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# An Empirical Analysis of Payout Policy and Option Expensing

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**ABSTRACT**

The increased use of stock options as a compensation component and the subsequent failure of firms where their use was prevalent forced both Congress and the Financial Accounting Standards Board (FASB) to enact new legislation and regulations in 2002. Among other things, the new legislation required corporations to disclose more information on their financial statements and initially to recognize voluntarily stock option grants as an expense on their financial statements. In 2004 option expensing became mandatory.

This investigation uses Tobit regression models to examine whether there is a change in the payout policy (use a firm's cash to pay dividends to its stockholders or to repurchase outstanding shares from its shareholders) in a group of firms after announcing their voluntary decision to expense their stock options.

The expected increases in the payment of dividends or share repurchases did not occur. Firms seem to have reacted to the required option expensing with other

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changes in their equity compensation plans such as accelerating the vesting of its options or by modifying the terms of its option grants.

**Keywords**: Stock options, Payout policy, Dividends, Share repurchases

## RESUMEN

El aumento en el uso de las opciones de compra de acciones (de aquí en adelante, "opciones") como un componente de compensación y el fracaso subsiguiente de empresas donde su uso era común obligó al Congreso de los Estados Unidos y a la Junta de Normas de Contabilidad Financiera (FASB, por sus siglas en inglés) a desarrollar y aprobar nuevas leyes y reglamentos en el año 2002. Las mismas requerían a las Corporaciones, entre otras cosas, a divulgar información adicional y a inicialmente, reconocer de manera voluntaria, las concesiones de opciones como gasto en los estados financieros. En el año 2004 se hizo obligatorio el reconocimiento de las opciones como gasto.

Esta investigación usa modelos de regresión Tobit para examinar si surge un cambio significativo en la política de pago (uso del efectivo de una empresa para pagar dividendos a sus accionistas o readquirir todas o una porción de sus acciones en circulación) para un grupo de empresas que anunciaron voluntariamente que iban a reconocer las opciones como gasto en sus estados financieros.

No se observaron los aumentos esperados en la política de pago de las empresas. Los cambios hechos por las empresas fueron la aceleración de acumulación de beneficios y otros cambios en sus planes de compensación mediante el uso de opciones.

**Palabras clave**: Opciones de compra de acciones, Política de pago, Dividendos, Readquisición de acciones

## I. Introduction & Background

The increased use of stock options as a compensation component and the subsequent failure of firms such as Enron, WorldCom and others, where the use of options was prevalent, forced both Congress and the Financial Accounting Standards Board (hereafter, "FASB") to enact new legislation and regulations in 2002. The new legislation and several new accounting standards now require corporations, among other matters, to disclose more information related to executive compensation, and initially compelled firms to recognize voluntarily stock option grants as an expense on their financial statements. In 2004 option expensing became mandatory.

This investigation uses Tobit regression models to determine whether there was a significant change in the payout policy (use a firm's cash to pay dividends to its stockholders or to repurchase outstanding shares from its shareholders) in a group of firms after announcing their voluntary decision to expense stock options awarded to employees (managerial or non-managerial) as part of their compensation pursuant to their employment agreement.

The expected changes (increases) in the payment of dividends or share repurchases did not occur. Firms seem to have reacted to the required option expensing by initiating other changes in their equity compensation plans such as accelerating the vesting of its options or by modifying the terms of its option grants.

### The Origins of the Controversy over Stock Options

Prior to 2001 the debate over employee stock options had been mainly limited to certain aspects of the inherent agency conflict, and other issues such as their valuation and recognition on the issuing company's financial statements, and this had been done primarily in academic journals, and in discussions held by and between the FASB, the large international Certified Public Accounting firms, and U.S. Congressional subcommittees. However, stock options and the weak accounting rules behind them became world wide news when several well-publicized cases of corporate greed and malfeasance (*Enron*, W*orldCom*, among others) prompted the U.S. Congress to act swiftly by enacting the Sarbanes-Oxley Act of 2002 (formally known as the

"Public Company Accounting Reform and Investor Protection Act of 2002", but hereafter referred to as "Sarbanes-Oxley"), to scrutinize what a public corporation and their independent auditors can and cannot do. Other regulatory entities, pension funds and institutional investors, such as the Teachers Insurance and Annuity Association-College Retirement Equities Fund (TIAA-CREF), also joined the bandwagon calling for stronger corporate governance measures and tighter scrutiny of corporate events and transactions.[1]

Although the aforementioned corporate failures were caused by different reasons, Sundaram and Inkpen (2004) state that the widespread use of stock options to compensate corporate managers helped fuel the different corporate failures observed during 2001 and 2002. The reason for this widespread belief is attributed to the "unrestrained granting of stock options" to compensate corporate managers during the Internet bubble frenzy of the 1990's. According to Gordon (2003), the problems at Enron were exacerbated by its "high-powered stock-based compensation structure". A report prepared in February 2003 by Towers Perrin, a human resources consulting firm hired by a Congressional Committee to investigate Enron reveals that the Company's stock compensation for its highest executives in 2000 represented 66% for Kenneth Lay and 75% for Jeffrey Skilling. Gordon (2003) also finds that Enron's stock-based compensation arrangements for its managers included performance-based accelerated vesting. Since managers usually exercise options upon vesting, and with the potential to receive additional options based on performance, Enron managers had a "pathological" concern over the fluctuations in the Company's stock price. This environment increased the pressure on senior managers to "manipulate financial results" to obtain increased current earnings that would agree with the expectations held by the firm's institutional investors, thereby resulting in an increase in the Company's stock price.

The ongoing controversy over stock options intensified on July 8, 2003, after Microsoft, who originally was against the expensing of options decided that that it would no longer grant employees stock options on its shares. In its place, and starting in September 2003,

[1] "About TIAA-CREF: Corporate Governance", available through the Internet: http://www.tiaa-cref.org/advisors/about_tiaa/governance.html.

the Company would start to grant their 50,000 employees the right to receive restricted company stock through time. According to Mr. Michael Cohen, Research Director at Pacific American Securities, the expectation that was circulated on Wall Street was that to gain shareholder support, the Company would either increase the amount of dividends paid, or pay a special dividend estimated at more than $10 billion, to "reward" its employees, who are the actual owners of the company's stock.[2] As expected, on September 12, 2003, Microsoft announced the payment of its annual dividend of $0.16 per share, which was twice the amount of the previous year's dividend of $0.08 per share. Microsoft has subsequently continued to consistently pay dividends, and on July 20, 2004, the Company announced that it would pay a special dividend of $3 per share on December 2, 2004, and that beginning in fiscal year 2005 it would start paying quarterly dividends, and that it would also start a $30 billion buyback of its shares.[3]

Prior to 2002, generally accepted accounting principles (hereafter, "GAAP") allowed firms to avoid recognizing the effect of its stock options on the financial statements, and merely required disclosing their effect in the footnotes section. Several academic and business leaders (Merton Miller, Warren Buffet, and Alan Greenspan, among others) expressed their inconformity with not reflecting stock options as an expense on a firm's financial statements.

