

Impact Of Stock Options On Quarterly EPS: A Proposal For Change

Ron Best, (E-mail: rbest@westga.edu), State University of West Georgia
Joseph C. Rue, (E-mail: jrue@fgcu.edu), Florida Gulf Coast University
Ara Volkan, (E-mail: avolkan@westga.edu), State University of West Georgia

Abstract

The purpose of this paper is to: 1) explore the annual and quarterly economic impact of FAS 123 on a group of S&P 100 firms; 2) propose changes in the measurement and disclosure rules of FAS 123; and 3) determine the annual and quarterly economic impact of these proposed changes on the same group of S&P 100 firms. While both FAS 123 and dynamic option expense measurement approaches have material economic impact and reduce the EPS amounts reported under APBO 25 rules approximately 16 percent or more, no statistically significant differences are found between the results of these two approaches in any year 2000 quarters. However, when the sample is split into two groups based on negative and positive quarterly returns, the differences between the results of the two methods are statistically significant for seven of eight quarterly observations. Compared to the static (FAS 123) measurement approach, the dynamic (quarterly recalculated) approach results in lower option expenses and higher EPS values for firms with declining stock prices and higher option expenses and lower EPS values for firms with increasing stock prices. Thus, the dynamic measurement approach proposed in this paper more faithfully represents the economic reality of individual firms.

Introduction

In 1983, the Financial Accounting Standards Board (FASB) embarked on a major project to determine if stock options should be included as compensation expense in audited income statements. After more than 12 years of deliberation, the FASB (1995) issued *Statement of Financial Accounting Standards No. 123 – Accounting for Stock-Based Compensation* (FAS 123). The pronouncement encouraged, but did not require, companies to adopt a fair value pricing model to determine the option value at the grant date and record a portion of this amount as expense over the vesting period of the option. The firms that chose not to follow the recommendations of FAS 123 could continue to use the requirements of the *Accounting Principles Board Opinion No. 25 – Accounting for Stock Issued to Employees* (APBO 25). These firms had to disclose the pro forma impact of FAS 123 requirements on their annual earnings and earnings per share (EPS) in the footnotes of their annual reports. However, neither the AICPA (1972) nor the FAS 123 required the quarterly recalculation and recognition of the option expense.

Thus, bowing to pressure from the business community and Congress, the FASB reversed the accounting proposals contained in its *Exposure Draft – Accounting for Stock-Based Compensation* (ED) and opted for a realization and disclosure approach as opposed to the realization and recognition approach that was advocated in the ED (FASB, 1993). Since recording option expenses would reduce earnings, and since the recommended method required that a firm continue to apply the approach in future periods (FASB, 1995, par. 14), very few firms adopted the recommended expense recognition approach. While the new annual footnote disclosure _____

Readers with comments or questions are encouraged to contact the authors via email.

requirements have been effective since December 15, 1995, the FASB did not require quarterly disclosures, even though the latter information might be useful to decision makers.

Purpose and Approach

The purpose of this paper is to: 1) explore the annual and quarterly economic impact of FAS 123 on a group of S&P 100 firms; 2) propose changes in the measurement and disclosure rules of FAS 123; and 3) determine the annual and quarterly economic impact of these proposed changes on the same group of S&P 100 firms. Consequently, the impact of the option expense on quarterly EPS is examined using both the static measurement approach recommended by the FASB and the dynamic market valuation approach proposed in this study. The statistical significance of the differences in EPS resulting from the use of these two approaches is explored to obtain a perspective of the economic impact. The magnitudes of the reductions in EPS amounts resulting from the use of these proposals are identified to bring focus on their materiality.

The FAS 123 requires the future option expense for a company be determined at grant date based on stock prices prior to that date. Future stock price changes are ignored. Thus, the requirement is static and fails to consider future stock price movements, which determine whether the option will be exercised or not. It is therefore possible to disclose an option expense in a period in which the stock price is substantially below the option price. We propose that the option expense for each period be recalculated based on current stock prices.

