

**The Determinants of Transitional Method to Adopt Fair Value Accounting for
Employee Stock Options**

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Abstract

This paper examines firms' motivations of using one of the three alternative transition approaches as specified in FAS148 when adopting fair value accounting for employee stock options (ESOs). Using a sample of U.S. firms that announced their intentions to voluntarily expense ESOs in 2002 and 2003, I show that Prospective method users are characterized by a significantly larger amount of pro forma ESOs expenses related to options awarded in prior years. Prospective method users are also more likely to display a long string of past earnings growth and to show earnings close to zero in the year prior to the adoption. This evidence is broadly consistent with the contention that avoiding the capital market punishment being a driver behind the decision to adopt FAS123 prospectively. In addition, I also find evidence consistent with firms expensing ESOs retroactively in order to manage growth expectations. This research contributes to prior and ongoing research related to the controversy surrounding the expensing of stock options by providing insights into firms' discretionary behavior when choosing transitional methods when adopting FAS123.

Key words: Compensation; Employee stock options; FAS148; Accounting choice

INTRODUCTION

This paper examines the economic determinants of firms' transition methods for adopting fair value accounting for employee stock options (ESOs). Current accounting rules for ESOs in the U.S. are governed by FAS123 (*Accounting for Stock-based Compensation, FASB, 1995*), which encourages firms to use the fair value method for ESOs (by which the option's fair value at the grant date is amortized over the vesting period and is expensed on the income statement) on a voluntary basis. If a firm elects, instead, to use the intrinsic value method (by which stock option expense is defined as the difference between the stock price and option exercise price at the measurement date), which typically results in zero stock option expense, it must provide the pro forma effects of recognizing compensation cost according to the fair value based method.

Recently, the FASB proposed that publicly traded companies be required to list the value of ESOs as an expense on their financial statements for fiscal years beginning after June 15, 2005.¹ Whether ESOs should be expensed in corporate reported earnings is one of the most controversial topics in financial accounting. The FASB's position is that, since ESOs are used to motivate performance (i.e., to generate profits), the value of the transferred ownership, like other forms of compensations, should be deducted from earnings in the year when the options are granted. Not expensing ESOs in financial statements when they are issued creates misleading financial reports. Further, not expensing encourages excess option grants, thus distorts managerial incentives. In contrast, opponents from industries argue that expensing requires an accurate measure of option value, and such measures (such as the Black-Scholes valuation model) are controversial. Further, mandatory expensing is not necessary since the relevant information relating to ESOs is already available in the notes to the financial statements since FAS123 was issued.

Virtually no firms used fair value accounting of ESOs before 2002. However, since the summer of 2002, many firms have adopted or announced their decision to adopt the fair value method.² When FAS123 was initially issued in 1995, the FASB required prospective application, by which options granted in the current year are expensed, and all old ones, including those vesting only now, are ignored. However, one problem with the prospective method is the gradual increase in expenses in the first few years after adoption (i.e., ramp-up effect). As more firms are announcing their intentions to expense stock options, the FASB issued FAS148 in December 2002 to address the transition issues. To address the ramp-up effect and make voluntary expensing of stock options more attractive, FAS148 permits two additional methods for companies to consider in addition to the Prospective (P) method: the Modified Prospective (MP) approach and the Retroactive Restatement (RR) approach.³

Since the P method produces the least impact on earnings during the first several years following adoption (as discussed further below), we would expect firms, naturally, would choose the P method when adopting the fair value method. Surprisingly, however, a small portion of firms has elected to use the MP or RR method, which affects the earnings more negatively than the P method. The motivation under such an accounting method choice is not well understood. Firms claim that they use the RR or the MP method in order to make financial statements more comparable over time. However, concerns have been raised that the existence of three methods to account for otherwise identical transactions induces firms to strategically choose a transition method in order to manage their financial statement presentation. Therefore, it is important to understand whether voluntary restatements of prior earnings are motivated by the decision to enhance financial statement comparability or for other reasons (e.g., opportunism).

The purpose of this paper is to examine whether firms use the flexibility in the adoption method for FAS123 strategically to minimize the increased reporting and contracting costs that arise from expensing ESOs. To accomplish this goal, I compare the characteristics of firms that have chosen to use the P method (“P method users” thereafter) to those of firms which have elected to use the MP or RR method (“MP or RR method users” thereafter). Specifically, within the content of several established theories from prior studies, I analyze factors that are hypothesized to affect the likelihood that firms decide on one of the three alternative methods over another. I hypothesize that firms with less potential reporting costs and more discretion with accounting choices are more likely to use the MP or RR method to take advantage of the benefits of information signaling. In addition, firms are more likely to use the RR method if they have more incentive to manage growth expectation. Finally, firms are more likely to use the P method to avoid the stock market’s punishment for breaking the earnings string and for failing to maintain positive earnings.

Since several recent studies document some systematic differences between firms that voluntarily expense ESOs and firms that have chosen not to do so (e.g., Aboody et al. 2004), in testing my hypotheses I control for this self-selection bias by using a two-stage procedure (Heckman 1979). The first stage analysis models a firm’s decision to voluntarily expense ESOs and the second stage analysis models the choice of transition method after incorporating the Inverse Mills Ratio in the first stage model into the second stage Probit model as a control variable.⁴

I test my hypotheses on a sample of 324 firms that announced their intentions in 2002 and 2003 to voluntarily expense ESOs, and whose implementation methods for FAS123 were identified. Of these expensing firms, 61 (19%) firms are MP or RR method users.

The evidence reported in this study suggests that managers trade off the financial statement benefits and costs of using alternative accounting methods. Specifically, my results indicate that the probability of using the MP or the RR method is significantly associated with the relative reporting cost under each alternative. P method users are characterized by significantly larger amounts of pro forma ESOs expenses in the year prior to the adoption. My results are also broadly consistent with the notion that avoiding the capital market punishment being a driver behind the decision to adopt of FAS123 prospectively (Barth, et al. 1999). Specifically, P method users are more likely to display a pattern of increasing earnings during the years before the adoption, and are more likely to display earnings close to zero in the year immediately prior to the adoption. Finally, I also find support that firms voluntarily restate earnings (by using the RR method) in order to manage growth expectations.

As a complementary test, I also examine whether the market's reaction to the announcement of expensing ESOs is associated with whether a firm used the full expense recognition methods (the MP or the RR method) to adopt the fair value method. I analyze 3-day and 5-day market-adjusted Cumulative Abnormal Returns (CARs) around 214 announcements of expensing ESOs made in 2003, partitioned on the transition approach chosen. After controlling other factors that might affect investor reaction, such as firm size, debt level, and market-to-book-ratio, I find that the market reacts slightly more favorably to firms announcing their decision to adopt FAS123 using the MP or the RR methods. It appears that, although firms may strategically use the transition method to minimize financial reporting costs, investors seem to reward firms for using the full expense recognition methods when adopting FAS123.

This study contributes to the literature regarding accounting choices and enhances our understanding of firms' discretionary behavior when choosing transitional accounting methods.⁵

The study of the adoption of the fair value method for ESOs is unique, since voluntarily restating previously audited financial statements is relatively rare in practice.⁶ The FASB concedes that it is unusual to provide firms with several options for their accounting, but argues that the standard is meant to encourage the use of the RR or the MP method since both methods can produce more comparable financial statements than the P method.

This research also contributes to prior and ongoing research related to the controversy surrounding expensing of stock options (Aboody, 1996; Espahbodi et al. 2002; Seethamraju and Zach, 2003; Aboody et al. 2004, among others) by examining the method chosen when adopting fair value accounting for ESOs. For example, using a sample of 155 announcing firms in 2002 and early 2003 and a control sample, Aboody et al. (2004) find that the likelihood of recognition is associated with the extent of market participation, the private incentives of top managers, information asymmetry and political cost. In contrast, using 129 announcing firms in 2002 and a matched control sample, Seethamraju and Zach (2003) find that publicity and valuation benefits from expensing ESOs explain the timing of expensing decisions. However, none of these studies addresses the issues related to the transition method choice as specified in FAS148. Finally, the paper also contributes to studies which examine a firm's discretionary behavior in accounting for ESOs (e.g., Hodder et al. 2004; Aboody et al. 2003) by identifying factors which affect a firm's strategic decision when adopting fair value accounting of ESOs.

