ARE BUYBACKS INCREASING EPS?

Margaret (Peg) Horan, Wagner College

ABSTRACT

Trends indicate that treasury shares or buyback shares are gaining new momentum and intensity and maybe effecting reported earnings per share. This study was undertaken by evaluating the buyback activity of the Standard and Poor's 500, for the period of 2005-2008 to the Hribar et al (2004 and revised 2006) study of buybacks for their period of 1988-2001. Their study reflected that buybacks were not dominant due to their tri-model of low number of share being repurchased, the high number of companies experiencing a loss and high P/E multiples.. This study experienced greater frequency and intensity of buybacks, due to a reversal in the three conditions being a larger number of shares purchased,) lower incident of losses and lower P/E multiples. The findings are that buybacks are more frequent, more intense, and are having an increased accretive effect on EPS. As a solution proposed here is a new EPS model that reports EPS in segments; those from operations and those from buybacks when the effect is $.01 or more. This new EPS model is responsive to the changing financial landscape and is deserving of attention at this time of international accounting assessment.

JEL: M41, G35

KEYWORDS: Buybacks, Treasury Shares, Stock Repurchases, Earnings Per Share,

INTRODUCTION

When a company buys its own stock back, the repurchased stock is referred to as treasury stock in accounting terminology. The more generic term of this is "buybacks". One could suppose that the term comes from putting it back into the treasury or as the Merriam Webster dictionary defines treasury as a "place in which stores of wealth are held." The Merriam Webster defines treasury stock as stock that is repurchased and held as an asset. This is partially untrue since treasury stock is not held as an asset but as negative equity. When treasury stock is purchased, the account Treasury Stock is debited and Cash is credited. However, the treasury-stock account is not included in the asset section of the balance sheet but it is included as a contra-equity account since it is subtracted from equity. Besides, any gains or losses realized from the purchase or sale of treasury stock are not reported on the income statement, even though they have tax consequences. The gains or losses are added or subtracted from equity and circumvent the income statement. Treasury stock does not vote and it does not collect dividends. It is more or less taken out of circulation for the time being.

Treasury stock affects earnings per share (EPS) since the denominator of the EPS is outstanding stock, which excludes treasury shares. Thus when treasury shares are purchased the outstanding stock is reduced; and if it is of magnitude, it may result in increasing EPS even though net income has not increased. The following is the formula for EPS.

$$EPS = \frac{Net\ Income - Preferred\ Dividends}{Issued\ Shares - Treasury\ Shares} \quad (1)$$

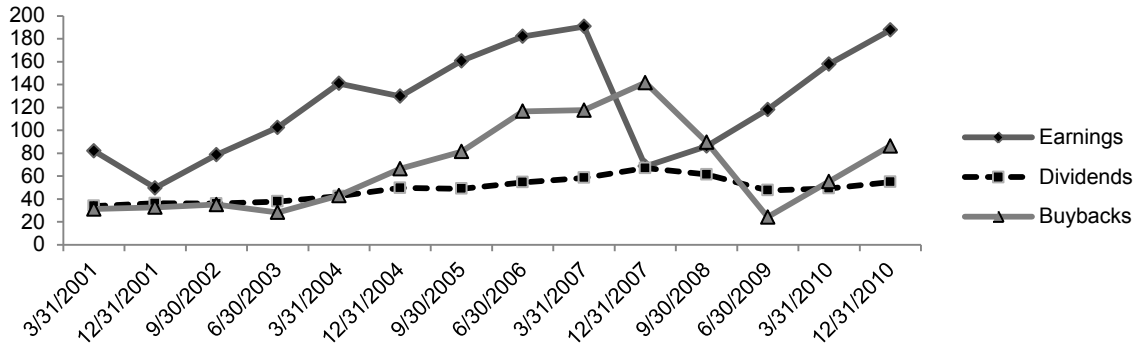
Surprisingly, EPS was not originally an accounting item; rather it emerged from the finance community. The financial community was the creator of EPS, which is used to report as a one-liner the results of a company's performance. In actuality, it reports on the income of a company and gives no reflection of the resources used to create those returns. In the earlier days of accounting development the Committee on Accounting Procedure, specifically Accounting Research Bulletin (ARB) No. 32 in 1947 "admonished

financial statement users against placing undue prominence on a single net income or earnings per share amount". One item of the EPS that is an equity issue is its treasury shares. In the past, they were not of consequence. However, the economic landscape is continually changing, especially in this regard specifically since 2005. According to Horngren, (1974):

The earning (net income) applicable to each share of common stock is perhaps the single most-quoted figure in an annual report, primarily because investors are so heavily interested in the effect of such earning on the market price of the stock. It is heavily documented that the market reacts very strongly to EPS (p.276).

This research focuses on the surge of buyback activity for the period of 2005-2008. See the following Standard and Poor's 500 (S&P 500) figure 1, of earnings, dividends, buyback for the period of 2001 through 2010. The buybacks (red) spike up between 2005 through 2008 while the dividends (purple) are relatively even and the earnings are somewhat in tandem with the buybacks. Instinctively we see a reversal in 2008 and 2009 due to the US Financial Crisis, however recovering trend of upward buybacks is reflected for 2010. The supposition is that buybacks may be becoming the latest financial instrument that is not being reflected in the EPS model that is insidiously increasing EPS. Previously research by Hribar, Jenkins & Johnson (2006) covering the period of 1988-2001 and found that buybacks were having a marginal anti-dilutive or accretive effect on EPS. One explanation given was that enormous amounts of shares needed to be repurchased on a quarterly basis to affect EPS However; given the period post 2004 the trend as depicted seems to give credence that buybacks are acute.

