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Short-Term Incentive Effects of Temporary Full Capital Asset Expensing

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ABSTRACT

The Tax Relief, Unemployment Compensation Reauthorization, and Job Creation Act of 2010 (2010 Tax Relief Act) temporarily modified capital asset expensing provisions, increasing the allowed bonus depreciation percentage from 50% to 100%. The legislative intent of the provision was to encourage capital investment by firms, although prior research suggests that capital expenditures did not increase during the availability of 30% or 50% bonus depreciation. I find that the availability of 100% bonus depreciation significantly increases the likelihood that firms increase capital expenditures, as well as increases the magnitude of capital expenditures. Overall, my evidence highlights how temporary changes in capital asset expensing provisions affect firms' behavior with respect to investment decisions and that the market reacts both positively and negatively to those decisions.

Keywords: Tax Relief, Unemployment Compensation Reauthorization, and Job Creation Act of 2010; 2010 Tax Relief Act; capital asset expensing provisions; bonus depreciation; capital expenditures

SHORT-TERM INCENTIVE EFFECTS OF TEMPORARY FULL CAPITAL ASSET EXPENSING

By

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J. David P. Witesman

1. INTRODUCTION

Congress frequently uses favorable tax provisions to encourage growth or specific types of investment in targeted sectors of the United States economy. During times of economic distress, however, broader provisions are enacted to increase investment activity and growth in the economy as a whole. Two of the most common categories of favorable tax provisions are credits and accelerated expensing of capital assets.

In general, firms must expend resources in order to gain the benefits of these provisions. Accelerated expensing has existed in some form for many years, for example: double declining balance depreciation under the Modified Accelerated Cost Recovery System (MACRS) was introduced in the Tax Reform Act of 1986 (TRA 1986). Section 179 of the Internal Revenue Code (IRC Section 179) allows firms to expense all or part of the value of a newly acquired capital asset up to a relatively limited threshold.[1] Because of these limitations, IRC Section 179 expensing, also known as small business expensing, is generally unavailable to large companies. The temporary partial expensing provision known as bonus depreciation under IRC Section 168(k) however, provides accelerated expensing for qualified assets with no thresholds or limits beyond the statutory expensing percentage.

Legislators intended these provisions to increase capital investment by firms, thereby providing an economic stimulus (Gravelle 2004; Knittel 2007). Empirical examination of bonus

[1] The Section 179 deduction was introduced in TRA 1986 with a maximum deduction of $10,000. The maximum deduction amount has been increased many times in response to various economic needs. For 2015, the maximum deduction for IRC Section 179 expense is $500,000 and pending legislation seeks to make this amount permanent and index it for inflation. Expensing under IRC Section 179 is then subject to limitations based on total qualifying assets placed in service. If the total qualifying assets exceed two million dollars, the allowed deduction is reduced on a dollar for dollar basis, and phases out completely at $2.5 million of new assets. In addition, the deduction cannot exceed current taxable income.

depreciation has mainly focused on changes to capital spending, but prior results are mixed and/or ambiguous. One reason prior research may not be conclusive is that bonus depreciation has always coincided with other favorable tax provisions (Hulse and Livingstone 2010). The expansion of bonus depreciation under the Tax Relief, Unemployment Compensation Reauthorization, and Job Creation Act of 2010 (2010 Tax Relief Act) changed existing expensing provisions to such a significant extent that changes to other favorable tax provisions in the same period should not interfere with identifying the impact of the bonus depreciation provisions.

I identify the financial statement effects of expanded bonus depreciation by analyzing how firms used additional funds provided by tax refunds or reduced cash taxes paid. I construct a two-stage empirical model that controls for share repurchases to examine whether firms with 100% bonus depreciation availability are more likely to increase capital expenditures. Specifically, I identify 17,503 calendar year-end firm-year observations with data available to calculate the variables in my empirical model. Separately, I also examine whether full capital asset expensing availability increased the magnitude of capital expenditures.

My results provide evidence that 100% bonus depreciation availability increased the likelihood that firms will increase capital expenditures. My results also show a significant relationship between increases in capital expenditures and the availability of 100% bonus depreciation. Prior literature focusing on how the capital asset expensing provision affected capital investment has not produced strong results. Hulse and Livingstone (2010) provide mixed and inconclusive evidence that the expectation of and the availability of 30% or 50% bonus depreciation affects the level of firms’ capital expenditures. My results suggest that the temporary 100% bonus depreciation availability encouraged firms to increase capital expenditures consistent with the legislative intent (Council 2004) of this provision under IRC Section 168(k).

My evidence contributes to the literature stream that considers temporary tax benefits on firm use of funds. I extend the literature on the effects of bonus depreciation on capital investment by analyzing the entire period where 100% bonus depreciation was available. I also show that 100% bonus depreciation did result in an increase in capital investment, while earlier 50% bonus provisions did not.

The next section of the paper provides a background on bonus depreciation provisions and a review of prior empirical research on bonus depreciation and firms' use of funds, as well as the hypothesis development. Section 3 describes my sample selection criteria and empirical model. Section 4 provides a discussion of the results of univariate and multivariate statistical tests. The fifth section concludes and provides possible extensions for the paper.

2. RELATED LITERATURE AND HYPOTHESIS DEVELOPMENT

Bonus Depreciation

Technical Overview and Example

Under Generally Accepted Accounting Principles, newly acquired capital assets are required to be depreciated over a specified useful life. For tax purposes, capital assets are generally depreciated using the Modified Accelerated Cost Recovery System (MACRS). MACRS specifies the recovery period and annual depreciation percentages for delineated asset classes. For example, an asset with a five year recovery period deducts 40% of its undepreciated value (adjusted basis) each year under MACRS double declining-balance depreciation. A newly acquired asset, however, is subject to either the half-year, mid-quarter, or mid-month conventions. For the sake of simplicity, I discuss only the half-year convention hereafter. The half-year convention states, in effect, that all assets are deemed to have been placed in service in the middle of the fiscal year and thus, only half of the current year depreciation is applied. Thus, for the aforementioned five year asset, the first year's depreciation is equal to 20% of the adjusted basis of the asset. Bonus depreciation interacts with MACRS depreciation by reducing the adjusted basis of an asset by the applicable statutory percentage prior to the calculation of MACRS depreciation. Thus, if a five year asset costing $1,000 were placed in service in a year where bonus depreciation with a 50% statutory rate was available, $500 of bonus depreciation is deducted then 20% of the remaining $500 of basis is deducted, resulting in a total depreciation deduction of $600 in the current year. Based on this example, it is evident that bonus depreciation has a far greater impact on longer-lived assets and that the effects of bonus depreciation may be substantial to corporations.[2] In terms of tax effects, a firm with a marginal tax rate of 35% reduces its taxes by $70 by placing the above asset in service in a year with no allowable bonus depreciation. In a year with 50% bonus depreciation, the firm's tax reduction rises to $210, and with 100% bonus depreciation, the firm's tax reduction is $350.

As a response to the September 11, 2001 terrorist attacks and the subsequent economic downturn in the U.S., Congress enacted the Job Creation and Worker Assistance Act of 2002. In addition to various tax credits and favorable tax provisions, this legislation introduced a new accelerated expensing provision referred to as bonus depreciation. The initial implementation of bonus depreciation allowed for a 30% first-year depreciation allowance on "new qualified property acquired after September 11, 2001, and placed into service no later than December 31, 2004," (Guenther 2012, 7). The legislation also allowed firms to elect to forgo bonus depreciation for individual classes of assets, which allows managers discretion over the short-

[2] Methods for depreciating capital assets are detailed in IRC Section 167 and Section 168 and in IRS Publication 946.

and long-term effects of accelerated expensing. The 30% allowance was later increased to 50% and extended for certain qualified property until the end of 2005. In 2008, 50% bonus depreciation was reinstated by Congress as part of the Economic Stimulus Act of 2008. The Housing Assistance Tax Act of 2008 introduced a provision that enabled firms to exchange their bonus depreciation allowance “for a refundable tax credit equal to the lesser of $30 million or 6% of the sum of any research and AMT credits that could be carried forward from tax years before 2006” (Guenther 2012, 7).

Various other legislation extended 50% bonus depreciation through December 31, 2011. In addition to extending 50% bonus depreciation through December 31, 2012, the Tax Relief, Unemployment Compensation Reauthorization, and Job Creation Act of 2010 increased the bonus depreciation allowance to “100% for qualified property acquired after September 8, 2010, and placed in service before January 1, 2012” (Guenther 2012, 7). The period of 100% bonus depreciation also eliminated the research credit option, but the overall $30 million or 6% limitation on credit usage remained in effect for the AMT credit alternative. The 2010 Tax Relief Act also allowed firms to elect 50% bonus depreciation on individual asset classes in addition to the election to forgo bonus depreciation altogether. Table 1 lists legislation enacting or extending bonus depreciation, the applicable dates and percentages, and the availability of a credit alternative.

Insert Table 1 here

Prior Research

House and Shapiro (2008) present a general macroeconomic theory underlying the benefits of temporary investment tax incentives. Firms seek to maximize the present discounted value of profits, thus, investment decisions are intrinsically forward-looking. Therefore a short-term tax incentive that affects long-lived capital assets should increase capital investment in the short term. "As such, the benefits from investment are anchored by future, long-run considerations. As long as the far future is only mildly influenced by temporary policies, the benefit to any given investment is largely independent of short-run considerations" (House and Shapiro 2008, 740). The author's econometric analysis confirms the theory. When considering long-lived assets, those with a 20 year life or more, they show a substitution effect between assets that qualify for bonus depreciation and those that do not qualify. Rather than increasing capital spending, their analysis suggests substitution through a shift in the timing of asset purchases, rather than a current increase with a future decrease in capital investment. The model presented by House and Shapiro (2008, 740) is, however, limited to long-lived assets. They state that "the approximations are less accurate and potentially quite misleading for long-lasting changes in policy or for capital that depreciates rapidly."

Cohen et al. (2002) conclude that the temporary availability of bonus depreciation could substantially increase firms' incentives to invest through a reduction in their user cost of capital. They present the following time variant user cost of capital model to support their theory:

$C_s = p_s T_s [(\rho + \delta) + (\Gamma_{s+1} - \Gamma_s) / (1 - \Gamma_s)]$, where: $T_s = (1 - \Gamma_s) / (1 - \tau)$ and $\Gamma_s = \tau Z_s$

C_s is the user cost of capital in year s, p_s denotes the price of new capital goods, $E(\Delta p/p)$, in year s. τ is the corporate marginal income tax rate, Z_s is the present value of depreciation allowances per dollar invested in year s, ρ is the nominal after-tax cost of funds (debt plus equity), and δ is the rate of physical depreciation. Reductions to the user cost of capital could be offset by internal adjustment costs which would reduce the value of the incentive. Similar to House and Shapiro (2008), Cohen et al. (2002) propose that the temporary nature of bonus depreciation, or any investment tax incentive for that matter, is what leads to the largest benefit. Unlike 50% bonus depreciation, which has been added to the annual tax extenders bill, 100% bonus depreciation was available only for a limited time during 2010 and 2011.

Cohen and Cummins (2006) follow up on the theoretical model provided in Cohen et al. (2002) by evaluating the capital expenditure patterns of firms using a difference-in-difference framework to compare the periods before, during, and after the availability of bonus depreciation. Their results suggest “only a very limited impact of partial expensing on investment spending, if any,” (Cohen and Cummins 2006, 20). They also review a sample of tax returns and find a lower than expected usage of bonus depreciation. Finally, they review survey data that indicates that the investment decisions of only a small portion of firms were affected by the availability of bonus depreciation.

