Returns of SE Firms: Major Exchange and OTC

Significance Tests

Previous discussion provides some preliminary indication that there are differences in the impact of accounting regulation announcement between FC firms and SE firms. In particular, the SEC decision to reject the proposal to put mandatory switch to SE method into effect has a positive impact on the stock price of FC firms and a negative impact on the stock price of SE firms. Furthermore, the OTC market appears to be less efficient than the major market and thereby inclusion of the OTC firms in the sample could result in understatement of abnormal returns. To support the validity of the graphical interpretation, the crude dependence adjustment *t-tests* are performed to examine if the differential effects are statistically significant. Table 2 summarizes the results of significance tests of mean abnormal returns (MARs) for various event window periods in each type of firms and market.

Table 2 indicates that almost all test statistics in long (-10 through +10) to narrow (-1 through +1) announcement periods are not statistically significant even at an optimistic level of ten percent (equivalent to t = 1.60). This statistically insignificant test statistics are shown for FC and SE firms alike. In general, therefore, the test results on the basis of mean abnormal returns do not support the hypothesis that there is a real impact of SEC decision to the stock price of oil and gas industry. In particular, the SEC decision did not have a positive stock price impact on FC firms (as hypothesized) nor a negative impact on SE firms.
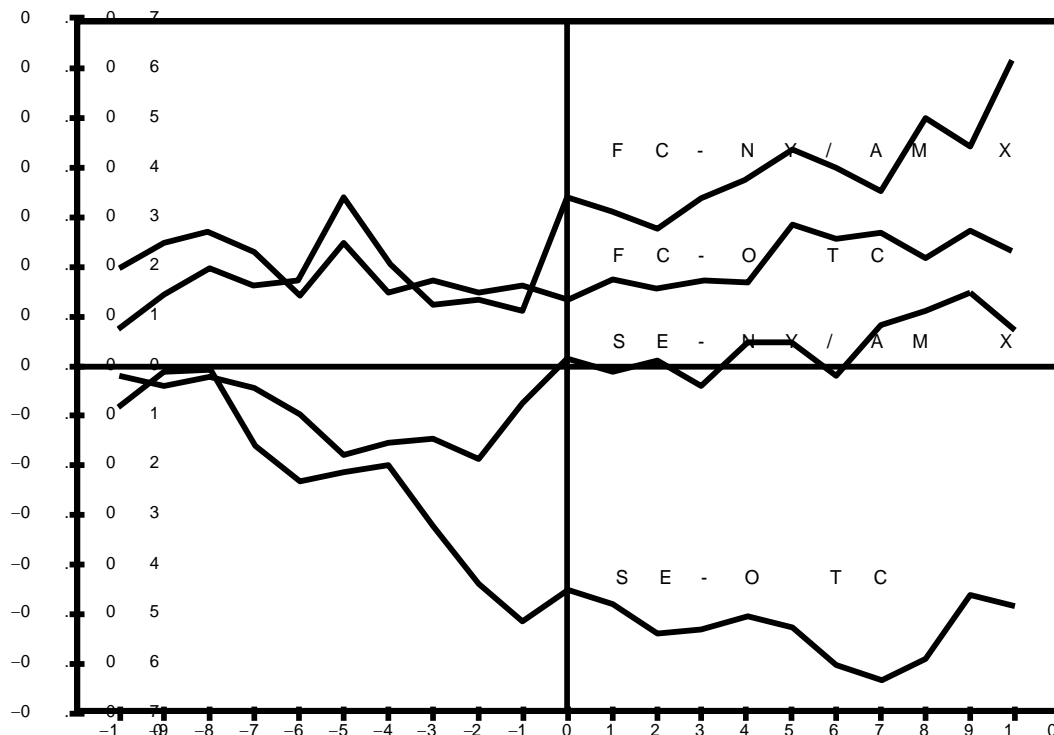
Figure 5 Mean Cumulative Abnormal Returns: Major Exchange and OTC