Figure 1: S&P 500 Companies- Earnings, Dividends and Buybacks



The above figure gives the trends of earnings (blue), dividends (purple), buybacks (red) and dividends with buybacks (green) for the period 2001 through 2010 by quarters. The figure reflects that the buybacks have been on the up rise starting in 2005 through 2007, with a decrease in 2008 and 2009 due to the financial crisis and a further upswing in 2010. This reflects stronger presence of buybacks that was not seen earlier. Source of Data: www.standardand poors.com

In general, terms, the purpose of this paper is to quantify the effect of buybacks. If they do have measureable effect then value is added by devising a new EPS model that communicates earnings from operations apart and separate from earnings due to buyback activity, along with a combined EPS. This is of interest at this point in time as the Financial Accounting Standards Board (FASB) and the International Accounting Standards Board (IASB) are working together to design a just global accounting application that reflects the substance of financial transactions.

The rest of the paper will be followed by four sections. The first is the literature review, which give an overview on this topic, which is followed by the generated hypotheses. The data will be the S&P 500 on a quarterly basis from 2005-2008 and the methodology will to replicate in part a prior study to determine if the effects of the buybacks on EPS are the same. Thereafter is presented the results and some concluding comments.

LITERATURE REVIEW

The topic of treasury shares is considered the accounting piece, while the topic of buybacks is considered the financial piece, which gives way to a disconnect in the literature. The accounting research on EPS is much less and centers on its computation; its usefulness, effectiveness, accuracy and transparency. The current accounting pronouncement that governs EPS is Statement of Financial Accounting Standards (SFAS) No. 128 paragraph 8 " the objective of basic Earnings Per Share (EPS) is to measure the performance of an entity over the reporting period". In contrast, the research on EPS in the financial realm is concerned with its connection to performance and valuation. Earnings that are off by a penny from the projected results can have a tremendous effect on the market value (Skinner & Sloan, 19980).

Rolen's 1969 "Evaluation of Earnings Per Share," was about the inadequacy of Accounting Principle Board (APB) No.9. His research reinforces the movement that was going on at that time to move away from just one EPS calculation gives more concrete direction on how and when different EPS data should be presented. The research focused on the problem when the financial operations of a company are primarily measured by a one dimensional EPS. APB No. 9 was very vague and gave several directions that could be undertaken to calculate EPS and the overall impression was that the Opinion did not give clear enough direction that resulted in an inadequate EPS computation. The purpose of Rolen's study was to expose how little comparability there was in the computation of EPS at that time. This provided good evidence that the profession reflected in changes that were implemented with the adoption of APB No.15, prescribing more uniformity in the EPS calculation and the institution of primary and fully diluted earnings per share when a complex capital structure in place.

Greco (1972) preformed a study to determine the statistical usefulness of the revised EPS as dictated under APB No.15. Twelve companies were evaluated over a ten-year period of 1957-1966. The EPS during this period were calculated under APB No. 9, which was the GAAP of that time. Greco recomputed the EPS for these companies using the APB No.15 retroactively to determine if there was a statistical difference between the two different accounting pronouncements. Greco tested empirically two hypotheses: 1) There is no statistical difference between primary and traditionally measured earnings per share distributions over time and 2) There is no statistical difference between fully- diluted and traditionally measured earnings per share distributions over time. In order to test this Greco (1972) had each of the alternative earnings per share amounts regressed against a dummy time variable. Greco's conclusion was that "the revised earnings per share measurement procedures had no impact on a principal user group (investors) of the earnings per share measures. Accordingly, he concluded that the Accounting Principles Board did not make a notable improvement in financial reporting by issuing APB No. 15. Thus, his contribution was a positive assessment of the EPS computation used at that time.

Jolly (1978) topic was "An Alternative Method for the Computation of Earnings Per Share. Here Jolly examines the EPS as prepared under APB No. 15. He proposes a unique alternative method that gives recognition to the difference between distributed and undistributed earnings. It recognizes that earnings distributed or dividends are not subjected to dilution. The alternative method makes another modification in that it reflects the effects that the dilution caused by stock equivalents may have on the book value of a company. To test this on actual data Jolly (1978) collected EPS data for companies listed on the New York Stock Exchange though the Compustat tape for years 1970-1974. This generated 922 firms The Wilcoxon rank sum test was performed to see if there was a significant statistical difference between the EPS published and Jolly's alternative computation. There was no difference between the primary EPS, and his proposed alternative EPS, which were found to be the same. This reflects an assessment the EPS in practice, which proved again to be adequate.

Casson and McKenzie (2007) devised an alternate method for calculating fully diluted EPS. Their model was fashioned after the Black-Scholes Model, and allowed for anti-dilution residual securities to be

factored into the calculation, which is not the case with current GAAP. This more current study covers that GAAP of FASB 128 *Earnings Per Share* which is presently operative. Their findings were that the method per FASB 128 for fully diluted EPS, specifically the treasury stock method has a poor performance when evaluated against their benchmark. This literature reflects the financial sophistication that is used for derivative valuation, can be tailored to EPS to generate a better measure.

These research pieces on the accounting aspects of EPS give testimony to the usefulness of academic assessment of accounting models which when continually evaluated contribute vastly to the body of knowledge. When it comes to the extensive financial literature, the research on buybacks can be arbitrarily summarized in one of four compartments 1) as a signaling device, 2) as a substitution for dividends, 3) as a mitigation of agency cost and 4) as an earnings managing device.

