Result of FASB 133 on Market Volatility in the Financial Services Sector

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Abstract

FASB 133, the new financial reporting standard, was adopted in early 2001 despite strong opposition from the financial services sector. Critics predicted significantly increased volatility in corporate earnings and increased market volatility ("realized volatility"). A statistical analysis of the 190 companies that compose the entire exchange-listed financial services sector was conducted to assess the validity of the criticism. The study did not find a strong trend in market volatility. A follow-up examination of over 240 regulatory filings for the six largest firms in the sector also found no discernible trend or significant change in the volatility of announced corporate earnings. The results suggest that the industry insiders' warning of a sharp increase in volatility was inaccurate.

Introduction and Review of Literature

The Financial Accounting Standards Board (FASB) Rule 133 establishes new accounting and reporting standards for derivative (option contract) instruments. The new set of regulations attempts to expose the underlying volatility in the fair asset value of derivatives by forcing companies to report these daily fluctuations as profit or loss in corporate earnings. Previously, the net changes in value were hidden until after the contract expiration date, both dampening their effect and opening some potential for a posteriori tampering. The FASB stated that the new standards would provide shareholders with improved information, reducing the opportunities for firms to artificially "smooth" corporate earnings.

Volatility in earnings and in stock price reduces the value of a firm to investors (Longstaff and Piazzesi, 2004), giving managers a strong incentive to opportunistically manage earnings (Michelson, et al., 2000).

Goel and Thakor (2003) stated that volatility increases the cost and the value of private information. Uninformed investors who sell shares to informed investors due to exogenous liquidity reasons lost value at an amount equal to the information acquisition cost; competition among the informed investors produces zero ex-ante expected profits. Higher reported earnings volatility leads to a greater information acquisition cost, resulting in lower valuations for these firms.

Bordurtha (2002) states that "reported volatility is likely to affect investor perceptions of firm risk." Market valuation of firms is largely driven by expected corporate earnings (Bao and Bao, 1998) volatility in earnings increases the perception of risk in an investment (Bordurtha, 2002; Longstaff and Piazzesi, 2004).

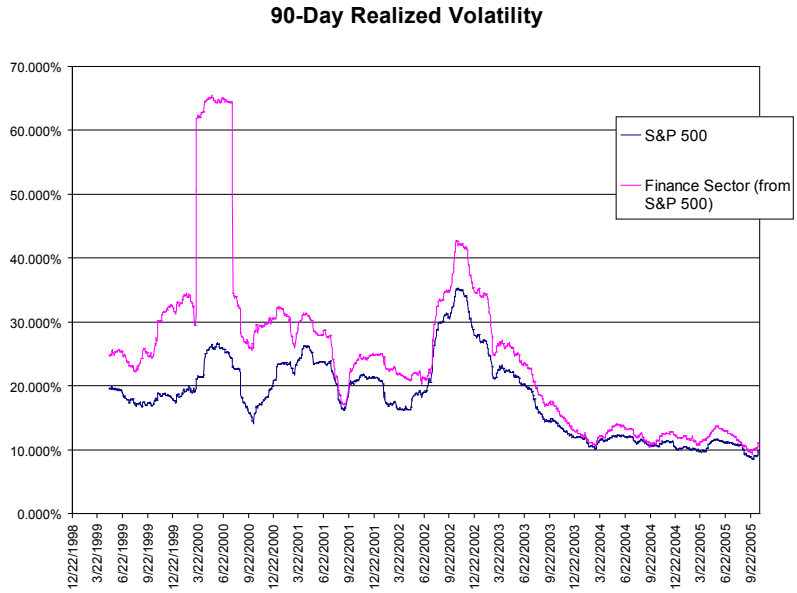

Figure 1. Realized volatility for the finance sector and for the S&P 500 showing an average 6% difference. Data for the financial services sector is computed from the market valuation of the Financial Select Sector SPDR, an EFT that is composed of sector-specific selections from the S&P 500.

