DO FIRMS SHAVE CAPITAL EXPENDITURES WHEN REPURCHASING SHARES?

Yatin N. Bhagwat, Grand Valley State University
Marinus DeBruine, Grand Valley State University

ABSTRACT

Increasingly corporate management is characterized as forgoing (long-term) investments in the company's future and distributing funds to company shareholders in the form of share repurchases. This paper examines to what extent firms pass up value-increasing capital expenditures with share repurchases. This paper also contributes to the debate on whether share repurchases can be taken as a sign of undervalued equity.

Employing a matched sample constructed from firms across all but the financial and regulated industries during the 1998-2014 time period, this study compares capital expenditures by firms that repurchase shares to those that did not. Our results do not support the assertion that firms shave investments to repurchase shares; instead, these findings corroborate the notion that firms regularly return funds to shareholders because they generate more funds than they can use in light of the growth opportunities they face.

Keywords: Share Repurchases, Capital Expenditures, Free cash-flow, Financialization.

INTRODUCTION

This paper studies the relationship between share repurchases and long-term investments (capital expenditures, research and development, and advertising) in the U.S economy from 1998 through 2014. Some researchers (Orhangazi, 2008; Lazonick, 2011; Almeida et al., 2016) have characterized share repurchasing firms as foregoing long-term investments in favor of distributions to shareholders. After the SEC established Rule 10b-18 of the Securities Exchange Act in 1982, firms have been allowed to buy back their shares on the open market with virtually no regulatory limits. Grullon and Michaely (2002) show that immediately following that Act firms started substituting share repurchases for dividend payouts. Lazonick (2014) reports that over the past 30 years companies belonging to the S&P 500 distributed a growing proportion of their income as share repurchases: an average of 25% between 1984 and 1993, 37% between 1994 and 2003, and 47% between 2004 and 2013. He calls for a repeal of Rule 10b-18 and argues that it threatens our economic prosperity because corporate distributions "*crowd out*" investments in growth opportunities and thus provide lower employment opportunities as evidenced by the slow recovery following the recent financial crisis.

Share repurchases have been getting scrutiny from Congress too. For example, Senator Elizabeth Warren said in a 2015 interview with the Boston Globe that share repurchases boost prices in the short run, but "*the real way to boost the value of a corporation is to invest in the future, and they are not doing that*." She explained that prior to the adoption of Rule 10b-18 large share repurchases were treated as stock manipulation and that she was in favor of undoing the SEC rule. In early 2018, Senators Cory Booker and Robert Casey introduced the Worker Dividend Act with the intent of limiting share repurchases because of the concern that with companies frequently using their cash and taking on debt in order to repurchase large numbers of

shares the shareholders capture all the value from what should be considered shared resources shared with workers and other company stakeholders (Booker et al., 2018).

We hypothesize that firms forgo investing in their future and instead distribute those funds to shareholders. Hence, similarly-sized firms with similar growth opportunities operating in the same industry should spend more on capital expenditures, research & development, and advertising than their share-repurchasing counterparts. Using S&P's COMPUSTAT database to obtain annual firm observations from 1997 through 2015 and slightly modifying a technique first used by Lie (2001), this paper matches those observations on four dimensions time period, industry affiliation, size, and growth opportunities. The results show that similarly-sized firms facing similar growth opportunities make similar long-term investments irrespective of whether they repurchase shares or not, which is inconsistent with the hypothesis. Instead, our results show that those matched firms differ significantly in terms of performance (i.e., repurchasing firms have significantly higher ROAs in the year preceding the repurchase year), available funds (i.e., repurchasing firms are significantly better funded at the beginning of the repurchase year) and leverage (i.e., repurchasing firms have significantly lower leverage at the beginning of the repurchase year). These findings are consistent with the free cash-flow hypothesis that claims that management will distribute excess funds rather than over-invest in order to mitigate agency costs (Jensen, 1986).