Hulse and Livingstone (2010) rely on the theory presented in Cohen et al. (2002) as the basis for their analysis of the effects of bonus depreciation enacted in 2002 and 2003 on capital expenditures. Their model, based on Shin and Kim (2002), controls for determinants of capital expenditures. Their results offer limited support for bonus depreciation stimulating capital spending but the results do not hold in supplemental analysis. Rather than looking at the effects on capital expenditures, Knittel (2007) analyzes bonus depreciation usage by corporations. For 2002 through 2004 he shows that 54 to 61 percent of C corporations utilized bonus depreciation. He states that one reason for the lower than expected uptake by firms could be the presence of current and past NOLs that limit the benefits of the provision. He also shows substantial industry clustering with 53.4% of firms in the Manufacturing, Wholesale, or Utilities industrial classifications using bonus depreciation.

Cash Flow Usage

Prior Research

Finance theory predicts that firms with few attractive investment opportunities will distribute excess cash flows to investors through dividends or share repurchases. Jagannathan et al. (2000) analyze the increase of open-market share repurchases between 1985 and 1996. They state that share repurchases are a complement to, rather than a replacement for, dividend payments. They find that firms with more volatile cash flows tend to repurchase shares and those firms have lower cash flows following repurchases than dividend-increasing firms. They conclude that "dividends are paid out of sustainable cash flows while repurchases are paid out of temporary cash flows," (Jagannathan et al. 2000, 382).

Guay and Harford (2000) use a sample of firms that either increase their quarterly dividend payouts or announce stock repurchases to compare the cash flow permanence between firms doing one or the other. They find that firms with a transient positive shock to cash flows use the additional funds for share repurchases whereas dividend-increasing firms' cash flow shocks have a higher permanent component.

Firm characteristics do, however, play a role in determining how firms use funds provided by positive shocks to cash flows. Blanchard et al. (1994) analyze a small sample of firms that received cash windfalls from legal actions. Using Tobin's Q as a benchmark, they evaluate how firms with a low Q, indicating limited investment opportunities, use the funds from cash windfalls where the additional funds did not change their marginal Q. Contrary to the previously stated theory, "the managers of these firms choose to keep the cash windfall inside the firm rather than distribute it to investors in the form of dividends, share repurchases, or debt reduction" (Blanchard et al. 1994).

Blouin and Krull (2009) analyze how firms used funds repatriated under the provisions of the American Jobs Creation Act of 2004 (AJCA 2004). The AJCA 2004 provided a one-time 85% dividends received deduction on funds repatriated by multinational corporations from their foreign subsidiaries. Consistent with the findings of prior cash flow use of funds research, they find that repatriating firms increased repurchases of both stock and debt relative to non-repatriating firms.

As with shareholder payouts, capital investment decisions have demonstrated effects on stock prices. McConnell and Muscarella (1985) determine that there is a significant positive relationship between capital expenditure changes and excess stock returns for industrial firms. However, for utility firms, they find no relationship. These findings are related to the market's perception that industrial firms are more likely to have investment opportunities with a positive net present value. Chung et al. (1998) show that stock price reactions to capital expenditure announcements depends on the market's perception of the quality of the firm's investment opportunities. They use Tobin's Q as a benchmark for determining investment opportunities and show that high Q firms that increase capital expenditures exhibit positive stock returns, while low Q firms exhibit the opposite. Titman et al. (2004) demonstrate a negative five-year stock return for firms that substantially increase capital investment when they have greater discretion, which they describe as firms with high cash flows and low debt ratios. They control for many risk factors and firm characteristics and come to the conclusion that the negative stock returns after investment increases are independent of those risk factors. The method of financing for capital investments and the presence of information asymmetry can also impact market reaction, as shown by Morellec and Schürhoff (2011). They show that firms can use positive private information to signal to investors that they have good investment prospects. They also show that asymmetric information also leads firms to speed up investment. Aktas et al. (2015), show that there is an optimal level of working capital and that firms which use excess working capital for corporate investments exhibit superior performance.

Hypothesis Development

Financial theory and the majority of research into the use of funds from positive abnormal cash flows show that firms use these funds for shareholder distributions (Barth and Kasznik 1999; Guay and Harford 2000; Skinner 2008; Blouin and Krull 2009). Research on the effectiveness of bonus depreciation provisions in stimulating capital investment, which was the legislative intent of the provisions, has shown mixed results (Knittel 2007; Billings et al. 2008; Edgerton 2010; Hulse and Livingstone 2010; Zwick and Mahon 2014). Firms that take advantage of bonus depreciation can substantially reduce tax expenditures in the year of investment, thereby creating temporary positive cash flows. It can be inferred from this that firms may use excess cash provided by this tax incentive for shareholder payouts. Anecdotal evidence, presented in Appendix A, also indicates that firms use additional funds from reduced cash tax expenditures for the repurchase of stock. The highlighted cells show a large increase in share repurchases coupled with large tax refunds and a large decrease in tax liability. Theory suggests that firms are more likely to repurchase shares than increase dividend payouts due to the transitory nature of the increase in cash flows. On the contrary, firms could use those funds internally as found in Blanchard et al. (1994). As such, the econometric model employed controls for share repurchases. This leads to the following hypothesis:

H1: The availability of 100% bonus depreciation will increase the likelihood that firms will increase capital expenditures.

Firm behavior and responses to different income tax provisions are influenced by firm level tax policies (Blouin and Krull 2009; Albring et al. 2011a; Park 2012; Inger 2014), investor level tax policies (Campbell et al. 2013), and by a firm's capital structure (Blouin and Krull 2009; Albring et al. 2011b). Funds used internally for bonus depreciation eligible capital expenditures would substantially decrease taxes payable, which could incentivize firms to spend more on eligible capital investments. Investment tax incentives encourage specific behaviors, but many cases show that firms have found ways to subvert the legislative intent of those incentives. Prior research is ambiguous about actual increases to capital expenditures, thus it is important to address the changes in investment in addition to the likelihood of increases. This leads to my second hypothesis:

H2: The availability of 100% bonus depreciation will be positively related to increases in the magnitude of capital expenditures.

Market reactions to capital expenditure changes depend on many factors including investment opportunities (Chung et al. 1998), industry (McConnell and Muscarella 1985), firm information environment (Morellec and Schürhoff 2011), business environment (Titman et al. 2004), and working capital management (Aktas et al. 2015). Bonus depreciation creates a substantial incentive for firms to increase capital expenditures, even when positive net present value investments may not be available. This could lead to overinvestment in capital assets over long periods of time due to the immediate tax benefits. The 100% bonus depreciation provision, however, was only available for a short window, which substantially increases its benefits. The temporary nature of the provision and the magnitude of tax benefits lead me to the following hypothesis:

H3: Firms that increase capital expenditures during the availability of 100% bonus depreciation will have positive cumulative abnormal stock returns.

3. SAMPLE SELECTION AND RESEARCH DESIGN

Sample Selection

To empirically evaluate the impact of bonus depreciation availability on the likelihood of firms increasing capital expenditures, I identify U.S. firms in Compustat from January 1, 2006 to December 31, 2012 with available data to calculate capital expenditures, share repurchases, effective tax rates, and control variables. My sample includes three time periods: 2006-2007 does not allow bonus depreciation, 2008-2010 and 2012 allow 50% bonus depreciation, and 100% bonus depreciation is available in 2010-2011. Due to midyear changes in bonus depreciation availability during 2010, I eliminate non-calendar year-end firms from the sample. With these restrictions, I obtain an initial sample of 43,746 firm-year observations. Consistent with prior literature, I exclude firms in the financial and utility industries (SIC codes 4900-4949 and 6000-6999) because financial structures of financial services firms differ and utility firms face additional regulatory requirements (Campbell et al. 2013; Brockman et al. 2008; Jagannathan et al. 2000). After eliminating firms with missing observations to estimate the empirical model, and firms with total assets under $1 million, the final sample consists of 17,503 firm-year observations for 4,084 unique firms. Table 2 Panel A summarizes the sample selection criteria. Panel B reports the industry breakdown based on the Fama-French 12 industry classifications (French 2014). The sample includes a diverse cross-section of industries, with some industry clustering with four industries – Manufacturing; Business Equipment; Healthcare and Medical Equipment, and Other. The four aforementioned industries account for 67.78% of the total sample.

Insert Table 2 here

Research Design - Capital Expenditure Logistic Model

I first examine whether firms used cash freed up from decreased income tax expense from bonus depreciation availability to increase capital expenditures to test H1. To test whether firms are more likely to increase capital expenditures as a result of the availability of 100% bonus depreciation, I define my variables using the model in Campbell et al. (2013). I then construct a two-stage Heckman (1979) model (Blouin and Krull 2009; Jackson et al. 2009; Lennox et al. 2011[3]) to control for stock repurchase activity, using an indicator for whether a firm is below or above the median of net stock repurchases (*MRep*). For the first stage, I utilize the predictive models in Jagannathan et al. (2000) and Brockman et al. (2008) to estimate the following probit model:

$$MRep = \beta_0 + \beta_1 B100 + \beta_2 B50 + \beta_3 \Delta CapEx + \beta_4 Size + \beta_5 OpInc + \beta_6 NopInc + \beta_7 StdOIRat + \beta_8 LagDIV + \beta_9 Avg + \beta_{10} PYavg + \beta_{11} TOBINSQ + \beta_{12} SPRtn + Industry\ Fixed\ Effects + \varepsilon \quad (1)$$

First Stage Variables

The dependent variable in the first stage is *MRep,* which is an indicator variable equal to one if a firm has above median net share repurchases and zero otherwise. *NetSTK* is used to construct *MRep* and is defined as stock repurchases less stock issuances scaled by total stockholders' equity. *B100* is an indicator variable equal to one for years when 100% bonus depreciation is available (i.e., 2010 and 2011), and zero otherwise. I also include the change in capital expenditures *ΔCapEx* where capital expenditures are measured as capital expenditures from the statement of cash flows scaled by prior year total assets, and change in capital expenditures is

[3] Results of the second-stage regressions are qualitatively similar when not using the Inverse Mills Ratio from the Heckman selection model.

measured from year t-1 to year t. Consistent with prior literature, control variables are calculated as three-year averages, from year t-3 to year t-1, to decrease yearly variation in the independent variables except as otherwise noted (Jagannathan et al. 2000; Brockman et al. 2008). I include *Size*, calculated as the log of total assets. Operating income is included in the model to control for permanent cash flows. *OpInc* is the average ratio of operating income to total assets. Non-operating income, *NopInc*, controls for temporary cash flows and is calculated as the average ratio of non-operating income to total assets. I control for volatility of cash flows by including the standard deviation of the ratio of operating income to total assets measured over the five years from year t-4 to year t, *StdOIRat*.[4] The variable *LagDIV* is calculated as the prior year's ratio of total dividends to net income available to common shareholders. I also control for underpricing with the variable *Avg*. *Avg* is defined as the mean market return of a firm's stock calculated using the Compustat Securities monthly total returns for the current year. The variable *PYavg* is calculated as the mean market return of a firm's stock using the Compustat Securities monthly total returns for the prior year. *TOBINSQ* is calculated as the market value of assets scaled by prior year total assets and is included in the model to control for growth opportunities. *SPRtn* is the annual return on the S&P500 and is included to control for market level effects. Industry Fixed Effects are controlled for using indicator variables for each of the Fama-French industries. All continuous variables are winsorized at the 1% and 99% levels.