Corporate America also responded to the *Enron* & *WorldCom* scandals, and in early 2002, a group of firms in different industries such as American Express, Coca-Cola, General Electric, and Wal-Mart, among others, announced that they would voluntarily record their stock options as an expense. At that time, technology firms such as Intel, Cisco Systems, and Oracle, among others, vigorously expressed their opposition to this new requirement. These firms claimed that expensing options would have two negative effects. The first effect would be to reduce their reported earnings ("dilutive effect"). The second negative effect would be an increased difficulty

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[2] La Monica, Paul R., "Microsoft ending options grants", **CNN/Money Report**, July 9, 2003, http://money.cnn.com/2003/07/08/technology/Microsoft/.

[3] Microsoft's Dividend History, Microsoft Investor Relations-Dividend FAQ, http://www.microsoft.com/msft/FAQ/faqdividend.mspx.

in the recruiting and hiring of managerial talent, due to the fact that this type of firm uses stock options as a compensation incentive.

## EVOLUTION OF ACCOUNTING STANDARDS (FASB STATEMENT NOS. 148 AND 123-R)

In December 2002 the FASB reacted to its critics by issuing a new accounting standard FASB Statement No. 148 ("Accounting for Stock-Based Compensation-Transition and Disclosure") that provided firms with alternative methods of transition for a *voluntary* change to the "fair value" method of accounting for stock options, which the FASB stated was the *preferable* method of accounting for stock-based compensation. SFAS No. 148 also required disclosures in both the annual and interim financial statements of the effect of the stock options on the financial statements, and even required a specific way as to how to present the information to be disclosed on the financial statements. The effective date for SFAS No. 148 was for fiscal years ending after December 15, 2002, i.e. for companies with a December 31 year-end, the Standard would apply starting January 1, 2003.

The FASB asserted that the underlying motivation behind SFAS No. 148 was to achieve international convergence with the global capital markets. International publicly traded companies that do not present their financial statements in accordance with US GAAP must adhere to the GAAP established by its counterpart, the International Accounting Standards Board (hereafter, "IASB"). In November 2002 the IASB issued an exposure draft for public comment, wherein they required that companies recognize stock options as an expense.[4]

On October 29, 2003, the FASB announced that by 2005 they would start requiring all firms to expense their stock options.[5] On February 19, 2004, the IASB issued its International Financial Reporting Standard No. 2 ("Share-based Payment) requiring all

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[4] Official Releases-FASB No. 148, **Journal of Accountancy**, March 2003.

[5] "FASB Picks 2005 To Begin Mandatory Stock-Option Expensing", by Lingling Wei of Dow Jones Newswires, available through the Internet: http://www.siliconinvestor.com/stocktalk/msg.gsp?msgid.

international companies to expense their stock options beginning on or after January 1, 2005.[6]

On March 31, 2004, the FASB announced the release of an exposure draft of its proposed new standard, but on October 13, 2004, it delayed the effective date of its proposed new standard. On December 16, 2004, the FASB announced it had issued its final statement as SFAS No. 123-R ("Share-Based Payment"), where the R means, "Revised". This new Statement replaced SFAS No. 123 and superseded APB Opinion 25. The new Standard requires public companies to adopt option expensing in interim or annual periods beginning after June 15, 2005, instead of the original effective date of January 1, 2005.[7]

On March 29, 2005, the SEC issued Staff Accounting Bulletin No. 107, hereafter SAB 107 and on April 15, 2005, it issued a ruling described as "Amendment to Rule 4-01 (a) of Regulation S-X Regarding The Compliance Date For Statement Of Financial Accounting Standards No. 123 (Revised 2004), Share-Based Payment." SAB 107 consists of various clarifications in the form of questions and answers related to the implementation of SFAS 123-R. The amendment to Regulation S-X delayed the implementation date of SFAS 123-R for public companies until their next fiscal year that begins after June 15, 2005. The effect of this change for calendar year-end companies is that they would not be required to implement this new standard until the first quarter of 2006. However, companies may choose to adopt the Standard earlier if possible.

## II. Prior Research

The literature on stock options includes among other matters, agency and valuation (pricing) issues, recording and disclosure requirements, tax effects, and their use to compensate (and motivate) managers, as well as their advantages and disadvantages.

The literature on payout policy and its relationship with stock options is also extensive. Several authors such as Seethamraju and

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[6] Reilly, David, "New International Rule Pressures U.S. to Handle Stock Grants the Same Way", **Wall Street Journal**, February 19, 2004.

[7] FASB Project Updates-Equity-Based Compensation, available through the Internet: http://www.fasb.org./project/equity-based_comp.shtml.

Zach (2004), Semerdzhian (2004), and Elayan, Pukthuanthong, and Roll, (2004), discuss different aspects of the effects of expensing stock options when expensing them was voluntary. In addition, Fenn and Liang (1997), Jolls (1998), Weisbenner (1998 and 2004), Grullón and Michaely (2002), and Bens, Nagar, Skinner and Wong (2003), among others, study the association between stock options and payout policy.

## OPTIONS AS A COMPONENT OF COMPENSATION AND RELATED AGENCY COSTS

The use of stock options in a firm's compensation plan brings up the inherent agency problems that arise between a firm's managers and its shareholders. Guay (1999) states that a typical manager is risk-averse, and this presents a conflict that will generate an agency cost. Shareholders want managers to select positive net present value projects to increase the value of the firm. However, these types of projects entail a significant degree of risk for the managers. Since managers usually have made an investment in their firm, they want to reduce risk, and that may be undesirable from the perspective of a well-diversified stockholder. The author's hypothesis was that to avoid or mitigate the risk-related agency conflict, firms add "convexity" to the managers' total compensation package to encourage them to accept high-risk project opportunities. Firms will achieve this by including bonuses and stock options as part of the incentives awarded to managers. Guay's study of a sample of CEOs and their compensation confirms his initial hypothesis that managers are more willing to take on more high-risk opportunities if there is a possibility of receiving a higher incentive. In fact, he finds that stock options play a more significant role than common stock in increasing the convexity of the wealth-performance relationship as observed by Jensen and Meckling (1976) and others.

Jensen (1986) finds that firms also incur in agency costs whenever firms generate cash in excess of their capital investment needs (described as "free cash flow") because stockholders and managers usually have different ideas as to how to invest it. Stockholders want to prevent the natural tendency of managers to invest the firm's free cash flow in perks for themselves or in projects that do not represent

positive growth opportunities for the firm. Stockholders believe that managers should either invest the firm's free cash flow in positive growth projects (that have positive net present value), or pay it out to the stockholders in the form of dividends or via stock repurchases. The payment of a firm's free cash flow to its stockholders generates value to the firm and results in a higher stock price. Jensen (1986) also notes that when firms issue debt, managers are forced to become more efficient because they have to continue generating operating cash flows to meet the required debt repayments. The markets interpret the additional leverage and the resulting managerial efficiencies in a positive way with a higher stock price.

### Stock Options as a Compensation mechanism to reduce the Agency problem

According to Kole (1997), the negotiation of managerial compensation contracts generates a different type of agency problem. The Board of Directors (hereafter, the Board) or a Compensation Committee comprised of Board members, now act as principal on behalf of the stockholders and negotiate the compensation packages for a firm's managers that include stock option plans, restricted stock grants and long-term performance plans.