The rest of this paper is organized as follows: Section 2 reviews the institutional background. Section 3 outlines the theoretical framework and hypotheses. Section 4 describes the sample and research design. Section 5 presents the empirical results and sensitivity tests. Section 6 describes additional market reaction tests, and Section 7 concludes.

BACKGROUND

The FAS148

The use of ESOs became particularly pronounced in the 1990s, when many start-up high-tech companies used them to attract quality employees while avoiding paying cash compensation. After about a decade in hibernation, however, cries for reform and a requirement to treat options as an expense resurfaced after the accounting scandals in the later 1990s uncovered how extravagant option packages led managers to manage earnings to boost the value of the options.⁷

The FAS148 (*Accounting for Stock-Based Compensation—Transition and Disclosure*) was issued in response to requests from some U.S. companies that announced their intention to switch to the fair value method of reporting ESOs in 2002. FAS148 addresses issues related to the transition and disclosure provisions of FAS123. It provides some flexibility for the transition, if a company chooses the fair value cost recognition of ESOs.

When FAS123 was initially issued in 1995, companies that adopted the fair value based method were required to apply that method prospectively for new stock option awards. Prospective application was appropriate at that time, since companies did not have the information available on prior grants. However, this approach contributed to a “ramp-up” effect on compensation expenses in the first few years following adoption, and led to increased concerns with regard to a lack of consistency in reported results.

To address the ramp-up effect in the transition phase and to ensure the consistency and comparability of information provided from financial statements, the FAS148 provides two additional methods of transition (the MP and the RR method) that reflect a firm’s full complement of stock-based compensation expenses immediately upon adoption. The two

additional methods are feasible, since companies have been required since 1995 to disclose the pro forma net income, and thus the information for retroactive application is available.

Furthermore, to encourage early adoption, the FASB specifies that the P method is not available for firms adopting FAS123 after 2003. This implies that companies adopting FAS123 in 2004 would have to either restate past earnings or account for previously granted unvested options going forward. A research report from Buck Consultants suggests that adoption of fair value accounting for options in 2004 rather than in 2003 could reduce earnings dramatically for many companies, especially those in the high-tech field.⁸ Presumably, companies that decided not to adopt the fair value approach by 2003 must have had strong incentives to do so.

Income statement effect of alternative transition methods of adopting FAS123

Despite encouraging the use of fair value accounting for ESOs, the multiple-choice transition method has been criticized for compromising the comparability among firms' financial results.⁹ The selection of a transition approach for expensing stock options under FAS148 can have a dramatic impact on the pattern of estimated annual income in the transition stage. The following hypothetical example illustrates the patterns of earnings in the transition period that result from using different accounting methods when adopting FAS123.

A hypothetical example

Suppose a company adopted the fair value based method in 2003. Assume the company has granted options since 2000 and will continue to do so. Further, assume that each option has a grant date fair value of \$500 and a 4-year vesting period. The compensation expenses recognized on the income statement by using the P, the MP and the RR methods are shown in Exhibit 1.

[Insert Exhibit 1 about here]

As shown from Exhibit 1, the P method is the most gradual among all three alternatives. It involves a ramp-up effect since the recognized expenses will increase from the beginning of the fiscal year of adoption for a period equal to the vesting period. The company will continue to show a pro forma effect on earnings until all previously granted stock options have vested.

The MP approach is similar to the P method, but has the added requirement of recognizing expenses attributable to the unvested portion of stock options granted prior to the fiscal year of adoption. Therefore, this approach results in an immediate and more complete transition than the P method and avoids the need to show the pro forma effect on earnings. It also avoids the ramp-up effect by requiring full expense recognition from the beginning of the fiscal year of adoption. Finally, it provides more forward-looking information and year by year comparison for the initial years following the date of adoption.

The RR approach is similar to the MP approach but has the added requirement of restating results in prior years for comparative purposes. This approach requires the greatest expense recognition, but incorporates the clearer and more transparent reporting of MP, with the added benefit of providing more useful back-looking information and year by year comparisons.

Prior studies demonstrate lower valuations of the firm's stock as a result of adopting income reducing accounting methods, although there is no cash flow implication associated with these accounting policies.¹⁰ The earnings effect discussed above implies that, if companies are concerned that investors' functional fixation on earnings may lead to lower valuations, they will likely weigh the costs and benefits that will arise from adopting the alternative transition methods, and strategically make their choice. The following section develops the hypotheses.

HYPOTHESES DEVELOPMENT

Magnitude of expenses relating to prior option grants

One important consideration when determining the transition method for FAS123 is the earnings impact of unvested options granted in prior years. While both the MP and the RR method must consider the expenses related to prior years' ESOs, the P method ignores such expenses, resulting in the highest earnings in the adopting year, among all three methods. Accordingly, as the expenses related options granted in prior years increase, the disparity between future earnings (until the equilibrium is reached) under the three alternative methods increases.

Prior studies indicate that firms are less likely to early adopt an accounting method with a negative earnings effect (e.g., Ayres, 1986). In addition, Espahbodi et al. (2000) provide evidence that the market reacts negatively to the FASB announcements relating to possible expensing of ESOs. Motivated by the common belief and the evidence from the literature that negative earnings changes affect stock price valuation, I argue that firms, that have chosen to expense ESOs, most likely use a transitional method with the least negative impact on earnings in the transition years. Therefore, I predict that the preference for the P method is positively related to the magnitude of the fair value of ESOs granted in prior years.¹¹ This leads to the first hypothesis:

H1: Firms with higher fair values of unvested options outstanding in the year prior to the adoption year are more likely to use the P method.

Information signaling

The above analyses indicate that firms with less financial reporting impact from option grants in prior years may be less susceptible to the effects of expensing ESOs by using the MP or

the RR method. However, it is not immediately clear why such firms would voluntarily expense a larger amount of ESOs costs to current earnings, or voluntarily restate prior years' earnings, since restatement literature suggests that the capital market generally punishes firms for restating earnings (e.g., Dechow et al. 1996; Turner, 2001; Anerson and Yohn, 2002; and Palmrose et al. 2004).¹² I look to prior signaling literature for possible explanations.

The information signaling hypothesis of accounting choice posits that managers have a comparative advantage in providing information about their firms. As a result, if managers are compensated (at least partially) for their ability to credibly communicate value-relevant information, they will use the early adoption of an income-decreasing policy as a signaling channel to reveal their private information (Holthausen, 1990; Amir and Ziv, 1997). Both the MP and the RR methods are the transition approaches preferred by the FASB to adopting fair value accounting for ESOs. Specifically, the MP method provides a better indication of future options costs than the P method by including a full year's cost of stock options in current earnings. Similarly, the RR method provides the consistency and clarity of the compensation expense, both historically and prospectively, to investors. By choosing the MP or the RR method to expense ESOs, firms can credibly signal or communicate their commitment to financial reporting transparency and consistency. Since the commitment to enhance financial reporting quality is unobservable, I use a proxy for corporate governance to represent this commitment, because firms with a strong corporate governance mechanism are more likely to improve financial reporting quality under pressure. I predict that corporations with a stronger corporate governance system are more likely to use a conservative accounting method. This leads to the following hypothesis:

H2: Firms with stronger corporate governance mechanism are more likely to use the MP or the RR method.

