The Value-Relevance Of Stock-Based Employee Compensation Disclosures

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Abstract

This study employs pro-forma company footnote disclosures to assess the value-relevance of employee stock option compensation expense using the fair value method as stipulated by Statement of Financial Accounting Standard No. 123. The study is motivated by the controversy surrounding the issue of accounting for employee stock options and the countervailing effects of issuing stock options on firm value. Although accounting regulators and the business community agree that employee stock options have value and therefore, are a form of compensation, critics of the FASB's proposed fair value method of accounting for employee stock options argue that measuring the compensation expense using contemporary models will result in unreliable and meaningless measures. Moreover, the expected future benefits from granting stock options suggest that this form of employee compensation is not a typical expense. We find a significant association between the disclosed compensation expense using the fair value method and firm value that is in the opposite direction from other income statement expenses. This result implies that the disclosed employee stock option expense is a value-relevant measure and the incentives derived from employee stock option plans provide value-increasing benefits to the firm. In addition, we find the positive association between the employee stock option expense and firm value is greater for firms with more growth opportunities.

I. Introduction

After more than a decade of deliberating on the issue of accounting for stock options and other similar equity securities, the Financial Accounting Standards Board (FASB) in October, 1995, issued Statement of Financial Accounting Standard (SFAS) No. 123: *Accounting for Stock-Based Compensation*. This standard encourages, but does not require, companies to recognize the fair value of stock-based compensation as an expense in their financial statements. This method of recognition is referred to in SFAS 123 as the *fair value based method* of accounting for employee stock options (ESOs).[1] If companies choose to continue accounting for ESOs based on APB Opinion No. 25 (referred to in SFAS 123 as the *intrinsic value based method*), SFAS 123 requires pro forma footnote disclosures of net income as if the fair value method had been applied. This paper employs the resulting financial reporting data related to SFAS 123 to assess the value-relevance of the ESO fair value expense.

The motivation for our examination is based on the fundamental differences between the ESO

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expense and other expenses recognized on the income statement and the controversy surrounding the FASB deliberations concerning its recognition. Few individuals would doubt that ESOs have value and therefore, are a form of compensation expense. The issuance of ESOs has the potential effect of diluting the position of existing shares. This dilutive effect results in a value transfer from existing shareholders to the holders of the options and therefore, on a per share basis, issuing stock options is similar to other types of expenses in that it will have a negative effect on share price. However, employee stock options have important characteristics that potentially create additional value for the firm. Agency theory suggests that granting ESOs will alleviate the problems inherent in principle/agent relationships since the employee becomes a potential owner. ESOs can motivate employees to work harder and can build company loyalty. Furthermore, ESOs can help in attracting top employee talent. Whether the granting of ESOs has a positive or negative net effect on the prices of existing shares depends on whether the incentive benefits inherent in ESOs outweigh their dilutive effects on claims to company resources.

The FASB proceedings that ultimately led to SFAS 123 were accompanied by a large amount of attention and criticism.[2] The related Exposure Draft issued by the FASB proposed a requirement that companies deduct the fair value compensation expense from earnings; however, the relentless pressure from business, government, and even the accounting profession led the FASB to compromise its position and allow pro forma note disclosures.[3] A wide disparity exists between the beliefs of business executives and the FASB concerning the usefulness of stock-based compensation disclosures using the fair value method (Khalaf, 1993; Harlan, 1994; Rodgers, 1994; Berton, 1995). Critics of ESO expense recognition argue that the available option pricing models provide a measure of the expense that is unreliable and meaningless (AcSEC, 1994; Beese, 1994).

Similar to previous research, value-relevance is assessed in this study by examining the association between the disclosed ESO expense and annual stock returns. If investors' perceptions are that the dilutive effects of granting stock options dominate their incentive effects and the ESO expense, as disclosed by the company, accurately reflects this dilutive effect, then similar to other items that reduce net income, we should find a significantly negative association between the ESO expense and stock returns.[4] However, if the granting of ESOs builds company loyalty, allows the company to attract better employees, and/or motivates employees to act in the best interests of the company shareholders, then the ESO expense could have a positive association with firm value. Given the extensive debate concerning the appropriate accounting for ESOs and the uncertainty surrounding the expected association between ESOs and firm value, the results of this study should be of interest to a wide range of accounting constituents, including company managers and compensation committees, who must decide whether ESO plans provide value-increasing benefits to the firm.