This approach would measure the option expense based on the most recent market information, and would allow the expense to be adjusted upward or downward each period based on future stock price movements (a dynamic measure). This new measure of the expense would be treated as a change in accounting estimate. Since it is advocated that the option expense be recognized quarterly, the effect on EPS is illustrated as of March 31, June 30, September 30, and December 31, 2000 (latest calendar year for which data was available). Regardless of the final decision on measurement choice (i.e., static or dynamic), there is no excuse for not disclosing the option expense and its impact on EPS on a quarterly basis. The ability to accomplish this task exists and most expenses are currently disclosed in interim statements.

Background

Stock options are granted for several reasons. They represent deferred executive compensation with favorable tax treatment to the individual so long as the option price is equal or above the stock price at the grant date. Options allow employees to become owners of the business at a favorable price. They offer incentives to employees to improve firm performance and thus increase stock prices. If the option has a value as of grant date, the value should be an expense to the company, reducing both net income and EPS (Apostolou and Crumbley, 2001). Yet under the APBO 25 requirements currently in force, assuming an exercise value at or above the market value of the stock at the grant date, the company would not record a transaction until the option is exercised. Further, when the option is exercised, no expense would be recorded.

Moyer and Wehrich (2000) and Hill and Stevens (1997) present excellent discussions of these background issues in two case studies that can be used in a classroom setting. The cases explore the impact of stock options on employee wealth, managerial incentives, and company financial statements and tax returns. Also, the political and social consequences of stock options are examined.

From an employee's perspective, the option takes on value when the market price of the stock exceeds the exercise price. From the firm's perspective, costs are incurred when stock is issued to the employees at the reduced price since the firm gives up cash it could have received by selling the shares in the market instead of to employees. Thus, future market conditions are relevant to both the employee and the employer. Attempts to measure future costs without incorporating the most current market conditions can result in poor estimates.

Measuring Option Value

In January 1986, the FASB tentatively agreed that the compensation cost of stock options and stock award plans should be measured at the date of grant by using a minimum value model. However, the FASB reversed itself six months later and agreed that compensation costs should be measured at the later of the vesting date or the date on

which certain measurement factors, including the number of shares and purchase price, would be known. The Board has also agreed that the measurement method should use a fair value model, with the presumption that this value would not be less than the value determined by applying a minimum value model.

The FASB initially embraced the minimum value method because it was believed to be conceptually sound, objectively determinable, and easily computed (Swieringa, 1987, p.7). The minimum value of an option is defined as the market price of the stock minus the present values of the exercise price and expected dividends, with a lower bound of zero. This method, while easy to use, contains several assumptions and limitations that restrict its applicability for valuing executive stock options. First, the model assumes that the risk free rate of interest is known, constant throughout the time period, and available to the borrower. Second, the model ignores taxes and transaction costs. Third, the model assumes that the stock option is held to maturity (i.e., a European call option). However, employee stock options and awards differ from traded options in that they are not transferable and that they lapse upon termination of employment. Both of these restrictions undermine the assumption that the option will be held to maturity and generally result in an overstatement of the option's value. More importantly, the minimum value model fails to incorporate the volatility of the underlying stock.

The fair value (exact) option pricing models, including the Black-Scholes (1973) model, incorporate the volatility of the underlying stock in the determination of the option's value, in addition to the determinants already included in the minimum value model. As with the minimum value model, the Black-Scholes (B-S) model assumes that the executive stock option is a European call option (i.e., one that can only be exercised at maturity). Thus, the fair value option pricing models suffer many of the same limitations and deficiencies attributable to the minimum value models with one notable exception. Although the B-S model includes a volatility adjustment, it is still restricted to assuming a constant variance in the rate of return of the underlying stock, resulting in an overstatement of the option value (Doyle, 1997, p. 40).