Table 2 Summary of Mean Portfolio Abnormal Returns and Significance Test Results

Event Window	FC-All	SE-All	FC-NY/AM	SE-NY/AM	FC-OTC	SE-OTC
MAR (-10/+10)	0.0023020	0.0007793	0.0029408	0.0003740	0.0011114	0.0022718
t-statistic	(0.2832)	(0.1023)	(0.2906)	(0.0467)	(0.1315)	(0.2182)
MAR (-5/+5)	0.0018788	0.0003335	0.0022568	0.0013474	0.0011743	0.0025088
t-statistic	(0.2312)	(0.0438)	(0.2230)	(0.1684)	(0.1389)	(0.2410)
MAR (-5/+10)	0.0019896	0.0000385	0.0027965	0.0011153	0.0004857	0.0015318
t-statistic	(0.2448)	(0.0051)	(0.2763)	(0.1394)	(0.0575)	(0.1472)
MAR (-1/+1)	0.0040424	0.0026128	0.0058230	0.0059769	0.0007239	0.0017407
t-statistic	(0.4974)	(0.3429)	(0.5753)	(0.7469)	(0.0856)	(0.1672)
MAR (0)	0.0130170	0.0064755	0.0215260	0.0076660	0.0028396	0.0049348
t-statistic	(1.6016)	(0.8499)	(2.1268)	(0.9580)	(0.3359)	(0.4741)

Nevertheless, the results show that the narrower the event window, the higher the *t* statistics. This provides the notion that the shorter the window the higher the probability to reject the hypothesis of no impact. The t-statistics for FC firms from major market (NYSE/ AMEX) are relatively much higher than those of FC firms from OTC market for all event windows. This suggest that FC stocks in the major exchange are more reactive than FC stocks in the OTC market. Therefore, combining them in the sample would result in less power of test as shown by relatively lower t-statistics in combined FC firms than the FC firms from major exchange alone. In spite of the statistically insignificant results, this supports the argument for not including OTC firms in the event studies examining the impact of accounting regulations as suggested by Lev.

On the announcement date, the test statistic is statistically significant for FC firms in NY/AM market at 0.02 level. The same result occurs for FC firms in combined market at least at 0.10 level. However, the impact of an event on stock price cannot be evaluated only in one day because very highly efficient market should be assumed. This assumption is unrealistic because investors actually have different ability and speed to capture information signals and to act upon them. As previously mentioned, event studies in most cases define announcement period to span more than one day and in several cases even one year.

Table 3 Summary of Univariate T-statistics for Mean CARs Over 21 Days Window

Market	NYSE/AMEX		OTC		Combined	
Types of test	FC	SE	FC	SE	FC	SE
T-test: Mean=0	9.22608	-1.14390	20.01842	-8.93191	11.78248	-11.11520
Prob > |T|	(0.001)	(0.266)	(0.001)	(0.001)	(0.001)	(0.001)
M-test: Sign=0	10.5	-2.5	10.5	-10.5	10.5	-10.5
Prob > |M|	(0.001)	(0.383)	(0.001)	(0.001)	(0.001)	(0.001)
S-test: Rsum=0	115.5	-31.5	115.5	-115.5	115.5	-115.5
Prob > |S|	(0.001)	(0.284)	(0.001)	(0.001)	(0.001)	(0.001)

Table 3 summarizes the univariate t-test for mean CARs equal zero for each group of firms in NYSE/AMEX, OTC, and combined markets. Mean CARs for each group of firms in all market are statistically significant at 0.05 level except for SE firms in NYSE/AMEX market. This means that, except for SE firms in major exchanges, the mean CAR for each group is not equal to zero. Therefore, in terms of CARs, the announcement of SEC has an impact on the stock market. When SE firms from OTC are taken out from the sample, there is a statistically significant difference in mean CARs between SE firms from major exchanges and SE firms from OTC market. Therefore, combining them may result in misleading conclusions. This evidence supports the argument for not including OTC firms in the event studies as suggested by Lev (1979). Whether the mean CARs for each group of firms are positive or negative or whether mean CAR for one group is greater than that of other cannot be determined from the above table. Table 4 presents the results of comparison test between the two groups in all types of market for -10/+10 event window. Comparisons for other event windows (not shown) are also performed and these comparisons provide similar results.