First Stage Results

Descriptive statistics are reported in Table 3, Panel A for firms that increased stock repurchases and firms that did not increase stock repurchases, and provides a Mann-Whitney Wilcoxon test of differences between groups. Table 3 indicates that in 8,604 firm years, stock

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[4] I require data availability in a minimum of three out of five years.

repurchases increased during the sample period with a mean increase of 3.66% of stockholders' equity while 8,899 firm years had no increase, or had a decrease in stock repurchases with a mean decrease of -3.65%. There is no significant difference in the percentage of firm years that increase stock repurchases and those that don't while 100% bonus depreciation is available. In contrast, a higher percentage of firm years with no increased stock repurchases have 50% bonus depreciation available. Specifically, 26.96% of increasing firm years have 100% bonus depreciation available, while 59.44% of non-increasing firm years have 50% bonus depreciation availability. Firms that increase stock repurchases are significantly smaller with mean total assets of $3,093.59 million. The average operating income of firms that increase share repurchases is not significantly different between increasing and non-increasing firms. Mean non-operating income is also not significantly different between increasing and non-increasing firms. The prior year dividend payout ratio for non-increasing firms was significantly higher with a mean of 14.05%. Firms with an increase in repurchases had significantly lower average annual stock returns and prior-year stock returns with a mean of 0.0305% and 1.8029%, respectively. Descriptive statistics for the full sample are reported in Panel B of Table 3.

Insert Table 3 here

Table 4 reports the results of the probit regressions on the likelihood of firms having above median share repurchases from equation (1). I estimate the regression for the full sample period in Column (1), then for four comparative periods based on the different levels of bonus depreciation. The first subsample, reported in Column (2), is for the years 2006 to 2007 and 2010 to 2011; the former period had no allowable bonus depreciation and the latter allowed 100% bonus depreciation. The second subsample is comprised of years where either 50% or 100% bonus depreciation was allowed and is reported in Column (3). The third subsample, reported in

Column (4), is for the years 2006 to 2010, and the year 2012, which is comprised of years with either no allowable bonus depreciation or 50% bonus depreciation as defined earlier. The final subsample, reported in Column (5) is identical to that of Column (3).

Insert Table 4 here

The results of the first stage probit regression give insight into factors influencing share repurchasing behavior. In years with allowable 100% bonus depreciation, the coefficient on *B100* is positive and significant ($\beta_1 = 0.0853$; $p<0.01$) in Column (1), indicating a higher likelihood of firms having above median share repurchases in that period. *B100* remains positive and significant when compared only to years with no available bonus depreciation ($\beta_1 = 0.2242$; $p<0.01$) in Column (2) and is negative and significant ($\beta_1 = -0.0520$; $p=0.0351$) when compared directly to periods with 50% bonus depreciation in Column (3). Similarly, *B50* has positive and significant coefficients in Columns (1) ($\beta_2 = 0.0705$; $p<0.01$) and (4) ($\beta_2 = 0.2034$; $p<0.01$). When comparing 50% bonus depreciation directly to the 100% bonus depreciation period in Column (5), there is a significant negative coefficient ($\beta_2 = -0.2202$; $p<0.01$) which indicates a lower likelihood for firms to have above median repurchases. The coefficient on *ΔCapEx* is negative but not significant for the full sample in Column (1) and is not significant in the remaining subsamples. This result indicates that changes in capital expenditures may have little impact on whether a firm has above median share repurchases.

Size is negative and significant in the full sample ($\beta_4 = -0.0491$; $p<0.01$) and across all subsamples. This result is consistent with prior literature (Redding 1997) which indicates that larger firms are more likely to use dividends for shareholder payouts than share repurchases. *OpInc* is negative and significant for the full sample reported in Column (1) ($\beta_5 = -0.0491$; $p<0.01$) and remains negative and significant across all subsamples which is consistent with the results of Jagannathan et al. (2000). *NopInc* is negative and significant for the full sample in Column (1) (β_6 = -0.9398; p<0.01) and remains negative through the subsamples, but is not significant in Column (2). The coefficient on *stdOIRAT* is negative and highly significant in the full sample (β_7 = -0.1726; p<0.01) in Column (1) and across all subsamples. This indicates that firms with large variations in operating income are less likely to have above median share repurchases. The coefficient on *lagDIV* is negative across all regressions, but is only significant (β_8 = -0.0542; p=0.0431) in Column (2).

The coefficient on the firms's average stock return (*Avg*) is positive and significant (β_9 = 0.0040; p=0.0316) in the full sample, and is positive and significant in comparisons between no bonus depreciation availability and 50% or 100% bonus eras in Columns (2) (β_9 = 0.0124; p<0.01) and (4) (β_9 = 0.0056; p<0.01). The coefficient on *Avg* is negative and significant (β_9 = -0.0044; p=0.0409) in Column (3). The variation between subsample time periods is indicative of disparate share repurchase strategies in relation to market volatility. The coefficient on *PYAvg* is negative and significant in the full sample in Column (1) (β_{10} = -0.0036; p=0.0276) and is negative and significant across all subsamples with the exception of Column (2) where it is not significant. This indicates that when prior year stock returns are lower, firms are more likely to have higher share repurchases. Tobin's Q is positive and significant in the full sample reported in Column (1) (β_{11} = 0.0132; p<0.01) and remains positive across all subsamples but is marginally significant in Column (3) and not significant in Column (5). The coefficient on *SPRtn* is negative and significant (β_{12} = -5.3669; p<0.01) in the full sample and remains negative and significant across all subsamples. This shows that when the market is increasing, share repurchases tend to be below the median across this sample.

Second Stage Variables

From the first stage, I calculate the Inverse Mills Ratio (*IMR*) and include it in the second stage. I then estimate the following equation using logistic regression:

$$Pr(CapEx) = \alpha_0 + \alpha_1 B100 + \alpha_2 B50 + \alpha_3 MRep + \alpha_4 CF + \alpha_5 \Delta Cash + \alpha_6\, \Delta Debt + \alpha_7 TOBINSQ + \alpha_8 DivYld + \alpha_9 Size + \alpha_{10} IMR + \alpha_{11} GDP + Industry\ Fixed\ Effects + \varepsilon \quad (2)$$

Detailed definitions of the dependent and independent variables from the first stage are provided in Appendix B.

I include *CapEx* as the dependent variable, measured as an indicator variable equal to one if a firm increases capital expenditures, and zero otherwise. Capital expenditures are measured as capital expenditures from the statement of cash flows scaled by prior year total assets, and change in capital expenditures ($\Delta CapEx$) is measured from year t-1 to year t. *B100* is an indicator variable equal to one for years when 100% bonus depreciation is available (2010 and 2011), and zero otherwise. *B50* is used as an indicator variable equal to one for years where 50% bonus depreciation is available (2008-2010 and 2012), and zero otherwise. Hypothesis 1 states that 100% bonus depreciation availability will increase the likelihood that a firm will increase capital expenditures, therefore I expect a positive coefficient on *B100.* I do not make a prediction for *B50* due to ambiguity in prior literature.

The first control variable is *MRep* which is used as the dependent variable in the first stage. I expect a negative coefficient on *MRep.* I include several control variables that prior literature suggests are determinants of capital expenditures (Fazzari et al. 1988, 2000; Kaplan and Zingales 1997, 2000; Rauh 2006; Bushman et al. 2011; Campbell et al. 2013). *CF* is included in the model to control for cash flow from operations and is calculated as earnings before depreciation less working capital accruals, scaled by prior year total assets (Bushman et al. 2011). Prior literature provides evidence that firms with higher cash flow from operations have a higher level of capital expenditures (Fazzari et al. 1988, 2000; Kaplan and Zingales 1997, 2000; Ruah 2006; Campbell et al. 2013) and the predicted sign on the coefficient of *CF* is positive. *ΔCash* is included in the model to address the possibility of firms substituting qualified assets for planned unqualified assets and is defined as the change in cash and short term investments reported on the balance sheet from year t-1 to year t scaled by total assets. I do not make a sign prediction for *ΔCash*. *ΔDebt* is the change in total debt reported on the balance sheet from year t-1 to year t scaled by total assets and is included to address asset substitution as well. I predict a positive sign.

TOBINSQ is calculated as the market value of assets scaled by prior year total assets and is included in the model to control for growth opportunities. Prior literature suggests that firms with more growth opportunities have higher capital expenditures (Fazzari et al. 1988, 2000; Ruah 2006; Campbell et al. 2013). Hence, in the logistic regressions the predicted sign for *TOBINSQ* is positive. *DivYld* is measured as dividends per share scaled by stock price (Blouin and Krull 2009). Prior literature has found a negative relationship between dividends and capital investment (Auerbach and Hassett 2002; Skinner 2008). Thus, the predicted sign for the variable *DivYld* is negative. *Size* is the natural logarithm of the market value of equity at the end of the prior year. I predict a positive coefficient on *Size* consistent with prior literature (McConnell and Muscarella 1985; Malmendier and Tate 2005; Hulse and Livingstone 2010; Campbell et al. 2013).

IMR is the Inverse Mills Ratio estimated in the first stage of the model. *GDP* is the percentage change in annual Gross Domestic Product obtained from the Bureau of Economic Analysis (BEA) and is included to control for overall economic factors. Unreported robustness tests using other macroeconomic indicators including Gross Domestic Private Investment, the

Federal Reserve Rate, and Private Fixed Asset Investment figures from the BEA produce qualitatively similar results. All continuous variables are winsorized at the 1% and 99% levels. Detailed definitions of the dependent and independent variables from the second stage are provided in Appendix B.

4. EMPIRICAL RESULTS

Univariate Tests

Descriptive statistics on the variables in the capital expenditure model are reported in Table 5, with the sample divided between firms that increase capital expenditures and firms that do not increase capital expenditures. Table 5 indicates that 8,304 firms increase capital expenditures during the sample period with a mean increase of 4.47% of total assets, while 9,199 firms did not increase or decreased capital expenditures, with a mean decrease of -7.47% of total assets. For firms that increased capital expenditures, 33.10% did so during the availability of 100% bonus depreciation and 51.96 made increases during the availability of 50% bonus depreciation. There is no significant difference in net stock repurchases between increasing and non-increasing firms. Mean cash outflows from operating activities for increasing firms are significantly lower than non-increasing firms with a mean of -1.61% of prior year total assets. Increasing firms have significantly larger decreases in cash balances of -1.36% of total assets. Total debt increased significantly more for increasing firms with a mean increase of 0.78% of total assets. Tobin's Q was significantly higher for increasing firms with a mean of 3.31. Increasing firms had a significantly lower dividend yield with a mean of 1.21%. Increasing firms also had a significantly higher market value of equity with a mean logarithm of 5.77. The Inverse Mills Ratio is not significantly different between increasing and non-increasing firms. GDP growth was significantly higher in years where firms increased capital expenditures with a mean increase of 1.43% Descriptive statistics for the full sample are reported in Panel B of Table 5.

Insert Table 5 here

Correlation coefficients among the dependent, test, and control variables are reported in Table 6. Unreported univariate and multivariate tests of normality indicate that the variables do not follow a normal distribution, which limits the explanatory power of Pearson correlation coefficients for continuous variables, thus my discussion uses Spearman correlation coefficients (below the diagonal) for continuous variables and Pearson correlation coefficients (above the diagonal) for dichotomous variables. My primary interest is on the relation between 100% bonus depreciation (*B100*) availability and whether firms increased capital expenditures (*CapEx*). Consistent with my expectations, I find a positive correlation between 100% bonus depreciation availability and capital expenditure increases. *CapEx* is significantly correlated with the majority of the explanatory variables in the main model, with a maximum correlation coefficient of 0.1895 with *TobinsQ*. There are significant negative correlations between *Size* and *IMR* (-0.4524) and *B50* and *GDP* (-0.3246) resulting from the construction of the variables. Unreported tests show that the higher correlation coefficients do not result in multicollinearity issues. I control for these variables in my multivariate analysis to test whether firms with full capital asset expensing availability are more likely to increase capital expenditures.