Signaling Device

Much of the financial literature offers support that buybacks are managements 'way of sharing inside information that shares are undervalued. This is referred to as the signaling theory. Vermaelen (1981) published one of the first papers in this regard. The signal that repurchases give out is that " the observation that repurchases via tender offers are followed by abnormal increase in earnings per share and that mainly small firms engage in repurchase offers, provides further support for the signaling hypothesis." (p.139). Notice that in a statement that the increase is attributed to the increase in EPS. To investors, it is not obvious if an increase in EPS is due to an increase in the operating income, or due the mechanics of the treasury shares, which reduce the EPS denominator. Vermaelen also called for more regulation to resolve the asymmetric information problems. The United States, according to Vermaelen is one of the few countries that allow firms to make tender offers for their shares at prices above market, and this could lend itself to insider manipulation. This is especially so when the insiders hold a sizeable portion of stock and may be offering to buy the stock at a price higher than the market.

Other studies have shown that the prices do outperform the market for an extended period after the repurchases. Ikenberry, Lakonishok and Vermaelan (1995) documented that the stocks of companies that are repurchased that are considered "value stocks" increase in market value by an abnormal percent of 45.3% over the four year buy and hold period. While Kahle (2001) finds other evidence that buybacks are functions of stock option plans; that they are a pragmatic solution to getting the shares in house to meet this requirement.

"What Do We Know about Stock Repurchase?", Grullon & Ikenberry, (2000) tell us the stock repurchase movement is relatively young compared to the history of the United States' corporation. It essentially started in the 1980s and again, reinforces that repurchases are a signal of management's confidence in the stock's value, and that management is expressing it disagreement with the current market price. The issue addressed here is that the disclosure concerning buybacks is lax. They are not of equal vigor that is found for example in the disclosure requirement for insider trading and other items. There is not uniform presentation or disclosure requirement for buybacks, which is a disadvantage to the investor. They noted that since it is not required, few companies disclose information in this regard. Canada has a rule similar to our Rule 10b-18, which is more restrictive. Here proposed is that similar restrictive measures should be adopted here in the United States. Canadian law requires all repurchase programs to be completed within one year, and data in regard to this activity is readily available and disclosure is far more extensive and meaningful (Grullon & Ikenberry 2000).

Chan, Ikenberry, Lee & Wang (2010) take a very different perspective. This research piece explores the darker aspect of the signaling theory. Here the contention is that there is little cost to announce a repurchase announcement, that they are not binding and since managers are aware of the positive

signaling effect of a stock repurchase some may consider share repurchases as a mechanism to mislead investors to boost stock prices.

Substitution

Fama and French (2000) discuss the disappearing dividends with the corresponding increase in repurchases. The opening observation is that the dividends were once at an all time high , that the characteristic of the dividend payers is that they are more profitable than the non- payers, that they derive more of their market value from expected growth and are not the companies issuing new equity. In regard to companies that are involved in repurchases, they follow the same pattern of the dividend payers, and most of the companies involved in repurchases are also those which payout dividends. The reason cited is the companies have become aware of the tax disadvantage of dividends. The tax law in effect at that time taxed ordinary dividends as regular income at the top ordinary rate of 35%, while the long term capital gain tax was taxed at 15% which reflects a 20% substantial difference. Post 2001 due mainly to President George Bush's Economic Growth and Tax Relief Reconciliation Act of 2001 most ordinary dividends and long term capital gain rates are both at 15%. Mindful however, that the capital gain tax can be avoide or deferred depending upon timing of the sale.

In the Grullon and Michaely, 2002 study 1600 chief financial officers were surveyed in 1997 and 95% responded that they will pay out cash to their shareholders in the form of buyback shares. The repeated contribution is that that corporations are substituting share repurchases for dividends. Also, that the passage of Rule 10b-18 by the SEC (Security Exchange Commission) in 1982 made repurchases less restrictive. Also, the difference in the tax treatment of dividends and capital gains for repurchases was the driving factor for the preference of repurchases.

In *Payout Policy in the 21st Century,* Brav, Graham, Harvey & Michaely (2005) give a survey of dividends in the 21st Century. Some things are the same as outlined by Lintner (1962) dividend model and other thing are very different. The most noteworthy is their finding that repurchases are an efficient way to return capital, that dividends should not be cut, that 70% of managers would prefer to pay out capital for the first time with share repurchases only, and 76% of managers surveyed think that repurchase of shares automatically increases EPS. Most recently, Bozanic (2009) concurs, "There are two major mechanisms by which firms distribute cash to shareholder; through dividends and share repurchases." Historically, dividends have been the preferred method, but in recent years, share repurchases have become more popular, with more firms using repurchases than dividends to distribute cash (p.1).

Mitigation of Agency Cost

Many state that the "new' dividends of the repurchase are driven by management's desire to increase the stockholders wealth through market appreciation. More specifically to that "stock repurchase is related to agency cost mitigation (Lo, Wang & Yeh 2008)". This is driven by the agency problem first cited by Jensen & Meckling (1976) that purports management is interested in self-serving at the expense of the stockholder. Another area authored by Jensen (1986) is the free cash flow concept, which hypothesizes that companies buy the shares to get rid of excess cash and to avoid or mitigate agency problems. It reduces cash and oversight obligations by dispersing the cash out of management's hands and back to the stockholder.

Earnings Management Device

Management may announce targeted EPS that are projected for and an upcoming quarter, and then those targets are compared to the actual results. Earnings figures that are off by one penny can have a tremendous effect on the market value (e.g. Skinner & Sloan 1999, Barth, Elliot & Finn 1999, Larcker

2003). Thus, management is motivated to present the figures in the most favorable light. This is exacerbated by the corporate stock option plans that many executive now enjoy and is further compounded by the agency problem.