Managing growth expectation

Prior research suggests that managers have incentives to either manipulate expectations or manage accounting earnings in order to present the most favorable picture of performance.¹³ If adopting firms anticipate that future earnings may be further reduced due to the expensing ESOs, they may voluntarily use the MP or the RR method either in a poor year or in an extremely good year. Under both scenarios, lowering current and past years' earnings would make it much easier to show year-over-year earnings growth in future periods. Since the incentive to manage growth expectation is likely stronger for firms which have already been at a high level of growth, I expect the preference for the MP or the RR method is positively associated with earnings growth in the past several years. Hence:

H3: Firms with higher average level of earnings growth in last three years prior to the year of adoption are more likely to use the RR or the MP method.

Other discretionary choices

A firm's choice of accounting method may also be influenced by existing levels of other discretionary choices, since prior research (e.g., Fields et al. 2000) documents that managers may make multiple method choices to accomplish a specific goal. It is reasonable to assume that firms consider other available discretionary choices when selecting an accounting method for FAS123 transition. If a firm has a higher level of other discretionary choices, the MP or the RR method could be utilized in order to enjoy the benefits from signaling or managing expectations. On the other hand, if a firm is constrained with regard to accounting flexibility, the P method may be chosen in order to mitigate the negative impact of expensing ESOs on earnings. This discussion leads to the following hypothesis:

H4: Firms with less accounting discretionary choices are more likely to use the P method.

The effect of earnings pattern

Prior research suggests several patterns of the firm's earnings that have valuation implications and thus may affect managers' decisions regarding the management of reported earnings. These patterns include: (1) long string of earnings increase and (2) negative earnings. If this is the case, we expect these factors to be associated with decisions about which accounting method to choose when adopting the fair value method for ESOs.

Prior research finds that firms reporting long strings of consecutive earnings increases enjoy a market premium (Barth et al. 1999). However, the stock market penalizes these firms for failing to maintain the earnings strings. Therefore, one would expect that firms reporting long strings of consecutive earnings increases would have a stronger incentive to avoid using an earnings-decreasing accounting policy as much as possible, in order to sustain the earnings growth.

In addition, prior research also finds that firms appear to manage earnings to avoid losses (Burgstahler and Dichev, 1997; Degeorge et al. 1999). Expensing ESOs using the RR or the MP method increases the probability of reporting losses, as the expenses may prevent firms with slightly negative earnings from having positive earnings and may even cause firms with slightly positive earnings to have negative earnings. Thus, firms with earnings around zero (slightly positive or slightly negative) in the year prior to the adoption may be more concerned than other firms about the possible financial reporting costs associated with recording the expenses. This discussion, therefore, leads to the following hypotheses:

H5a: Firms exhibiting increasing earnings patterns over three years prior to the adoption year are more likely to use the P method.

H5b: Firms with slightly negative earnings or slightly positive earnings in the year prior to the adoption year are more likely to use the P method.

SAMPLE AND RESEARCH DESIGN

Sample selection

To examine my research questions, I analyze a sample of firms that adopted FAS123 in the years 2002 and 2003.¹⁴ I start my sample collection initially from lists of firms announcing expensing stock options, compiled by Standard and Poor's and Bear Stearns (456 firms). I then eliminate firms that were acquired during 2003 (9 firms), that announced the intention but did not adopt FAS123 as per 2003 annual reports (2 firms), whose 10-Ks or annual reports cannot be found from Edgar or the company's web site (2 firms), that were bankrupted in 2003 (1 firm), and whose adoption method cannot be found from the press or 10-K or annual reports (5 firms). To be included in the sample, a firm must also have financials in Compustat or financial statements and price and returns data available on CRSP (105 firms are further eliminated). These sample criterion lead to 332 expensing firms.

Part of the analysis is based on a sample of matched control firms that have stock option plans, and have the option to adopt the fair value method but have chosen not to by December 31, 2003. I further identify the control firms using the following criterion: (1) the same industry/sector by 4 or 2 digit SIC codes; (2) the market value of equity at the year prior to the adoption is within a 20% range of the treatment sample; and (3) data is available from Compustat or financial statements. Eight expensing firms can not be matched with a control firm by using the above procedures, thus are dropped from the sample. The final sample in the analysis consists of 324 expensing firms and their control firms.

Table 1 presents the industry composition of the expensing firms and their adopting methods for FAS123. As shown from table 1, the expensing firms are from many different industries, and 45% of the firms are from the banking, insurance and investment industries. Of

the 324 firms in the sample, the majority (263 firms or 81% of the sample) uses the P method, whereas 61 firms (19%) use the MP or the RR method to adopt FAS123.

[Insert table 1 about here]

Empirical design

Previous research (e.g., Beatty et al. 1995; D’Souza, 1998) has demonstrated the importance of simultaneity in firm accounting decisions. Since expensing firms may differ systematically from firms that do not expense, as documented in several recent papers (e.g., Aboody et al. 2004), I control for this self-selection bias in the analysis using a two-stage procedure suggested by Heckman (1979). In the first stage, I analyze managers’ decisions to voluntarily adopt FAS123, using a probit model on expensing firms and a sample of control firms. In the second stage, I include the Inverse Miller Ratio from the first stage analysis as a control variable in the regression.

Based on prior research, I evaluate the manager of firm i ’s decision to voluntarily recognize stock-based compensation expenses using the following probit model:

$$ADOPT_i = \alpha_0 + \alpha_1 INT_OP_i + \alpha_2 LEVEG_i + \alpha_3 INST_i + \alpha_4 ROE_i + \alpha_5 ROA_i + \alpha_6 GROWTH_i + \varepsilon_i \quad (1)$$

Where

ADOPT	= 1 for expensing firm, and 0 otherwise
INT_OP	= is the ratio of interest expense to operating income, measured at the year prior to the adoption
LEVEG	= book value of long-term debt to the market value of equity, measured at the year prior to the adoption
INST	= percentage of shares outstanding held by institutional holders, measured at the quarter prior to the adoption
ROE	= return on average common equity, measured at the year prior to the adoption
ROA	= return on assets, measured at the year prior to the adoption
GROWTH	= book-to-market ratio, measured at the year prior to the adoption

The sample consists of 324 firms that have announced their decision to expense ESOs by the end of 2003, and a matched control sample with the dependent variable ADOPT taking on the value 1 if the firm has adopted FAS123, and 0 otherwise.

Following prior research (e.g., Aboody et al. 2004), I use INT_OP (ratio of interest expense to operating income) to proxy for the involvement in the capital market activity. I expect this variable to be positively associated with the expensing decision. I also include LEVEG (Ali and Kumar, 1994) in the first stage analysis to proxy for the contracting cost,¹⁵ since prior studies demonstrate that the costs of an income-decreasing accounting method increase with a firm's proximity to its debt covenant limits and the costs of covenant violations (Watts and Zimmerman, 1986). My expectation is that firms having a higher probability of breaching their debt covenants are more likely to defer the expensing ESOs, in order to minimize the prospect of technical default, the cost of renegotiating their debt contractual terms, and the potential bankruptcy cost. I expect LEVEG to be negatively associated with the expensing decision.

Prior research indicates that firms with higher asymmetric information find it is harder to raise funds from external sources which can lead to underinvestment (Myers and Majluf, 1984). Thus, firms with high information asymmetry would benefit from the signaling effect of expensing stock options (Aboody et al. 2004). I include INST (percentage of institutional holding) as a proxy for information asymmetry, and expect it is negatively associated with the expensing decision.

In addition, financial health is likely a determinate in the expensing decision. Financially stronger firms may more easily absorb the impact of expensing stock options than financially weaker firms, and thus, are more likely to expense options voluntarily (Seethamraju, 2003). I use ROE, defined as net income deflated by average common equity, and ROA, defined as net

income deflated by total assets, both measured at the year prior to the adoption, to control for this determinate. I predict both variables are positively associated with the expensing decision. I also control for growth (GROWH), since prior studies demonstrated that high growth firms experience a stronger negative market reaction to negative earnings news than low growth firms (Skinner and Sloan, 2002). Thus high growth firms are more likely than low growth firms to defer the decision to expense stock options. I use market-to-book ratio at the year before the adoption as the proxy for growth, with higher market-to-book firms being higher growth firms.¹⁶ I expect that GROWTH is negatively associated with the decision of expensing.