This study is closely related to Aboody (1996), which investigates the value-relevance of the ESOs themselves (a balance-sheet valuation approach) and finds a significantly negative association between the ESO value — as estimated by the author — and a firm's share price. However, as suggested by Skinner (1996), the results in Aboody (1996) do not lend themselves to unambiguous conclusions. Due to the absence of explicit company disclosures related to the value of ESOs, Aboody (1996) makes several estimates in determining the ESO value, which introduces measurement error into his regression equation that probably affects the magnitude and significance of the regression coefficients. Moreover, in order to interpret the results, we must assume that the market calculates ESO value in the same manner as the author. Given these limitations, this paper provides a natural extension to Aboody (1996) by using the actual footnote disclosures provided by companies to

test the value-relevance of the ESO compensation expense.

Finally, we partition the data based on several company variables to investigate whether the value-relevance of the ESO expense is associated with the growth prospects of the firm. A popular notion within the financial community is that small companies with high growth potential rely more extensively on ESOs as a form of compensation (Khalaf, 1993; Beese, 1994; Harlan, 1994). As a result, small companies were particularly opposed to the FASB's ESO expense recognition proposal. The value of ESOs to employees is larger for high-growth firms and accordingly, high-growth companies that grant ESOs should receive more incentive benefits. In addition, the use of ESOs as a form of compensation allows small companies to be competitive in attracting top employee talent. Based on several growth proxies that are employed in the study, including firm size, we document results consistent with the notion that high-growth firms benefit more from ESOs.

The next section of the paper reviews the sequence of events leading up to the passage of SFAS 123. Section 3 describes the methodology employed in the study. The sample selection process and empirical results are presented in section 4. Finally, section 5 summarizes the results and provides conclusions.

II. Institutional Background

In March 1984, the FASB unanimously voted to add the stock compensation project to its agenda. This action was prompted by the development of option pricing models and a growing dissatisfaction with the current state of accounting for ESOs under the guidelines of APB Opinion No. 25. Under this standard, the majority of granted ESOs resulted in zero expense being recognized in the financial statements since they were issued with an exercise price equal to or greater than the current market price. This accounting treatment is inconsistent with other types of equity transactions. For example, when stock is issued for equipment, the fair market value of the stock is ultimately expensed as depreciation. Moreover, a perceived inequity existed in accounting for different types of stock option plans. Some option plans are linked to the achievement of performance goals -- commonly referred to as "variable plans". Within these plans, the number of options to be granted (or the exercise price of the options) is not known on the grant date and depends upon the achievement of stated goals. Since the necessary variables to measure the intrinsic value of these options are not available until after the completion of a multi-year cycle, the accounting treatment under Opinion 25 for these plans usually results in a significant expense being deducted from earnings.

For more than eight years, the FASB did little more than deliberate the issue. The development of option pricing models did not alleviate the problem of measurement that had hindered the APB in the early 70's. The Black-Scholes or binomial option pricing models were developed to value publicly traded call options, which differ from ESOs in some significant aspects. ESOs usually contain trading restrictions, have vesting requirements before they are exercisable, and have much longer exercise dates.

The issue of stock-based compensation was brought to the forefront again in 1992 when President Bush visited Japan while being accompanied by 12 American executives. The Japanese focused attention on the disparity in executive compensation packages between America and Japan with the insinuation that this disparity contributed significantly to higher costs for American products. Democratic Senator Carl Levin from Michigan promptly introduced a bill that would require companies to deduct from earnings the fair value of ESOs granted. Senator Levin admitted that a main objective in introducing legislation was to prod the FASB to act. In June 1993, the FASB issued their Exposure Draft that proposed recognition of the fair value

of ESOs as compensation expense.