Even further, Grullon and Michaely (2002) state that "in some countries such as Austria, Norway and Israel, open-market share repurchases are prohibited and are considered price manipulation. Although share repurchase programs had never been explicitly prohibited in the United States, there is reason to believe that regulatory agencies have been concerned with the potential impact of these programs on stock prices. This concern was expressed in the following statement from the Senate Committee many years ago: "Whatever the motive behind the repurchase program, if the repurchases are substantial they will have a significant impact on the market" (Senate Report No. 550, 90th Congress; 1967).

Along these same lines is Myers, Myers & Skinner (2007) research on earnings momentum and earnings management. Their research supports that companies that are able to sustain long periods or strings of time in which consecutive increases in EPS are realized, leads to higher market prices and more valuable stock-based compensation for managers, spark incentive for managers to " make the quarter's number" (p.3). Gumport (2007) finds that buybacks are now of such volume that they are distorting the financials on many different levels.

According to Oded & Michel (2008), performed what if scenarios of payout policies for ExxonMobil for the years 2002-2006. It showed that for ExxonMobil more than 16% of EPS growth over the past four years is an artificial result of its repurchases program and cannot be associated with improvement in operating performance. An under informed or naïve analyst might appropriately attribute this increase to enhanced operation efficiency.

The following two papers have tied repurchases to managements' motivation to self-serve by driving up the value of stock options. Griffin and Zhu (2010) finds "that CEO stock options influence the choice, amount and timing of funds distributed as a buyback (p. 1). In addition, Cheng, Harford and Zhang (2010) find "that when a CEO's bonus is directly tied to earnings per share (EPS), his company is more likely to conduct a buyback and the magnitude of the buyback tends to be larger" (p.1).

One favored study covered the accounting and the financial aspects of EPS by Hribar et al (2006) covered the period of 1988 thorough 2001 which studied a sample of 133,149 firm- quarters, of which 26,410 had firm quarters with repurchases. The findings were that most of the repurchases in their sample was not EPS accretive. Accretive is the term that is used when the transaction make the EPS increase. The reasons given were that 1) the volume of buybacks was relatively small 2) high percentage of firms had losses and 3) high P/E multiples.

In their research, by Hribar et al. the authors hypothesize that the repurchase of shares is a tool employed to manage earnings per share. Treasury shares reduce the number of shares outstanding, which can cause an increase or accretive earnings per share. The impetus for the study was a survey of 384 CFOs of which 75% reported that the desired effect of a stock repurchase was to increase EPS. According to the summary, "the findings were that only 19.9% of the stock repurchases in our sample increased quarterly EPS by one penny or more when the foregone profit on funds used to finance the buyback- the numerator effect was ignored (p.31)". This leads to the question if these findings would be similar using more current buyback data. Investors perceive EPS as the measure of the firms earning capacity.

HYPOTHESES

The accounting literature focuses on evaluating the appropriateness of the EPS model at different junctures of financial complexity. The financial literature presents that repurchases are on the rise, and

maybe instruments of managements' desire to booster EPS, market price, particularly as relate this relates to stock options and that more regulation and transparency in this regard is warranted. Thus, the research interest is to quantify the effect buyback shares are having in a current period of 2005-2008 and compare this to results published for the period of 1988-2001. This leads to the following research question; is the situation for the 2005-2008 period the same as it was for the Hribar et al 2006 study that took the form as the following hypothesis:

H_1: Buybacks are more frequent for the period of 2005-2008, than the period of Hribar's et al (2006) study of 1988-2001.

Since 2008 was a difficult year financial for the economy, due to the fallout from the Financial Crisis of 2007, which may distort the above results, this generated a research question excluded 2008 that took the form as the following hypothesis:

H_2: Buybacks are more frequent for the period of 2005-2007, than the period of Hribar's et al (2006) study of 1988-2001.

Frequency is a measure of occurrence, not necessarily impact or magnitude. This leads to the following question that took the form as the following hypothesis:

H_3: The accretive affects of the buyback are on a larger scale for the period of 2005-2008, than the period of Hribar's et al (2006) study of 1988-2001.

DATA AND METHODOLOGY

The object was to collect a related data sample that was to replicate in part the data analysis that was made in the Hribar's et al 2006 study to test the hypothesis that treasury shares are having a more dramatic effect on the computation of EPS. In the extensive Hribar et al study (2006) "the stock repurchase sample spanned s a 13-year period from 1988 to 2001 and included only U.S. firms listed on the NYSE, AMEX or NASDAQ exchanges" (p.9). The stock repurchases sample includes all firms that reported a quarterly stock repurchase of $10,000 or more and excluded financial, utilities and transportation companies since they have regulatory restriction on treasury stock repurchases. Their extensive study yielded an overall sample of 133,149 firm quarters, and a sample of 26,480 firm quarters with stock repurchases.