The remainder of the paper is organized as follows: the next section discusses the related literature and hypothesis in more detail. Next we describe the selection approach and provide descriptive statistics on the sample's firm characteristics. Next we discuss the results and the final section contains our concluding remarks.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

At the heart of the trade-off between repurchasing shares and investing in the firm's future lies financialization a term used to describe the rise of finance in the economy. Krippner (2005) refers to it as a "*pattern of accumulation in which profit making occurs increasingly through financial channels rather than through trade and commodity production*". The rise of finance as a dominant force in the economy has been argued to occur mostly when the productive economy is in decline (Arrighi, 1994). Analyzing non-financial corporations, Orhangazi (2008) uses firm level data from 1973 to 2003 to show that increased financial investment and increased financial profit opportunities may have crowded out real investments by changing the incentives of firm managers. First he shows that during that time total financial payments increased as a percentage of profits before taxes. Using a GMM estimation technique and regressing corporate investments against lagged investments, profits, sales, debt, financial profits, and financial payouts, he finds that his financial payout variable (dividends plus stock repurchases) has the negative coefficient predicted by financialization theory and is statistically significant. Those results support the argument that increased financial payout ratios decrease corporate investments by allocating funds away from investment. In light of this evidence we question to what extent this finding might be caused by the general decline in growth opportunities faced by non-financial corporations as they mature.

Davis (2013) studies the relationship between financialization and investment in the U.S. between 1971 and 2011 and finds that larger firms obtain a proportionately larger share of their income from financial income further evidence of the negative impact of financialization on real investment. Continuing at the firm level, Lazonick (2011) argues that financialization promotes a focus on stock prices which in turn leads management to "*downsize and distribute*" by

repurchasing shares in order to raise the stock price and increase their compensation. This represents a striking shift from an earlier strategy of "*retain and reinvest*" by which management holds on to profits and plows them back in order to grow their operations, thereby benefiting other stakeholders such as employees.

Repurchase-based earnings management is a strand of the financialization literature that deserves special attention here. Prior research has shown that firms that would otherwise narrowly miss the analysts' earnings consensus without conducting share repurchases are more likely to repurchase shares than firms that beat their earnings forecast by a few cents (Hribar et al., 2006; Farrell et al., 2014; Almeida et al., 2016). Hribar et al. (2006) are the first to find evidence that a disproportionately large number of firms have earnings-per-share-increasing repurchases (called accretive repurchases) when they would have marginally missed the analysts' earnings consensus without the repurchase, while a disproportionately small number of firms have non-accretive repurchases when their earnings per share are just above the analysts' earnings consensus before the repurchase. Farrel et al. (2014) examine how financing constraints affect the use of accretive repurchases and find that the presence of debt-financing constraints discourages the use of repurchase-based earnings management. Employing a fuzzy regression discontinuity framework, Almeida et al. (2016) show that accretive repurchases are associated with reductions in employment and investment evidence that to them suggests that firms are willing to trade off investment and employment for stock repurchases that allow these firms to meet analysts' earnings forecasts. Oded and Michel (2008) estimate that about 16% of the EPS increases during the 2002-2006 period can be traced to share repurchases. They provide mathematical support for share repurchases increasing reported EPS while not changing shareholder value. In light of this evidence this paper's research question is: Do firms repurchase shares at the expense of investing in their own (and that of their employees' and taxpayers') future?

Firms might well be shaving investments in order to repurchase shares, but a competing explanation for the increasing payouts phenomenon is when firms experience a contraction in their investment opportunity set and simultaneously an increase in their free cash flows. Share repurchases can be used to reduce the amount of free cash flow, thereby reducing potential over-investment by management (Jensen, 1986). Grullon and Michaely (2004) find that repurchasing firms reduce their current level of capital expenditures and research & development expenses, as well as the level of cash reserves on their balance sheets. Consistent with the free cash-flow hypothesis, their findings indicate that firms increase their cash payouts in response to a deteriorating investment opportunity set. This paper reexamines those firm characteristics using more recent years in light of the findings by Lazonick (2014) and Almeida et al. (2016) that firms appear willing to give up investing in their future in order to repurchase shares. That is, if repurchasing firms forgo investing in their future and instead distributes those funds to shareholders then similarly-sized non-repurchasing firms with similar growth opportunities operating in the same industry should spend more on capital expenditures, research & development, and advertising. Thus, the null of our hypothesis states that repurchasing and non-repurchasing firms spend the same on capital expenditures, research and development, and advertising:

$$H_0: \ Investments_{repurchasing\ firm} = Investments_{non\text{-}repurchasing\ counterpart}$$