Kole (1997) finds that the decision to grant equity as part of a manager's compensation can be predicted by certain financial characteristics of the firm, e.g. tangible assets and intangible assets, and to a lesser extent by the size of the firm or by the presence of the founding family on the firm's Board. However, the Board's judgment plays a very significant role in granting incentives. This discretion or "flexibility" could result in an "expropriation of shareholder wealth". According to this author this type of Board flexibility would be more likely to be present in large size firms, in firms that have larger differences among the different segments of the business, i.e., increased firm diversification, and firms that were more research-oriented. On the other hand, Barron and Waddell (2003) observe that as executives move up the corporate ladder within the same firm, compensation becomes more incentive based, and incentive pay becomes more equity based. This fact may reflect differences in project selection criteria, with more senior executives evaluating projects that generate increased costs if they make mistakes. Another possibility is that ex-

ecutive incentive pay might reflect differences in abilities or degrees of risk aversion, i.e. senior executives have more abilities and are less risk averse. The authors also document a tradeoff between various types of equity-based compensation, in particular restricted stock grants versus stock options. Stock options encourage increased effort at the expense of introducing a bias in the project acceptance decision. At higher levels of management, there is relatively less equity compensation in the form of stock options, compared to lower ranking managers. The authors interpret this finding as meaning that the adverse effect of stock options on project selection criteria is more important at higher executive ranks.

Although agency theory literature asserts that stock options represent a cost for the firm, they also provide certain advantages. Core and Guay (2001) note that firms use stock option compensation when they face capital requirements and financing constraints, to attract certain types of employees (workers with low-risk aversion), to provide retention incentives, and to create incentives to increase firm value.

## STOCK OPTIONS AND PAYOUT POLICY

Financial economists have written extensively about the relationship between stock options and a firm's payout policy. The literature in this area started with different tests of the *agency hypothesis*. According to Jolls (1988), when firms have stock option plans for their managers there is an increase in share repurchases. Managers prefer repurchases instead of dividends because there is no dilution in the value of their options. Lambert, Lanen and Larcker (1989), hereafter referred to as Lambert et al, observe that when firms *initially* implement a stock option plan, they reduce the amount of dividends paid. Lambert et al believe that this result is apparently due to the influence exerted by firm managers who want to reduce the dividends paid to obtain an increase in the value of their options.

Kahle (2002) encounters similar results in her research on executive and employee stock options and their relation to share repurchases. Kahle observes that from 1993 to 1996 firms started to change their compensation policy by increasing their use of stock

options for all employees (managers and non-managers). This change in compensation policy was accompanied by changes to firms' payout policy, since firms are more inclined to repurchase shares to provide increased benefits for their managers and to support their employee stock option plans. The existence of executive stock options increases the likelihood that a firm will repurchase its shares. However, once a firm decides to repurchase its shares, the author found that the number of executive stock options has no effect or impact on the total number of shares reacquired.

Fenn and Liang (2001) study the link between stock options and the agency costs of free cash flow. Although they agree that this is one of the most severe agency conflicts that exist between managers and shareholders, they note that firms distribute their free cash flow through ordinary dividends and open market repurchases to control the agency costs of free cash flow. According to Fenn and Liang, agency theory implies that firms with high levels of free cash flow and low financing costs will pay more dividends than firms with less free cash flow. Firms with low financing costs have the necessary flexibility to pay large amounts of dividends, because if they were to face a sudden reduction of their free cash flow in the future, their cost of borrowed funds would be low.

Fenn and Liang (2001) document the relationship between dividend policy and managerial stock incentives for more than 1,000 non-financial firms and observe that in firms that have severe agency problems, such as low stock ownership by managers, few available investment projects, or high free cash flow, there is a greater incentive to increase the payment of dividends. At firms with no severe agency problems, the ownership of the company stock by its managers had no effect on the dividends paid. The authors also find that the presence of stock options owned by firm managers were accompanied by an increase in stock repurchases. The inferences made by the authors are that firms distribute their free cash flow by ordinary dividends, and use stock repurchases to control the agency costs associated with free cash flows.

Grullón and Michaely (2002) observe that after the SEC approved Rule 10b-18 in 1982 creating a "safe harbor" for repurchasing shares on the open markets, firms reduced the amount of dividends paid

and tripled the aggregate amount spent on stock repurchases. The authors develop "the *substitution hypothesis*" to describe their observation that share repurchases have replaced dividends as the preferred payout method used by firms. Grullón, Michaely and Swaminathan (2002) develop the "*maturity hypothesis*" that relates the growth of the firm with its dividend and investment policies. The authors find that when firms are growing, their free cash flows are substantially reinvested in the different available projects, and as a result, they pay small dividends. When firms have grown and are faced with increased competitors or other market factors, the available positive net present value projects are reduced, and now they find themselves with an increase in their free cash flows. At this stage, firms will either increase the amount of dividends paid or increase their share repurchases.

Grullón and Michaely (2002) also evaluate the information content of share repurchases and observe that when firms are faced with the typical agency problem of over-investment, there is an increase in share repurchases. The authors note that the markets' positive reaction was probably due to the expected reductions to the firms' cost of capital and their agency costs of free cash flow. Lee and Meng Rui (2007) also find that a firm's share repurchases do not contain additional information about future earnings because they are usually funded from its non-recurring (temporary) earnings. Dividend changes seem to contain some information about the firm's future earnings because dividends are usually funded from a firm's permanent components of earnings.

### EFFECT OF STOCK OPTIONS ON EARNINGS PER SHARE

Bens, Nagar, Skinner and Wong (2003) find that in firms whose executives had compensation incentives tied to achieving certain earning levels increased share repurchases aimed at offsetting the dilutive effect that options have on earnings per share (hereafter, "EPS"), specifically *diluted* EPS. Since a firm's managers are evaluated on EPS growth patterns, any disruption to their firm's EPS might affect their compensation incentive. If a firm expects that its earnings will decrease, executives will be more inclined to initiate share repurchases

so that diluted EPS does not deviate from previous quarters.

Weisbenner (2004) obtains similar results when he examines the reasons for increased share repurchases in firms that have stock option plans. According to Weisbenner, the increase in firms' share repurchases could be explained by two hypotheses: the previously explained *agency* hypothesis and the *undo dilution* hypothesis. The undo dilution hypothesis predicts that managers will initiate repurchases to offset the dilution that comes from the unexercised stock options. The author interprets the results observed as a confirmation of the latter hypothesis, i.e. large firms with high stock returns engage in share repurchases to offset the dilution caused by stock options. It is interesting to note that Weisbenner believes (*before option expensing became mandatory*) that if accounting standards were changed to require option expensing, this would neutralize the options' dilutive effect on EPS. In addition, the author predicts (*before option expensing became mandatory*) that future option grants will likely decrease and that the trend in payout policy observed in the literature by other authors might be reversed, i.e. firms will forego repurchases in favor of dividends.

Brav, Graham, Harvey and Michaely (2005) observe further evidence of the dilutive effect of stock options on EPS when they updated their previous research on corporate payout policy. A series of interviews made with over 400 CFOs reveal, among other matters, that over the years the payout policy has shifted to include share repurchases in a greater proportion than dividends. The authors find that if firms could start over, they would either not pay dividends or pay fewer dividends. In addition, CFOs preferred the payout alternative of share repurchases because of their flexibility in helping them neutralize the dilution caused by stock options and being able to reach (or maintain) desired EPS levels.