The sample of this study was the S&P500, on a quarterly basis for 2005, 2006, 2007 and 2008. Of the 500 companies for which the data was requested 490 was retrieved in 2005 and 497 was retrieved for 2006, 2007 and 2008. The company data was retrieved by ticker symbol for the companies that were in a part of S&P Companies as 2009. Ten of these companies, according to ticker symbol were not in existence in 2005 due to merger, acquisitions or S&P company replacement. For 2006, 2007 and 2008 the three missing companies were General Motors (GM), Aon Corporation (AOC) and Waste Management (WMI). General Motors filed for bankruptcy in July of 2010 and was a reorganized company financed primarily by the United States Treasury by Transitory Asset Relief Fund (TARP). Aon Corporation is no longer under the ticker symbol of AOC; it has been changed to AON. In addition, the Waste Management Company is no longer under the ticker symbol of WMI; it has been changed to WM. Thus, what was retrieved was used as the database, with the above exception noted. In cases where there was missing data in the COMPUSTAT retrieval, this was supplemented by the data that was retrieved from the Business and Company Resource database. It was also necessary to determine what stock splits or reversals were announce during the study period and have them reflected correctly, and not incorrectly as possibly additional issued shares or repurchases. This was also applied to be consistent with the Hribar's et al 2006 study. Information regarding stock splits and reversals was retrieved from

Standard and Poor's was reflected as adjustments to beginning shares outstanding in the applicable quarters. In addition, similar to Hribar's et al (2006) any quarterly stock purchase that was greater than 20% of shares outstanding was eliminated. This data sample had no repurchases of this magnitude.

For 2005, COMPUSTAT retrieved 490 companies, times four quarters reported 1960 data points, of which three quarters were used to since quarter one's ending shares outstanding were used for quarter two's beginning shares outstanding and the same suit followed for quarters three and four yielding 1470 data points. For 2006, 2007 and 2008 497 companies, correspondingly yielded 1491data points for each of the three years. Next eliminated were companies that did not have repurchases. Then eliminated were the companies that were classified as financial, utilities or transportation companies according to the Global Industry Code Standard as prescribed by Standard and Poor's. Thus for the final accounting of data points which started with 1960, 1988, 1988 and 1988 for 2005-2008 for a total of 7,924 was reduced by 490,497,497 and 497 to access beginning shares outstanding for quarters two through four and was then again reduced by 571,478, 433 and 545 for quarters with no repurchases, and then reduced by 148, 205 , 206 and 195 for financial, utilities and transportation companies to an annual data base of 751,808, 852 and 751 for each of the following years respectively 2005,2006, 2007 and 2008 which is a total data pool of 3162.

Thus in comparison, the Hribar et al (2006) study yielded an overall sample size of 133,149 firm quarters and a sample of 26,400 firm quarters with stock repurchases which is 19.82% compared to this study which has an overall working sample size of 5,943 firm quarters and a sample of 3,162 firm quarters with stock repurchase which represents 53.21%. This reflects a smaller sample that reports a greater incidence of repurchases. Therefore, although this sample is for a few number of companies over a few number of years, the comparison is justified in pointing to a difference in trend specifically for this broad market index, as this smaller sample still robustly supports a difference in findings that will be discussed in the statistical findings. Also, the results here maybe even more pronounced than if the Hribar et al 2006 sample were used, as this sample includes only the large companies, and an earlier study by Vermaelen (1981) finds that buybacks are more accretive for the smaller firms that are not represented here.

For hypotheses one through three , the "as if" EPS to measure what EPS would have been without the repurchase as calculated in a replicated fashion as the Hribar et al 2006 study. This measure (ASIF_EPS) ignores the repurchase numerator effect (assumes r =0) and is computed

$$ASIF\_EPS = NI_t / (Shares\ outstanding_{t-1} + 0.5 \times Shares\ issued_t).$$

where $NI_{t\ is}$ net income before extraordinary items available for common stockholders, $Shares\ outstanding_{t-1}$ *the* shares outstanding at the beginning of the quarter and $Shares\ issued_t$ the number of shares issue. In this study, shares outstanding at the beginning of the quarter was needed and is not a data item on COMPUSTAT, and was necessary to replicate the Hribar's et al (2006) study. Thus, the ending shares outstanding of the one quarter were used as the beginning shares outstanding of the following quarter. COMPUSTAT had available at the retrieval date the total shares repurchases for the quarter. Number of issued shares for the quarter were not available but were computed by taking endings shares outstanding + treasury shares and – beginning shares to calculated issued shares.

In deference to the Hribar et al 2006 study, the following assumption was also assumed:

It was assumed that new shares are issued uniformly over the quarter. By constructing "as-if" EPS in this manner allows the repurchase timing parameter (*w)* to vary across firms. This is important because strategic repurchases intended to manage EPS are likely to be made earlier in the quarter than are other non-strategic repurchases and the computation allows for this possibility (p.11). The *ASIF_EPS was*

compared to the regular EPS, the difference was determined for each item in the sample, and the results were summarized.

RESULTS

The statistical sample results were summarized and are presented here for consideration in Table 1 and Table 2. The presented results are compared to the results of the Hribar et al 2006 study. Hribar et al 2006 was undertaken since "despite the obvious popularity of stock repurchases among corporate managers, there is little systematic evidence regarding the claim that repurchases are used to boost reported EPS" (p.4).In regard to the following hypotheses:

$H_{1:}$ Buybacks are more frequent for the period of 2005-2008, than the period of Hribar's et a (2006) study of 1988-2001.

In, the Hribar et al (2006) study the experience was that only a small percent of the sample had repurchases. It was a studied sample of 133,149 firm quarters over fourteen years of 1988-2001 and was to document the frequency of such buybacks and the frequency was 26,400 firm quarters. This is approximately a 20% frequency. This studied sample of 5,943 firm quarters over a four-year period documents buyback frequency of 3,162. This is approximately a 53% frequency. This represents more than twice the frequency from the prior study. This supports the hypothesis that this sample period of study from 2005-2008 has had buybacks at a frequency which is more than two times as great as the Hribar's study. Below in column one of Table 1, are the data points for the 2005-2008 period that can be compared to the third column which are the data points taken from the Hribar et al (2006) study for details on the descriptive statistics. The mean dollar of the purchases of the 2005-2008 period is $351 million, per quarter compared to $34 million for the prior study. This multiple is greater than ten. The median for this study is $110 million compared to $3 million which a 37 multiple.