Insert Table 6 here

Multivariate Tests – Test of H1

Table 7 reports the results of the logistic regressions on the likelihood of increases in capital expenditures from equation (2). I estimate the regression for the full sample period in Column (1), then for four comparative periods based on the different levels of bonus depreciation similar to the preceding analysis of stock repurchases. Consistent with my hypothesis that there is a higher likelihood of firms increasing capital expenditures in years with allowable 100% bonus depreciation, the coefficient on *B100* is positive and significant (α_1 = 0.3405; p<0.01) in Column (1) which equates to a 40.6% increase in likelihood. *B100* remains positive and significant across each subsample suggesting that firms are more likely to increase capital expenditures with allowable 100% bonus depreciation than in periods when it was not allowable.[5] The coefficient on *B50* is not significant in the full sample but is positive and significant (α_2 = 0.1643; p<0.01) in Column (4) but negative and significant (α_2 = -0.3148; p<0.01) in Column (5), indicating that firms were more likely to increase capital expenditures when 50% bonus depreciation was available compared to no bonus depreciation, but less likely to increase capital expenditures when compared to 100% bonus depreciation.

As expected, *MRep* has a significant negative coefficient indicating that firms with above median share repurchases were less likely to increase capital expenditures, although the effect is not significant across all subsamples. Consistent with my expectations, the coefficient on *CF* is positive and significant (α_4 = 0.2357; p<0.01) in Column (1) and across all subsamples, which suggests that as cash flow increases, the likelihood of increasing capital expenditures increases. *ΔCash* is negative and marginally significant (α_5 = -0.1224; p=0.0598) in Column (1) which suggests that firms increasing capital expenditures are drawing down cash reserves. *ΔCash* remains negative across all subsamples but is not statistically significant with the exception of marginal significance in Column (3). *ΔDebt* is positive and significant (α_5 = 0.5947; p<0.01) in Column (1) and across all subsamples which indicates that firms increasing debt were likely to increase capital expenditures. As expected, the coefficient on *TOBINSQ* is positive and

[5] Columns (3) and (5) of Tables 7 and 8 exclude the year 2010 due to the mid-year change from 50% to 100% bonus depreciation.

significant (α_5 = 0.0754; p<0.01) in Column (1). *TOBINSQ* remains positive and significant across all subsamples. This represents the higher likelihood of firms increasing capital expenditures when they have better investment prospects. The coefficient on *DivYld* is negative, as expected, but is not statistically significant in the main sample or in any subsamples. *Size* is not significant in the full sample reported in Column (1) or any of the subsamples with the exception of Column (2) where it is negative and marginally significant (α_9 = -0.0248; p=0.0539). This may reinforce the findings of Zwick and Mahon (2014) that smaller and more financially constrained firms are more likely to take advantage of bonus depreciation than larger firms.

Insert Table 7 here

Multivariate Tests – Test of H2

In order to test the magnitude of capital expenditure changes, I replace the dichotomous dependent variable in equation (2) with a continuous measure of capital expenditure changes defined previously (*ΔCapEx*) and estimate an ordinary least squares regression rather than a logistic regression. I include two interaction terms, *ΔCash*CapEx* and *ΔDebt*CapEx,* to more fully address the question of asset substitution. The interaction with the dichotomous variable CapEx results in the partitioning of the *ΔCash* and *ΔDebt* variables between firms that increased capital expenditures and those that didn't. I predict a negative sign on *ΔCash* and a positive sign on *ΔDebt*. The predicted signs on all of the remaining variables are consistent with the prior model. Results are reported in Table 8 using the same columnar subsamples as the previous section. The additional variables result in the following equation:

$$\Delta CapEx = \alpha_0 + \alpha_1 B100 + \alpha_2 B50 + \alpha_3 MRep + \alpha_4 CF + \alpha_5 \Delta Cash + \alpha_6 \Delta Debt + \alpha_7 \Delta Cash{*}CapEx + \alpha_8 \Delta Debt{*}CapEx + \alpha_9 TOBINSQ + \alpha_{10} DivYld + \alpha_{11} Size + \alpha_{12} IMR + \alpha_{13} GDP + Industry\ Fixed\ Effects + \varepsilon \quad (3)$$

The availability of 100% bonus depreciation (*B100*) had a significantly positive effect on the magnitude of capital expenditure increases across all samples with an increase of 2.33% in the full sample ($\alpha_1 = 0.0233$; $p<0.01$), which is consistent with Hypothesis 2. The coefficient on *B50* is positive and significant ($\alpha_2 = 0.0116$; $p<0.01$) for the full sample in Column (1). Consistent with the ambiguity of prior research, *B50* is also positive and significant in column (4) ($\alpha_2 = 0.0272$; $p<0.01$) but negative and significant in column (5) ($\alpha_2 = -0.0097$; $p<0.01$). This represents the differences in the comparative samples in that 50% bonus depreciation encouraged firms to increase the magnitude of capital expenditures when compared to no bonus depreciation, but did not when compared to 100% bonus depreciation. A firm's relation to median share repurchases (*MRep*) does not appear to have any significant effects on the magnitude of capital expenditures. *ΔCash* is positive and significant ($\alpha_5 = 0.0388$; $p<0.01$) for the full sample and across all subsamples. Due to the partitioning of the variable through the use of an interaction term, this indicates that firms which did not increase capital expenditures increased their total cash holdings. *ΔDebt* is positive and significant ($\alpha_6 = 0.0320$; $p<0.01$) in Column (1) and across all subsamples with the exception of Column (2) where it is not significantly different from zero. The interaction term *ΔDebt*CapEx* is not significant in the full sample or in any subsamples which may suggest that increases in capital expenditures were not part of long-term investment decisions. *TOBINSQ* is positive and significant across all samples, as expected. *DivYld* is insignificantly different from zero in all samples. Contrary to my expectations, *Size* has negative and significant coefficients across all samples. This may be indicative of the results from Zwick and Mahon (2014) that bonus depreciation-related capital expenditure increases were more likely for smaller, more financially constrained firms.

Insert Table 8 here

Analysis of Stock Performance

In this section, I use the directEDGAR software to identify the date when financial statements were released for firms in my sample. I use the financial statement release date rather than earnings announcement date so that all possible financial information regarding capital expenditures in the footnotes and management discussion and analysis is available for investors. I then calculate one year cumulative abnormal returns using the Eventus 9.0 database Fama-French daily factors. Due to data limitations within Eventus, my sample size is reduced to 7,422, but remains representative of the period. I then partition the remaining sample in two stages based on change in net share repurchases. The first partition is into two categories based on whether firms increase net share repurchases or not. The second partition is into quintiles based on the level of change in net share repurchases. I use quintiles rather than quartiles due to a large number of zero change observations within the sample (n=1,484), and because it allows me to analyze small and large changes separately. Industries represented in the full sample and each level of partitions are reported in Table 9. The industry makeup of the reduced sample and partitioned sections remains representative of the full sample reported in Table 2. I then estimate the following regression using ordinary least squares:

$$CAR = \alpha_0 + \alpha_1 B100 + \alpha_2 B50 + \alpha_3 NetSTK + \alpha_4 \Delta CapEx + \alpha_5 \Delta CapEx{*}B100 + \alpha_6 \Delta CapEx{*}B50 + \alpha_7 OpInc + \alpha_8 CF + \alpha_9 TOBINSQ + \alpha_{10} DivYld + \alpha_{11} Size + \alpha_{11} PYCAR + \alpha_{12} SPRtn + Industry\ Fixed\ Effects + \varepsilon \quad (4)$$

CAR is the cumulative abnormal return for the one year period following the release of a firm's annual 10K. *PYCAR* is the prior year cumulative abnormal return. All other variables are defined previously. In order to identify the capital expenditure effects on stock returns during the 100% and 50% bonus depreciation periods for each quintile, I include the following interaction terms: *ΔCapEx*B100 and ΔCapEx*B50.* I expect negative coefficients on *B100* and *B50* due to the severe economic turmoil represented in the two periods. I do not make a prediction for *ΔCapEx* due to the varying results from prior research. I expect a positive coefficient on *ΔCapEx*B100* consistent with H3. I do not make a prediction on the sign of *ΔCapEx*B50.* I expect *OpInc* to be positive because operating income increases are a positive market signal. Titman et al. (2004) show that high cash flow firms with abnormal capital investments have monotonic decreases in stock returns, thus I expect a negative coefficient on *CF*. I do not make a prediction on Tobin's Q. *DivYld* should be positive due to the strong tie between dividend payments and share prices. Because *PYCAR* is an indicator of market momentum, I expect a positive coefficient. I expect a negative coefficient on *SPRtn* because as the market moves as a whole, abnormal price changes are less common. I do not include *MRep* or *IMR* due to high levels of multicollinearity indicated by variance inflation factors.

Insert Table 9 here

Univariate Tests

Descriptive statistics for the cumulative abnormal return subsample are reported in Table 10. Panel A reports the means for the first partition on the change in share repurchases and includes a Mann-Whitney Wilcoxon test of differences between groups. There are 3,711 observations in each reported group and significantly higher mean cumulative abnormal returns for firms that increased net share repurchases. The increasing firms had a mean cumulative abnormal return of

12.43% while non-increasing firms had a mean return of -1.66%. Increasing firms had mean net stock repurchases of 6.62% which was significantly different than the -4.64% mean net stock repurchases for non-increasing firms. Overall, there was a mean decrease in capital expenditures, with a significantly larger mean decrease for firms that increased share repurchases of -1.82% of total assets. In the 100% bonus depreciation era, there was a decrease in capital expenditures for increasing firms of -22.02%, which is significantly different from the -2.03% decrease for non-increasing firms. In the 50% bonus depreciation era, there was no significant difference in capital expenditure changes despite different signs on the mean statistics. Mean operating income and mean cash flow from operations are positive for both groups, but there are no significant differences between them. Similarly, Tobin's Q and dividend yield are positive for both groups, but not significantly different. Increasing firms are significantly larger with a natural log of market value of equity of 6.65 compared to 6.27 for non-increasing firms. Prior year cumulative abnormal returns were significantly higher for non-increasing firms with a mean of 8.17% where there was a mean decrease of -4.62% for increasing firms. The mean S&P 500 return was significantly higher in in firm years with no net share repurchase increases with a mean of 0.0047. Descriptive statistics for the full sample are reported in Panel B of Table 10.

Insert Table 10 here

Multivariate Tests – Test of H3

Table 11 reports the results from the cumulative abnormal returns regressions for the full sample in Column (1) and results for 100% and 50% bonus depreciation effects for the first partition in Columns (2) through (5). As expected, the coefficients on *B100* and *B50* are negative and significant across all columns. *NetSTK* is positive and significant ($\alpha_3 = 0.1515$; $p<0.01$) for the full sample reported in Column (1) and remains positive across all subsamples. *NetSTK*, however, does not significantly affect cumulative abnormal returns for firms increasing share repurchases in Columns (2) and (4). *ΔCapEx* is not significantly different from zero in the full sample nor is it significant in the partitioned regressions. *ΔCapEx*B100*, which represents capital expenditure changes during the 100% bonus depreciation era, is negative and marginally significant (α_5 = -.0031; p=0.0967) in Column (1) which does not support H3, and is not significantly different from zero in the remaining samples. This indicates that firms increasing capital expenditures during the availability of 100% bonus depreciation generally had marginal decreases in cumulative abnormal returns irrespective of changes in net share repurchases. *ΔCapEx*B50* is positive and significant (α_6 = 0.003; p=0.0283) in Column (1). It is also significant and positive (α_6 = 0.0037; p=0.0376) in Column (5) but is not significant in Column (4). This indicates that firms which increased capital expenditures during the availability of 50% bonus depreciation experienced positive cumulative abnormal returns in general but specifically when decreasing share repurchases.