## III. Hypotheses Development

Miller and Crystal (1994), among others, have stated that once expensing becomes mandatory, firms that previously had not expensed their stock options will reflect significant reductions in their reported net income and Earnings per share, i.e. "the dilutive effect". To

offset these expected reductions, firms are expected to increase the payment of dividends as a signaling mechanism to the individual and institutional investors (hereafter, "the Market") that the firms' expected future cash flows should not be affected. In addition, firms are also expected to increase their share repurchases to offset the dilutive effect of their stock options. This investigation develops two hypotheses to examine whether there is any significant change in the payout policy for a group of firms after they announce their voluntary decision to expense their stock options. The first hypothesis in this investigation pertains to the expected effect of the announcement on the dividend payout ratio of a group of firms.

Fenn and Liang (2001) note that firms with high levels of free cash flow and low financing costs pay more dividends than firms with less free cash flow. Grullón, Michaely and Swaminathan (2002) observe that young growing firms reinvest their free cash flows in their operations and pay small dividends, whereas older mature firms have less available investment projects (that generate positive net present value) to invest their free cash flow. These older firms will either increase the amount of dividends paid or increase their share repurchases. Weisbenner (2004) expects (*before option expensing became mandatory*) that firms might change their payout policy (reversing the trend from repurchases and shifting back to dividends) when accounting standards change to require option expensing.

The dividend payout ratio in this investigation is measured similar to Jagannathan, Stephens and Weisbach (2000) who define a "lagged" dividend payout ratio that considers each firm's prior year's total dividends paid (Compustat Item Number 21) divided by the net income available to common stockholders (Compustat Item Number 237). The explanatory variables for the expected change in the dividend payout ratio are Earnings Before Interest, Taxes, Depreciation and Amortization (hereafter, EBITDA), the ratio of EBITDA to assets, size (log of total assets), a variable measuring investment (growth) opportunities represented by the ratio of market to book value of assets, the ratio of total debt to assets, Capital Expenditures (CAPEX), and a variable to measure the firms' volatility defined as the standard deviation of the announcing firms' EBITDA, following the same approach used by Elayan, Pukthuanthong and

Roll (2004), hereafter referred to as Elayan et al. Accordingly, the first hypothesis tested in this investigation is proposed as follows:

**H1**: After the announcement (event) date, the Announcing firms will reflect an increase in their dividend payout ratio.

The second hypothesis in this investigation pertains to the expected effect of the announcement on the share repurchase ratio of a group of firms. Jolls (1988) points out that when firms have stock option plans for their managers there is an increase in share repurchases. Managers prefer repurchases instead of dividends because there is no dilution in the value of their options. Kahle (2002) finds similar results in her research on executive and employee stock options and their relation to share repurchases. Kahle observes that during the period from 1993 to 1996 firms started to change their compensation policy by increasing their use of stock options for all employees (managers and non-managers). This change in compensation policy is accompanied by changes in firms' payout policy, since firms are more inclined to repurchase shares to provide increased benefits for their managers and to support their employee stock option plans. The existence of executive stock options increases the likelihood that a firm will repurchase its shares.

Grullón and Michaely (2002) observe that after 1982 firms reduce the payment of dividends and triple the aggregate amount spent on repurchases. The authors interpret the empirical evidence they found to suggest that share repurchases replaced dividends ("the *substitution hypothesis*") as the preferred payout method. Grullón and Michaely (2002) also evaluate the information content of share repurchases and observe that when firms are faced with the typical agency problem of over-investment, there is an increase in share repurchases. Weisbenner (2004) predicts (*before option expensing became mandatory*) that when accounting standards change to require option expensing, firms might reverse the trend from share repurchases and shift back towards dividends.

The share repurchase ratio in this investigation is measured similar to Weisbenner (2004) in terms of share repurchases in dollars (Compustat Item 115 - Compustat No.130) divided by the average

(beginning and end of year) market value of the firm. The explanatory variables for the expected change in the share repurchase ratio are EBITDA, size (log of total assets), CAPEX, a variable measuring investment (growth) opportunities represented by the ratio of market to book value of assets, diluted EPS, a lagged dividend payout ratio, dollars spent in share repurchases and the volatility of earnings measured by the standard deviation of the firms' EBITDA.

The second hypothesis in this investigation is stated as follows:

**H2**: After the announcement (event) date, the Announcing firms will reflect an increase in their Share repurchase ratio.

## IV. SAMPLE SELECTION PROCEDURE

The sample for this investigation comprises all the firms with available data on the Center for Research in Security Prices, also known as CRSP® US Stock Database (hereafter, "CRSP") and other financial information on the Compustat Annual Industrial and Research files. Stock prices and returns will be obtained from CRSP. Dividends, stock repurchases and other financial statement data such as EBITDA (Earnings before Interest, Depreciation and Amortization), Sales, among others, will be obtained from Compustat. Other information such as changes made to stock option plans or total compensation from stock options (managerial and non-managerial employees) that is reported in a firm's Annual Proxy statement (Schedule 14A) and in its audited Annual report (Form 10-K) filed with the SEC will be manually collected from the EDGAR (Electronic Data Gathering, Analysis and Retrieval) database.

To measure whether there was a significant increase in the dividend payout ratio, and following the approach used by Jagannathan, Stephens and Weisbach (2000), a lagged dividend payout ratio before and after the event date for each firm was used. The information for the prior year's dividends paid by the Announcing firms was obtained from Compustat data item no. 21. The net income available to common shareholders is Compustat data item no. 237. The change in the firms' debt ratio was obtained by dividing the average ratio of long-term debt (Compustat data item no. 9) by total assets (Compustat data item no. 6). EBITDA was obtained from Compustat

item no. 13. The data for share repurchases for the Announcing firms was obtained from Compustat data item no. 115. However, this item overstates repurchases because it includes purchases of both common and preferred stock.

Jagannathan, Stephens and Weisbach (2000) and Weisbenner (2004) suggest making certain adjustments to mitigate the aforementioned overstatement. The approach followed by these authors was incorporated in the present study, and consists of deducting the decrease in the carrying value of preferred stock (Compustat data item no. 130) to obtain a more reliable figure for purchases of common stock.

Table 1 summarizes our sample formation for this investigation. The firms included in this study were selected from a list originally compiled by Bear Stearns as of February 12, 2004 and provided by Mr. Brett J. Harsen of Mellon Human Resources and Investor Solutions (Available upon request). The Bear Stearns list identifies the 483 firms (with their related Ticker symbols) that were expensing their stock options or had announced that they would expense their stock options as of that date. The firms that were expensing or had announced they were going to expense options as of February 12, 2004, are the "announcing firms". The firms that were not expensing or had not announced they were going to expense options as of February 12, 2004, are known as the "non-announcing" firms and are included in another sample (the "Control" group).

Using the same approach adopted by Elayan et al (2004), each announcing firm was matched with a "Control" group firm that had employee stock option plans, is in the same industry (two-digit SIC codes), shares the same fiscal year-end, and has similar size (comparable Sales) and profitability levels. Elayan et al measure the latter variable with the ratio of EBITDA to Sales (hereafter, the "ES ratio").