Earnings can be "managed" by using accounting techniques to effectively reduce the earnings of a current profitable period to ensure a reserve for a future period (Ross, Westerfield and Jordan, 2006; Barton, 2001; DeFond and Park, 1997).

Some research suggests that the success of opportunistic earnings management depends on the qualities of the firm. Bao and Bao (2004) found that valuation was only improved for "quality" firms. They defined a "quality" firm as one in which the "cash content of earnings is higher than the total sample mean cash content… cash per share from operating activities is positive…[and] primary earnings per share before extraordinary items is positive (Bao and Bao, 2004)." Some firms do not benefit from opportunistic earnings management.

Barton (2001), in a review of the incentives for management to smooth reported earnings, predicted that FAS 133 may result in "less hedging and more accrual management." His empirical research used data from the mid-1990s that "[provided] evidence suggesting that managers smooth their firms' earnings by adjusting the volatilities of cash flows and accruals" (Barton, 2001).

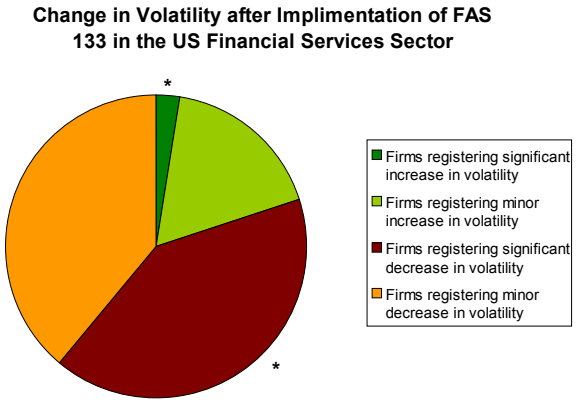

Figure 3.

Barton and other critics also point out that the FASB standard has the potential to increase corporate earnings volatility by requiring that daily changes in fair value are exposed as net changes in profit or loss. Others, such as Meyers of the Federal Reserve (2000) and Irving of KeyCorp (2000) suggest the opposite; the rule changes leave open loopholes that may allow management to artificially smooth earnings and reduce volatility.

Many industry representatives strongly criticized the rule changes when solicited by the FASB for comment in early 2000. Lee Irving, Chief Accounting Officer of KeyCorp, stated that the changes may introduce loopholes that increase the ability of managers to manipulate earnings. "The subjective measurement of items whose value changes are reflected in income is a potentially prime mechanism for inappropriate earnings management activities (Irving, 2000)." Laurence H. Meyer, a member of the Federal Reserve Board of Governors, echoed Irving's concern, stating that the rule changes allow managers to "significantly manage earnings and capital by making seemingly slight changes to valuation procedures."

Critics also stated that the rule changes would increase both volatility and the information acquisition cost. Howard Smith, Chief Financial Officer of the American International Group claimed the rule changes would strongly increase volatility in corporate earnings. This volatility "will make it extremely difficult for shareholders, security analysts and other members of the financial community to understand the financial statements and to evaluate an insurance company's performance (Smith, 2000)." Irving stated that the information disclosure required by the new rules would only provide investors with extraneous and unnecessary information. "The adaptation of full fair value accounting appears to be a step in the wrong direction… It will introduce more subjectivity to the financial statements, and therefore, result in more opportunity to manipulate the reported financial results of an entity."

Of the 126 comments submitted to the FASB regarding the proposal, 58 came from the financial services community. Of the 15 comments from publicly traded firms in the sector, 12 presented strong criticism of the proposal.