Insert Table 11 here

OpInc is not significant for the full sample, but is positive and significant for firms increasing share repurchases in Column (2) (α_7 = 0.2234; p<0.01) and Column (4) (α_7 = 0.2405; p<0.01). This indicates that firms with a higher operating income that increase share repurchases experience positive cumulative abnormal returns. *CF* is negative and significant (α_8 = -0.2743; p<0.01) in Column (1) and across all subsamples as expected. *Tobin's Q* is negative and significant (α_9 = -0.0375; p<0.01) for the full sample as reported in Column (1) and across all subsamples as expected. I interpret this finding as investors analyzing investment prospects of firms and if they have a high growth rate but are increasing shareholder payouts, there are concerns about missed opportunities for growth. *DivYld* is positive and significant (α_{10} = 1.6974;

$p<0.01$) in Column (1) as expected and in Columns (3) and (5). This represents the general positive market reaction to high dividend yields as well as the different market reaction to firms using share repurchases for shareholder payouts. *Size* is not significant for the full sample, but is negative and significant for firms that increased share repurchases as reported in Column (2) ($\alpha_{11} = -0.0256$; $p<0.01$) and Column (4) ($\alpha_{11} = -0.0328$; $p<0.01$). The change in sign reported in Column (5) may indicate the different investor responses to shareholder payout strategies of large companies. *PYCAR* is positive and significant ($\alpha_{12} = 0.1031$; $p<0.01$) in Column (1) and across all subsamples as expected, which exhibits the strong relationship between current and prior stock performance. *SPRtn* is negative and significant ($\alpha_{13} = -9.7466$; $p<0.01$) in the full sample as reported in Column (1) and across all subsamples, as expected. This indicates the difficulty of surpassing mean market performance.

The next step in my analysis is to partition the full sample into quintiles based on the level of change in net share repurchases. Table 12 reports the results from each quintile regression on cumulative abnormal returns. As in the prior analysis, the coefficients on *B100* and *B50* are negative and significant across all quintiles. *NetSTK* is not significant in any quintile. *ΔCapEx* is not significantly different from zero with the exception of the fifth quintile where it is negative and significant ($\alpha_{13} = -0.3567$; $p=0.0245$). This suggests that during non-bonus years, when firms substantially decrease repurchases in favor of capital expenditures, the market responds negatively to these strategic shifts. *ΔCapEx*B100*, which represents capital expenditure changes during the 100% bonus depreciation era, is not significant in any quintile. This leads to a rejection of H3 in this partition. *ΔCapEx*B50*, is only significant in the fifth quintile, but is positive. I interpret this finding as the market responding positively to substantial cash flow usage changes when firms reap tax benefits from capital investment. The provision for 50%

bonus depreciation continues to be extended, thus making it the new normal, which leads to investor perception of capital expenditures similar to non-bonus years. Additionally, the marginally significant differences in capital expenditure coefficients between the first and fifth quintiles for the 50% bonus depreciation period and the similarity with results from the sample in Table 11, Column (5) appears to show that investors are more concerned about capital expenditure changes when there is a shift away from using free cash flow for share repurchases than when repurchases are increasing.

Insert Table 12 here

OpInc is only significant in the first quintile ($\alpha_7 = 0.2806$; $p<0.01$) where it is positive as expected, and *CF* is negative and significant across all quintiles as expected. *Tobin's Q* is negative and significant across all quintiles. I interpret this finding as investors analyzing investment prospects of firms and if they have a high growth rate they may not be increasing shareholder payouts, thus negatively impacting stock returns. *DivYld* is not significant in Columns (1) or (2), but is positive and significant in Columns (3) through (5), which reinforces the idea that investors in dividend paying firms are more concerned with dividend yield than share repurchases. *Size* is negative and significant ($\alpha_{11} = -0.0330$; $p<0.01$) in Column (2) but positive and significant ($\alpha_{11} = 0.0238$; $p=0.0317$) in Column (3), and not significant in any other quintile. *PYCAR* is positive and significant across all quintiles as expected. *SPRtn* is negative and significant across all quintiles, as expected. The significant difference in magnitude between the first and fifth quintiles may indicate that firms increasing share repurchases may have an easier time beating mean market performance.

In order to more fully evaluate the effects of the variables of interest in different partitions on cumulative abnormal stock returns, I partition the full sample in two additional ways. The first partition is based on firm effective tax rates, where I divide the sample into terciles. The second partition is based on changes in capital expenditures and I partition into firms with increases and those without. The results of these two new partitions are reported in Table 13.

Consistent with the prior results, *B100* and *B50* are negative and significant across all columns of both partitions. *NetSTK* is positive and significant for firms with effective tax rates above the mean ($\alpha_3 = 0.2393$; $p<0.01$), reported in Column (1), and near the mean ($\alpha_3 = 0.2741$; $p<0.01$) as reported in Column (2). I interpret this as positive shareholder responses to stock repurchases for profitable firms, i.e., firms with taxable earnings, where there is little to no response for firms with little or no taxable earnings. *NetSTK* is also positive and significant ($\alpha_3 = 0.2307$; $p<0.01$) in Column (5), which suggests that shareholders react favorably to firms that repurchase shares while also increasing capital expenditures. *ΔCapEx* is positive and significant ($\alpha_3 = 0.6415$; $p<0.01$) only for firms increasing capital expenditures as reported in Column (5). *ΔCapEx*B100* is not significant in any regression in either partition, which leads me to reject H3. *ΔCapEx*B50* is positive and significant ($\alpha_6 = 0.0042$; $p<0.01$) in Column (2), indicating a positive investor response to increases in capital expenditures during the availability of 50% bonus depreciation for firms with effective tax rates near the mean of the sample.

Insert Table 13 here

OpInc is positive and significant ($\alpha_7 = 0.2400$; $p=0.0110$) in Column (3), but only marginally significant in Columns (1) and (2). This suggests that market responses to higher operating income are more important for firms with below average effective tax rates, while still being relevant to firms with higher effective tax rates. As with prior results, *CF* is negative and significant for all regressions of both partitions with the exception of Column (2) where there is no significant effect. *TobinsQ* is negative and significant across all columns of both partitions.

DivYld is positive and significant for low tax firms (α_{10} = 2.2443; p<0.01) in Column (3) and for firms increasing capital expenditures (α_{10} = 2.7888; p<0.01) in Column (5), but only marginally significant for firms near the mean effective tax rate in Column (2). This indicates that investors value high dividend payouts from firms with low effective tax rates and growing firms that are increasing capital expenditures. Consistent with expectations *PYCAR* is significant and positive across all columns of both partitions. *SPRtn* is negative and significant for all columns of each partition, which is similar to prior results.

5. CONCLUSION

This paper examines how firms react to temporary capital asset expensing provisions and the stock market effects of changes in capital expenditures. Prior literature suggests that firms with 30% and 50% bonus depreciation availability are not more likely to increase capital expenditures. I provide evidence that firms are more likely to increase capital expenditures when 100% bonus depreciation is available, which suggests that temporary full expensing is a more effective capital investment stimulus than temporary partial expensing. The policy implications of this difference are clear; stimulus provisions temporarily allowing full expensing of capital assets are more likely to fulfill the legislative intent of increasing capital investment than those offering only partial expensing. In addition, I show a significant increase in the magnitude of capital expenditures when 100% bonus depreciation is available. I also show that there are conflicting stock price effects when firms increase capital investment, which indicates that managers should carefully consider strategic cash flow usage when evaluating the benefits of new tax provisions.

Appendix A
Statement of Cash flows Excerpt

RENT A CENTER INC			
Consolidated Statements of Cash Flows (USD $)	**12 Months Ended**		
In Thousands, unless otherwise specified	**Dec. 31, 2012**	**Dec. 31, 2011**	**Dec. 31, 2010**
Cash flows from financing activities			
Purchase of treasury stock	-61,860	-164,169	-84,520
Exercise of stock options	14,121	34,910	19,040
Tax benefit related to stock option exercises	-4,348	-7,036	-2,974
Payments on capital leases	-27	-285	-979
Issuance of senior notes	0	0	300,000
Proceeds from debt	606,570	982,825	92,230
Repayments of debt	-659,745	-943,264	-402,274
Dividends paid	-37,866	-26,891	-7,804
Net cash used in financing activities	-134,459	-109,838	-81,333
Effect of exchange rate changes on cash	310	-201	950
NET INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS	-26,978	17,338	-31,076
Cash and cash equivalents at beginning of year	88,065	70,727	101,803
Cash and cash equivalents at end of year	61,087	88,065	70,727
Cash paid during the year for:			
Interest	31,574	35,609	20,569
Income taxes (excludes $4,169, $113,202 and $330 of income taxes refunded in 2012, 2011 and 2010, respectively)	$88,873	$10,522	$124,065

Appendix B

First Stage Variables (Share Repurchases)	
Variable names	**Variable definitions**
NetSTK	Stock repurchases less stock issuances scaled by total stockholders' equity
Repurchase	Indicator variable equal to one if a firm increased net share repurchases and zero otherwise.
MRep	Indicator variable equal to one if a firm has above median share repurchases and zero otherwise.
B100	Indicator variable equal to one for years where 100% bonus depreciation is available (2010 to 2011), and zero otherwise.
B50	Indicator variable equal to one for years where 50% bonus depreciation is available (2008-2010 and 2012), and zero otherwise.
ΔCapEx	Change in capital expenditures from the statement of cash flows scaled by prior year total assets measured from year t-1 to year t.
Size (First Stage Probit)	The natural logarithm of total assets.
OpInc	The average ratio of operating income to total assets for the prior three years.
NopInc	The average ratio of non-operating income to total assets for the prior three years.
StdOIRAT	The standard deviation of the ratio of operating income to total assets measured over the five years from year t-4 to year t.
LagDIV	The prior year's ratio of total dividends to net income available to common shareholders.
Avg	The mean market return of a firm's stock calculated using the CRSP monthly returns for the current year.
PYavg	The mean market return of a firm's stock calculated using the CRSP monthly returns for the prior year.
TOBINSQ	Tobin's Q, calculated as the market value of assets scaled by total assets from the prior year
SPRtn	The annual return on the S&P500 for each fiscal year.

Appendix B

Second Stage Variables (Capital Investment Model)	
Variable names	**Variable definitions**
CapEx	Indicator variable equal to one if a firm increased capital expenditures and zero otherwise.
CF	Cash flow from operations calculated as earnings before depreciation less working capital accruals, scaled by total assets from the prior year
ΔCash	The change in cash and short term investments reported on the balance sheet from year t-1 to year t scaled by total assets.
ΔDebt	The change in total debt reported on the balance sheet from year t-1 to year t scaled by total assets.
DivYld	Dividends per share scaled by price.
Size (Logit and OLS Regressions)	The natural logarithm of the market value of equity at the end of the prior year.
IMR	Inverse Mills Ratio
GDP	The percentage change in annual Gross Domestic Product obtained from the Bureau of Economic Analysis.
Cumulative Abnormal Return Analysis	
CAR	The cumulative abnormal return for the one year period following the release of a firm’s annual 10K.
PYCAR	The cumulative abnormal return for the one year period following the release of a firm’s annual 10K for year t-1

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TABLE 1
Summary of Bonus Depreciation Allowance Legislation

Legislation	Bonus Depreciation Percentage	AMT / Research Credit Alternative*	Effective Dates
Job Creation and Worker Assistance Act of 2002	30%	None	9/12/2001 - 12/31/2004
Jobs and Growth Tax Relief Reconciliation Act of 2003	50%	None	5/6/2003 - 12/31/2005
Economic Stimulus Act of 2008	50%	$30M / 6%	1/1/2008 - 12/31/2008
American Recovery and Reinvestment Act of 2009	50%	$30M / 6%	1/1/2009 - 12/31/2009
Small Business Jobs Act of 2010	50%	$30M / 6%	1/1/2010 - 12/31/2010
Tax Relief, Unemployment Compensation Reauthorization, and Job Creation Act of 2010	100% (50%)	$30M / 6% AMT Only	9/9/2010 - 12/31/2011 (12/31/2013)**

*Firms could elect to forgo bonus depreciation in order to accelerate AMT or Research Credits which carried over from prior years.