The announcing firms were initially subdivided and grouped based on their announcement dates and the year of adoption of the fair value (expensing) method of accounting for options using December 15, 2002, the effective date for SFAS No. 148 (*Voluntary* recognition of stock option expensing) as the cutoff date. The 11 firms that were expensing options prior to January 1, 2002 were excluded from the study because the exact announcement date was available for

only one of those firms. Firms that had subsequently merged with or were acquired by another firm or were non-US companies were also excluded. Other firms were also excluded due to their privatization (stockholder buyout), and one firm (SonomaWest Holdings, Inc-SWHI) was excluded because its common stock was delisted from the NASDAQ Small Cap Market on August 10, 2005.

When the remaining 303 firms were located in the CRSP data files by their ticker symbols, from January 1, 2001 to June 30, 2005, a file with 253 firms was obtained. There were 50 missing firms that ceased to exist during the 2001-2005 period because of mergers or privatization, among other reasons.

For the remaining 253 firms, another file was created based on a subsequent inquiry in the CRSP files with the following daily information: Company's Permanent Name (PERMNO), Date of calculation of stock return (DATE), Company's Ticker Symbol (TICKER), Stock return with Dividends (RET), Value-weighted return with Dividends (VWRET), and Equal-weighted return with Dividends (EWRET). This search produced 225 firms, which implies that there were 28 firms with missing data in CRSP.

The next step was to obtain the group of Matching "eligible and Non-Announcing" firms from the Compustat files by selecting all firms for the period January 1, 2001 through June 30, 2005 with the Company's Permanent Name (PERMNO). The criteria for selecting a similar matched firm was based on the following attributes: firms that have employee stock options plans, are in the same industry (Two digit SIC code), have the same fiscal year-end, and share similar Sales levels and Profitability levels, the latter defined similar to Elayan et al (2004) as the EBITDA/Sales ratio. Compustat Data Item 398 (Implied Option Expense) and Data Item 399 (Stock Compensation Expense) were used as the variables that identified whether a Matching (Non-Announcing) firm had an outstanding stock option plan. Any firm that did not have a reported value for any of these two variables was discarded for matching purposes.

The merged file of firms was divided in deciles (groups of ten) based on sales to identify the possible firms that could be matched with each Announcing firm in the sample. The file was divided again in those groups based on the ES ratio resulting in 148 perfectly

matched firms. The iterative process was repeated, first by changing the selection method to with replacement, then dividing the remaining firms in three groups with the complete Index, and then repeating the selection process removing the month of the firms'

**TABLE 1. Construction of the Sample for the Study**

| | |
|---|---|
| **Panel A: Construction of the Basic sample with Announcing firms** | |
| Initial sample of Announcing firms | 303 |
| Firms not found in CRSP | (50) |
| Firms not found in Compustat | (28) |
| Firms with missing values in Compustat | (34) |
| Announcing firms for which no matching firm was found | (8) |
| Number of Announcing firms in the sample with a matching firm | 183 |
| **Panel B: Construction of the sample for empirical analyses** | |
| Sample 1(a): Event Study with matching firms | |
| Basic sample with announcing firms | 183 |
| Number of matching firms without CRSP data in the event window | (29) |
| Sample of announcing firms with matching firms | 154 |
| Sample 1(b): Event Study with the Market Model | |
| Initial sample of announcing firms | 303 |
| Firms not found in CRSP | (50) |
| Firms not found in Compustat | (28) |
| Firms with missing values in Compustat | (34) |
| Subtotal | 191 |
| Firms with not enough CRSP data to estimate Market Model Coefficients | (9) |
| Sample of announcing firms for the Market Model | 182 |

fiscal year-end from the Index. To reduce the number of Announcing firms without a similar Matching firm, the selection criteria was liberalized initially to allow a Matching firm to be associated with more than one Announcing firm, and then paired considering the proximity of their sales levels and their ES ratio (EBITDA to Sales). At the completion of these iterations, there were eight Announcing firms for which no Matching firm were found, and as a result, they were discarded from the investigation. The adjusted basic sample

consisted of 183 Announcing firms. As explained on Table 1 the sample for the empirical analyses consisted of 154 Announcing firms and 154 Matching firms for a total sample of 308 firms.

The firms to be included in the tests of Hypotheses 1 and 2 were initially selected from the Basic sample of 183 Announcing and 183 Matching firms (See Panel A of Table 1). Both files (Announcing and Matching firms) were merged subsequently adding the dividends paid from 2001 to 2005 from Compustat. The year 2001 is included because to measure the change in the dividend payout ratio, this investigation adopts the approach used by Jagannathan, Stephens and Weisbach (2000), who use a "lagged" ratio that considers each firm's prior year's total dividends paid (Compustat Item Number 21) divided by the net income available to common stockholders (Compustat Item Number 237). Therefore, the lagged dividend payout ratio for this investigation considers the dividends paid prior to the earliest announcement date for an Announcing firm (July 2002).

## V. RESEARCH DESIGN

The expected change for the test of Hypothesis No. 1 is that after the announcement event, the Announcing firms will increase their dividend payout ratio to offset the expected negative perception that institutional and individual investors (hereafter, "the Market") might have from the reduced EPS levels associated with option expensing.

Our investigation considers that the explanatory variables for the expected change in the dividend payout ratio are EBITDA, ratio of EBITDA to total assets, size (log of total assets), the debt ratio (total long-term debt to total assets), Capital Expenditures (CAPEX), a variable measuring investment (growth) opportunities represented by the ratio of market to book value of assets, and the volatility of earnings measured by the standard deviation of the firms' EBITDA.

Since not all firms pay dividends, a Tobit regression model was used to consider the existence of a censored variable. The analysis of the changes in a firm's dividend payout ratio identifies a censoring variable that takes a value of 0 if the firm did not present a change in its dividend payout ratio, and a value of 1 if the firm had a change in its dividend payout ratio.

The Tobit regression model for the estimated change in the dividend payout ratio of the Announcing firms is the following:

$$\text{CHGdivPOR} = \text{Size} + \text{EBITDA} + \text{EBITDA/Assets} + \text{CAPEX} + \text{MVaBVa} + \text{Debt/Assets} + \text{Volatility} + \text{Announcing} + d3 + d4 + d5 + \varepsilon \quad \textbf{(1)}$$

Where CHGdivPOR is the change in the firms' lagged dividend payout ratio, Size is the log of total assets, EBITDA is the firms' operating income, CAPEX is the amount spent to acquire property and equipment, MvaBVa is a factor for investment (growth) opportunities, calculated as the Market value of assets divided by the Book value of assets. This investigation incorporates the same approach used by Fenn and Liang (2001) and others, who define this growth opportunity variable as the Book value of assets (Compustat Item No. 6) plus the market value of equity (Compustat Item No. 25 multiplied by Item No. 199) less the book value of equity (Compustat Item No. 60) divided by the book value of assets (Compustat Item No. 6). Debt/Assets is the firm's long-term debt to total assets, and Volatility is the standard deviation of EBITDA, and a dummy variable that takes a value of 1 if the firm is an Announcing firm, and 0, if not an Announcing firm. Dummy variables for the years 2003, 2004 and 2005, respectively, are also included.