Not all share repurchases come at the expense of investing in a firm's future. After 1982 many firms started repurchasing shares in lieu of dividends because repurchases signal less of a

commitment and thus provide more flexibility than dividends (Grullon and Michaely, 2002). However, there remains a place for dividends representing an ongoing commitment to pay out cash they help address the agency costs of free cash flows (Jensen, 1986) and signal management's confidence in their firm's underlying financial strength (Baker et al., 2015). Floyd et al. (2015) look back over 30 years and find that especially for industrial firms aggregate dividends declined sharply from 1982 through 2002 but then grew again after 2002 with barely a decline during the financial crisis of 2007-2009. They picture a very different trajectory for aggregate share repurchases: share repurchases increased sharply from almost nothing in 1982 to $453 billion in 2007 (more than twice as large as aggregate dividends in 2007), were reduced to a mere $130 billion in 2009 a 70% decline, and by 2011 they once again exceeded aggregate dividends. This reflects the key advantage of repurchases: they can be cut quickly when financial performance weakens. So it appears that they are not perfect substitutes but to control for the substitution effect we also analyzed the contemporaneous effects of a firm's total payouts (net share repurchases and dividends) on its capital expenditures and obtained qualitatively similar results.

METHODOLOGY

Data Collection and Variable Construction

This study uses S&P's Compustat North America annual data from 1997 through 2015, available from S&P's Research Insight database. To mitigate survivor bias, we obtain observations from the current and research database. Following other empirical studies, we delete all observations with industry codes related to banking, insurance, and utilities. Using the Global Industry Classification Standard, this leaves eight 2-digit sectors and 116 8-digit subindustries. We drop all observations that are missing valid data for main balance sheet categories, market value of the common equity, or net cash flows from operating, investing, and financing activities. Finally, we drop firm-year observations with total assets below $1 million to avoid the small denominator effect. This selection approach generates 74,192 firm-year observations representing 8,931 firms operating in 116 distinct 8-digit subindustries for which we pull or construct some additional data items next.

Capital expenditures represent investments in facilities and other productive assets employed to generate current and future revenues. Such investments are typically capitalized and subsequently depreciated or amortized. Firms also make investments in research and development and expend advertising dollars to generate current and future revenues. These investments are typically not capitalized but immediately expensed. In order to focus on the trade-off between share repurchases and expenditures that generate current and future revenues, we construct the variable "*Investments*" that combines the capital expenditures with the research & development and advertising expenditures paid in each reporting period (respectively, COMPUSTAT data items CAPX, XRD, and XAD). By virtue of the sample construction process, most firms represented report capital expenditures; however, the same is not true for research & development or advertising expenditures which are often combined with other expenditures in the Research Insight database. We substitute zeros for any non-useable entries for R&D or advertising in the dataset.

Adam and Goyal (2008) use a real options approach to evaluate the performance of several proxy variables for a firm's investment opportunity set. Their findings show that when compared with Equity MtB and Earnings-Price ratio Asset MtB has the highest information

content with respect to investment opportunities. Following Almeida et al. (2016) we create a proxy for Tobin's Q Asset Market-to-Book (Asset MtB) using the following COMPUSTAT data items: Market Value of Common Equity (MKVALF) plus Total Assets (TA) minus book value of common equity (CEQ) and deferred taxes (TXDB), all scaled by total assets. The variable Cash plus securities is COMPUSTAT data item CHE, the variable Available Funds is the sum of the book value of cash, short-term investments, and prior year's net cash flow from operating activities (COMPUSTAT data item OANCF). The variable ROA (return on assets) is the ratio of income to common before extraordinary items (COMPUSTAT data item IBCOM) over total assets. The variable LEV (leverage) is the ratio of total debt (COMPUSTAT data item DT) over total assets.

Following Floyd et al. (2015) we measure repurchases net as the difference between stock purchases and stock issuances from the statement of cash flows (COMPUSTAT data items PRSTKC and SSTK). This will remove the effects of shares repurchased for employee stock option programs or shares repurchased to fund acquisitions. Similar to Grullon and Michaely (2004) and Lie (2005), we require that the annual net repurchases are sizeable–at least 1% of the beginning of that year's total assets. This approach produces a set of 13,033 (14,712) firm-year observations representing 3,113 (3,936) different repurchasing firms during 1998-2014 (1997-2015). 297 of those 3,113 firms repurchased shares for at least 9 years during 1998-2014, while just 8 firm repurchased shares valued at more than one percent of total assets in all 17 years.