The Exposure Draft was met with strong resistance, especially from business executives. The FASB received over 1,700 letters of comment concerning the issue, almost all of which were in opposition to the Exposure Draft (Berton, 1994a). The main arguments against the fair value method of recognizing stock-based compensation fell into two areas: 1) public policy issues, and 2) reliability of measurement methods.

Company managers claimed that recognizing the fair value of ESOs as an expense would adversely affect their stock price, which would result in many companies having to cut stock plans (Khalaf, 1993; Beese, 1994; Harlan, 1994). Furthermore, this effect would be most significant for high-tech and emerging companies that rely heavily on stock-based compensation. The ultimate result, according to company managers, is that the U.S. economy would be seriously harmed due to: 1) the stifling of new business, 2) lost jobs from companies going out of business, and 3) a competitive disadvantage with foreign companies that do not follow the fair value method.

The other main argument made against the Exposure Draft concerns the reliability of measuring the fair value of ESOs (Rodgers, 1994; Beese, 1994). The trading restrictions contained in most ESOs and the longer exercise dates give rise to the possibility of risk-averse employees exercising ESOs early. Together with the long vesting requirements, these restrictions result in the option pricing models overstating the cost of ESOs to companies (Huddart, 1994; Hemmer, Matsunaga, and Shevlin, 1994). Coopers and Lybrand (1993) conducted a study indicating the resulting compensation expense under the guidelines of the FASB Exposure Draft would vary widely depending on the assumptions used in the model. The study suggested that financial statement users may want to remove the impact of the expense recognition from the financial statements when analyzing the company. Even the Accounting Standards Executive Committee (AcSEC), which originally favored the FASB putting stock compensation on its agenda, voted 9 to 6 in disagreement with the FASB's proposal to recognize stock-based compensation using the fair value method based on their belief that the measurement methods are not sufficiently reliable to be helpful (AcSEC, 1994).

The lobbying against the FASB's proposal became intense.[5] The American Stock Exchange conducted a survey of over 200 chief executive officers of companies listed on the exchange and reported that 84% of those surveyed opposed the recognition requirement (Berton, 1994a). The debate over the appropriate accounting treatment even reached capital hill where Democratic Senator Joseph Lieberman introduced the Equity Expansion Act of 1993, which, if enacted, would have overruled any decision by the FASB that required expensing the fair value of granted ESOs. Treasury Secretary Lloyd Bentsen encouraged the FASB to carefully consider retaining the then current accounting treatment for ESOs. Even President Clinton warned of the possibility that the FASB's proposal would undermine the competitiveness of America's high-tech firms (Harlan, 1994).[6]

The fervent opposition generated towards the Exposure Draft caused the FASB to consider alternatives (Berton and Lublin, 1994; Berton, 1994b). Several businesses suggested a compromise that would require recognizing compensation expense only when ESOs are exercised quickly after the grant. Other possibilities considered were to eliminate stock-price volatility from the option pricing formula or record the valuation of the ESOs at the vesting date. Both alternatives would reduce the amount of compensation expense recognized. Most critics suggesting compromise recommended that full disclosure would be adequate. Ultimately, the FASB voted 5 to 2 in favor of accepting pro forma disclosures of earnings that indicate what earnings would be if the fair value of stock-based compensation were recognized.[7]

The FASB's compromise was generally cheered by the business community (Colvin, 1995, Berton and Lublin, 1994). However, there were other companies that were still not satisfied. Nearly 400 companies sent a letter to the FASB expressing their disagreement with the FASB's requirement that the footnote disclosures provide a specific value for ESOs granted (Berton, 1995).

III. Methodology

Value-Relevance of the Stock-Based Compensation Expense

This paper investigates the value-relevance of the ESO expense as measured using the fair-value method. Few people would argue with the notion that ESOs have value and therefore, are a form of compensation expense. However, two significant factors associated with ESOs suggest that their impact on firm value may not be the same as other earnings components. First, option plans can be very effective in motivating employees to act in the best interests of shareholders. Presumably, shareholders would not approve these plans unless they perceived the company would benefit in the long-term. Therefore, ESOs may actually send a positive signal to the market. Second, the important differences between ESOs and traded options emphasize the limitations of the option pricing models that are employed to value ESOs. Huddart (1994) finds that the Black-Sholes option pricing model overstates the cost of ESOs to employers when risk-averse employees exercise ESOs early.