David Sidwell of J.P. Morgan & Co. epitomized the message of supporters, stating that he confidently believes "markets [will] continue to evolve… [and the concerns of critics, while

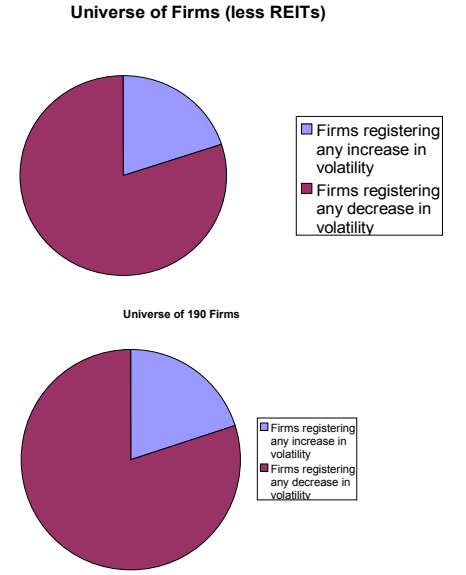

Figure 4.

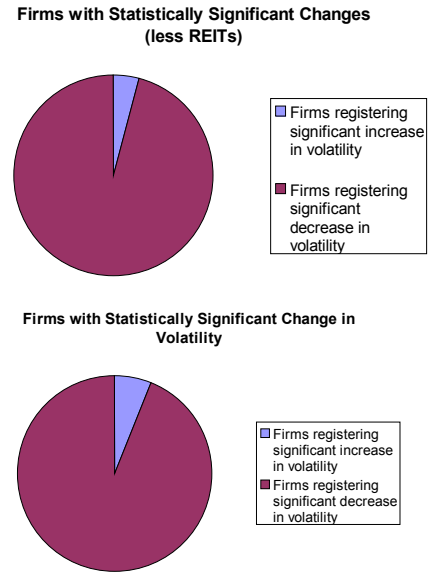

Figure 5.

valid] should not be a hindrance in moving forward with fair value."

While research has indicated motives for managers to use derivatives to artificially manipulate reported earnings, little exists to document whether managers have continued this practice using different methods after the implementation of FAS 133, or if they have simply allowed greater earnings volatility as a cost of regulatory compliance.

This study attempts to measure the quantitative influence of the FAS 133 regulation on market valuation of affected firms.

Methods

This study uses historical stock information for the 303 companies focused on the financial service sector by Morningstar, Inc (as characterized in September, 2005). Firms with limited market data due to extraordinary events, as well as those not subject to US reporting requirements (or with an insignificant base of US investors) were removed. The 190 firms remaining are the subjects of this study.

For an additional level of detail, the statistical methods were repeated for the finance sector with Real Estate Investment Trusts (REITs) removed. REITs are real estate firms that are restricted by law to distributing 90% of income to shareholders as dividends. Results for REITs were presented separately.

Realized volatility reflects the historical price movements of a stock. There are several different methods to measure realized volatility or "historical volatility". This study utilizes a quarterly variation on the close-to-close method:

$$\mathrm{HV}_{\mathrm{quarterly}} = \sqrt{\frac{1}{(n-1)} * \sum_{i=1}^{n} (M - X_i)^2}$$

where n is the number of days in the quarter,or more generally, the number of occurrences, M is the mean, and X_i is price change.

Realized volatility was calculated for each quarter for all available data.

Since market valuations of firms is strongly driven by expectation of corporate earnings (Bao and Bao, 1998), this study makes the assumption that an increase in the volatility of corporate earnings would also drive an increase in the volatility (measured quarter by quarter) of the firm's market valuation (the stock price).

It is difficult to gauge the cause of an increase in a specific firm's volatility because in a less than perfectly efficient market, an observer has only incomplete information. While a sector-wide increase in volatility is possible, a review of literature provides some anecdotal evidence that this was not the case for the finance sector in the years after the adoption of FAS 133. While sector performance undoubtedly influences market *valuation*, this study makes the assumption that the average *volatility* is unaffected.

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	S&P 500 & Finance Sector SPDR	1628	.770	.000

A one-way analysis of variance (ANOVA) was performed to determine the statistical significance on any volatility changes before and after the FAS 133 effective date. A comparison of means plots suggested the direction of change.

This first phase assumes a strong correlation between volatility in the market valuation of a stock and volatility in corporate earnings announcements. Based on these initial results, a second phase of research was performed. While the documentation of corporate earnings was labor intensive because of the SEC filing process and the limited availability of commercial tools, it was informative to examine and measure directly volatility in corporate earnings. A manual survey of quarterly regulatory filings - in the form of earnings announcements - was performed on a subset of the Morningstar sample. The six firms in the subset were selected based on largest market capitalization.