### Methodology for the Effects of the Announcement Event on the Firms' Share Repurchase Ratio (Test of Hypothesis No. 2)

A firm's share repurchase ratio, as defined by Weisbenner (2004) is share repurchases in dollars (Compustat Item 115 - Compustat No.130) divided by the average (beginning and end of year) market value of the firm. A firm's market value is obtained from Compustat Item 25 multiplied by Compustat Item 199. The expected change for the test of Hypothesis No. 2 is that after the announcement event, the Announcing firms will increase their share repurchases, as measured by the repurchase ratio, to offset the dilutive effect on EPS generated by the mandatory expensing of its stock options.

Our investigation considers that the explanatory variables for the expected change in the share repurchase ratio are EBITDA, size (log of total assets), Capital Expenditures (CAPEX), a variable measuring

investment (growth) opportunities represented by the ratio of market to book value of assets, Diluted EPS, the lagged dividend payout ratio, and the volatility of earnings measured by the standard deviation of the firms' EBITDA.

Since not all firms repurchase their shares, a Tobit regression model was used to consider the existence of a censored variable. The analysis of the changes in the share repurchase ratio identifies a censoring variable that takes a value of 0 if the firm did not have a change in its share repurchase ratio, and a value of 1 if the firm had a change in its share repurchase ratio.

The Tobit regression model for the estimated change in the share repurchase ratio of the Announcing firms is the following:

$$\text{CHGShRep} = \text{Size} + \text{EBITDA} + \text{EBITDA/Assets} + \text{LagdivPOR} + \text{CAPEX} + \text{MvaBVa} + \text{Debt/Assets} + \text{Diluted EPS} + \text{Volatility} + \text{Announcing} + d3 + d4 + d5 + \varepsilon \quad \textbf{(2)}$$

Where CHGShRep is the change in the firms' share repurchase ratio, Size is the log of total assets, EBITDA is the firms' operating income, MvaBVa is the Market value of assets divided by the Book value of assets, LagdivPOR is the lagged dividend payout ratio (Compustat Item No. 21 divided by Compustat Item No. 237), Diluted EPS is Compustat Item No. 57, Volatility is the standard deviation of EBITDA, and a dummy variable that takes a value of 1 if the firm is an Announcing firm, and 0, if not an Announcing firm. Dummy variables for the years 2003, 2004 and 2005, respectively, are also included.

The original sample presented on Table 1 was constructed for an event study performed for a different investigation. In that study, a matching firm could be associated with more than one announcing firm. However, for our investigation of the changes in the dividend payout ratio and the share repurchase ratio, a different approach is adopted. The merged file of announcing and matching firms

presented various instances where a matching firm experienced certain changes such as dividend payments in one or two years only during the five-year period of 2001-2005. In these situations the matching firms with missing values (and the related announcing firms) are discarded. In addition, banks and certain utilities are also discarded because Compustat does not report share repurchases in dollars, and utilities are restricted from paying dividends due to their regulated nature. Therefore, the final sample for our tests of the changes in Firms' payout policy consists of 909 firm-years on Compustat from 2001 to 2005.

## VI. Descriptive Statistics of the Empirical Results

Table 2 reflects the results obtained for the announcing and matching firms for both Tobit regressions. The top portion of this table presents the changes observed in the dividend payout ratio, where approximately 35% (317) of the total 909 firm-year observations reveal a change in their dividend payout ratio. Among the "changing" firms, the number of matching firm-year observations (179) prevailed over the number of announcing firm-year observations (138). The overwhelming majority of the 592 firm-year observations that did not present a change in their dividend payout ratio consisted of announcing firm-year observations (338) compared to 254 matching firm-year observations.

Table 2 also presents the changes in the share repurchase ratio. The results obtained reflect that only 32% (292) of the total 909 firm-year observations had a change in their share repurchase ratio during the 2001-2005 period. Among the changing firms, the number of matching firm-year observations (163) also predominated over the number of announcing firm-year observations (129). Among the "non-changing" firms, the announcing firms also represented the larger group (347) among the 617 observations that did not change their share repurchase ratio, which represent 56% of that group; the remaining 270 observations represented 44% of this same group of firm-year observations.

**TABLE 2. RESULTS OF TOBIT REGRESSIONS FOR THE ANNOUNCING AND MATCHING FIRMS**

$$CHGdivPOR = Size + EBITDA + EBITDA/Assets + CAPEX + MvaBVa + Debt/Assets + Volatility + Announcing + d3 + d4 + d5 + \varepsilon \quad (1)$$

$$CHGShRep = Size + EBITDA + EBITDA/Assets + LagdivPOR + CAPEX + MvaBVa + Debt/Assets + Diluted\ EPS + Volatility + Announcing + d3 + d4 + d5 + \varepsilon \quad (2)$$

| Hypoth No. | Dependent Variable | Firm | (A) No Change in Dependent Variable | (A /C) Vs. Total | (B) Change in Dependent Variable | (B /C) Vs. Total | (C) Total Firm Years |
|---|---|---|---|---|---|---|---|
| 1 | Dividend Ratio | | | | | | |
| | | Announcing | 338 | 0.37 | 138 | 0.15 | 476 |
| | | Matching | 254 | 0.28 | 179 | 0.20 | 433 |
| | | Total Firms | 592 | 0.65 | 317 | 0.35 | 909 |
| 2 | Share Repurchase Ratio | | | | | | |
| | | Announcing | 347 | 0.38 | 129 | 0.14 | 476 |
| | | Matching | 270 | 0.30 | 163 | 0.18 | 433 |
| | | Total Firms | 617 | 0.68 | 292 | 0.32 | 909 |

Announcing firms=Firms selected from a list compiled by Bear Stearns that identified the firms that were expensing or had announced they were going to expense their stock options as of February 12, 2004.

Matching firms=Firms that were not expensing or had not announced they were expensing stock options as of February 12, 2004, that were matched with Announcing firms based on the following criteria: firms that have stock option plans operating in the same industry (Two digit SIC code), have the same fiscal year-end, and have similar sales and profitability levels (EBITDA/Sales).

Dividend ratio=lagged dividend payout ratio that considers a firm's prior year's dividends paid (Compustat Item No. 21) divided by the net income available to common shareholders (Compustat Item No. 237).

Share Repurchase ratio=Share repurchases in dollars (Compustat Item 115-Compustat Item 130) divided by the average (beginning and end of year) market value of each firm (Compustat Item 25 multiplied by Compustat Item 199).

The results of the first Tobit regression for the dividend payout ratio (See Table 3) reflect that the only significant explanatory variable is the size of the firm (Log of assets). This finding provides support to the first hypothesis of this investigation and is consistent with Fenn and Liang (2001) who also observe a correlation between firm size and a firm's payout ratio, but is inconsistent with the prediction made by Weisbenner (2004) that after option expensing became mandatory, the firms' payout policy would shift away from the trend of share repurchases and return to the payment of dividends. On the other side of the argument, the fact that 65% of the observations in the sample (592 of 909) did not change their dividend payout ratio is consistent with the literature (Grullón and Michaely, 2002; Grullón, Michaely and Swaminathan, 2002; Brav, Graham, Harvey and Michaely, 2004, among others) that states that firms are reluctant to reduce their dividend payment patterns.