All of the figures presented in Table 1 for the number of shares repurchased again present factors that are at least 10 times the figures of the prior period. Thus, the average number of shares repurchased in this time is 9 billion per quarter compared to 1 billion for the prior study. The individual years reflect a pattern of rising purchases for each of the individual years of 2005, 2006, 2007 and then a reversal of t in 2008. This is the case for both an analysis of the dollar value of repurchases and then for the number of shares repurchased. It could be justly speculated that the 2008 drop in repurchase activity was due to the Financial Crisis that started in 2007.

On Table 1 the repurchases in this sample as a percent of outstanding shares is also larger. The median here is .92% while it is .59% in the prior study and the average was larger as well 1.41% versus 1.28%. It is 1.83% compared to the 1.53% for the top 75 percentile. This reflects greater magnitude. This is more pronounced when evaluating the individual year of 2007, which has the highest value in all data points concerning shares, repurchases as a percent of beginning shares. In 2007, the mean was 1.71% and the 75% quadrant was 2.17%. This is a moving increase that has its start in 2005 through 2007 then abruptly changes in 2008. However, over all this four-year period still maintains an overall frequency, despite the turn in statistics in 2008.

$H_{2:}$ Buybacks are more frequent for the period of 2005-2007, than the period of Hribar's et al (2006) study of 1988-2001.

Across the board in all categories, the experience of 2005-2007 was greater than 2005-2008 and by association greater than the Hribar et al 2006 studied period. Thus, not only is the frequency more pronounced in this sample period of 2005-2007 but also the dollar amount greater and the intensity of the buybacks effect is stronger.

Table 2 gives some descriptive statistics of repurchasing firms of the samples, we see that when the 2005-2008 and the 2005-2007 periods are compared to the prior study, we visualize different types of firms. This is most evident from the asset section of the statistics. We see a much larger asset base, averaging $26million for the current study and $4billion for the prior study. Sales hold a related relationship to the asset bases and follow in tandem with sales approximating 20% of the asset holdings. In addition, in continuation share price of the current study almost twice of the earlier study; average $47 versus $28, and median of $42 verse $22. What is similar is the cash as a percent of total assets. Cash is available for both studies in the range of 12%-17% as a percentage of assets.

Table 1: Descriptive Statistics for sample of repurchase firms

	2005-2008	2005-2007	1990-2000 (*)
Repurchase activity variables. Dollar Value of Repurchases($M)			
Mean	350.7	369.32	34.31
Std. Dev	844.17	836.47	141.04
25th	27.1	33.1	0.56
Median	109.78	124.06	3.05
75th	320.46	339.83	16.42
Shares Repurchased(M)			
Mean	9.23	9.758	0.87
Std. Dev	22.28	23.848	2.687
25th	0.648	0.712	0.038
Median	2.65	2.788	0.168
75th	7.449	7.693	0.64
Shares repurchased as a percent of Beginning shares outstanding (%)			
Mean	1.41	1.49	1.28
Std. Dev	2.08	2.24	1.99
25th	0.29	0.33	0.18
Median	0.92	0.93	0.59
75th	1.830	1.890	1.530

Note* : Per the statistics reported Hribar et al 2006 study, p10. *The above table summarizes the findings regarding the dollar value of repurchase shares repurchases and share repurchased as a % of beginning shares outstanding. When the two current periods are compared to 1990-2001 the results show a multiple of ten times greater for dollar value and shares and as a % of beginning inventory the current is 1.41% &1.49% compared to 1.28%. This supports greater frequency.*

In both studies, not all buybacks resulted in an accretive EPS. Accretive EPS is that the earnings per share are greater by one penny or more due to the buybacks. Skinner & Sloan (1999) showed that missing the quarterly forecast by $.01 could lead to a dramatic loss in market value. Some buybacks had no effect or a negative if they were offset by issued share which could increase outstanding shares, or that the forgone profit on the cash used to repurchase was too great to offset the denominator effect of the buyback shares. Several reasons were cited in the Hribar et al 2004 (p,17) study " to believe that many of the open-market stock repurchase in their sample are not EPS accretive since 1) the repurchases are relatively small since the median repurchase eliminates less than 1% of the shares outstanding. 2) Second, 12.3% of the quarters studied involved a loss for the current quarter, since a stock repurchase cannot increase the earnings per share of these firms and 3) Third, more that one-quarter involved firms where the P/E exceeds 20 which makes it more difficult for the buybacks to be accretive. The higher the P/E multiple the more difficult for stock repurchases to be accretive (Hribar et al 2004 version p.29). The Hribar et al 2004 study present a model that predicts the accretiveness of buybacks as a function of three factors 1) the size of the buybacks as a percent of shares outstanding, 2) the amount of companies with a loss and 3) as a function of the P/E ratio. Their model holds true for this sample period, however with different results due to a reversal in the conditions one, two and three here mentioned.

H_3: The accretive affects of the buyback are on a larger scale for the period of 2005-2008, than the period of Hribar's et al (2006) study of 1988-2001.

The frequency of buybacks was higher than this hypothesis follows to test the intensity of the effect. This is undertaken with the understanding that not all buybacks are accretive. The purpose here is to measure the magnitude of the effect and compare it to earlier findings. According to the information presented on Hribar et al 2006 (p.12) 4,466 firm quarters or 17.6% of the stock repurchases increased current quarter EPS by one penny. This study finds 1337/3162 or 42% of the stock repurchases increase current quarter EPS by one penny. Again, this is in the line with the other findings, of a dramatic increase.