If the compensation expense that is disclosed by companies is overstated, the weight placed on this earnings component will be small relative to the weight placed on other earnings components. In addition, critics of the stock-based compensation Exposure Draft contend that the fair value of ESOs cannot be measured reliably enough to be useful. If the compensation expense contains only noise, its association with firm value will not be significant.

To test the value-relevance of the ESO expense, we employ the following conventional model that measures the association between annual returns and earnings components:

$$R_i = \gamma_0 + \gamma_1(EPS_i) + \gamma_2(ESO_i) + \varepsilon_i \quad (1)$$

where:

R_i = a twelve-month return for company i ending three months after the fiscal year end;

EPS_i = primary earnings-per-share before non-operating items for company i deflated by price at the beginning of the return cumulation period;

ESO_i = the after-tax effect of the fair value expense on earnings-per-share as reported in the companies' footnotes deflated by price at the beginning of the return cumulation period; and

ε_i = a random error term.

The model does not have a time subscript because all observations correspond with the 1996 fiscal year — the first year of ESO expense disclosure. For this reason, we use raw returns as the dependent variable since a market-adjusted return would result in the same adjustment for all firms and therefore, would affect only the regression equation's intercept. The coefficient γ_2 provides information concerning the value-relevance of the disclosed ESO expense; a positive (negative) value indicates that the incentive (dilutive) effects of ESOs dominate.

To provide further insight about the value-relevance of the ESO expense, we partition our data based on companies' growth prospects. The granting of ESOs may be particularly beneficial to high-growth companies due to their high demand for cash. ESO plans provide high-growth companies an avenue that will allow them to offer top employee talent an attractive compensation package that does not require large cash outlays in the short-term. In addition, there are

some potential signaling benefits from ESO plans for these kinds of companies. Compared to large, well-established companies, small companies with high-growth prospects have a greater risk of terminating operations due to various factors. The fact that employees are willing to defer cash compensation in favor of ESOs may provide a positive signal to the market about the overall value of the firm.

We partition our sample based on the following growth proxies: 1) firm size, 2) Tobin's Q-ratio, and 3) dividend policy. Firm size is probably the coarsest measure for growth; however, it is used here because of the persistent argument raised to the FASB that small companies would especially suffer from a standard that required ESO expense recognition due to their extensive reliance on ESO plans. Firm size is measured as the market value of equity at the end of the fiscal year.

Tobin's Q-ratio is a popular growth measure, particularly in the finance literature, and is computed as follows:

$$\frac{(E+D+PS)}{RC} \qquad (2)$$

where E, D, and PS are equal to the market value of equity, debt, and preferred stock, respectively, and RC is equal to the replacement cost of assets. A Q-ratio significantly greater than one is commonly interpreted as an indication that the company has a high level of growth prospects. The market value of equity (E) is calculated by multiplying stock price by the number of shares outstanding at the fiscal year end. Similar to Lang and Litzenberger (1989) and Lang, Stultz, and Walkling (1989), book values of debt and preferred stock are employed as their market values. Measuring the replacement cost of assets (RC) is the most problematic. When available, previous studies have used current cost data provided by SFAS 33 (e.g., Lang, et al., 1989; and Landsman and Shapiro, 1995). When SFAS 33 data is unavailable, which is obviously the case in this study, prior research has generally used either historical cost amounts adjusted for general inflation (e.g., Lang, et al., 1989; and Landsman and Shapiro, 1995) or book value (e.g., Chen and Ho, 1997). Due to its relative ease and the questionable benefits derived from adjusting historical cost amounts by the general inflation rate, we use book value in this study. This decision results in a positive bias in the Q-ratio due to the typical case where the book value of assets are understated; however, this bias should be fairly constant across firms and therefore, the OLS parameter estimate should remain unbiased.