Nevertheless, the fair value option pricing models may provide the best possible estimation of an option's value given the inherent uncertainty involved. Thus, in the ED, the FASB required the recognition of compensation costs using the fair value of the option rather than the minimum value of the option.

Requirements of the ED and FAS 123

The ED required the fair value of executive options to be recorded as an asset and a corresponding equity account credited as of the grant date. The asset would then be amortized over the time period that the option would vest. The ED argued that employee stock options represented probable future benefits because employees have agreed to render future services to earn their options. Stock options also reduced future cash outflows otherwise necessary to compensate employees.

In addition, the FASB asserted that changes in stock prices after the grant date had no effect on measuring the value of the option. This approach was preferable since it eliminated the volatility in interim measures of compensation cost that might result from use of later dates as the measurement date. Since fair value models like the B-S model incorporate past market prices in determining option values, it appears that while past volatility in stock prices is acceptable to the FASB in measuring option expense, future volatility in prices is not.

The requirements of the ED were not well received by the business community and the FASB backed down from mandating recording option expenses. Instead, FAS 123 encouraged, but did not require companies to record this compensation expense. However, companies that chose not to adopt the new rules still had to measure and disclose the impact of implementing the FAS 123 rules on annual earnings and EPS in the footnotes of their annual reports. Thus, the critics of expense recognition carried the day, forcing the FASB to adopt a measurement and disclosure approach as opposed to a measurement and recognition approach. The critics succeeded in spite of the results of rigorous research that analyzed the economic consequences of the ED and showed that business opposition was mainly due to political, rather than financial, reasons (Dechow, Hutton, and Sloan, 1996).

The critics argued that outright recognition of option expenses would increase unemployment by having a

large negative impact on small emerging companies where most jobs are created (Doyle, 1997; Mellman and Lillien, 1996; Tucker and Shimko, 1995; Ciccotello and Grant, 1995). They argued for a compromise based on disclosure only (Derieux, 1994). In addition, there were predictions of option plan terminations, manipulation of measurements, loss of key employees by emerging companies, and the devastation these losses would cause to innovation and ability to raise capital (Perspectives, 1994).

The defenders of the recognition approach argued that they have heard these arguments before. Indeed, the sky did not fall when leases were capitalized in 1976 and pension liabilities were recognized in 1986. The defenders employed an argument often used by the FASB in the past, that while our capital markets had very high informational efficiency, disclosure was not a substitute for recognition (Pacter, 1994; American Accounting Association, 1994). Some argued for going beyond the approach proposed in the ED and the definition of assets/liabilities currently accepted and treating options as stock appreciation rights (Balsam, 1994).

Flaws in FAS 123

While the FASB continues to assert that option-pricing models provide reliable and relevant information, failure to update and revise cost estimates quarterly and annually does not appear to be logical because it does not incorporate current information about volatility that is relevant to those estimates. Furthermore, the recommended approach is not consistent with accounting for other estimated expenses, where most recent data must be used for measurement and amounts must be recognized in interim financial statements.

Methodology

The application of the B-S model in accounting for stock options as required by FAS 123 is static. The option value is determined based on volatility of stock prices prior to the granting of the option. Once this value is determined it is divided by the length of the vesting period of the option to determine the annual expense. Thus, this expense is an estimate based upon market price movements prior to granting the option. Future price movements that will determine whether the option is exercised are ignored. The alternative recommended in this study would recalculate the option values subsequent to the issue date and thus capture more recent market price movements. Changes in the value of the option would cause changes to be recognized in the option expenses of subsequent periods. Thus, the dynamic approach would treat such changes as a change in an accounting estimate.

All S&P 100 firms with calendar years and options outstanding as of December 31, 1999 were selected. There were 40 firms that had the required information. The S&P 100 firms were used in this study because of the expectation that most of these firms had large stock option plans and firmly established markets for their stock. Using the B-S model and the average vesting period of options disclosed in the footnotes, the values of the options and amounts of option expenses were computed under both the FAS 123 approach (static expense) and the approach proposed in this study (dynamic/quarterly recalculation approach). These computations were carried out as of December 31, 1999 and for the year 2000 quarters ending March 31, June 30, September 30, and December 31. The effects of including these two expenses in earnings were computed in order to determine whether the decreases in the APBO 25 based EPS amounts and the differences between changes caused by the two methods were significant.