In the second stage, I model the decision of the accounting method for the FAS123 as follows:

$$METHOD_i = \alpha_0 + \alpha_1 EXPEN_i + \alpha_2 SHARE_i + \alpha_3 SHARE_MG_i + \alpha_4 ERGROW_i + \alpha_5 W_SALES_i + \alpha_6 A_SALES_i + \alpha_7 STRING_i + \alpha_8 CLOSE_i + \alpha_9 IMR_i + \varepsilon_i \quad (2)$$

Where

METHOD	= indicator, coded as 1 for using the MP or RR method, and 0 otherwise
EXPEN	= disclosed pro forma ESO expenses at the year prior to the adoption, deflated by the beginning market value of equity
SHARE	= logarithm of common shareholders
SHARE_MG	= percentage of common shares held by managers
ERGROW	= indicator, coded as 1 for pretax earnings growth rate over the last three years above median, 0 otherwise
W_SALES	= net operating assets relative to sales, at the year prior to the adoption
A_SALES	= net fixed asset relative to sales, at the year prior to the adoption
STRING	= indicator, coded as 1 if the firm has increasing earnings in each of three years prior to the adoption, and 0 otherwise.
CLOSE	= absolute value of pretax earnings per share, at the year prior to the adoption
IMR	= Inverse miller ratio

To test the reporting cost hypothesis, I use the prior year's pro forma stock option expenses (EXPEN) as disclosed in the notes to the financial statements, deflated by market value of equity to proxy for the magnitude of expenses relating to the fair values of ESOs granted in

prior years. As predicted by hypothesis 1, EXPEN is expected to be negatively associated with the probability of adopting the MP or the RR method.

Information signaling hypothesis predicts that firms with strong corporate governance are more likely to commit to enhancing financial reporting comparability. I use two measures to proxy for governance. SHARE is the number of common shareholders, which measures the extent of investor-base dispersion, and SHARE_MG, which is the percentage of shareholdings held by managers. I expect SHARE (SHARE_MG) to be positively (negatively) related to the decision to use the RR or the MP method when adopting the FAS123.

With regard to the managing growth expectation hypothesis, I capture firms' earnings growth rate using ERGROW, which is 1 for the pretax earnings growth rate over the last three years above median, and 0 otherwise. I predict a positive association between this proxy and a firm's tendency to use the full recognition methods.

Regarding discretionary choice hypothesis, I use working capital to sales (W_SALES) and net fixed assets to sales ratios (A_SALES) to proxy for the level of discretionary accounting choices, since Barvo and Simko (2002) argue that a manager's ability to optimistically bias earnings decreases with the extent to which net assets are already overstated on the balance sheet. They demonstrate the linkage between the abnormal accruals accumulated with larger levels of net operating assets to sale (defined as beginning net operating assets relative to sales), and net fixed asset (defined as net fixed asset to sales ratios).¹⁷ Since a higher value of W_SALES (A_SALES) corresponds to a lower level of discretionary choices, I expect a negative coefficient on both A_SALES and W_SALES.

To test the earnings pattern hypothesis, following Barth et al. (1999), I use an indicator variable (STRING), which is 1 if the firm has increasing earnings per share in each of three years

prior to the adoption year, and 0 otherwise, to capture the extent of consecutive earnings increases. I predict a negative association between this variable and the likelihood of using the RR or the MP method. Finally, to capture the extent of earnings close to zero, I use CLOSE, which is defined as the absolute value of pretax earnings per share in the year prior to the adoption. I expect this proxy is positively associated with the decision to use the MP or the RR method.

RESULTS

Descriptive statistics

Descriptive statistics for the variables used in the adoption method analysis are provided in table 2. Panel A compares the median and mean values of selected independent variables included in the second-stage analysis across P method users and RR or MP method users, and therefore presents univariate tests of my hypotheses.

Statistically significant differences in the median and mean values of disclosed ESO expenses between the P method users and the RR or the MP method users indicate that P method users have significantly higher levels of pro forma stock option expenses at the year prior to adopting FAS123 than RR or MP method users. This evidence is consistent with the financial reporting cost hypothesis. In addition, P method users are more likely to report long strings of consecutive earnings increases in prior years, and are more likely to have earnings around zero at the year prior to the adoption than the RR or the MP method users. This evidence is consistent with the notion that firms choose the accounting method when adopting FAS123 as part of a strategy to minimize the possibility of breaking the string of earnings growth and maximize the possibility of showing positive earnings. The mean net fixed asset level is also marginally higher

for firms that use the P method (0.59 versus 0.37), consistent with the prediction that firms with less accounting discretionary choices are more likely than other firms to use the P method. However, results based on a second proxy, the net working capital, do not support my prediction. Results provide mixed support of my information signaling hypothesis, since the two corporate governance proxies, shareholding dispersion and management shareholdings, are not consistently correlated with the adoption method as predicted.

Panel B reports the Pearson correlation coefficients among the independent variables used in the second-stage analysis. Consistent with prior research, disclosed option expense, EXPEN, is negatively correlated with adoption method ($=-0.11$) and with earnings growth (ERGROW) ($= -0.14$). The two accounting constraint proxies, W_SALES and A_SALES, are negatively correlated ($= -0.08$). The negative correlation (-0.24 and -0.10) between the proxies of the earnings patterns prior to the adoption year (STRING and CLOSE) and the dependent variable is consistent with the notion that firms with earnings exhibiting consecutive increases, and with earnings around zero are more likely to use the P method. Interestingly, firms with a higher level of shareholding dispersion (SHARE) are less likely to have a string of consecutive earnings growth in three years prior to adoption (ERGROW), and are less likely to have overstated assets (W_SALES). No other correlation coefficient exceeds 0.20 in absolute value.

[Insert table 2 about here]

Regression results

To test my hypotheses, I first model the probability of a firm's voluntarily expensing stock options and include the Inverse Mills Ratio from the first-stage probit model into my second-stage analysis of factors associated with a firm's choice of adoption method. Table 3 presents the first-stage analysis of the decision to expense, and table 4 presents the second-stage

probit analysis of the adoption method. To reduce the impact of outliers, the independent variables in the logistic regressions are winsorized at the 1% and the 99% levels. All p-values reported are two-tailed.

In table 3, the descriptive statistics (panel A) and the multivariate results (panel B) for the first-stage analysis of the decision to expense options yield results that are largely consistent. Consistent with Aboody et al. (2004), the probability of expensing is positively associated with the level of information asymmetry (INST) at less than the 0.01 level, and negatively associated with growth (GROWTH) at less than the 0.01 level. There is also a positive association between the probability of expensing and the involvement in the capital market (INT_OP), providing support for the capital market involvement hypothesis. However, the coefficients on LEVEG and ROA are not statistically significant at conventional levels.

[Insert table 3 about here]

I test my hypotheses by running the Probit model on 324 expensing firms, after controlling for self-selection bias in the model. The regression results are provided in table 4. The results provide evidence in support of the financial reporting cost hypothesis (H1). Specifically, after controlling for other hypothesized relevant factors, disclosed option expenses in the prior year are significantly greater for firms that choose the P method when adopting FAS123 than for other firms ($t = - 2.16$).

My information signaling hypothesis (H2) predicts that firms with strong corporate governance are more likely to use the MP or the RR method. Consistent with this prediction, the coefficients on the governance proxy (SHARE) is significantly more positive for firms choosing the RR or the MP method ($t = 2.72$). However, the share ownership by managers (SHARE_MG) is not associated with the adoption method decision as predicted.