Dividend policy (DIV) is a dummy variable employed in Pilotte (1992) as a proxy for growth. Firms that have not declared a cash dividend since inception are defined as growth companies and DIV is set equal to one. For all other firms, DIV is set equal to 0.

IV. Empirical Results

Sample Selection Process

The initial sample for this study was identified by searching the footnotes of all companies that filed their 10-K with the SEC using Electronic Data Gathering, Analysis, and Retrieval system (EDGAR) prior to April 1, 1997. To be retained in the final sample, a firm must meet the following criteria: 1) a December 31 fiscal year end, 2) disclosed compensation expense related to ESOs in 1996, and 3) a CUSIP available on the Disclosure/SEC database. These criteria resulted in an initial sample of 1,126 firms. This initial sample was further reduced by 161 observations due to insufficient return data during the 1996 cumulation period. Finally, 209 additional observations were deleted where the ESO expense per share was less than 0.1% of share price (N=756). This final selection criterion was implemented in an effort to eliminate observations where the magnitude of the ESO expense was not material enough to have an effect on stock price.

Table 1
Descriptive Statistics for Sample of Firms Disclosing Employee Stock Option Expense in Company Footnotes (N=756)[a]

Panel A: Distribution Statistics

Variable	Mean	Median	Std. Dev.	10th Perc.	90th Perc.
Firm Size (mil.)	$1,026	$174.3	3,608	$28.5	$2,039
R	6.44%	1.79%	0.50	-49.3%	59.9%
EPS	1.31%	3.65%	0.17	-9.30	10.9%
ESO	0.85%	0.40%	0.02	0.14%	1.65%
DIV	51.5%	1.00	0.50	0.00	1.00
Tobin's Q	2.30	1.53	2.45	1.01	4.34

Panel B: Pearson Correlation Matrix

	ln(Firm Size)	R	EPS	ESO	DIV
R	0.16*				
EPS	0.21*	0.25*			
ESO	-0.26*	0.04	-0.22*		
DIV	-0.26*	-0.15*	-0.23*	0.15*	
Tobin's Q	0.13*	-0.01	-0.11*	-0.01	0.22*

*Represents statistical significance at the α=.01 level.

[a]Firm Size = stock price multiplied by number of shares outstanding as of December 31, 1996.
R = 12 month return ending March 31, 1997 (i.e., three months after fiscal year end);
EPS = earnings per share from continuing operations deflated by price at April 1, 1996 (i.e., the beginning of the return cumulation period);
ESO = employee stock option expense per share measured by the fair value method as disclosed in company footnotes deflated by price at April 1, 1996 (i.e., the beginning of the return cumulation period);
DIV = 1 if the firm has not declared a cash dividend since its inception; 0 otherwise.
Tobin's Q = (market value of equity + book value of debt + book value of preferred stock) / book value of total assets.

Table 1 provides some descriptive statistics for the final sample of 756 firms. Panel A reports statistics that provide information about the distribution of several variables of interest. The average size firm as represented by their market value of equity is just over $1 billion. Both very large and very small companies are represented in the sample as firm sizes range from a minimum of $2 million to a maximum of over $54 billion. Although the mean ESO is relatively small, it represents approximately 65% of the mean EPS. The ESO values around the 90th percentile are quite large and can have a very significant impact on reported EPS. Approximately one-half of the sample is comprised of firms that have never declared a cash dividend. Only 9% of the sample has a Q-ratio less than one, which indicates that most of these companies have growth opportunities; however, as mentioned in a previous section, the use of book value of assets as a proxy for RC results in an inflated Q-ratio.

Panel B of Table 1 reports a Pearson correlation matrix for the same variables except that the natural logarithm of firm size is used in this panel. Several interesting relationships should be noted. First, as expected, the negative correlation between firm size and the ESO expense indicates that smaller companies rely more ex-

Table 2
Regression of Annual Returns on Contemporaneous Earnings and ESO Expense
Regression Equation[a]: $R_i = \gamma_0 + \gamma_1(EPS_i) + \gamma_2(ESO_i) + \gamma_i$

	γ_0	γ_1	γ_2	R^2_{adj}	γN
Coefficient	0.00	1.33*	1.71*	13%	756
(t-statistic)	(0.23)	(10.8)	(2.71)		

* indicates that the coefficient exceeds zero at the .01 alpha level using a two-tailed test.