Also according to the Hribar et al 2006 study, 84.1% of the accretion was by $.01 and $.02, which confine the accretion to a narrow area. According to this study, the results were similar. In 86% of this accretive sample, the confines were also in the $.01 and $.02 range.

Table 2: Descriptive Statistics for Sample of Repurchase Firms

		2005-2008	2005-2007	1988-2000 (*)
Repurchase activity Other Variables				
Sales ($millions)				
	Mean	5,303.8	5,119.9	892.6
	Std. Dev	10,078.8	9,343.0	2,825.8
	Median	2,127.0	2,130.0	159.1
E/P				
	Mean	0.0372	0.0499	0.0474
	Std. Dev	0.2804	0.0897	0.0900
	Median	0.0556	0.0537	0.0557
P/E ratio	for positive earning firms only			
	Mean	24.69	25.57	27.41
	Std. Dev	60.88	61.42	94.36
	Median	17.44	18.23	16.80
Share Price ($)				
	Mean	46.980	48.840	27.640
	Std. Dev	35.770	35.110	23.340
	Median	42.000	44.370	22.130
Assets ($ millions)				
	Mean	26,393.5	26,208.4	4,006.8
	Std. Dev	60,057.7	58,765.5	16,024.7
	Median	9,727.0	9,603.0	586.8
Cash (% of assets)				
	Mean	13.7	12.8	12.4
	Std. Dev	12.7	13.8	16.5
	Median	7.5	7.6	5.0
EPS ($)				
	Mean	0.64	0.70	0.36
	Std. Dev	1.29	0.82	0.54
	Median	0.58	0.59	0.32

(*)Note : Per the statistics reported Hribar et al 2006 study, p10. The above table summarizes some of the descriptive characteristics of the repurchasing firms of the samples. When comparing 2005-2008 and 2005-2007 to 1988-2000, the visual is that the sales, sales price, asset base and EPS are much higher. What is similar is the cash as % of total asset and sales holing in tandem with a 20% of asset base. This sample was the S&P 500 which are large capitalized United States companies, and did not include all other repurchasing firms as Hribar et al (2006) study. The indication is that repurchases are moving mainstream into the large companies.*

The accretive affects are more dramatic since a larger percent that is causing a difference of $.01 or more. This is of interest since if a difference of $.01 is considered as having market effect, then the effect of the buybacks on EPS should be transparent. Thus, here is proposed a new EPS model that allows for the analyzing EPS in a in a segmental fashion. It isolates t he EPS from operations from the EPS from the equity component due to the treasury shares. This is presented and illustrated in the following formula:

$$Yt = Nt / It - ((Nt/ It) - Nt /(It - Tt)) \quad (2)$$

Where
Yt = EPS reported for the current quarter
Nt= net income at present time
It= = issued shares in the present quarter
Tt= treasury shares in the present quarter
For illustration purposes the hypothetical company has the following data.

$Yt = EPS = \$5$
$Nt = net\ income = \$100$
$It = issued\ shares = 25$
$Tt = treasury\ shares = 5$
$Yt = Nt/It - ((Nt/It) - Nt/(It - Tt))$
$\$5 = \$100/25 - ((\$100/25) - \$100/(25-5))$
$\$5 = \$4 - (\$4 - \$5)$
$\$5 = \$4 + 1$ (1)

The value added by segmentalizing the EPS, is that it isolates the earnings from operations, which in this simple example is $4, and to isolate the EPS from the equity component contributed from the treasury shares, which in this illustration is the $1. EPS is the total of $5, which is the sum of the two.

CONCLUDING REMARKS

The goal of this paper is to bring attention the new financial phenomenon of increases in buybacks that are having a more dramatic effect on the accretion of EPS. This study focused on later time period and has found the volume is greater, and that it is affecting EPS on a larger scale. The current EPS model does not reflect this component of EPS. In order for the accounting to keep pace with the financial impact of treasury shares, a new EPS model is proposed to report what portion of EPS is from operations and what portion is from the mechanical effect of the treasury shares when it is applicable. This may be of interest to the accounting community of the FASB and the IASB as their convergence projects seeks to devise an accounting system that reflects the realities of the financial transactions.

The data collected and the methodology for this paper was to replicated part the Hribar et al (2004, revised 2006) study. The period studied here was 2005-2008 compared to 1988-2001. The sample for this study was the S&P 500 companies on a quarterly basis. EPS was recalculated without the buybacks to determine how much they were affecting the EPS. This was done by comparing reported EPS with the recalculated EPS. The results reflect that buyback shares are more commonplace and are escalating their accretive effect on EPS. In conclusion there is statistical support that the model presented by Hribar et al 2004 to explain the lack of frequency for their study of 1988-2001, works in reversal for the 2005-2008 period due to a reversal in financial and economic conditions. Their study found frequency to be weak due to three factors; 1) low number of shares repurchased 2) large number of firms with losses and 3) high P/E. This study finds greater impact given the reversal of the situations where 1) the dollar amount, the number and the percentage was greater. The mean dollar amount , mean number of shares, and shares repurchased as a percent of beginning shares were $350 million, 9.23 million and 1.41% compared to $34 million, .87 million and 1.28% 2) lower number of firms with losses : 5.4% compared to 12.3% and 3) lower P/E multiples: mean P/E of 24.69 compared to 27.41. Also supported was that the accretive affects were more frequent here at 42% compared to 17.6%. However, in both studies the effect of the accretion is in the $.01 -$.02 range for 80% or more of the firms.