Under the static expense method, the B-S model was used to calculate the value of outstanding stock options on December 31, 1999. The quarterly expense was set equal to the total stock option value divided by the vesting period of the option (stated in quarters). When necessary, a twelve-quarter option-vesting period is assumed for both methods. This assumption was necessary since not all firms in the sample indicated the actual vesting period for their stock options. The vesting period assumption was based on the finding that the average vesting period for firms reporting this information was approximately three years (twelve quarters).

Under the dynamic approach, the quarterly expense was calculated using the B-S model and the most recent stock price information available. The option expense for the first quarter of 2000 was determined by calculating the total value of the stock options based on stock price (and volatility) information available as of March 31, 2000 and dividing it by the number of quarters in the option vesting period (or twelve quarters). To determine the

subsequent option expense for the second quarter, the total value of the stock options based on stock price information as of June 30, 2000 was computed. The value of the expense taken in the first quarter was then subtracted from the newly calculated total option value. This remainder was then divided by the remaining quarters in the vesting period (or eleven quarters) to determine the expense for the second quarter. The revised expenses for the third and fourth quarters of 2000 were computed similarly. It was assumed that the vesting period length and the number of shares under the option plans disclosed on December 31, 1999 did not change during 2000. The Appendix contains a description of this approach.

The quarterly EPS amounts computed using the static measures of option expenses and the ones using the dynamic measures of option expenses were then compared in order to determine if they were materially different from each other. Difference-in-mean tests were used to determine if the differences were statistically significant, with the initial expectation that (null hypothesis) no significant differences would be found. Given a portfolio of forty firms in diverse industries with possibly diverging stock price movements, this would be a valid expectation.

Next, the forty firms were separated into two groups based on their quarterly returns. The computations and statistical tests were repeated each quarter for the group with positive cumulative returns as well as for the one with negative cumulative returns. It is likely that the differences between the two EPS measures would be statistically significant (i.e., the null hypothesis would be rejected) since stock prices and the direction of their movements are a major determinant in the B-S valuation model.

Finally, economic consequences were measured by observing the decreases in the reported EPS values when either static or dynamic option expenses were included in the EPS computations. A three percent or more decrease was assumed material. The three-percent change was used in many accounting standards concerning EPS calculations and disclosures.

Results and Analysis

Data on the financial characteristics of the 40 firms included in the analysis is presented in Table 1. The smallest firm has \$648.42 million in total assets, while the largest \$716.937 billion. Outstanding shares range from approximately 57 million to 4.5 billion, with a mean of 1.3 billion. Meanwhile, shares under option plans range from approximately 4.4 million to 305 million. Finally, the B-S option plan values range from approximately \$23 million to \$7.4 billion and the average option lives range from 8 to 36 quarters, with mean and median lives of 22 quarters. However, the average vesting period of options for those firms that disclose this information is 12 quarters.

Table 1. Sample Characteristics (40 firms)

Variable	Mean	Median	Minimum	Maximum
Total Assets (\$ millions)	72449.33	23613.50	648.42	716937.00
Common Equity (\$ millions)	13690.99	8247.50	537.08	78927.00
Shares Outstanding (\$ thousands)	1304737	724859	57158	4500000
1999 EPS (\$)	2.69	2.45	0.44	6.99
Stock Options Outstanding (thousands)	78839	48312	4355	305600
Expected Life (quarters)	22	22	8	36

Black-Scholes value (\$ per share)	18.43	18.11	4.15	50.91
Black-Scholes value (\$ total in millions)	1505.62	676.43	23.35	7440.11