[a]R = the twelve-month return ending three months after the fiscal year end;
EPS = primary earnings-per-share before non-operating items deflated by price at the beginning of the return cumulation period;
ESO = the after-tax effect of the fair value expense on earnings-per-share as reported in the companies' footnotes deflated by price at the beginning of the return cumulation period;
ε = a random error term; and
i = a firm subscript.

To control for outliers, the data was winsorized as follows: R magnitudes greater than 100% were set equal to 100%; EPS and ESO magnitudes greater (less) than 0.5 (-0.5) were set equal to 0.5 (-0.5).

tensively on ESO plans. A significantly negative association exists between EPS and ESO, which suggests that firms with relatively low earnings attempt to lower their compensation expense as reported in the income statement by issuing more ESOs.

In general, the three proxies for growth have the expected relationships. The negative association between firm size and dividend policy suggests that cash dividends are declared by larger, more mature firms. Tobin's Q and dividend policy have a positive association, which indicates that these two variables may be a close measure for the same growth characteristics of the firm. Given the above two relationships, the positive association between firm size and Tobin's Q is somewhat surprising and indicates that these two variables are complimentary and measure different underlying growth factors.

Value-Relevance of Employee Stock Option Expense

Table 2 presents the results from estimating regression equation (1). To control for outliers, instead of deleting observations, we winsorized extreme values as follows: returns greater than 100% were winsorized to 100% and standardized earnings and ESO magnitudes were winsorized to 0.5 in absolute value. As expected, the coefficient on EPS is significantly positive. The ESO expense is entered into the regression as a positive value; therefore, if the market interprets ESO expense similar to other expenses, γ_2 should be negative. The significantly positive γ_2 coefficient implies that, on average, the incentive benefits associated with ESOs outweigh their dilutive effects.[8]

A common notion held by the financial community and an argument presented to the FASB in response to the original ESO Exposure Draft is that small companies with high growth potential rely more heavily on ESOs as a form of compensation. Valuation models, including those presented in Ohlson (1995) and Feltham and Ohlson (1995), suggest that earnings growth is an important determinant of firm value. The results in table 2 suggest that the size of the ESO plan might be a good proxy for a company's growth potential.

To provide further insight about the value-relevance of the ESO expense, we expand equation (1) as follows:

$$R_i = \beta_0 + \beta_1(GROWTH_{j,i}) + \beta_2(EPS_i) + \beta_3(EPS_i * GROWTH_{j,i}) + \beta_4(ESO_i) + \beta_5(ESO_i * GROWTH_{j,i}) + \nu_i \quad (3)$$

where $GROWTH_{j,i}$ represents the jth growth proxy for firm i. The growth proxies are (1, 0) dummy variables and are based on firm size, dividend policy, and Tobin's Q-ratio, as defined before. The dummy variable SIZE (the first growth variable) is set equal to 1 (0) when the firm's market value of equity is greater than (less than or equal to) the median value for the sample. The dummy variable DIV is as defined before and Q is set equal to 1 (0) when the firm's Q-ratio is greater than (less than or equal to) the median value for the sample.[9] If the ESO expense is positively associated with the firm's growth potential, then the expected signs for β_5 is negative when GROWTH is proxied by the firm size dummy variable and positive when GROWTH is proxied by the dividend policy and Q-ratio dummy variables.