The enactment of SEC Rule10B-18 in 1982 allowed firms to repurchase shares in the open market, and we are not aware of any regulatory policies explicitly prohibiting management from repurchasing shares. Accordingly, we assume that all firms could potentially decide to repurchase shares at some point (even though more than one-third of the firms didn't do so at all during the 1997-2015 time period from which we obtained our initial data). We identify all firm-year observations that contain no share repurchases of any size for three years in a row and select the middle-year observation. We select only the middle-year observation to avoid that a repurchase happened just before or after the year without a repurchase. This selection approach avoids the tedious task of reviewing specific repurchasing dates; however, because of this approach there are no observations from 1997 or 2015 in the set of non-repurchasing firms or the subsequently-constructed matched samples. This approach results in a set of 23,588 firm-year observations representing 5,325 non-repurchasing firms during 1998-2014 from which we will select the repurchasing firms' non-repurchasing counterparts.

Sample and Descriptive Statistics

Business cycles affect the growth opportunities, performance and cash flows of firms differently. For example, consumers preserve funds during a recessionary period by postponing investments in durable goods such as cars and appliances and/or by eating more often at home rather than in restaurants. Firms react in turn and preserve funds by reducing investments in their operations and/or distributions to owners. In order to control for differential business cycle impacts we initially match firm-year observations by GICS industry code and by year. To examine the behavior of the repurchasing firms relative to that of their non-repurchasing peers, this study creates sets of matched firm-year observations in which each match is made up of a repurchasing firm and a non-repurchasing firm operating in the same year and industry. Lie (2001) and others chose to match on 2-digit Standard Industry codes and relaxed that standard even further if they couldn't find a suitable match. Instead, we choose to only match firms that share the same 8-digit industry classification. Even though this means using 116 different

subindustries, we believe that "*closely resemble*" is already a stretch within the 8-digit industry code, and going to four- or two-digit codes matches too many firms that differ significantly in their operations.

Because size can differentiate firms on dimensions such as profitability (due to economies of scale), growth opportunities and free cash flows (due to life cycle stage), and leverage (smaller firms are perceived to be more risky and thus have a larger proportion of equity in their capital structure), we decide to first match on size. Using an approach similar to the one employed by Lie (2001) and others, we then match on size as proxy by its beginning-of-year total assets (being within 20 percent of the repurchasing firm's beginning-of-year total assets). This approach results in an initial sample of 3,417 matches or almost a quarter of the 13,033 repurchasing firm-year observations from 1998 through 2014. Table 1 presents the firm characteristics of the initial sample of 3,417 matched firm-year observations.

Table 1
DESCRIPTIVE STATISTICS FOR MATCHED FIRM-YEAR OBSERVATIONS

Initial sample	Repurchasing firm-years			Non-repurchasing firm-years		
No. of observations	3,417			3,417		
No. of firms	1,776			1,868		
Firm characteristics (in $ millions)	Mean	Median	St. dev.	Mean	Median	St. dev.
$Repurchases_t$	73	12	260	0	0	0
$Payouts_t$	93	14	354	11	0	70
$Capital\ expenditures_t$	70	8	337	70	7	387
$Investments_t$	111	20	424	102	19	428
$Total\ assets_{t-1}$	1,011	210	3,296	979	208	3,152
$Cash\ plus\ securities_{t-1}$	145	32	460	109	22	349
$Available\ funds_{t-1}$	275	70	855	177	40	581
$Income\ to\ common_{t-1}$	74	10	316	8	1	202
$Total\ debt_{t-1}$	216	5	865	315	21	388
(standardized and winzorized) $Net\ repurchases_t$	0.071	0.042	0.079	0.000	0.000	0.000
$Payouts_t$	0.096	0.063	0.111	0.007	0.000	0.038
$Capital\ expenditures_1$ ($CAPX_t$)	0.060	0.033	0.076	0.061	0.033	0.081
Change in $CAPX_t$	-0.003	-0.001	0.056	-0.012	-0.001	0.105
$Investments_t$	0.128	0.094	0.215	0.136	0.094	0.150
$Cash\ plus\ securities_{t-1}$	0249	0.192	0223	0.197	0.109	0222
$Available\ funds_{t-1}$	0.359	0.322	0237	0217	0.165	0256
$AMtB_{t-1}$	2.101	1.675	1.389	2.019	1.393	3.681
$EBtM_{t-1}$	0.568	0.454	0.456	0.584	0.488	2.620
ROA_{t-1}	0.044	0.065	0.148	-0.058	0.013	0293
LEV_{t-1}	0.133	0.057	0.171	0245	0.187	0298