Table 2 presents the results of analyses for the 40 firms. On average, the companies in the portfolio experienced negative returns in the first two quarters of 2000, and positive returns in the following two quarters. Mean quarterly EPS amounts computed under both the FAS 123 approach (static expense) and the approach proposed in this study (dynamic/quarterly recalculated expense) are approximately 16 percent lower than the quarterly EPS amounts reported by the firms based on the APBO 25 rules. While the declines from the EPS amounts reported under APBO 25 are material, none of the quarterly differences between those EPS amounts that would have been reported under FAS 123 and those that would have been reported under the dynamic approach are statistically significant at the 95 percent confidence level.

Table 2. Mean Quarterly EPS Considering Option Expense for Full Sample

Variable	Quarter re- turn (%)	Reported EPS	EPS with static expense	EPS with dynamic expense	Difference test statistic
2000 – Quarter 1	-2.49	0.6108	0.5134	0.4986	1.85
2000 – Quarter 2	-0.67	0.5799	0.4843	0.4786	0.75
2000 – Quarter 3	1.06	0.6527	0.5572	0.5581	-0.07
2000 – Quarter 4	6.44	0.4746	0.3792	0.3594	1.50
2000 Annual	----	2.3180	1.9341	1.8947	1.08

This outcome suggests that for a portfolio containing a large number of companies that operate in a diverse set of industries, both the FAS 123 and the proposed option valuation approaches result in similar EPS computations. Since the FAS 123 approach involves less effort, it should be preferred in computing an EPS amount for a diversified portfolio. However, this result must be placed in perspective. Most individual investors and investment advisors mainly focus on the EPS trends of a given company or a given sector (e.g., new economy, old economy, technology, emerging companies, specific industries, and growth firms). While the average EPS computations of a diversified portfolio of S&P 100 firms may not be sensitive to the use of a given option expense measurement method, the EPS computations of individual firms or sectors may be.

To observe the impact of the two option expense measurement methods on the EPS values of firms with similar quarterly financial outcomes, we separated the sample into two groups. Table 2A shows the quarterly results of the analysis for firms with negative quarterly returns and Table 2B shows the results for firms with positive quarterly returns. Except for the first quarter for firms with negative returns, all differences between EPS values calculated under the two methods are statistically significant at either 95 or 99 percent confidence levels. In addition, EPS values based on dynamic (recalculated) expenses are higher than the ones based on the static (FAS 123) expenses for firms with negative returns, with the B-S model assigning lower option values to firms with declining stock prices. As expected, results opposite to those are obtained for firms with increasing stock prices (positive returns). Thus, the dynamic approach to option expense measurement is superior to FAS 123 approach in reflecting economic reality for individual firms.

Table 2A. Mean Quarterly EPS for Year 2000 Considering Option Expense for Firms with Negative Cumulative Returns from the Beginning of the Year until the End of Each Listed Quarter

Time	Number	Quarter re-	Reported EPS	EPS with static	EPS with dynamic	Difference
------	--------	-------------	--------------	-----------------	------------------	------------

Period	of firms	turn (%)		expense	expense	Test statistic
Quarter 1	27	-11.94	0.6335	0.5436	0.5458	-0.48
Quarter 2	23	-21.29	0.5782	0.4932	0.5176	-4.91 ^a
Quarter 3	20	-29.47	0.5936	0.5132	0.5569	-6.62 ^a
Quarter 4	20	-26.43	0.2812	0.1920	0.2253	-3.85 ^a

(a) Probability > 99%

Table 2B. Mean Quarterly EPS for Year 2000 Considering Option Expense for Firms with Positive Cumulative Returns from the Beginning of the Year until the End of Each Listed Quarter

Time Period	Number of firms	Quarter return (%)	Reported EPS	EPS with static expense	EPS with dynamic expense	Difference Test statistic
Quarter 1	13	17.16	0.5635	0.4507	0.4004	2.53 ^b
Quarter 2	17	21.31	0.5822	0.4723	0.4258	4.52 ^a
Quarter 3	20	26.88	0.7119	0.6013	0.5593	2.27 ^b
Quarter 4	20	31.57	0.6680	0.5663	0.4934	3.95 ^a