One weakness of the paper maybe that it does not entirely replicate the Hribar et al study (2004 revised 2006) ; they studied all firms that had repurchases over $10,000 for a 13 year period, while this study a substantial subsample which is the S&P 500 for a four year period. For future study, an item that has sparked interest, especially since the literature has conflicting findings is in regarding to number of shares outstanding. Are they overall decreasing due to buybacks and what effect is this having on market capitalization?

REFERENCES

Accountants, American Institute. (1947). ARB 32: Income and Earned Surplus. Accounting Research Bulletins.

Barth, M., Elliot ,J.A., & Finn, M.W. (1999). Market Rewards Associated with Patterns of Increasing Earnings. *Journal of Accounting Research,* 37 (2) 27

Board, A. P. (1969). APB15: Earnings Per Share: Accounting Principle Board.

Board, F. A. S. (1997). FAS 128: Earnings Per Share. In F. A. S. Board (Ed.).

Board, I. A. S. (2009). IAS 33 Earning Per Share: International Accounting Standards Board.

Bozanic, Z. (2009). Management Motivation and Timing of Open Market Share Repurchases. *Review of Quantitative Finance and Accounting, 34*(4), 15.

Brav, A., Graham, J. R., Harvey, C. R., & Michaely, R. (2005). Payout Policy in the 21st Century. *SSRN*.

Casson, P., & McKenzie, G. (2007). A Comparison of Measures of Earnings Per Share. *The European Journal of Finance, 13*(3), 17.

Chan, K., Ikenberry, D. L., Lee, I., & Wang, Y. (2010). Share Repurchases as a Tool to Mislead Investors: Evidence of Quality and Stock Performance. *Journal of Corporate Finance, 16*(2), 137-158.

Cheng, Y., Harford, J., & Zhang, T. (2010). Bonus Driven Repurchases. *working paper*.

Congress, U. S. (1967). *Senate Report 550*: 90th Congress.

Fama, E., & French, K. (2000). Disappearing Dividends: Changing Firm Characteristic of Lower Propensity to Pay? *Journal of Financial Economics, 60*(41).

Greco, J. A. (1972). *Alternative Earnings Per Share Measurement Procedures: An Empirical Study.* Unpublished Dissertation, New York University, New York.

Griffin, P. A., & Zhu, N. (2010). Accounting Rules? Stock Buybacks and Stock Options: Additional Evidence. *Journal of Contemporary Accounting and Economics, 6*(1), 17.

Grullon, G., & Ikenberry, D. L. (2000). What Do We Know About Stock Repurchases. *Journal of Applied Corporate Finance, Spring*, 21

Grullon, G., & Michaely, R. (2002). Dividends, Share Repurchases, and the Substitution Hypothesis. *The Journal of Finance, LVII*(4), 35.

Gumport, M. A. (2007). Accounting for The Buyback Boom. *Social Science Research Network, 32*.

Horngren, C. (1974). *Accounting for Management Control:* . Englewoods Cliffs: Prentice Hall.

Hribar, P., Jenkins, N. T., & Johnson, W. B. (2004). Stock Repurchases as an Earnings Management Device. *SSRN, 44*.

Hribar, P., Jenkins, N. T., & Johnson, W. B. (2006). Stock Repurchases as an Earnings Management Device. *Journal of Accounting and Economics, 41*(1-2), 25.

Ikenberry, D., Lanonishok, J., & Vermaelen, T. (1995). Market Under-reaction to Open Market Share Repurchases. *Journal of Financial Economics, 39*, 28.
Jensen, M. C. (1986). Agency Costs of Free Cash Flow, Corporate Finance and Takeovers. *American Economic Review, 76*(2), 7.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the Firm: Managerial Behavior, Agency Costs andOwnership Structure. *Journal of Financial Economics, 3*(4), 56.

Jolly, S. A. (1978). *An Alternative Method of the Computation of Earnings Per Share.* University of North Carolina at Chapel Hill, Chapel Hill.

Kahle, K. M. (2001). When a Buyback Isn't a Buyback: Open Market Repurchases and Employee Options: SSRN.

Larcker, D. F. (2003). Discussion of Employee Stock Options, EPS dilution, and Stock Repurchase. *The Journal of Accounting And Economics, 5*.

Lintner, J. (1962). Dividends, Earnings, Leverage, Stock Prices and the Supply of Capital to Corporations. *Review of Economics & Statistics, 28*.

Lo, K. H., Wang, K., & Yeh, C. T. (2008). Stock Repurchases and Agency Problems Emerging Market Finance and Trade. *44, 11*.

Meyers, J. N., Meyers, L. A., & Skinner, D. J. (2007). Earnings Momentum and Earnings Management. *SSRN*.

Oded, J., & Michel, A. (2008). Stock Repurchases and the EPS Enhancement Fallacy. *Financial Analysts Journal 64*(4), 24.

Rolen, C. O. (1969). *An Analysis and Evaluation of Earnings Per Share.* University of Arkansas.

Schuster, S. (1988). Webster's New World Dictionary. In 3rd (Ed.), *Webster's New World Dictionary*.

Skinner, D. J., & Sloan, R. (1999). Earnings Surprises, Growth Expectations and Stock Returns. *SSRN, 57*.

Stand & Poor's www.standardand poors.com (various dates, retrieved from press releases)

Vermaelen, T. (1981). Common Stock Repurchases and Market Signaling. *Journal of Financial Economics, 9*, 45.

BIOGRAPHY

Dr. Margaret (Peg) Horan is the Director of the Accounting Program and an accounting faculty member at Wagner College. She can be contacted at Wagner College, One Campus Road, Staten Island, NY 10301, US. Telephone number 718-390-3437 and Email: phoran@wagner.edu.