Inspecting the top section of Table 1 it can be seen that on average repurchasing firms spend as much on capital expenditures, research & development, and advertising as their similar-sized non-repurchasing counterparts ($111 million *vs.* $102 million). To fund their higher average outlays repurchasing firms have slightly higher liquid assets at the beginning of the repurchase year as measured by average Cash plus securities ($145 million *vs*. $109 million) but significantly higher average liquid assets when those are combined with the prior year's Net cash flows from operations into Available funds ($275 million *vs*. $177 million). Finally, the average Income to common before extraordinary items (IBCOM) is significantly higher ($74 million *vs.* $8 million) indicating that repurchasing firms are on average more profitable (and thus generate higher cash flows from operations) than their non-repurchasing counterparts.

We further standardize all firm characteristics in order to better compare and analyze differences across the matched firms. Size appears to drive many of the differences and dividing by total assets further controls for the effect of size on the other firm characteristics. Following Almeida et al. (2016) and others, we apply a 98% winsorization to the standardized characteristics to cut down on spurious outliers. This paper's results are qualitatively similar using non-winsorized variables; however, the statistical significance of the non-winsorized results is reduced due to higher variances.

The bottom part of Table 1 reveals that as a proportion of total assets capital expenditures and investments appear very similar for the matched firms. However, repurchasing firms appear to generate on average more Available funds (36% *vs.* 22% of total assets), have higher average Asset MtB values (2.10 *vs*. 2.02), and lower Leverage (13% *vs*. 25% of total assets) at the beginning of their repurchasing year as compared to their similarly-sized non-repurchasing counterparts.

Grullon and Michaely (2004) posited that repurchasing firms face fewer growth opportunities and thus reduce their capital expenditures in future periods. The repurchasing firms in our initial sample face more growth opportunities (as proxy by the higher average beginning Asset MtB values) than their non-repurchasing counterparts, so we are not testing their hypothesis here. Our question of whether repurchasing and non-repurchasing firms do in fact invest similarly can be best answered by comparing firms with similar growth opportunities. The next section describes this further selection process and reports our results.

RESULTS

We first show that from 1998 through 2014 repurchasing firms were as likely to increase their capital expenditures as their non-repurchasing counterparts. We calculate the percentage of firm-year observations that increased their capital expenditures and standardized capital expenditures (CAPX as a percentage of Total assets) as compared to the prior year. We perform these calculations for our initial set of 13,033 observations of firms that repurchase shares during the year equal to at least one percent of their total assets at the beginning of the year as well as for the 23,588 observations of firms that did not repurchase shares at all during the year (nor the years before and after). Next we calculate these percentages for the initial sample of 3,417 matched firm-year observations. Table 2 presents the results of our calculations.

Table 2
PROPORTION OF CAPX-INCREASINGFINN-YEAR OBSERVATIONS DURING 1998-2014

	Repurchasing firm-years			**Non-repurchasing firm-Years**		
		with increasing			**with increasing**	
	N	$CAPX_t$	$CAPXt/AT_{t-1}$	N	$CAPX_t$	$CAPX_t/AT_{t-1}$
Initial Sets	13,033	7,362 (56.5%)	6,192 (47.5%)	23,588	11,681 (49.5%)	10,620 (45.0%)
Initial Sample of matched firm-years	3,417	1,876 (54.9%)	1,601 (46.6%)	3,417	1,794 (53.5%)	1,491 (43.6%)

Inspecting Table 2 reveals that more than 50 percent of the firm-year observations show increases in capital expenditures when compared to the year before. When capital expenditures are standardized by the beginning of the year total assets, those percentages fall below 50 percent. When compared to non-repurchasing firms, more repurchasing firms appear to increase their (standardized) capital expenditures than their non-repurchasing counterparts. This finding

does not support the contention that firms repurchase shares at the expense of investing in their future.