(a) Probability > 99% (b) Probability > 95%

Table 3 shows that recognizing option expenses under either static (FAS 123) or dynamic (recalculated) measurement approaches results in material economic impact. A three percent or more decline in reported APBO 25 based EPS amount is considered significant because this criterion of materiality has been used in every EPS standard promulgated in the past four decades. Under the static method only one of the 40 firms in the sample has an EPS decline that does not exceed three percent. Under the dynamic method only two of the 40 firms in the sample have an EPS decline that does not exceed three percent. The average decline in reported EPS for all forty firms is 16.25 percent under the static expense measurement approach and 15.85 percent under the dynamic approach.

Table 3. Economic Effect of Stock Options on EPS

Calculation method	Number over 3% of EPS	Average % effect on EPS	Median % effect on EPS	Minimum magnitude % effect on EPS	Maximum magnitude % effect on EPS
EPS with flat expense	39	-22.36	-16.25	-1.09	-86.60
EPS with recalculated expense	38	-23.92	-15.85	-2.41	-132.43


Summary and Concluding Comments

The results of this study are consistent with the accepted theories concerning diversified portfolios. While both FAS 123 and dynamic option expense measurement approaches have material economic impact and reduce the average EPS amounts reported under APBO 25 rules by approximately 16 percent or more, no statistically significant differences are found between the results of these two approaches in any year 2000 quarters. However, when the sample is split into two groups based on negative and positive quarterly returns, the differences between the re-

sults of the two methods are statistically significant in seven of eight quarterly observations. Compared to the static (FAS 123) measurement approach, the dynamic (quarterly recalculated) approach results in lower option expenses and higher EPS values for firms with declining stock prices and higher option expenses and lower EPS values for firms with increasing stock prices. Thus, the dynamic measurement approach more faithfully represents the economic reality of individual firms. Finally, no technical or logistical impediments are observed to measurement and disclosure of option expenses and their impact on EPS in interim financial statements.

While it is theoretically justifiable to recognize option expenses, political realities of material economic impact on EPS values may continue to force the profession to settle for disclosure only. However, the results of this study show that the dynamic measurement approach and quarterly disclosure of option expenses should be the preferable strategy for the FASB to follow in either case. The FAS 123 modified the asset-equity approach required by the ED in favor of an income statement approach. The latter approach requires a periodic measure of what is being given up by granting employee options. Since the B-S model tends to front-end the expense, quarterly use of the B-S model to recalculate the option value and update the expense is warranted.

Recommendations for Future Research

The results of this study should be extended to include all companies with employee stock option plans. While using a sample of S&P 100 firms with calendar year ends allowed for ready access to information and rigorous empirical results, it limited the applicability of these results to large, diversified companies. Other studies may focus on the impact of these two expense measurement approaches on companies with certain financial characteristics or operating in certain industry sectors. Finally, it should be possible for future studies to relax the calendar year requirement used in this study and enlarge the sample size. 