Weakly consistent with managing growth expectation hypothesis(H3), the coefficient on ERGROW is positively associated with the adoption decision ($t = 1.69$), suggesting that firms with a higher average level of earnings growth prior to the adoption year are more likely to use the RR method to manage growth expectation.

Hypothesis 4 predicts that firms with less accounting discretionary choices are more likely to use the P method. The coefficient on the accounting constraint variable, A_SALES, is more negative for firms that choose to use the RR or the MP method than for firms that choose to use the P method ($t = - 2.09$), consistent with the findings at the univariate level. W_SALES, the other proxy for discretionary choices, is not significant. This could be due to the fact that the W_SALES variable does not adequately capture the accounting flexibilities that affect firms' accounting choices.

Finally, the results are consistent with earnings pattern hypothesis (H5), which predicts that firms exhibiting increasing earnings patterns or earnings close to zero at the years prior to the adoption are more likely to use the P method. The coefficients on STRING and CLOSE are both negatively associated with the probability of using the RR or the MP method ($t = - 4.36$, $t = -1.70$), suggesting that managers are concerned about the punishment from the stock market result for breaking the string of earnings growth, or exhibiting negative earnings by adopting FAS123 retroactively.

Taken together, after controlling for self-selectivity, the results presented in table 4 suggest that firms that choose to use the RR or the MP method have less stock option related expenses, and are more likely to manage earnings growth expectation. Firms that choose the RR method are also less concerned about capital market punishment for failing to maintain the string of earnings or maintain positive earnings.

[Insert table 4 about here]

Sensitivity tests

I conduct the following robustness checks on my Logit analysis:

Drop financial institutions. 40% of expensing firms in the sample are financial institutions. Since finance and insurance companies are regulated, such industry wide expensing decisions may reflect factors unique to financial institutions. To examine whether the results reported in table 4 are driven by industry effect, initially, I put an industry dummy on 144 financial institutions, and find the coefficients on the industry coefficient are significant at less than the 0.05 level (results are unreported); other variables are not affected. Then I drop 144 financial institutions (SIC is from 60 to 69) and their control firms in the analysis. The results from the Logit analysis (unreported) in the second stage reveal that EXPEN is more positively associated with the decision to use the RR or the MP method ($P < 0.01$), and the coefficient on A_SALES becomes insignificant. Overall, the sensitivity results are generally consistent with those revealed in table 4.

Alternative proxy for accounting constraints. Barton and Simko (2002) also examined another component of net asset overstatement: other long term assets scaled by sales. I add this additional accounting flexibility measure into the logit analysis. The coefficient on this variable is insignificant, while other results are not affected.

Alternative deflators. I also rerun the analysis using beginning year common shareholders equity in place of the market value of equity to deflate EXPEN in the second stage analysis. The coefficient on this measure is significantly positive at the 10% level ($t = 1.76$), and no other results are affected.

ADDITIONAL ANALYSES

A significant issue around the stock option expensing controversy is whether there is any economic difference in the manner in which financial statement information is presented. Given that the stock option expenses have already been disclosed in the notes in the pro forma format since 1995, can the market be “fooled” by footnote disclosure versus financial statement recognition?¹⁸

Amir and Ziv (1997) develop a theoretical framework that explains firms’ response to new accounting standards released by the FASB under its extended adoption policy. They argue that managers utilize the extended adoption period and strategically choose adoption timing and reporting method to signal their private information about the new standard’s financial impact. The model predicts that firms with “favorable” information recognize the impact of the new standard earlier than the mandatory adoption date. As a result, a positive market reaction to an early-recognition decision is anticipated.¹⁹ Likewise, if the market appreciates the more conservative manner of adopting the FAS123 by using the full implementation methods (i.e., the MP or the RR approach), then a positive market reaction to the decision to use the MP or the RR method is also expected.

Motivated by the above belief, as a supplementary test, I examine the stock market reaction to the announcements of the expensing of stock options partitioned on the transition method chosen. If the market is indifferent to the economical motivations underlying adoption method choice, then the market reaction across the method choices would not be significantly different.

The sample in this test includes 214 firms which announced their decisions to expense stock options in 2003.²⁰ Among these firms, 167 used the P method, and 29 (19) used the MP

(RR) method. I use a market-adjusted model based on an equally weighted index to estimate abnormal returns around announcement dates. I subtract the CRSP equal-weighted index return from a firm's daily return to obtain the market-adjusted abnormal return for each firm and day. The daily abnormal returns are then summed to obtain the cumulative abnormal returns (CARs) for a given time period.²¹

Table 5 panel A provides descriptive statistics for the market-adjusted CARs over both three-day and five-day windows centered on expensing announcement dates. The statistics are presented, conditional on the transitional method chosen. A general pattern that emerges across both windows is that the CARs around expensing announcement dates are more positive for firms that use the RR or the MP method than for firms that use the P method (0.64% versus 2.45% or 1.74% for mean CARs). There is no significant difference in CARs for firms which use the RR or the MP method. This evidence supports the contention that investors generally interpret announcements of expensing options using a more complete and more conservative method as conveying more favorable information.

One problem with the interpretation of table 5 panels A is that these are univariate results that do not take into consideration other factors that might affect investor reaction such as firm size, debt level, stock performance, and market to book ratio. Prior studies of market reactions to earnings announcements have found that investors react less to news releases from larger firms (Collins et al. 1987; O'Brien and Bhushan, 1990), since larger firms have a better information environment than smaller firms, and investors in larger firms have greater incentives to search for pre-disclosure information. Similarly, the literature demonstrates that market reactions differ across debt levels (e.g., Fischer and Verrecchia, 1997; Core and Schrand, 1999). Investors may also react differently to news releases from firms with a strong recent stock performance than

from those with a weaker performance. Finally, investors' reactions may differ between high and low growth firms.

I control for these determinants by running the following regression:

$$CAR_{S_i} = \alpha_0 + \alpha_1 RR_MP_i + \alpha_2 SIZE_i + \alpha_3 DEBT_i + \alpha_4 RETURNS_i + \alpha_5 MBR_i + \alpha_6 RR_MP_i * SIZE_i + \alpha_7 RR_MP_i * DEBT_i + \alpha_8 RR_MP_i * RETURNS_i + \alpha_9 RR_MP_i * MBR_i + \varepsilon_i \quad (3)$$

Where:

- RR_MP = indicator coded as 1 if the firm chose to use the RR or the MP method to adopt the FAS123, and 0 otherwise
- SIZE = indicator coded as 1 if the firm's logarithm of the book value of total assets reported at the last fiscal year end prior to the announcement is greater than sample mean, and 0 otherwise
- DEBT = indicator coded as 1 if the ratio of long-term debt to total assets, measured at the last fiscal year prior to the announcement, is greater than sample mean, and 0 otherwise
- RETURNS = indicator codes as 1 if buy and hold returns over 120 days prior to the announcement (day -120 to day -1) is greater than sample mean, and 0 otherwise
- MBR = indicator coded as 1 if the market to book ratio, measured at the last fiscal year prior to the announcement is greater than sample median, 0 otherwise
- RR_MP*SIZE, RR_MP*DEBT, RR_MP*RETURNS, RR_MP*MBR: interaction variables

The intercept represents the average 3-day (5-day) market reaction to the firms that announced they were using the P methods to adopt the FAS123, and the coefficient α_1 measures the incremental market reaction if the firm chose to use the RR or the MP method to adopt FAS123, after controlling for other factors that might affect investor reaction. In equation (3), I also include the interactions of the test and control variables.