Table 4 presents the results obtained for the Tobit regression model for the change in the share repurchase ratio. The most significant explanatory variables in explaining the change in the share repurchase ratio were a firm's EBITDA, size (Log of total assets) and the volatility of its operating income (standard deviation of EBITDA).

The findings presented on Table 4 are consistent with Fenn and Liang (1997), Kahle (2002), and with Bens, Nagar, Skinner and Wong (2003) that suggest that firms that are more likely to engage in share repurchases were large (size variable), and whose operating income provided them with the necessary free cash flow to engage in share repurchases. These findings are also consistent with Weisbenner (2004) who predicted (*before option expensing became mandatory)* that as a result of mandatory option expensing, firms would shift their payout policy from repurchases towards dividends. Although this investigation did not find evidence to support the latter point of view, the results obtained do suggest a change in the firms' payout policy consisting in a reduction in share repurchases.

## TABLE 3. Change in Dividend Payout Ratio (Hypothesis No. 1)

**"Pooled regressions and controlling years with dummy variables"**

$$CHGdivPOR = Size + EBITDA + EBITDA/Assets + CAPEX + MvaBVa + Debt/Assets + Volatility + Announcing + d3 + d4 + d5 + \varepsilon \quad \textbf{(1)}$$

| Censor | | Frequency | % | Cumulative Frequency | Cumulative % |
|---|---|---|---|---|---|
| 0 | No change in DivPOR | 592 | 65.13 | 592 | 65.13 |
| 1 | Change in DivPOR | 317 | 34.87 | 909 | 100.00 |
| | | 909 | | | |

Model Information

| | | |
|---|---|---|
| Data Set | | WORK.TOBIT |
| Dependent Variable | Change in Div | CHGdivPOR |
| Censoring Variable | Payout Ratio | Censor |
| Censoring Value (s) | | 1 |
| Number of Observations | | 909 |
| Noncensored Values | | 592 |
| Right Censored Values | | 317 |
| Left Censored Values | | 0 |
| Interval Censored Values | | 0 |
| Name of Distribution | | Normal |
| Log Likelihood | | -2597.3967 |
| Number of Observations Read | | 909 |
| Number of Observations Used | | 909 |

Type III Analysis of Effects

| Effect | DF | Wald Chi-Square | Pr > ChiSq |
|---|---|---|---|
| EBITDA | 1 | 0.4325 | 0.5107 |
| EBITDA/Assets | 1 | 3.4091 | 0.0648 |
| SIZE | 1 | 43.8462 | < .0001 |
| Debt/Assets | 1 | 3.0898 | 0.0788 |
| CAPEX | 1 | 0.0311 | 0.8600 |
| MVaBVa | 1 | 0.6479 | 0.4209 |
| Volatility | 1 | 1.5669 | 0.2107 |
| Announcing | 1 | 0.8499 | 0.3566 |
| d3 | 1 | 5.1655 | 0.0230 |
| d4 | 1 | 0.0356 | 0.8504 |
| d5 | 1 | 1.3762 | 0.2408 |

**TABLE 3, continued**

Analysis of Parameter Estimates

| Parameter | DF | Estimate | Standard Error | 95%Confidence Limits | | Chi-Square | Pr > ChiSq |
|---|---|---|---|---|---|---|---|
| Intercept | 1 | 23.3546 | 3.5676 | 16.3623 | 30.3469 | 42.86 | < .0001 |
| EBITDA | 1 | 0.0001 | 0.0001 | -0.0002 | 0.0004 | 0.43 | 0.5107 |
| EBITDA/Assets | 1 | -13.5198 | 7.3223 | -27.8713 | 0.8317 | 3.41 | 0.0648 |
| SIZE | 1 | -2.4378 | 0.3682 | -3.1594 | -1.7162 | 43.85 | < .0001 |
| Debt/Assets | 1 | 6.0004 | 3.4136 | -0.6902 | 12.6910 | 3.09 | 0.0788 |
| CAPEX | 1 | 0.0000 | 0.0002 | -0.0004 | 0.0004 | 0.03 | 0.8600 |
| MvaBVa | 1 | 0.5343 | 0.6638 | -0.7667 | 1.8353 | 0.65 | 0.4209 |
| Volatility | 1 | 0.0009 | 0.0007 | -0.0005 | 0.0023 | 1.57 | 0.2107 |
| Announcing | 1 | -1.0548 | 1.1441 | -3.2971 | 1.1876 | 0.85 | 0.3566 |
| d3 | 1 | 3.7076 | 1.6313 | 0.5103 | 6.9049 | 5.17 | 0.0230 |
| d4 | 1 | 0.2968 | 1.5734 | -2.7869 | 3.3806 | 0.04 | 0.8504 |
| d5 | 1 | 1.8585 | 1.5843 | -1.2466 | 4.9636 | 1.38 | 0.2408 |
| Scale | 1 | 15.1617 | 0.4410 | 14.3215 | 16.0512 | | |

***** d3, d4 and d5 are dummy variables for years 2003, 2004 and 2005, respectively

CHGdivPOR = change in the firms' lagged dividend payout ratio (a firm's prior year's dividends paid (Compustat Item No. 21) divided by the net income available to common shareholders (Compustat Item No. 237).

EBITDA = firms' operating income (Compustat Item 13)

EBITDA/Assets = the ratio of EBITDA (Compustat Item 13) divided by total assets (Compustat Item 6)

Size = log of total assets

Debt/Assets = firms' long term debt (Compustat Item 9) divided by total assets (Compustat Item 6)

CAPEX = amount spent to acquire property and equipment

MVaBVa = a factor for investment (growth) opportunities, calculated as the Market value of assets divided by the Book value of assets. The Market value of assets = Compustat Item 6 + Compustat Item 25 multiplied by Compustat Item 199 – Compustat Item 60. The Book of assets = Compustat Item 6

Volatility = standard deviation of the firms' EBITDA

Announcing = firms selected from a list compiled by Bear Stearns that identified the firms that were expensing or had announced they were going to expense their stock options as of February 12, 2004.

Matching firms= firms that were not expensing or had not announced they were expensing stock options as of February 12, 2004, that were matched with Announcing firms based on the following criteria: firms that have stock option plans operating in the same industry (Two digit SIC code), have the same fiscal year-end, and have similar sales and profitability levels (EBITDA/Sales).