**50% bonus depreciation was extended two additional years beyond the expiration of 100% bonus depreciation.

TABLE 2
Sample Selection and Industry Distribution

Panel A: Sample Selection

Compustat Calendar Year Firm Observations from 2006 to 2012	43,746
Less:	
Financial Service Firms (6000 ≤ SIC ≥ 6999)	(11,181)
Utility Firms (4900 ≤ SIC ≥ 4949)	(1,960)
Firms with Total Assets < $1 Million	(736)
Observations with missing data	(13,102)
Final Sample (4,084 Unique Firms)	17,503

Panel B: Industry Distribution

Industry Type*	**Observations**	**Percentage**
Consumer NonDurables -- Food, Tobacco, Textiles, Apparel, Leather, Toys	923	5.27%
Consumer Durables -- Cars, TV's, Furniture, Household Appliances	459	2.62%
Manufacturing -- Machinery, Trucks, Planes, Off Furn, Paper, Com Printing	2,077	11.87%
Oil, Gas, and Coal Extraction and Products	1,465	8.37%
Chemicals and Allied Products	560	3.20%
Business Equipment -- Computers, Software, and Electronic Equipment	3,819	21.82%
Telephone and Television Transmission	883	5.04%
Wholesale, Retail, and Some Services (Laundries, Repair Shops)	1,351	7.72%
Healthcare, Medical Equipment, and Drugs	2,650	15.14%
Other -- Mines, Constr, BldMt, Trans, Hotels, Bus Serv, Entertainment	3,316	18.95%
Total	17,503	100.00%

*Industries follow the Fama-French 12 Industry Classifications

TABLE 3

Descriptive Statistics Tests of Differences in Means by Increase in Stock Repurchase Choice

Panel A

	Increasing Firms		Non-Increasing Firms		
Variables	N	Mean	N	Mean	
Change in Stock Repurchases (%)	8,604	0.0366	8,899	-0.0365	***
B100	8,604	0.2696	8,899	0.2774	
B50	8,604	0.5413	8,899	0.5944	***
Change in Capital Expenditures (ΔCapEx)	8,604	-0.0261	8,899	-0.0102	***
Size (in Millions) (Size)	8,604	3,093.59	8,899	3,179.92	***
Tobin's Q	8,604	2.7375	8,899	2.8009	
Operating Income (%) (OpInc)	8,604	-0.0051	8,899	0.0017	
Non-Operating Income (%) (NopInc)	8,604	0.0080	8,899	0.0081	
Standard Deviation of Operating Income (%) (StdOIRat)	8,604	0.1863	8,899	0.1932	
Lagged Dividend Payout Ratio (%) (LagDIV)	8,604	0.1341	8,899	0.1405	**
Stock Returns (Avg)	8,604	0.0305	8,899	1.8029	***
Prior Year Stock Returns (PYavg)	8,604	0.6645	8,899	1.5860	***
S&P 500 Average Return (SPRtn)	8,604	0.0002	8,899	0.0045	***

*, **, and *** denote a difference in means with significance of $p < 0.10$, $p < 0.05$, and $p < 0.01$ respectively.

Panel B

Variables	N	Mean	Std Dev	Lower Quartile	Median	Upper Quartile
Change in Stock Repurchases (%)	17,503	-0.0006	0.1167	0	0	0
B100	17,503	0.2736	0.4458	0	0	1
B50	17,503	0.5683	0.4953	0	1	1
Change in Capital Expenditures (ΔCapEx)	17,503	-0.0180	0.1684	-0.0156	-0.0004	0.0110
Size (in Millions) (Size)	17,503	3,137.48	9,162.38	57.44	304.95	1,542.20
Tobin's Q	17,503	2.7697	4.2406	1.0754	1.5953	2.6625
Operating Income (%) (OpInc)	17,503	-0.0017	0.3309	-0.0139	0.0934	0.1530
Non-Operating Income (%) (NopInc)	17,503	0.0081	0.0315	0.0007	0.0047	0.0127
Standard Deviation of Operating Income (%) (StdOIRat)	17,503	0.1898	0.5721	0.0243	0.0489	0.1097
Lagged Dividend Payout Ratio (%) (LagDIV)	17,503	0.1374	0.5042	0	0	0.0528
Stock Returns (Avg)	17,503	0.9316	6.1366	-2.1774	0.8752	3.5884
Prior Year Stock Returns (PYavg)	17,503	1.1330	6.5038	-2.0414	0.9179	3.6111
S&P 500 Average Return (SPRtn)	17,503	0.0024	0.0179	0.0010	0.0108	0.0115

TABLE 4

Likelihood of Above Median Share Repurchases - Heckman First Stage Probit Regressions

	(1)		(2)		(3)		(4)		(5)	
	Full Sample (2006 - 2012)		0/100% Bonus Eras (2006-2007, 2010-2011)		50%/100% Bonus Eras (2008-2012)		0/50% Bonus Eras (2006-2010, 2012)		50%/100% Bonus Eras (2008-2012): 50% Effect	
	Estimate	**Pr > ChiSq**	**Estimate**	**Pr > ChiSq**	**Estimate**	**Pr > ChiSq**	**Estimate**	**Pr > ChiSq**	**Estimate**	**Pr > ChiSq**
Intercept	0.3170	<.0001	0.4004	<.0001	0.5402	<.0001	0.1272	0.0023	0.7051	<.0001
B100	0.0853	<.0001	0.2242	<.0001	-0.0520	0.0351				
B50	0.0705	0.0004					0.2034	<.0001	-0.2202	<.0001
ΔCapEx	-0.0164	0.7810	-0.0325	0.6768	0.0751	0.3256	-0.0346	0.5746	0.0375	0.6239
Size	-0.0491	<.0001	-0.0577	<.0001	-0.0549	<.0001	-0.0381	<.0001	-0.0561	<.0001
OpInc	-0.2458	<.0001	-0.2157	<.0001	-0.2888	<.0001	-0.2204	<.0001	-0.2853	<.0001
NopInc	-0.9398	0.0024	-0.4379	0.2899	-1.0662	0.0037	-0.7866	0.0187	-0.9453	0.0103
stdOIRAT	-0.1726	<.0001	-0.1967	<.0001	-0.1855	<.0001	-0.1501	<.0001	-0.1863	<.0001
lagDIV	-0.0206	0.2889	-0.0542	0.0431	0.0076	0.7332	-0.0287	0.1711	0.0052	0.8165
Avg	0.0040	0.0316	0.0124	<.0001	-0.0044	0.0409	0.0056	0.0040	-0.0016	0.4716
PYAvg	-0.0036	0.0276	-0.0022	0.3490	-0.0070	0.0003	-0.0038	0.0324	-0.0050	0.0107
TOBINSQ	0.0132	<.0001	0.0203	<.0001	0.0062	0.0766	0.0172	<.0001	0.0051	0.1455
SPRtn	-5.3669	<.0001	-29.6303	<.0001	-2.1386	0.0038	-4.6181	<.0001	-3.1942	<.0001
Firms Below Median	9,346		5,047		6,928		7,874		6,928	
Firms Above Median	8,157		4,975		5,342		7,306		5,342	
Total Observations	17,503		10,022		12,270		15,180		12,270	
Log Likelihood	-11744.50		-6622.58		-8188.75		-10181.80		-8164.50	

TABLE 5
Descriptive Statistics and Tests of Differences in Means by Increase in Capital Expenditures Choice

Panel A

Variables	Increasing Firms N	Increasing Firms Mean	Non-Increasing Firms N	Non-Increasing Firms Mean	
Change in Capital Expenditures / Lagged Total Assets (ΔCapEx)	8,304	0.0447	9,199	-0.0747	***
B100	8,304	0.3310	9,199	0.2218	***
B50	8,304	0.5196	9,199	0.6122	***
Net Stock Repurchases / Stockholders' Equity (NetSTK)	8,304	0.0206	9,199	-0.0433	
Median Repurchase (Mrep)	8,304	0.4595	9,199	0.4719	
Cash Flow / Lagged Total Assets (CF)	8,304	-0.0161	9,199	-0.0294	***
Change in Cash / Total Assets (ΔCash)	8,304	-0.0136	9,199	-0.0129	***
Change in Total Debt / Total Assets (ΔDebt)	8,304	0.0078	9,199	0.0009	***
ΔCash*CapEx	8,304	-0.0121	9,199	0.0000	
ΔDebt*CapEx	8,304	0.0078	9,199	0.0000	***
Tobin's Q (TOBINSQ)	8,304	3.3085	9,199	2.2834	***
Dividend Yield (%) (DivYld)	8,304	0.0121	9,199	0.0124	***
Natural Logarithm of Market Value of Equity (Size)	8,304	5.7681	9,199	5.6686	***
Inverse Mills Ratio (IMR)	8,304	0.8617	9,199	0.8609	
Change in Gross Domestic Product (GDP)	8,304	1.4348	9,199	0.7468	***

*, **, and *** denote a difference in means with significance of $p < 0.10$, $p < 0.05$, and $p < 0.01$ respectively.

Panel B

Variables	N	Mean	Std Dev	Lower Quartile	Median	Upper Quartile
Change in Capital Expenditures / Lagged Total Assets (ΔCapEx)	17,503	-0.0180	0.1684	-0.0156	-0.0004	0.0110
B100	17,503	0.2736	0.4458	0	0	1
B50	17,503	0.5683	0.4953	0	1	1
Net Stock Repurchases / Stockholders' Equity (NetSTK)	17,503	-0.0130	3.0481	-0.0155	0	0
Median Repurchase (Mrep)	17,503	0.4660	0.4989	0	0	1
Cash Flow / Lagged Total Assets (CF)	17,503	-0.0231	0.5054	-0.0631	0.0639	0.1525
Change in Cash / Total Assets (ΔCash)	17,503	-0.0132	0.2464	-0.0618	0.0016	0.0588
Change in Total Debt / Total Assets (ΔDebt)	17,503	0.0042	0.1325	-0.0209	0	0.0185
ΔCash*CapEx	17,503	-0.0058	0.1438	0	0	0
ΔDebt*CapEx	17,503	0.0037	0.1947	0	0	0
Tobin's Q (TOBINSQ)	17,503	2.7697	4.2406	1.0754	1.5953	2.6625
Dividend Yield (%) (DivYld)	17,503	0.0123	0.0310	0	0	0.0098
Natural Logarithm of Market Value of Equity (Size)	17,503	5.7158	2.3338	4.0768	5.7671	7.2898
Inverse Mills Ratio (IMR)	17,503	0.8613	0.1700	0.7410	0.8421	0.9622
Change in Gross Domestic Product (GDP)	17,503	1.0732	1.8514	-0.3000	1.8000	2.5000