To test our hypothesis whether repurchasing firms forgo investing for their future and instead distribute those funds to shareholders, we first select a subsample of similar-sized firms facing similar growth opportunities as measured by their beginning-of-year Asset MtBs. Using the approach employed in Lie (2001) and others, we match on beginning-of-year Asset MtB being within 20 percent of the repurchasing firm's beginning-of-year Asset MtB. This strict condition results in a subsample of 844 matches (or 25% of the initial sample of 3,417 matches) made up of similar-sized repurchasing and non-repurchasing firms operating in the same year and subindustry and facing similar growth opportunities. Table 3 presents the results of the paired t-tests on the standardized firm characteristics of the strictly matched firms in the first subsample. As an attest to the robustness of our findings: Relaxing the growth opportunity constraint by a factor of 10 produces an expanded subsample of 2,289 matches (or over 65 percent of the initial sample of 3,417 matched firm-year observations) with qualitatively similar results.

Table 3
PAIRED T-TEST RESULTS FOR TEST OF HYPOTHESIS USING STANDARDIZED CHARACTERISTICS

Subsample of matched firm-years	Repurchasing	Non-repurchasing		
No. of observations	844	844	Paired t-tests	
No. of finds	674	669	*Ho*: Mean difference=0	
Standardized characteristics	Mean	Mean	t-stat	p-value
Net repurchases$_t$	0.063	0.000		
Payouts$_t$	0.082	0.008		
Capital expenditures$_t$ (CAPX$_t$)	0.063	0.062	0.297	0.767
Change in CAPX$_t$	0.067	0.103	-1.205	0.229
lnvestments$_t$	0.114	0.120	-1.040	0.299
Cash plus securities$_{t-1}$	0.217	0.166	6.748	0.000
Available funds$_{t-1}$	0.315	0.201	12.643	0.000
EBtM$_{t-1}$	0.629	0.531	2.518	0.012
ROA$_{t-1}$	0.035	-0.024	7.477	0.000
LEV$_{t-1}$	0.157	0.265	-11.767	0.000

We perform paired t-test on the standardized firm characteristics. First, the t-values for the difference in the sample means of both standardized expenditure variables Capital expenditures, Changes in Capital expenditures, and Investments are 0.297, -1.205 and -1.040, respectively. In other words, those average expenditures levels are not different ($p>0.25$) and at the conventional significance level ($\alpha=0.05$) we do not reject the null of our hypothesis that repurchasing and non-repurchasing firms spend similar amounts on capital expenditures, research & development, and advertising. This finding is noteworthy as Lazonick (2014) and Almeida et al. (2016), among others, argue that firms are making trade-offs between share repurchases and investments in their future. It's not being disputed here that some firms won't do so but our results suggest that for now it is not the norm.

Looking to the remaining t-test results, we find significant differences in the sample means of the standardized Cash plus securities ($p=0.000$), Available funds ($p=0.000$), ROA ($p=0.000$), and LEV ($p=0.000$) at the beginning of the year. That is, on average repurchasing firms have more liquid assets, are more profitable, and are less leveraged than their non-repurchasing

counterparts. This finding supports the notion that on average firms appear to maximize shareholder value by distributing excess funds and/or taking advantage of their favorable leverage ratio.

Finally, repurchasing firms have higher average EBtM values at the beginning of the year as compared to their non-repurchasing counterparts ($p<0.015$). Higher EBtM values at the beginning of the year are consistent with the market undervaluing the potential of these repurchasing firms. However, a relatively higher EBtM value can be caused by a relatively lower leverage, a relatively lower performance, or a relatively higher cost of capital. In this case the lower leverage explains the higher EBtM. The higher average EBtM changes into a lower average EBtM for repurchasing firms when selecting only those 577 matches from the initial sample for which the leverage is within 20 percent of each other.

CONCLUSION

This study analyzes firms' decisions regarding share repurchases and making investments in their future. Prior research has found that in special cases firms make trade-offs between these two and has gone so far as calling for a repeal of Rule 10b-18 of the Security Exchange Act that allows firms to repurchase shares on the open market. Our findings do not support a repeal of that rule.

This study contributes to the literature on share repurchases by providing evidence that on average repurchasing firms increase their standardized capital expenditures at least as frequently as and on average spend at least as much on capital expenditures as their non-repurchasing counterparts. Using a sample of firm-year observations from 1998-2014 that was matched on industry affiliation, year, size, and growth opportunities, we go on to show that in general firms do not appear to repurchase shares at the expense of making investments in the future of the firm. This finding does not support our first hypothesis that firms repurchase shares at the expense of investing in their future.