References

1. American Institute of Certified Public Accountants, *Accounting Principles Board Opinion No. 25: Accounting for Stock Issued to Employees*, AICPA, New York, NY, 1972.
2. Apostolou, Nicholas G. and D. Larry Crumbley, "Accounting for Stock Options: The Controversy Continues," *The CPA Journal* (May 2001), pp. 34-39.
3. Balsam, Steve, "Extending the Method of Accounting for Stock Appreciation Rights to Employee Stock Options," *Accounting Horizons* (December 1994), pp. 52-60.
4. Black, F. and M. Scholes, "The Valuation of Option Contract and a Test of Market Efficiency," *The Journal of Finance* (May 1973), pp. 399-417.
5. Ciccotello, Conrad S. and C. Terry Grant, "Employee Stock Option Accounting Changes," *Journal of Accountancy* (January 1995), pp. 72-77.
6. Dechow, Patricia M., Amy P. Hutton and Richard G. Sloan, "Economic Consequences of Accounting for Stock-Based Compensation," *Journal of Accounting Research* (Supplement 1996), pp. 1-20.
7. Derieux, Samuel A., "Stock Compensation Revisited," *Journal of Accountancy* (February 1994), pp. 39-41.
8. Doyle, William N., "New Accounting Principles for Stock-Based Compensation," *Management Accounting* (February 1997), pp. 38-42.
9. Financial Accounting Standards Board, *Exposure Draft: Accounting for Stock-Based Compensation*, FASB, Norwalk, CT, 1993.
10. _____, *Statement of Accounting Standards No. 123: Accounting for Stock-Based Compensation*, FASB, Norwalk, CT, 1995.
11. Financial Accounting Standards Committee of the American Accounting Association, "Response to: FASB Exposure Draft - Accounting for Stock-Based Compensation," *Accounting Horizons* (June 1994), pp. 114-116.
12. Hill, Nancy T. and Kevin Stevens, "Instructional Case: Choices and Dilemmas in Accounting for Stock-Based Compensation," *Journal of Accounting Education*, Vol. 15, No. 7 (1997), pp. 389-410.
13. Mellman, Martin and Steven Lillien, "Stock-Based Compensation Effect on Net Income," *The CPA Journal* (March 1996), pp. 50-53.
14. Moyer, Susan E. and Susan A. Weihrich, "Espresso, Inc.: Analyzing the Impact of Employee Stock Op-

- tions,” *Issues in Accounting Education* (August 2000), pp. 513-534.
15. Pacter, Paul, “FASB’s Stock Option Accounting Proposal: Correcting a Serious Flaw,” *The CPA Journal* (March 1994), pp. 60-61.
 16. Perspectives, “Letters to the Editor,” *Harvard Business Review* (January-February 1994), pp. 27-36.
 17. Swieringa, R. J., “Accounting for Stock Options,” *FASB Status Report No. 183* (January 1987), pp. 6-10.
 18. Tucker, James J. III, and Barbara W. Shimko, “The Economic Impact of the Propose Rule Change for Employee stock Options: The Issues and Controversy,” *American Business Review* (January 1995), pp. 8-10.

Appendix

Description of the Computation Processes Used

Value of options outstanding computed using B-S on 12/31/99 and at the end of each 2000 quarter	V (\$\$)
Average vesting period of options	A (# of Quarters)
# of C/S outstanding disclosed at 12/31/99 and at the end of each 2000 quarter	N (# of Shares)
Net Income under APBO 25 for 1999 and for each 2000 quarter	NI (\$\$)
EPS under APBO 25 for 1999 and for each 2000 quarter	EPS (\$\$/share)
Quarter 1 → 4 of 2000	Designated by subscripts 1 → 4
Quarterly EPS computations under flat (FAS 123) method	$\frac{NI_1 - V/A}{N_1}, \frac{NI_2 - V/A}{N_2}, \frac{NI_3 - V/A}{N_3}, \frac{NI_4 - V/A}{N_4}$
Quarterly EPS computations under the dynamic method	$\frac{NI_1 - \frac{V_1}{A}}{N_1}, \frac{NI_2 - \left(\frac{V_2 - V_1}{A-1}\right)}{N_2}, \frac{NI_3 - \left(\frac{V_3 - V_1 - \frac{V_2 - V_1}{A-1}}{A-2}\right)}{N_3},$ $\frac{NI_4 - \left(\frac{V_4 - \left(\frac{V_1}{A}\right) - \left(\frac{V_2 - V_1}{A-1}\right) - \left(\frac{V_3 - \frac{V_1}{A} - \frac{V_2 - V_1}{A-1}}{A-3}\right)}{A-3}\right)}{N_4}$