The regression results are provided in panel B, table 5. The results, based on a 3-day window, suggest that there is a negative market reaction for firms announcing their decisions to expense stock options prospectively (-0.025, t = - 3.18). The evidence is generally consistent with Aboody et al. (2004), who find no significant favorable market reaction to expensing firms except for very early adopters. Like the univariate tests, the regression results indicate that

RR_MP is positively associated with returns, suggesting that the market reacts more favorably to firms adopting the fair value method of accounting for ESOs using the full implementation method (0.03, $t = 1.92$). In addition, investors react more negatively to announcements from larger firms, and respond more positively to firms with more positive stock performance in the past 120 days, as evidenced by the negative association between the CARs and SIZE (-0.012, $t = -1.80$) and the positive association between CARs and RETURNS (0.039, $t = 5.54$). The interaction variables are generally not significant except for RR_MP*MBR, which is marginally significant (0.022, $t = 1.71$).

The regression results shown in columns 4 and 5, when the CARs are measured surrounding a 5-day window, are similar to results obtained when using a 3-day window, with the exception of RR_MP*MBR, which lacks significance at traditional levels ($t = 0.49$).

[Insert table 5 about here]

Overall, the market reaction tests surrounding the announcements of expensing options suggest that investors react differently to the announcements of expensing options for firms using different implementation methods. In particular, the market reacts more positively to firms adopting the more conservative methods. It appears that the market interprets the use of a more complete method when expensing stock options as favorable news, such as an enhancement to financial reporting transparency.

CONCLUSION

How to account for employee stock options is an important yet controversial issue. In response to firms' voluntary recognition of stock option expenses starting from 2002, the FASB allows firms to use three alternative methods when adopting the fair value method of accounting

for option expenses. Although multiple transition methods encourage more firms to adopt the expensing options voluntarily, critics express concerns that vastly different methods would prevent investors from evaluating the effects of options upon earnings for all companies on a uniform basis.²² In making the decision to voluntarily adopt the FAS123 using one of three alternatives, presumably, managers are aware of the impact the earnings information can have on market participants, and have carefully weighed the benefits against the costs. Given that financial reporting comparability is greatly affected by three different methods, it is important to understand the motivations behind such a decision.

This paper examines the economic determinants underlying a firm's decision to choose one of the three alternative methods permitted under FAS148 when adopting the fair value method to account for ESOs. The evidence shows that firms using the full implementation methods (the RR and the MP), have less stock option related expenses related to options awarded in prior years, and have more discretionary accounting choices as reflected in a significantly lower level of net fixed assets at the beginning of the adoption year. Furthermore, firms which use the full implementation methods are less likely to have long strings of earnings increases during the years before the adoption, and are less likely to have earnings around zero in the year prior to the adoption. Finally, the results are consistent with the hypothesis that firms restate earnings in prior years in order to make some cushions to manage growth expectations.

The supplementary market reaction tests indicate that the market reacts differently to announcements of expensing stock options based on the implementation method, and the market reaction appears to be more favorably towards firms using the full implementation methods. It appears that, although firms may strategically use the transition method to minimize financial

reporting costs, investors seem to reward firms for using the full expense recognition methods when adopting FAS123.

The results documented in this paper add to the literature on accounting choices. By examining determinants that help to explain why firms choose one of the three alternatives for adopting FAS123, it provides insight into the underlying factors affecting corporate decisions around implementing new accounting standards. The findings may be of interest to the FASB regarding its new accounting policies and transitional provisions. Finally, the study also provides evidence germane to the stock option expensing controversy, and complements existing studies on managerial incentives or strategies to manage financial reporting when facing the pressure of expensing stock options. Future research examining the impact of expensing stock options may investigate whether or not expensing stock options may indeed improve financial reporting transparency and financial reporting quality.

Notes

¹ The FASB withdrew a similar proposal in the face of congressional pressure and heavy lobbying from high-technology companies in 1995, and instead issued FAS123. However, the FASB continued to maintain that disclosure is not an adequate substitute for recognition of expenses in financial statements.

² Following the highly publicized bankruptcies of Enron Corp., and WorldCom, Inc., investors and other users of financial statements began questioning firms' accounting and reporting for ESOs. The criticism over the lack of transparency in the accounting led many firms to expense ESOs.

³ Under the MP approach, a company would include options granted in the current year as well as previously granted unvested ones in its calculations. The RR method allows companies to restate earnings to reflect costs of stock options granted since 1995 when the FAS123 was initially issued.

⁴ I assume that firms decide whether voluntarily expense ESOs or not before choosing the accounting method. It is reasonable to believe that the expensing decision is much more critical than the transitional method choice.

⁵ A substantial body of literature has examined the economic determinants of firms' accounting choices (Watts and Zimmerman, 1986; Ball and Smith, 1992). See Fields et al. (2002) for a review of research in this area.

⁶ Normally, companies agree to restate their results only if pressured by their auditors or securities regulators. The normal transition method for a company changing a key accounting practice is to record a one-time charge or gain on its income statement to account for the cumulative effect of the accounting change.

⁷ See Guay et al. (2003) for detailed discussions of the debate surrounding the expensing of stock options in the 1990s.

⁸ For example, the report indicates that for companies which do not voluntarily adopt the new rules early, the median charge to earnings is more than 20 times greater than those that do voluntarily adopt the accounting changes before the deadline. The findings are based on a study conducted in earlier 2004, which analyzed the financial statements of 28 large high-tech companies.

⁹ *Electronic Business* (November 28, 2002).

¹⁰ For example, consistent with the notion that non-cash expense does affect market valuation, Hopkins et al. (2000) find evidence that goodwill amortization from purchase accounting has a negative effect on analysts' firm valuations after acquisitions.

¹¹ In this paper, I combine the RR method users and the MP method users as a single group in the analyses for several reasons. First, the FASB treats both methods as full expense recognition methods of ESOs. Second, the power of test can be increased due to a higher degree of freedom in the regression analyses. Finally, the market reaction analysis, which suggests that investors do not significantly differentiate these two groups, justifies this combination to some degree.

¹² Several studies (e.g., Dechow et al. 1996; Turner, 2001; Anerson and Yohn, 2002; and Palmrose et al. 2004), examining motivations of earnings restatement and the capital market implications, document a negative market reaction to the announcements of restatements.

¹³ Earnings management literature indicates that in particularly bad earnings years, managers may choose to report additional bad news so as to create some reserve to use in the next period (big bath). Alternatively, companies may purposely report bad news in extremely good earnings years so as to smooth out the earnings stream over time (income smoothing, McNichols and Wilson, 1988).

¹⁴ I choose year end of 2003 as a cut-off date for two reasons. First, CRSP data is available only up to 2003. Second, calendar year-end firms have the option to use any of three transition methods if they voluntarily adopt FAS123 by 2003. Therefore, firms choose not to expense stock options by 2003 must have particularly strong reasons to do so.

¹⁵ Existing research indicates that there is a positive association between leverage and the proximity to covenant limits (Press and Weintrop, 1990), and leverage and the costs of covenant violation (Beneish and Press, 1993).

¹⁶ Following prior studies, firms with negative book-to-market ratios are eliminated.

¹⁷ The variable of operating assets is defined as follows: $\text{shareholders equity} - \text{cash} - \text{marketable securities} + \text{total debt}$. The variable of net fixed assets is defined as fixed assets net of accumulated depreciation at the beginning of the year.

¹⁸ Several empirical studies in the literature have examined the disclosure versus the recognition issue in different context, but have provided mixed evidence. Imhoff et al. (1993) test explicitly for a difference between the coefficients on recognized capitalized leases and disclosed operating leased, and find no significant difference between capital leases and operating leases in explaining variance in stock returns. On the other hand, Harris and Ohlson (1987), and Landsman and Ohlson (1990) find that prices partially ignored certain footnote disclosures.

¹⁹ Existing studies have examined the market's reaction to the announcements of early adoption of FAS123, but provide mixed results. For instance, Rees and Scott (2001) find that the market reacts positively to early

announcements; Aboody et al. (2004) only find positive market reactions for early announcers before July 31, 2002. None of existing studies examine whether the market reacts differently depending on whether firms use different accounting methods to adopt FAS123.