TABLE 6
Pearson / Spearman Correlation Coefficients, N = 17503

	ΔCapEx	B100	B50	MRep	CF	ΔCash	ΔDebt	TOBINSQ	DivYld	Size	IMR	GDP
ΔCapEx		0.1251	-0.0940	-0.0149	0.0737	-0.0284	0.0401	0.1895	0.0155	-0.0164	0.0273	0.1491
		<.0001	**<.0001**	**0.049**	**<.0001**	**0.0002**	**<.0001**	**<.0001**	**0.0403**	**0.0297**	**0.0003**	**<.0001**
B100	0.0605		-0.0661	-0.0185	0.0254	-0.0342	-0.0245	0.0141	-0.0068	0.0210	0.0976	0.1671
	<.0001		**<.0001**	**0.0146**	**0.0008**	**<.0001**	**0.0012**	0.063	0.3665	**0.0054**	**<.0001**	**<.0001**
B50	-0.0281	-0.0661		-0.0335	-0.0277	0.0062	-0.0032	-0.1606	0.0174	-0.0335	0.1692	-0.3246
	0.0002	**<.0001**		**<.0001**	**0.0003**	0.4132	0.6756	**<.0001**	**0.0213**	**<.0001**	**<.0001**	**<.0001**
MRep	-0.0021	-0.0185	-0.0335		0.1067	-0.0369	0.0524	-0.0745	0.1323	0.1032	-0.2028	0.0464
	0.7831	**0.0146**	**<.0001**		**<.0001**	**<.0001**	**<.0001**	**<.0001**	**<.0001**	**<.0001**	**<.0001**	**<.0001**
CF	-0.0259	0.0119	-0.0026	0.0649		0.0945	-0.2255	0.1783	0.2493	0.3410	-0.2616	0.0413
	0.0006	0.1146	0.7351	**<.0001**		**<.0001**	**<.0001**	**<.0001**	**<.0001**	**<.0001**	**<.0001**	**<.0001**
ΔCash	0.0297	-0.0054	0.0035	-0.0223	0.0096		-0.0408	0.0761	-0.0124	-0.0369	-0.0142	-0.0167
	<.0001	0.4786	0.6418	**0.0032**	0.2032		**<.0001**	**<.0001**	0.1010	**<.0001**	0.0603	**0.0269**
ΔDebt	0.0198	-0.0248	-0.0045	0.0501	-0.1677	-0.0393		0.0146	0.0315	0.0103	0.0444	-0.0111
	0.0087	**0.0010**	0.5486	**<.0001**	**<.0001**	**<.0001**		0.0530	**<.0001**	0.1721	**<.0001**	0.1427
TOBINSQ	0.1728	0.0009	-0.0788	-0.0693	-0.2984	0.1046	0.0060		-0.0190	0.1318	0.1240	0.1862
	<.0001	0.9019	**<.0001**	**<.0001**	**<.0001**	**<.0001**	0.4282		**0.0121**	**<.0001**	**<.0001**	**<.0001**
DivYld	-0.0165	-0.0356	0.0632	0.0446	0.1128	-0.0187	0.0499	-0.0806		0.4139	-0.3565	-0.0041
	0.0294	**<.0001**	**<.0001**	**<.0001**	**<.0001**	**0.0132**	**<.0001**	**<.0001**		**<.0001**	**<.0001**	0.5858
Size	-0.0625	0.0209	-0.0329	0.1006	0.2652	-0.0235	0.0223	-0.1024	0.1849		-0.4686	0.0285
	<.0001	**0.0058**	**<.0001**	**<.0001**	**<.0001**	**0.0019**	**0.0031**	**<.0001**	**<.0001**		**<.0001**	**0.0002**
IMR	0.0125	0.0866	0.1681	-0.1948	-0.3297	-0.0168	0.0095	0.3765	-0.1576	-0.4524		-0.1312
	0.0980	**<.0001**	**<.0001**	**<.0001**	**<.0001**	**0.0267**	0.2091	**<.0001**	**<.0001**	**<.0001**		**<.0001**
GDP	0.0668	0.3283	-0.4598	0.0014	0.0029	-0.0190	0.0134	0.0688	-0.0277	0.0669	-0.0524	
	<.0001	**<.0001**	**<.0001**	0.8553	0.6977	**0.0121**	0.0758	**<.0001**	**0.0003**	**<.0001**	**<.0001**	

TABLE 7

Likelihood of Capital Expenditure Increases - Logistic Regressions

		(1) Full Sample (2006 - 2012)		(2) 0/100% Bonus Eras (2006-2007, 2010-2011)		(3) 50%/100% Bonus Eras (2008-2012): 100% Effect		(4) 0/50% Bonus Eras (2006-2010, 2012)		(5) 50%/100% Bonus Eras (2008-2012): 50% Effect	
	Predicted Sign	**Estimate**	**Pr > ChiSq**	**Estimate**	**Pr > ChiSq**	**Estimate**	**Pr > ChiSq**	**Estimate**	**Pr > ChiSq**	**Estimate**	**Pr > ChiSq**
Intercept		-0.5648	0.0008	0.7725	0.0145	-0.8033	<.0001	-0.6329	0.0003	-0.4107	0.0448
B100	+	0.3405	<.0001	0.4527	<.0001	0.3185	<.0001				
B50	?	-0.0363	0.3214					0.1643	0.0001	-0.3148	<.0001
MRep	-	-0.0574	0.0726	-0.0962	0.0222	-0.0640	0.0974	-0.0344	0.3164	-0.0287	0.4566
CF	+	0.2357	<.0001	0.1831	0.0001	0.2594	<.0001	0.2438	<.0001	0.2645	<.0001
ΔCash	?	-0.1224	0.0598	-0.0072	0.9328	-0.1292	0.0988	-0.1040	0.137	-0.1135	0.1471
ΔDebt	+	0.5947	<.0001	0.4104	0.009	0.5410	0.0005	0.5825	<.0001	0.4965	0.0014
TOBINSQ	+	0.0754	<.0001	0.0867	<.0001	0.0721	<.0001	0.0795	<.0001	0.0740	<.0001
DivYld	-	-0.1087	0.8351	-1.3095	0.119	-0.2076	0.7234	-0.0788	0.8862	-0.4134	0.4798
Size	+	0.0005	0.9532	-0.0248	0.0539	0.0001	0.9944	-0.0086	0.3436	-0.0042	0.6801
IMR	?	-0.0456	0.7849	-1.4464	<.0001	0.2092	0.272	-0.0754	0.6677	0.1841	0.3335
GDP	?	0.1696	<.0001	0.1092	0.0169	0.1775	<.0001	0.2127	<.0001	0.2109	<.0001
Increasing Firms		8,304		5,402		5,651		6,968		5,651	
Non-Increasing Firms		9,199		4,620		6,619		8,212		6,619	
Total Observations		17,503		10,022		12,270		15,180		12,270	
Likelihood Ratio		1048.45	<.0001	325.70	<.0001	851.16	<.0001	903.71	<.0001	848.29	<.0001

TABLE 8

Magnitude of Change in Capital Expenditures Ordinary Least Squares Regression

		(1) Full Sample (2006 - 2012)		(2) 0/100% Bonus Eras (2006-2007, 2010-2011)		(3) 50%/100% Bonus Eras (2008-2012)		(4) 0/50% Bonus Eras (2006-2010, 2012)		(5) 50%/100% Bonus Eras (2008-2012): 50% Effect	
	Predicted Sign	**Estimate**	**Pr > |t|**	**Estimate**	**Pr > |t|**	**Estimate**	**Pr > |t|**	**Estimate**	**Pr > |t|**	**Estimate**	**Pr > |t|**
Intercept		0.0943	<.0001	0.2593	<.0001	0.0902	<.0001	0.0836	<.0001	0.1040	<.0001
B100	+	0.0233	<.0001	0.0454	<.0001	0.0118	0.0009				
B50	?	0.0116	<.0001					0.0272	<.0001	-0.0097	0.0076
MRep	-	0.0001	0.9697	0.0005	0.8910	-0.0007	0.7990	0.0020	0.4810	0.0004	0.8798
CF	+	0.0124	<.0001	0.0122	0.0005	0.0150	<.0001	0.0116	0.0001	0.0151	<.0001
ΔCash	?	0.0388	<.0001	0.0307	0.0012	0.0434	<.0001	0.0398	<.0001	0.0436	<.0001
ΔDebt	+	0.0320	0.0036	0.0157	0.2695	0.0450	0.0004	0.0288	0.0167	0.0435	0.0006
ΔCash*CapEx	-	-0.0887	<.0001	-0.0613	<.0001	-0.0977	<.0001	-0.0898	<.0001	-0.0970	<.0001
ΔDebt*CapEx	+	0.0070	0.3413	0.0062	0.5172	0.0011	0.8914	0.0080	0.3425	0.0009	0.9110
TOBINSQ	+	0.0086	<.0001	0.0106	<.0001	0.0078	<.0001	0.0090	<.0001	0.0079	<.0001
DivYld	-	0.0230	0.5809	-0.0970	0.1506	0.0325	0.4536	0.0192	0.6696	0.0240	0.5779
Size	+	-0.0080	<.0001	-0.0135	<.0001	-0.0070	<.0001	-0.0080	<.0001	-0.0071	<.0001
IMR	?	-0.1343	<.0001	-0.2979	<.0001	-0.1149	<.0001	-0.1375	<.0001	-0.1167	<.0001
GDP	?	0.0043	<.0001	-0.0005	0.8928	0.0059	<.0001	0.0073	<.0001	0.0072	<.0001
Increasing Firms		8,304		5,402		5,651		6,968		5,651	
Non-Increasing Firms		9,199		4,620		6,619		8,212		6,619	
Total Observations		17,503		10,022		12,270		15,180		12,270	
Adjusted R-Square		0.0524		0.0608		0.0502		0.0533		0.0499	
F Value		44.97		31.89		31.87		41.66		31.68	

TABLE 9
Cumulative Abnormal Return Sample Industry Distribution: Change in Repurchases

	Full Sample		Increasing Firms		Non-Increasing Firms	
	Obs	**%**	**Obs**	**%**	**Obs**	**%**
Consumer NonDurables	413	5.56%	194	5.23%	219	5.90%
Consumer Durables	220	2.96%	106	2.86%	114	3.07%
Manufacturing	1,168	15.74%	590	15.90%	578	15.58%
Oil, Gas, and Coal Extraction and Products	604	8.14%	286	7.71%	318	8.57%
Chemicals and Allied Products	323	4.35%	156	4.20%	167	4.50%
Business Equipment	1,339	18.04%	703	18.94%	636	17.14%
Telephone and Television Transmission	377	5.08%	168	4.53%	209	5.63%
Wholesale, Retail, and Some Services	644	8.68%	347	9.35%	297	8.00%
Healthcare, Medical Equipment, and Drugs	896	12.07%	446	12.02%	450	12.13%
Other	1,438	19.37%	715	19.27%	723	19.48%
Total	7,422	100.00%	3,711	100.00%	3,711	100.00%

Cumulative Abnormal Return Sample Industry Quintile Distribution (Reverse Sort)

	Quintile 1		**Quintile 2**		**Quintile 3**		**Quintile 4**		**Quintile 5**	
	Obs	**%**	**Obs**	**%**	**Obs**	**%**	**Obs**	**%**	**Obs**	**%**
Consumer NonDurables	71	4.78%	71	4.78%	95	6.40%	93	6.26%	83	5.59%
Consumer Durables	42	2.83%	45	3.03%	52	3.50%	39	2.63%	42	2.83%
Manufacturing	198	13.34%	246	16.57%	276	18.60%	247	16.63%	201	13.54%
Oil, Gas, and Coal Extraction and Products	132	8.89%	93	6.26%	154	10.38%	99	6.67%	126	8.49%
Chemicals and Allied Products	58	3.91%	66	4.44%	65	4.38%	69	4.65%	65	4.38%
Business Equipment	282	19.00%	295	19.87%	208	14.02%	288	19.39%	266	17.92%
Telephone and Television Transmission	77	5.19%	58	3.91%	86	5.80%	76	5.12%	80	5.39%
Wholesale, Retail, and Some Services	132	8.89%	157	10.57%	118	7.95%	114	7.68%	123	8.29%
Healthcare, Medical Equipment, and Drugs	208	14.02%	163	10.98%	138	9.30%	181	12.19%	206	13.88%
Other	284	19.14%	291	19.60%	292	19.68%	279	18.79%	292	19.68%
Total	1,484	100.00%	1,485	100.00%	1,484	100.00%	1,485	100.00%	1,484	100.00%

TABLE 10
Descriptive Statistics and Tests of Differences in Means by Stock Repurchase Change

Panel A

Variables	Increasing Firms N	Increasing Firms Mean	Non-Increasing Firms N	Non-Increasing Firms Mean	
One Year Cumulative Abnormal Return (%)	3,711	0.1243	3,711	-0.0166	***
B100	3,711	0.2905	3,711	0.2802	
B50	3,711	0.5287	3,711	0.6095	***
Net Stock Repurchases (%)	3,711	0.0662	3,711	-0.0464	***
Change in Net Stock Repurchases (%)	3,711	0.1971	3,711	-0.1401	***
Change in Capital Expenditures / Lagged Total Assets (ΔCapEx)	3,711	-0.0182	3,711	-0.0082	***
ΔCapEx * B100	3,711	-0.2202	3,711	-0.0203	**
ΔCapEx * B50	3,711	-0.1301	3,711	0.1189	
Operating Income (%) (OpInc)	3,711	0.0898	3,711	0.0924	
Cash Flow / Lagged Total Assets (CF)	3,711	0.0614	3,711	0.0672	
Tobin's Q (TOBINSQ)	3,711	2.2164	3,711	2.2224	
Dividend Yield (%) (DivYld)	3,711	0.0108	3,711	0.0124	
Natural Logarithm of Market Value of Equity (Size)	3,711	6.6486	3,711	6.2691	***
Prior Year Cumulative Abnormal Return (%) (PYCAR)	3,711	-0.0462	3,711	0.0817	***
S&P 500 Average Return (SPRtn)	3,711	0.0004	3,711	0.0047	***

*, **, and *** denote a difference in means with significance of $p < 0.10$, $p < 0.05$, and $p < 0.01$ respectively.