## Table 4. Change in Share Repurchase Ratio (Hypothesis No. 2)

"Pooled regressions and controlling years with dummy variables"

$$CHGShRep = Size+EBITDA+EBITDA/Assets+LagdivPOR+CAPEX+MVaBVa+Debt/Assets + DilutedEPS+Volatility+Announcing+d3+d4+d5+\varepsilon \quad (2)$$

| Censor | | Frequency | % | Cumulative Frequency | Cumulative % |
|---|---|---|---|---|---|
| 0 | No change in ShrRep Ratio | 617 | 67.88 | 617 | 67.88 |
| 1 | Change in ShrRep Ratio | 292 | 32.12 | 909 | 100.00 |
| | | 909 | | | |

| Model Information | | |
|---|---|---|
| Data Set | WORK.TOBIT | |
| Dependent Variable | Change in Share Repurchase Ratio | CHGShRep |
| Censoring Variable | Censor | |
| Censoring Value (s) | | 1 |
| Number of Observations | | 909 |
| Noncensored Values | | 617 |
| Right Censored Values | | 292 |
| Left Censored Values | | 0 |
| Interval Censored Values | 0 | |
| Name of Distribution | | Normal |
| Log Likelihood | | -4747.480193 |
| Number of Observations Read | 909 | |
| Number of Observations Used | 909 | |

Type III Analysis of Effects

| Effect | DF | Wald | Pr > ChiSq |
|---|---|---|---|
| | | | Chi-Square |
| EBITDA | 1 | 5.2639 | 0.0218 |
| SIZE | 1 | 17.2164 | < .0001 |
| CAPEX | 1 | 0.0136 | 0.9073 |
| MvaBVa | 1 | 0.4692 | 0.4934 |
| Diluted EPS | 1 | 0.3428 | 0.5582 |
| LagdivPOR | 1 | 0.4067 | 0.5237 |
| Volatility | 1 | 24.9676 | < .0001 |
| Announcing | 1 | 0.7114 | 0.3990 |
| d3 | 1 | 0.0687 | 0.7933 |
| d4 | 1 | 1.3348 | 0.2479 |
| d5 | 1 | 8.5126 | 0.0035 |

**TABLE 4, continued**

| Analysis of Parameter Estimates | | | | | | | |
|---|---|---|---|---|---|---|---|
| Parameter | DF | Estimate | Standard Error | | 95% Confidence Limits | Chi-Square | Pr > ChiSq |
| Intercept | DF | 418.4394 | 86.9917 | 247.9387 | 588.9400 | 23.14 | < .0001 |
| EBITDA | 1 | -0.0092 | 0.0040 | -0.0171 | -0.0013 | 5.26 | 0.0218 |
| Size | 1 | -38.7086 | 9.3290 | -56.9932 | -20.4241 | 17.22 | < .0001 |
| CAPEX | 1 | 0.0007 | 0.0057 | -0.0105 | 0.0118 | 0.01 | 0.9073 |
| MvaBVa | 1 | -9.3918 | 13.7112 | -36.2652 | 17.4817 | 0.47 | 0.4934 |
| Diluted EPS | 1 | -2.5597 | 4.3721 | -11.1288 | 6.0094 | 0.34 | 0.5582 |
| LagdivPOR | 1 | 2.3325 | 3.6576 | -4.8362 | 9.5013 | 0.41 | 0.5237 |
| Volatility | 1 | 0.1121 | 0.0224 | 0.0681 | 0.1561 | 24.97 | < .0001 |
| Announcing | 1 | -26.0980 | 30.9411 | -86.7415 | 34.5455 | 0.71 | 0.3990 |
| d3 | 1 | -11.3651 | 43.3705 | -96.3698 | 73.6397 | 0.07 | 0.7933 |
| d4 | 1 | 49.6168 | 42.945 | -34.5538 | 133.7874 | 1.33 | 0.2479 |
| d5 | 1 | 125.6319 | 43.0595 | 41.2368 | 210.027 | 8.51 | 0.0035 |
| Scale | 1 | 416.5785 | 11.7878 | 394.1038 | 440.3349 | | |

* d3, d4 and d5 are dummy variables for years 2003, 2004 and 2005, respectively

CHGShRep = change in the firms' share repurchase ratio (Compustat Item 115 – Compustat Item 130)

EBITDA = firms' operating income (Compustat Item 13)

EBITDA/Assets = the ratio of EBITDA (Compustat Item 13) divided by total assets (Compustat Item 6)

Size = log of total assets

CAPEX = amount spent to acquire property and equipment

MVaBVa = a factor for investment (growth) opportunities, calculated as the Market value of assets divided by the Book value of assets. The Market value of assets = Compustat Item 6 + Compustat Item 25 multiplied by Compustat Item 199 – Compustat Item 60.The Book of assets = Compustat Item 6

Debt/Assets = firms' long term debt (Compustat Item 9) divided by total assets (Compustat Item 6)

Diluted EPS = firms' diluted earnings per share (Compustat Item 57)

LagdivPOR = lagged dividend payout ratio (Compustat Item 21 divided by Compustat Item 237)

Volatility = standard deviation of the firms' EBITDA

Announcing = firms selected from a list compiled by Bear Stearns that identified the firms that were expensing or had announced they were going to expense their stock options as of February 12, 2004.

Matching firms = firms that were not expensing or had not announced they were expensing stock options as of February 12, 2004, that were matched with Announcing firms based on the following criteria: firms that have stock option plans operating in the same industry (Two digit SIC code), have the same fiscal year-end, and have similar sales and profitability levels (EBITDA/Sales).

## VII. CONCLUSIONS, CONTRIBUTIONS AND LIMITATIONS

This paper empirically examines whether changes in the payout policy in a group of firms are observed after the announcement event and after the new accounting standard requiring mandatory expensing went into effect.

The changes that were expected to occur in the payout policy after option expensing became mandatory such as increasing the payment of dividends or increasing share repurchases did not materialize. Firms seem to have reacted to the required expensing with other changes such as accelerating the vesting of its options or modifying its equity compensation plans,

This investigation contributes to the existing literature by performing the empirical aspects in a slightly different manner, thereby providing another perspective to the effects of expensing stock options and the relationship between stock options and firms' payout policy. However, the aforementioned results obtained should be interpreted cautiously. Due to the small size of the different samples evaluated during the tests of hypotheses, other results could have been obtained with larger sample sizes. In addition, the explanatory variables used to explain the changes in the dividend payout ratio and the share repurchase ratio could also have been specified incorrectly.

This investigation is characterized by several limitations that must be considered as part of the understanding and interpretation of its findings. The sampled firms examined in the study were classified as either Announcing or Matching. The Announcing firms partially reflect self-selection bias because they decided to expense stock options, when other firms had not done likewise. The subsequent procedure to select a similar "matched" firm also reflects a selection bias inasmuch as only firms with certain attributes such as being in the same industry, having the same fiscal year-end, and sharing similar sales and profitability (EBITDA/Sales ratio) levels, among others, were eligible Matching firms. Firms that did not have a reported value for the Compustat variables 398 and 399 (Implied Option Expense and Stock Compensation Expense, respectively) were eliminated for matching purposes.

Another limitation in this investigation is the sample selection bias for the firms in the Tobit regression models for the tests of Hypotheses 1 and 2. Although a matching firm could be associated with more than one announcing firm in the original study performed by Elayan et al (2004), this flexibility was not allowed in the evaluation of the changes observed in the dividend payout ratio and the share repurchase ratio.

Corporate payout policy continues to attract research interest because of its dynamic nature. As markets change and firms react to these changes, payout policy shifts from one extreme to the other. The study of executive (and employee) compensation is another area with extensive research interest from the inherent agency conflict to the corporate governance side. As long as the agency conflict is present, firms will try to implement different mechanisms to align the interests of its managers with those of its stockholders at the lowest possible cost. This presents an opportunity for future investigation in the areas of Corporate Governance and Agency and Executive Compensation among money managers of mutual funds and other entities in the financial services industry and other industries.

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