The results from estimating regression equation (3) for the three growth proxies are presented in table 3. Our discussion initially focuses on the first column where growth is proxied by firm size. The earnings response coefficient (ERC), β_2, is significantly positive for small firms. The large firms in our sample have an ERC that is significantly larger compared to small firms as indicated by the significantly positive β_3 coefficient.[10] The ESO expense response coefficient for small firms remains significantly positive ($\beta_4 = 2.08$; $t = 3.23$). The β_5 coefficient is negative, as expected, but not statistically significant. However, the sum of β_4 and β_5 represents the response coefficient to the ESO expense for large firms. This coefficient is -1.37 and not statistically different from zero. Therefore, although our tests are not powerful enough to detect a statistically significant difference in the market's response to the ESO expense (as indicated by β_5), the results show that separate regressions on the sample partitioned by the SIZE dummy variable provide a significantly positive ESO expense response coefficient for small firms and a negative but statistically insignificant coefficient for large firms.

Column 2 of table 3 presents the results when growth is proxied by the firm's dividend policy. Mature firms that are declaring cash dividends are represented by a 0 value for DIV. The difference in the ERC between mature and growth firms is not statistically different from zero ($\beta_2 = 0.17$; $t = 0.68$). However, the ESO expense response coefficient does differ between the two sub-samples, as indicated by the significant β_5 coefficient. Mature firms have a negative coefficient, $\beta_4 = -1.83$, although it is not statistically significant. Growth firms have a significantly positive coefficient, $\beta_4 + \beta_5 = 2.24$ (t-stat = 3.40).

Finally, column 3 of table 3 presents the results when growth is proxied by the variable Q, which is set equal to 1 (0) when the firm's Q-ratio is greater than (less than or equal to) the sample's median value. The statistically significant β_3 coefficient indicates that the ERC for large Q-ratio firms is significantly greater than the ERC for low Q-ratio firms. A possible interpretation of this result is that the Q-ratio is capturing much of the growth opportunities of the firm. With respect to the ESO expense, both low Q-ratio and high Q-ratio firms have a positive association between the ESO expense and annual returns. As expected, the difference in the ESO response coefficient between low Q-ratio and high Q-ratio firms, as indicated by β_5, is positive but only marginally significant.

In summary, the results in table 3 are sensitive to the growth proxy used in equation (3). However, in general, the preponderance of the evidence suggests that the ESO expense is more positively associated with annual returns for high growth firms, which is consistent with the notion

Table 3
Regression of Annual Returns on Contemporaneous Earnings, ESO Expense and Growth Proxies (N=756)

Regression Equation[a]: $R_i = \beta_0 + \beta_1(GROWTH_{j,i}) + \beta_2(EPS_i) + \beta_3(EPS_i * GROWTH_{j,i}) + \beta_4(ESO_i) + \beta_5(ESO_i * GROWTH_{j,i}) + \nu_i$

Coefficient Variable	(Col. 1) Growth = SIZE	(Col. 2) Growth=DIV	(Col. 3) Growth=Q
Intercept	-0.05*	0.07**	-0.02
(t-stat.)	(-2.45)	(2.82)	(-0.88)
Growth	0.10**	-0.11**	0.01
(t-stat.)	(2.86)	(-3.42)	(1.37)
EPS	1.13**	1.14**	1.12**
(t-stat.)	(8.20)	(6.07)	(7.41)
EPS*GROWTH	0.59†	0.17	0.82**
(t-stat.)	(1.81)	(0.68)	(3.16)
ESO	2.08**	-1.83	1.45*
(t-stat.)	(3.23)	(-0.79)	(2.11)
ESO*GROWTH	-3.45	4.08*	2.18†
(t-stat.)	(-1.10)	(1.70)	(1.52)
$\beta_4 + \beta_5$	-1.37	2.24**	3.64**
(t-stat.)	(-0.45)	(3.40)	(2.75)
Adj. R^2	15.0%	14.3%	14.4%

[a]SIZE is equal to 1 (0) when the market value of equity is greater than (less than or equal to) the sample median value.
DIV is set equal to the dividend policy dummy variable as defined in table 1.
Q is equal to 1 (0) when the Tobin's Q is greater than (less than or equal to) the sample median value.
All other variables are as defined in table 2.
†, *, and ** indicates statistical significance at the .10, .05, and .01 alpha levels, respectively. All tests are two-tailed except for the one-tailed directional tests for β_5.

that these types of firms receive more benefit from an ESO plan as a form of compensation. These incremental benefits to growth companies can come in the form of greater employee incentives or a more positive signal to the market about the firm's growth prospects.