Panel B

Variables	N	Mean	Std Dev	Lower Quartile	Median	Upper Quartile
One Year Cumulative Abnormal Return (%)	7,422	0.0538	0.8139	-0.36875	0.0151	0.4250
B100	7,422	0.2854	0.4516	0	0	1
B50	7,422	0.5691	0.4952	0	1	1
Net Stock Repurchases (%)	7,422	0.0099	0.2236	-0.01003	0	0.0306
Change in Net Stock Repurchases (%)	7,422	0.0285	0.4370	-0.01786	0	0.0425
Change in Capital Expenditures / Lagged Total Assets (ΔCapEx)	7,422	-0.0132	0.1409	-0.01322	-0.0002	0.0108
ΔCapEx * B100	7,422	-0.1203	6.0345	0	0	0
ΔCapEx * B50	7,422	-0.0056	7.6715	-0.00348	0	0.0002
Operating Income (%) (OpInc)	7,422	0.0911	0.1961	0.07056	0.1189	0.1678
Cash Flow / Lagged Total Assets (CF)	7,422	0.0643	0.2855	0.00695	0.0813	0.1534
Tobin's Q (TOBINSQ)	7,422	2.2194	2.8958	1.12082	1.5483	2.3152
Dividend Yield (%) (DivYld)	7,422	0.0116	0.0262	0	0	0.0135
Natural Logarithm of Market Value of Equity (Size)	7,422	6.4588	2.0099	5.07929	6.4685	7.8162
Prior Year Cumulative Abnormal Return (%) (PYCAR)	7,422	0.0177	0.8529	-0.41179	-0.0110	0.4066
S&P 500 Average Return (SPRtn)	7,422	0.0026	0.0176	0.00096	0.0108	0.0115

TABLE 11

One Year Cumulative Abnormal Returns Following 10-K Release: Change in Share Repurchases

		(1) Full Sample		(2) Increase in Share Repurchases (100% Bonus Effect)		(3) No Increase in Share Repurchases (100% Bonus Effect)		(4) Increase in Share Repurchases (50% Bonus Effect)		(5) No Increase in Share Repurchases (50% Bonus Effect)	
	Predicted Sign	**Estimate**	**Pr > |t|**	**Estimate**	**Pr > |t|**	**Estimate**	**Pr > |t|**	**Estimate**	**Pr > |t|**	**Estimate**	**Pr > |t|**
Intercept		0.3079	<.0001	0.4052	<.0001	0.0498	0.3377	0.4997	<.0001	0.0620	0.2486
B100	-	-0.1626	<.0001	-0.1772	<.0001	-0.1308	<.0001				
B50	-	-0.1638	<.0001					-0.1954	<.0001	-0.0954	0.0003
NetSTK	+	0.1515	0.0003	0.0672	0.2481	0.1729	0.0084	0.0460	0.4284	0.1769	0.0072
ΔCapEx	?	-0.0218	0.7456	0.0404	0.6508	-0.0826	0.4326	-0.0040	0.9643	-0.1379	0.1791
ΔCapEx * B100	+	-0.0031	0.0967	-0.0015	0.3198	-0.0030	0.8259				
ΔCapEx * B50	?	0.0033	0.0283					-0.0009	0.587	0.0037	0.0376
OpInc	+	0.0868	0.1212	0.2234	0.0043	-0.0312	0.6991	0.2405	0.0021	-0.0005	0.9947
CF	-	-0.2743	<.0001	-0.2728	<.0001	-0.2546	<.0001	-0.2744	<.0001	-0.2773	<.0001
TOBINSQ	?	-0.0375	<.0001	-0.0402	<.0001	-0.0286	<.0001	-0.0403	<.0001	-0.0305	<.0001
DivYld	+	1.6974	<.0001	0.5052	0.3355	2.3734	<.0001	0.8420	0.1072	2.5687	<.0001
Size	+	-0.0064	0.1883	-0.0256	0.0003	0.0098	0.1446	-0.0328	<.0001	0.0118	0.0803
PYCAR	+	0.1031	<.0001	0.1260	<.0001	0.0713	<.0001	0.1501	<.0001	0.0930	<.0001
SPRtn	-	-9.7466	<.0001	-6.8864	<.0001	-11.3708	<.0001	-8.7807	<.0001	-11.4822	<.0001
Total Observations		7,422		3,711		3,711		3,711		3,711	
Adjusted R-Square		0.1168		0.1086		0.1108		0.1127		0.1099	
F Value		45.63		23.60		24.11		24.57		23.91	

TABLE 12

One Year Cumulative Abnormal Returns Following 10-K Release: Change in Share Repurchase Quintiles

		(1) Large Increase in Share Repurchases		(2) Small to Moderate Increase in Share Repurchases		(3) Zero Increase in Share Repurchases		(4) Small to Moderate Decrease in Share Repurchases		(5) Large Decrease in Share Repurchases		
	Predicted Sign	**Estimate**	**Pr > |t|**	**Estimate**	**Pr > |t|**	**Estimate**	**Pr > |t|**	**Estimate**	**Pr > |t|**	**Estimate**	**Pr > |t|**	
Intercept		0.3657	0.0001	0.7245	<.0001	0.3347	0.0006	0.1228	0.1266	0.0046	0.9609	
B100	-	-0.1618	0.0005	-0.2086	<.0001	-0.1765	0.0004	-0.1352	0.0008	-0.1332	0.0106	***
B50	-	-0.1576	0.0002	-0.2427	<.0001	-0.1947	<.0001	-0.1128	0.0026	-0.1310	0.0019	***
NetSTK	+	0.0590	0.3634	-0.0171	0.9445	0.0792	0.9416	0.1650	0.5676	0.1200	0.1005	***
ΔCapEx	?	0.0164	0.8804	0.0948	0.6088	0.0259	0.9118	0.0803	0.6692	-0.3567	0.0245	
ΔCapEx * B100	+	-0.0006	0.8610	0.0018	0.9710	0.0006	0.9740	0.0979	0.6188	0.0142	0.9721	
ΔCapEx * B50	?	0.0087	0.1652	-0.0029	0.9546	-0.0071	0.7392	0.0025	0.1574	0.0166	0.0111	*
OpInc	+	0.2806	0.0047	-0.0853	0.5807	-0.0256	0.9075	0.0801	0.5249	0.0166	0.8843	***
CF	-	-0.2392	<.0001	-0.4552	<.0001	-0.3121	0.0053	-0.2572	0.0083	-0.3216	<.0001	
TOBINSQ	?	-0.0263	<.0001	-0.0858	<.0001	-0.0480	<.0001	-0.0249	0.0022	-0.0393	<.0001	
DivYld	+	-0.1852	0.8244	1.0163	0.2086	1.7319	0.0375	3.2597	<.0001	2.5354	0.0014	***
Size	+	-0.0132	0.2665	-0.0330	0.0021	0.0097	0.4530	0.0000	0.9976	0.0238	0.0317	
PYCAR	+	0.1521	<.0001	0.0882	0.0004	0.1184	<.0001	0.0625	0.0096	0.0879	0.0002	***
SPRtn	-	-9.9448	<.0001	-7.7365	<.0001	-9.7241	<.0001	-9.4558	<.0001	-10.3339	<.0001	***
Total Observations		1,484		1,485		1,484		1,485		1,484		
Adjusted R-Square		0.1263		0.1493		0.0979		0.0916		0.1392		
F Value		10.74		12.84		8.31		7.80		11.90		

*, **, and *** denote a difference in coefficients between the first and fifth quintiles with significance of p < 0.10, p < 0.05, and p < 0.01 respectively.

TABLE 13

One Year Cumulative Abnormal Returns Following 10-K Release: ETR and CapEx Partitions

		(1) Above Mean Effective Tax Rate		(2) Near Mean Effective Tax Rate		(3) Below Mean Effective Tax Rate		(4) No Increase in Capital Expenditure		(5) Increase in Capital Expenditures	
	Predicted Sign	**Estimate**	**Pr > |t|**	**Estimate**	**Pr > |t|**	**Estimate**	**Pr > |t|**	**Estimate**	**Pr > |t|**	**Estimate**	**Pr > |t|**
Intercept		0.2254	<.0001	0.0551	0.3453	0.3746	<.0001	0.4325	<.0001	0.1780	0.0013
B100	-	-0.1043	0.0002	-0.1695	<.0001	-0.1872	<.0001	-0.1265	<.0001	-0.1628	<.0001
B50	-	-0.1548	<.0001	-0.1585	<.0001	-0.2083	<.0001	-0.2202	<.0001	-0.1384	<.0001
NetSTK	+	0.2393	<.0001	0.2741	<.0001	0.0747	0.3431	0.0565	0.3648	0.2307	<.0001
ΔCapEx	?	-0.1465	0.1377	0.0507	0.6210	-0.0392	0.7808	-0.0541	0.4933	0.6415	0.0048
ΔCapEx * B100	+	-0.0055	0.5706	0.0004	0.8703	-0.0075	0.6659	0.0016	0.5930	-0.0023	0.9791
ΔCapEx * B50	?	0.0043	0.6631	0.0042	0.0062	0.0117	0.3780	-0.0027	0.4243	0.0027	0.1001
OpInc	+	0.2101	0.0658	0.2211	0.0574	0.2400	0.0110	0.1126	0.1483	-0.0044	0.9577
CF	-	-0.1796	0.0076	-0.0110	0.8737	-0.2438	<.0001	-0.2185	0.0008	-0.2640	<.0001
TOBINSQ	?	-0.0293	<.0001	-0.0372	<.0001	-0.0388	<.0001	-0.0955	<.0001	-0.0317	<.0001
DivYld	+	0.7625	0.1398	0.9413	0.0866	2.2443	0.0011	0.4683	0.3498	2.7888	<.0001
Size	+	-0.0068	0.3154	0.0098	0.1593	0.0035	0.7682	-0.0014	0.8386	0.0028	0.6819
PYCAR	+	0.0927	<.0001	0.0619	0.0004	0.1139	<.0001	0.0898	<.0001	0.1091	<.0001
SPRtn	-	-3.2868	<.0001	-4.3050	<.0001	-17.7286	<.0001	-9.0426	<.0001	-10.2983	<.0001
Total Observations		2,474		2,474		2,474		3,754		3,668	
Adjusted R-Square		0.0667		0.0737		0.1835		0.1192		0.1835	
F Value		9.04		9.94		26.26		24.09		26.26	

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