Table 4 Test Results for the Difference in Mean CARs Between the Two Groups

	NYSE/AMEX	OTC	Combined
TTEST:			
T-statistic	8.3071	13.4270	16.0611
p-value > |T|	(0.0001)	(0.0001)	(0.0001)
One tail p-value	(0.00005)	(0.00005)	(0.00005)
Wilcoxon Test:			
Z-statistic	5.33302	5.53426	5.53426
p-value > |z|	(0.0001)	(0.0001)	(0.0001)
One tail p-value	(0.00005)	(0.00005)	(0.00005)

The *t* statistics in each type of market are all statistically significant at 0.05 level. Therefore, it can be concluded that, on the basis of mean CARs, there is indeed a difference between FC firms and SE firms with respect to the impact of SEC announcement on the stock prices. The sign test in Table 3 and the Wilcoxon test results suggest that mean CARs for FC firm are positive and the mean CARs for SE firms are negative. It can be concluded that the announcement of the SEC decision has a positive impact on the stock price of FC firms and a negative impact on the stock price of SE firms. For FC firms, the results are consistent with the expected reversal impact of the mandatory accounting change when it was first released.

The test results based on the mean abnormal returns are inconsistent with those based on mean cumulative abnormal returns. The former does not support the hypothesis but the latter does. Averaging abnormal returns during announcement period in each individual firm may have a dampening effect on the measure of market reaction so that the power of test is reduced. Averaging not only draws the mean abnormal return to zero when returns fluctuate around zero but also hides the information of individual abnormal returns. This does not happen to cumulative abnormal returns. If abnormal returns tend to increase or decrease, cumulative abnormal returns will capture the tendency and thereby no information is lost in the CAR as an estimate. Therefore, cumulative abnormal returns may have richer information than mean abnormal returns and thus CAR-based statistical tests are more powerful.

SUMMARY, CONCLUSION, AND LIMITATION

This paper examines the impact of SEC decision to reject the proposal to make effective of SFAS No. 19 on the stock price of oil and gas industry especially of the companies adopting full cost method. The impact on stock price is measured in terms of mean abnormal return and cumulative abnormal returns during the period of decision announcement. Market model is employed to estimate abnormal returns for each individual company and for both FC and SE groups. Statistical tests using mean abnormal returns and mean cumulative abnormal return are performed to determine if the impact is statistically significant.

The test results based on mean abnormal returns using crude dependence adjustment *t-tests* do not provide the evidence that mean abnormal returns for all possible event windows are not zero. Therefore, it is concluded that the SEC decision to reject the proposal did not have an impact on the stock price of oil and gas industry. Specifically, the announcement of SEC decision did not cause a

positive abnormal returns for FC firms. Given this is the case, one possible explanation for the insignificance of results is that the issue of elimination of full cost method has been going on quite long time since it was released in 1977. This prolonged uncertainty makes no surprise about the reopening of the issue and the decision of the SEC. In other word, the market has anticipated such an event or action and acted accordingly. The absence of unanticipated abnormal returns during the announcement period also suggests that the market is efficient with respect to such information. Another possible explanation is that averaging abnormal returns during announcement period results in an estimator that is less informative and thereby less powerful tests. Therefore, an alternative measure (that is cumulative abnormal returns) is also used to test the hypothesis.

The alternative tests using cumulative abnormal returns indicate that the SEC decision announcement has a different impact on the market between FC firms and SE firms. In particular, the SEC decision to reject the re-enactment of SFAS No. 19 was favorably responded by investors for FC firms and unfavorably responded by investors for SE firms. This difference in results suggests that the tests using mean CARs may be more powerful than the test using mean abnormal return. Subject to the validity of reaction measures, this study supports the contention that the choice of accounting method does have an economic consequence and thereby standard setting is indeed a political process.

One limitation of this study is that only two groups in the same industry are compared. FC firms are treated as if they were an experimental group and SE firms a control group. Therefore, it cannot be assured whether the different reactions between the two groups are due to the SEC announcement or due to some other confounding factors. Future research of this nature should include a control group from different industry.

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