V. Summary and Conclusions

This study investigates the value-relevance of companies' disclosures related to employee stock option expense using the fair value method as prescribed in SFAS 123. This study differs from previous research in that we employ company disclosures related to the actual ESO expense, which became available in early 1997. We find that the 1996 ESO expense is significantly associated with firm value. However, unlike other typical operating expenses, the association between the ESO expense and annual returns is positive. These results suggest that the incentive benefits derived from employee stock option plans outweigh the costs associated with the plan.

We also find evidence that suggests smaller companies that have high growth potential benefit more from an ESO plan compared to larger,

more mature firms. These benefits can come from different sources. Companies that are in the growth stage of their life cycle are likely to have a high demand for cash. Granting ESOs will allow the company to defer cash compensation and still attract top employee talent. In addition, the fact that employees have accepted participation in an ESO plan, might send a positive signal to the market about the future growth prospects of the firm.

VI. Suggestions for Future Research

As stated above, this study examines the value relevance of the **actual** pro-forma footnote disclosures regarding employee stock option expense. An inherent limitation in this study is that only one year's worth of data were available at the time this study was performed. A natural extension of this study would be to collect the relevant footnote data for subsequent years to determine if the positive relationship between ESO expense and firm value found in this study is consistent over multiple periods. If this relationship does hold in subsequent periods, then the power of the results would be strengthened.

Endnotes

1. The scope of SFAS 123 encompasses many different types of stock-based employee compensation, such as; stock purchase plans, restricted stock, and stock appreciation rights. However, most of the attention related to stock-based compensation is related to ESOs since they result in predominantly zero compensation expense being recorded on the financial statements.
2. Arthur Levitt, Jr., Chairman of the SEC, was quoted as saying: "I've never seen the amount of corporate anxiety that this issue has raised" (Harlan, 1994).
3. A notable exception to the predominantly unfavorable reaction to the FASB's Exposure Draft was the strong support of the FASB's position by the American Accounting Association's Financial Accounting Standards Committee (1994).
4. Investment guru Warren Buffett has recently been quoted as follows: "When Berkshire acquires an option-issuing company, we promptly substitute a cash compensation plan having an economic value equivalent to that of the previous option plan. The acquiree's true compensation cost is thereby brought out of the closet and charged, as it should be, against earnings" (Morgenson, 1998).
5. The general feeling of the business community towards the FASB's recognition proposal is typified by the following statement by T.J. Rodgers, President of Cypress Semiconductor: "FASB's recent assault on incentive stock options is an example of wealth destruction by a government-mandated bureaucracy.... The arrogant, out-of-touch FASB bureaucracy should simply close its doors and stop damaging corporate America for the sake of accounting principles" (Rodgers, 1994).
6. Other examples of opposition against the FASB's proposal was the Coalition for American Equity Expansion, which was formed to fight the Exposure Draft (Harlan, 1994). California state officials and federal legislatures addressed a rally held in San Jose, CA, while the FASB was there holding public hearings on the Exposure Draft (Berton and Lublin, 1994). Even one of the SEC commissioners expressed his strong opinion that the adoption of the Exposure Draft would be an economic casualty (Beese, 1994).
7. Interestingly, one of the FASB dissenting votes was made by James Leisenring, who actually introduced the idea of providing companies with a choice at a FASB task force meeting in December 1994.
8. The results without winsorizing the data are qualitatively similar. Specifically, both parameter estimates are still significantly positive at the $\alpha=.01$ level; however, the adjusted R^2 is attenuated to 7%.
9. We estimated regression equation (3) by including the actual value of firm size and the Tobin's Q-ratio. The results from these equations did not find a statistically significant difference in the value-relevance of the ESO expense based on these variables.
10. This result is consistent with previous research that documents a negative relationship between the ERC and risk (Collins and Kothari, 1989) and size is a good proxy for risk (Fama and French, 1992; Malkiel and Xu, 1997).

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