²⁰ I test the market reactions to announcements made in 2003, since FAS148 was issued in December, 2002.

²¹ As a sensitivity test, I also use the CRSP value-weighted market returns to CARs, the empirical results are virtually unaffected.

²² *Wall Street Journal*. September 6, 2002.

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Exhibit 1 - Earnings Effect of Adopting FAS123 Using Three Alternative Methods

This exhibit uses a hypothetical example to illustrate the impact of adoption method of FAS123 on recognized compensation expense and earnings in the transition stage.

Prospective Method

Compensation expense recognized in (\$):	Year 2003	Year 2004	Year 2005	Year 2006	Year 2007
2000 grant	0				
2001 grant	0				
2002 grant	0				
2003 grant	500	500	500	500	0
2004 grant		500	500	500	500
2005 grant			500	500	500
2006 grant				500	500
2007 grant					500
Total	500	1000	1500	2000	2000

Modified Prospective Method

Compensation expense recognized in (\$):	Year 2003	Year 2004	Year 2005	Year 2006	Year 2007
2000 grant	500				
2001 grant	500	500			
2002 grant	500	500	500		
2003 grant	500	500	500	500	0
2004 grant		500	500	500	500
2005 grant			500	500	500
2006 grant				500	500
2007 grant					500
Total:	2000	2000	2000	2000	2000

Retroactive Restatement Method

Compensation expense recognized in (\$):	Year 2000 (Restated)	Year 2001 (restated)	Year 2002 (restated)	Year 2003	Year 2004	Year 2005	Year 2006	Year 2007
2000 grant	500	500	500	500				
2001 grant		500	500	500	500			
2002 grant			500	500	500	500		
2003 grant				500	500	500	500	0
2004 grant					500	500	500	500
2005 grant						500	500	500
2006 grant							500	500
2007 grant								500
Total:	500	1000	1500	2000	2000	2000	2000	2000

Table 1 – Sample Composition

Industry	SIC	P users	MP or RR users	Total (%)
Oil and Gas Extraction	13	10	0	10 (3.09)
Food and Kindred Products	20	4	2	6 (1.85)
Containers/Packaging	26	3	0	3 (0.93)
Publishing: Newspapers	27	2	1	3 (0.93)
Oil Refining/Marketing	29	3	0	3 (0.93)
Chemicals and Allied Products	28	8	3	11 (3.4)
Other Metals/Minerals	33	3	0	3 (0.93)
Industrial Machinery / Equipment	35	5	3	8 (2.47)
Electronic Equipment	36	7	1	8 (2.47)
Transportation Equipment	37	4	2	6 (1.85)
Air Freight/Couriers	42	3	1	4 (1.23)
Communications	48	7	4	11 (3.4)
Electric, Gas, Sanitary Services	49	7	4	11 (3.4)
Miscellaneous Commercial Services	51	2	1	3 (0.93)
Retail trade	53	5	1	6 (1.85)
Restaurants	58	2	1	3 (0.93)
Banks	60	28	5	33 (10.19)
Rental/leasing	61	4	3	7 (2.16)
Investment Brokers	62	8	3	11 (3.4)
Insurance	63	26	7	33 (10.19)
Real Estate Investment	67	54	6	60 (18.52)
Business Services	73	8	3	11 (3.4)
All Other Industries		60	10	70 (21.6)
TOTAL		263 (81%)	61 (19%)	324 (100)

**Table 2 – Descriptive Statistics and Correlations:
Determinants of Transition Method when Adopting FAS123**

Panel A: Descriptive statistics for independent variables used in analysis of adoption method choice (N=324)

Variable ^a	Mean			Median		
	MP or RR users (N = 263)	P users (N = 61)	t-test ^b	MP or RR users (N = 263)	P users (N = 61)	z-test ^b
EXPEN	0.13	0.40	2.05***	0.08	0.04	1.98**
SHARE	2.35	1.53	2.54***	2.31	1.20	2.65***
SHARE_MG	9.516	8.672	0.42	4.612	2.936	4.18***
ERGROW	0.777	0.770	0.18	1	1	-0.47
W_SALES	2.076	2.489	-0.91	0.908	1.239	-0.375
A_SALES	0.369	0.594	-1.67*	0.225	0.200	2.751**
STRING	0.204	0.522	-4.39***	0	1	-3.27***
CLOSE	1.649	2.453	-1.82*	1.475	1.7	-2.24**

Notes to panel A:

^a Variable definitions:

METHOD = 1 for using the MP or RR method, and 0 otherwise

EXPEN = disclosed pro forma ESO expenses deflated by the market value of equity all measured at the year prior to the adoption

SHARE = logarithm of common shareholders at the year prior to adoption

SHARE_MG = percentage of shareholding by managers at the year prior to adoption

ERGROW = 1 for pretax earnings growth rate over the three years (prior to adoption) above median, 0 otherwise

W_SALES = net operating assets relative to sales ratio at the year prior to the adoption

A_SALES = net fixed asset to sales ratio at the year prior to the adoption

STRING = 1 if the firm has increasing earnings in each of three year prior to the adoption, and 0 otherwise.

CLOSE = absolute value of pretax earnings per share at the year prior to the adoption

^b t-tests refer to differences in means and z-statistics refer to Wilcoxon two-sample median tests.

***, **, * Significant at < .01, < .05 and < .10 levels for two-tailed tests.

Panel B: Pearson correlations of variables used in analysis of adoption method choice (N=324)

Variable ^a	METHOD	EXPEN	SHARE	SHARE_MG	ERGROW	W_SALES	A_SALES	STRING	CLOSE
METHOD	1								
EXPEN	-0.11*	1							
SHARE	0.14*	-0.02	1						
SHARE_MG	0.02	0.01	-0.1	1					
ERGROW	0.01	-0.14*	-0.13*	-0.1	1				
W_SALES	-0.05	0.05	-0.12*	-0.08	0.16**	1			
A_SALES	-0.08	-0.02	0.1	-0.01	0.01	0.08	1		
STRING	-0.24**	-0.04	-0.13*	0.03	0.35**	0.04	-0.09	1	
CLOSE	-0.10*	0.06	0.03	0.08	-0.15**	-0.03	-0.03	-0.01	1

Notes to panel B:

*: Correlation is significant at the 0.05 level (two-tailed).

**: Correlation is significant at the 0.01 level (two-tailed).

^a Variable definitions:

METHOD = 1 for using the MP or RR method, and 0 otherwise

EXPEN = disclosed pro forma ESO expenses deflated by the market value of equity all measured at the year prior to the adoption

SHARE = logarithm of common shareholders at the year prior to adoption

SHARE_MG = percentage of shareholding by managers at the year prior to adoption

ERGROW = 1 for pretax earnings growth rate over the three years (prior to adoption) above median, 0 otherwise

W_SALES = net operating assets relative to sales ratio at the year prior to the adoption

A_SALES = net fixed asset to sales ratio at the year prior to the adoption

STRING = 1 if the firm has increasing earnings in each of three years prior to the adoption, and 0 otherwise.