Instead, we find that repurchasing firms have more available funds and are less leveraged than their non-repurchasing counterparts. We interpret this finding as being consistent with the shareholder value maximization theory popularized by Michael Jensen (1986) who argued that firms will distribute excess funds to their shareholders. Our finding is also consistent with Grullon and Michaely (2004) who found that repurchasing firms reduce their current level of capital expenditures caused by a deteriorating investment opportunity environment. As such, our finding agrees with many others who have made similar associations between share repurchases and free cash flows.

In this study we show that repurchases do not cause firms to shave capital expenditures. Other studies (Almeida et al., 2016) have shown that EPS-motivated repurchases tend to shave capital expenditures, employment, and research & development decisions. In a similar vein, it is possible that a subset of our repurchasing firms might well be shaving capital expenditures in order to signal their undervalued equity. Further study on the interplay of capital expenditures, repurchases, and equity values could shed light on the relative impact of these and similar policies.

REFERENCES

Adam, T., & Goyal, V.K. (2008). The investment opportunity set and its proxy variables. *Journal of Financial Research, 31*(1), 41-63.

Almeida, H., Fos, V., & Kronlund, M. (2016). The real effects of share repurchase. *Journal of Financial Economics*, *119*(1), 168-185.

Arrighi, G. (1994). *The long twentieth century: Money, power, and the origins of our times*. London, UK: Verso.

Baker, M., Mendel, B., & Wurgler, J. (2015). Dividends as reference points: A behavioral signaling approach. *The Review of Financial Studies*, *29*(3), 697-738.

Booker, C., & Casey, R.P. (2018). *Senate bill 2505-Worker dividend act*. Retrieved from https://www.congress.gov/bill/115thcongress/senatebill/2505?q=%7B%22search%22%3A%5B%22workers+dividend+act%22%5D%7D&r=1

Davis, L.E. (2013). *Financialization and the nonfinancial corporation: An investigation of firm level investment behavior in the US, 1971-2011* (No. 2013-08). Working Paper, University of Massachusetts, Department of Economics.

Farrell, K., Unlu, E., & Yu, J. (2014). Stock repurchases as an earnings management mechanism: The impact of financing constraints. *Journal of Corporate Finance*, *25*, 1-15.

Floyd, E., Li, N., & Skinner, D.J. (2015). Payout policy through the financial crisis: The growth of repurchases and the resilience of dividends. *Journal of Financial Economics*, *118*(2), 299-316.

Grullon, G., & Michaely, R. (2002). Dividends, share repurchases, and the substitution hypothesis. *The Journal of Finance*, *57*(4), 1649-1684.

Grullon, G., & Michaely, R. (2004). The information content of share repurchases programs. *The Journal of Finance*, *59*(2), 651-680.

Hribar, P., Jenkins, N.T., & Johnson, W.B. (2006). Stock repurchases as an earnings management device. *Journal of Accounting and Economics*, *41*(1), 3-27.

Jensen, M.C. (1986). Agency costs of free cash flow, corporate finance, and takeovers. *The American Economic Review*, *76*(2), 323-329.

Krippner, G.R. (2005). The financialization of the American economy. *Socio-Economic Review*, *3*(2), 173-208.

Lazonick, W. (2011). From innovation to financialization: How shareholder value ideology is destroying the US economy. In M. Wofson and G. Epstein (Eds.), *The Handbook of the Political Economy of Financial Crises.* (Oxford: Oxford University Press), 491-511.

Lazonick, W. (2014). Profits without prosperity. *Harvard Business Review*, *92*(9), 46-55.

Lie, E. (2001). Detecting abnormal operating performance: Revisited. *Financial Management*, 77-91.

Lie, E. (2005). Operating performance following open market share repurchase announcements. *Journal of Accounting and Economics*, *39*(3), 411-436.

Oded, J., & Michel, A. (2008). Stock repurchases and the EPS enhancement fallacy. *Financial Analysts Journal*, *64*(4), 62-75.

Orhangazi, Ö. (2008). Financialisation and capital accumulation in the non-financial corporate sector: A theoretical and empirical investigation on the US economy: 1973-2003. *Cambridge Journal of Economics*, *32*(6), 863-886.