Results

Of the 190 firms in the sample, 38 displayed an increase in volatility, although only 5 were statistically significant (Figure 3). However, 152 displayed an overall decrease with 78 of these reaching statistical significance (Figure 3). These analyses show that volatility *decreased* in the finance sector after the implementation of FAS 113.

The second phase, a statistical analysis of corporate earnings announcements gathered from the six largest finance firms that are US-based, revealed similar mixed results.

American International Group (AIG) and Wells Fargo & Co. (WFC) had corporate earnings announcements with increased volatility after the effective date of FAS 133; J.P. Morgan Chase (JPM), Citigroup (C), Bank of America (BAC), and Berkshire Hathaway (BRK.B) had decreased volatility. None of the groups had statistically significant differences.

Discussion and Interpretation

Members of the academic community and several industry representatives hypothesized that FAS 133 would induce a sharp increase in volatility in both corporate earnings and stock valuation. The results of this study do not support this hypothesis. In fact, it appears that market volatility decreased. While the subset selected to measure changes in corporate earnings volatility was inherently limited, results from that phase of the study additionally undermine the predictions of industry critics.

Several senior members of the financial services industry commented in 2000 that the FAS 133 standard may introduce loopholes that allow managers additional tools to artificially manipulate corporate earnings. While the rule change is intended to reduce opportunities for subjective interpretation, the results weakly support the hypothesis posed by critics. Further studies on this issue would be necessary before a definitive conclusion. The increase in volatility for the American International Group (AIG) is not surprising given the sharp drop in share price in March, 2005 following the announcement of a New York State Attorney General investigation and the subsequent restatement of financial results. Without this influence, it would appear that in general, volatility in corporate earnings had also decreased after the implementation of FAS 133. However, the subset studied in this phase is much

too small to provide statistically meaningful data about larger trends.

Conclusion

Despite pessimistic predictions of some CFOs, the financial services community survived the implementation of FAS 133. While anecdotal reports may appear to support many critics' concerns about the significant cost of implementation, the sector as a whole performed well in the market. The Financial Select Sector SPDR (the oldest sector index of its kind) reported 6.60% annualized returns for the five-year period while the S&P 500 exhibited annualized returns of negative 2.37%.

Why didn't the largely expected increase in volatility occur? If firms now are unable to use the many techniques developed in the 1990's to artificially manipulate corporate earnings, why has the market not punished the increased risk associated with firms in the financial services sector? Either managers have developed new techniques, perhaps to be discovered by the public in the next Fannie Mae or American International Group-style disclosure, or the market has decided that the increased information exposed by the FAS 133 reporting requirements outweighs the sector risk now imposed on these firms.

As Sidwell predicted, "markets continue to evolve" in unanticipated ways.

		Sum of Squares	df	Mean Square	F	Sig.
JPM	Between Groups	8852324.990	1	8852324.990	8.544	.006
	Within Groups	38336607.335	37	1036124.523		
	Total	47188932.326	38			
C	Between Groups	7786.010	1	7786.010	.903	.347
	Within Groups	361951.775	42	8617.899		
	Total	369737.785	43		1.159	.288
BAC	Between Groups	15608.522	1	15608.522		
	Within Groups	552169.729	41	13467.554		
	Total	567778.251	42		6.636	.013
AIG	Between Groups	1861530.657	1	1861530.657		
	Within Groups	12903840.015	46	280518.261		
	Total	14765370.672	47		3.067	.093
BRK	Between Groups	1128439.411	1	1128439.411		
	Within Groups	8830203.440	24	367925.143		
	Total	9958642.852	25		.010	.922
WFC	Between Groups	549.829	1	549.829		
	Within Groups	2670750.230	47	56824.473		
	Total	2671300.059	48			

Figure 6: ANOVA of phase two sample.

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