CLOSE = absolute value of pretax earnings per share at the year prior to the adoption

Table 3 - First Stage Analysis of FAS123 Adoption Decision

Panel A: Descriptive Statistics: determinants of decision of adopting FAS123

Variable ^a	Expensing firms (N=324)			Non-expensing firms (N=324)		
	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.
ADOPT	1.00	1	0.00	0.000	0	0.00
INT_OP	0.36	0.238	0.60	0.171	0.163	1.41
LEVEG	1.08	0.475	2.28	1.197	0.400	3.05
INST	49.21	55.68	28.52	53.320	61.025	28.68
ROE	0.15	0.103	0.97	-0.015	0.098	0.77
ROA	0.02	0.021	0.26	-0.006	0.018	0.20
GROWTH	1.67	1.549	2.95	2.373	1.778	2.63

Notes to panel A:

^a Variable definitions:

- ADOPT = 1 for expensing firm, and 0 otherwise
- INT_OP = the ratio of interest expense to operating income, at the year prior to the adoption
- LEVEG = book value of long-term debt to the market value of equity, at the year prior to the adoption
- INST = percentage of shares outstanding held by institutional holders, at the quarter prior to the adoption
- ROE = return on average common equity at the year prior to the adoption
- ROA = return on assets measured at the year prior to the adoption
- GROWTH = book-to-market ratio at the year prior to the adoption

Panel B: First stage regression analysis of adoption decision (N=648)

$$ADOPT_i = \alpha_0 + \alpha_1 INT_OP_i + \alpha_2 LEVEG_i + \alpha_3 INST_i + \alpha_4 ROE_i + \alpha_5 ROA_i + \alpha_6 GROWTH_i + \varepsilon_i \quad (1)$$

Variable ^a	Predicted Sign	Coefficient	Asymptotic T-statistics
Intercept	?	0.651	3.096***
INT_OP	+	0.223	1.803*
LEVEG	-	-0.041	-1.387
INST	-	-0.008	-2.888***
ROE	+	0.204	1.670*
ROA	+	0.318	0.720
GROWTH	-	-0.106	-2.968***
MADDALA R ²	0.059		

Notes to panel B:

***, **, * Significant at < .01, < .05 and < .10 levels for two-tailed tests.

^a Variable definitions:

- ADOPT = 1 for expensing firms, and 0 otherwise
- INT_OP = the ratio of interest expense to operating income, at the year prior to the adoption
- LEVEG = book value of long-term debt to the market value of equity, at the year prior to the adoption
- INST = percentage of shares outstanding held by institutional holders, at the quarter prior to the adoption
- ROE = return on average common equity at the year prior to the adoption
- ROA = return on assets measured at the year prior to the adoption
- GROWTH = book-to-market ratio at the year prior to the adoption

Table 4 - Analysis of the Adoption Method Choice: Regression Analysis

Tobit analysis examining the determinants of transitional method chosen when adopting FAS123 (N=324)

$$METHOD_i = \alpha_0 + \alpha_1 EXPEN_i + \alpha_2 SHARE_i + \alpha_3 SHARE_MG_i + \alpha_4 ERGROW_i + \alpha_5 W_SALES_i + \alpha_6 A_SALES_i + \alpha_7 STRING_i + \alpha_8 CLOSE_i + \alpha_9 IMR_i + \varepsilon_i \quad (2)$$

Variable	Predicted Sign	Coefficient	Asymptotic T-stat
Intercept	?	-1.675	-2.280**
EXPEN	-	-0.901	-2.157**
SHARE	+	0.219	2.729***
SHARE_MG	-	0.012	1.070
ERGROW	+	0.584	1.693*
W_SALES	-	-0.037	-0.601
A_SALES	-	-0.644	-2.094**
STRING	-	-1.682	-4.362***
CLOSE	+	-0.173	-1.702*
IMR	?	-1.6751	-2.279**
MADDALA R ²	0.22777		

Notes to table 4:

***, **, * Significant at < .01, < .05 and < .10 levels for two-tailed tests.

^a Variable definitions:

METHOD = 1 for using the MP or RR method, and 0 otherwise
 EXPEN = disclosed pro forma ESO expenses deflated by the market value of equity all measured at the year prior to the adoption
 SHARE = logarithm of common shareholders at the year prior to adoption
 SHARE_MG = percentage of shareholding by managers at the year prior to adoption
 ERGROW = 1 for pretax earnings growth rate over the three years (prior to adoption) above median, 0 otherwise
 W_SALES = net operating assets relative to sales ratio at the year prior to the adoption
 A_SALES = net fixed asset to sales ratio at the year prior to the adoption
 STRING = 1 if the firm has increasing earnings in each of three years prior to the adoption, and 0 otherwise.
 CLOSE = absolute value of pretax earnings per share at the year prior to the adoption

Table 5 - Market Reaction to the Announcements of Expensing ESOs: Conditional on the Adoption Method Chosen

Panel A: Mean (Median) market-adjusted CARs over a three-day (five-day) window centered on expensing announcement date, conditional on the transitional method choice (N=215)

Variable ^a	CARs (3-day window)		T-test ^b	Z-test ^b	CARs (5-day window)		T-test ^b	Z-test ^b
	Mean	Median			Mean	Median		
	P (N=167)	0.64%			0.85%			
MP (N= 29)	2.45%	2.54%			1.60%	2.14%		
RR (N= 19)	1.74%	1.57%			0.89%	0.83%		
MP and RR	1.39%	1.63%			0.90%	1.16%		
P vs. MP			-1.96**	-4.70***			-1.50*	-4.14***
MP vs. RR			0.42	-0.4			0.63	-0.44
P vs. RR			-0.41	-3.82***			-0.63	-3.17***
P vs. MP and RR			-1.88**	-6.02***			-1.42*	-4.49***

Notes to panel A:

***, **, * Significant at < .01, < .05 and < .10 levels for one-tailed tests.

^a Variable definitions:

CARs = cumulative market adjusted abnormal returns, measured as raw returns minus the CRSP equal-weighted market portfolio, measured over the 3-day (5-day) window, centering the announcement date of expensing stock options.

P = Prospective method user

MP = Modified Prospective method user

RR = Retroactive Restatement method user

^b t-tests refer to differences in means and z-statistics refer to Wilcoxon two-sample median tests.

Panel B: Multivariate market reaction regression (N=215)

$$CARs_i = \alpha_0 + \alpha_1 RR_MP_i + \alpha_2 SIZE_i + \alpha_3 DEBT_i + \alpha_4 RETURNS_i + \alpha_5 MBR_i + \alpha_6 RR_MP*SIZE_i + \alpha_7 RR_MP_i*DEBT_i + \alpha_8 RR_MP_i*RETURNS_i + \alpha_9 RR_MP_i*MBR_i + \varepsilon_i \quad (3)$$

Variable ^a	CARs (3-day window)		CARs (5-day window)	
	Coefficient	T-statistics	Coefficient	T-statistics
Intercept	-0.025	-3.189***	-0.017	-2.295***
RR_MP	0.03	1.925**	0.018	1.683**
SIZE	-0.012	-1.800**	-0.001	-0.184
DEBT	0.007	1.013	-0.005	-0.761
RETURNS	0.039	5.540***	0.025	3.772***
MBR	0.004	0.537	0.006	0.975
RR_MP*SIZE	0.001	0.102	0.006	0.463
RR_MP*DEBT	-0.016	-1.225	-0.008	-0.649
RR_MP*RETURNS	0.007	0.484	0.004	0.299
RR_MP*MBR	0.022	1.719*	0.006	0.498
Adjusted R ²	0.31		0.14	

Notes to panel B:

***, **, * Significant at < .01, < .05 and < .10 levels for one-tailed tests.

^a Variable definitions:

RR_MP = indicator coded as 1 if the firm chose to use the RR or the MP method when adopting the FAS123

SIZE = indicator coded as 1 if the firm's logarithm of the book value of total assets reported at the last fiscal year end prior to the announcement is greater than sample mean

DEBT = indicator coded as 1 if the ratio of long-term debt to total assets, measured at the last fiscal year prior to the announcement, is greater than sample mean

RETURNS = indicator codes as 1 if buy and hold returns over 120 days prior to the announcement (day -120 to day -1) is greater than sample mean.

MBR = indicator coded as 1 if the market to book ratio, measured at the last fiscal year prior to the announcement is greater than sample median, 0 otherwise

RR_MP*SIZE, RR_MP*DEBT, RR_MP*RETURNS, RR_MP*MBR = interaction variables