

The Preferential Tax Rate on Dividend Income: Economic Stimulus or Window Dressing

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This study examines whether the preferential tax treatment of dividend income benefits the U.S. economy and, specifically, incentivizes private firms to increase dividend payouts. Using time-series analyses to contrast the post-2003 recovery against the 1990s, focusing on small- to mid-size business, and regression analysis of confidential Forms 1120, benefitting from special access, our examination indicates that the 2003 dividend tax rate reduction failed to provide a sustained economic stimulus or to increase private firm dividend payouts. This evidence suggests that the dividend tax rate reduction is an ineffective mechanism for stimulating the economy and generating employment opportunities.

INTRODUCTION

In late 2017, Congress passed the Tax Cuts and Jobs Act (TCJA). To stimulate the economy, TCJA included the much heralded reduction of the corporate tax rate from 35% to 21%. With much less attention, TCJA also reduced the dividend received deduction, presumably because the reduction of the tax rate reduced the corporate double tax, which is the motivation for the dividend received deduction. Interestingly, another tax provision designed to alleviate the double taxation on corporate income, the preferential individual income tax rate on dividends, was not increased by the TCJA. Given the concern by some that the TCJA may increase the federal deficit,¹ although others believe TCJA is revenue neutral,² Congress may later need to increase tax revenue, presumably in a manner that would have little, if any effect on the economy. Increasing the dividend tax rate might be one provision that policymakers could consider.

In this study, we extend and expand on the limited number of studies which examined the influence of the 2003 dividend tax cut. In 2003, Congress reduced the federal individual income tax rate on dividends, granting dividends the same preferential tax treatment provided long-term capital gains. Congress expected that this change would encourage the distribution of corporate wealth into the U.S. economy (Chetty and Saez, 2005), energizing the economy and motivating the growth of employment (Amromin et al., 2005). Although research generally focuses on large firms, it is small to medium size privately owned businesses that generate the majority of new U.S. jobs (Harrison, 2013).³ Therefore, we extend prior research by examining how the 2003 dividend tax cut affected the U.S. economy and employment, focusing on that important, but underexplored segment of the economy, small- to mid-size

businesses and private firms. Beyond extending extant research, our study could provide valuable information to policy makers seeking to make informed decisions about future tax policy changes.

Using time-series analyses, we first examine the economy as a whole and by firm size, focusing on small- to mid-size firms, using alternative, comprehensive data sources, discussed below. Yagan (2015) examines a random sample of public and private firms and provides evidence that the 2003 tax reduction did not stimulate either intrafirm investment or employee compensation. We examine the broad economy to consider the economic activity that may occur outside of the firm, which could result from an increase in dividends, the objective of the tax change. To judge the effectiveness of the economic stimulus, we compare the post-2003 changes of the gross domestic product, corporate investment, total employment, and payroll to these same metrics during the mid- to late-1990's. Similar to the early 2000's the U.S. was recovering from an early 1990's recession in 1993. However, unlike the post-2003 era, dividends were taxed at ordinary rates during the mid- to late-1990's. Thus, we use the post-1993 period as a benchmark to evaluate the economic and employment growth following the 2003 dividend tax cut. While there is evidence of an economic recovery following the 2003 tax rate reduction, including a growth in the general economic activity, employment, and profits, we find no clear evidence that the economy grew at a rate greater than that seen during the mid- to late-1990s. Thus, our results do not support a conjecture that the 2003 dividend tax cut was more effective in stimulating the economy or achieving employment growth than might have been achieved without the tax cut.

If the dividend tax cut did not stimulate the economy, the natural question is whether firms responded to the tax change by increasing dividend payouts. Prior studies examine how the tax cut influences public firm payouts, providing evidence that dividends increased in the short-term (Chetty and Saez, 2005, 2006). Yagan (2015) examined a sample of public and private firms, and documented that total payouts, dividends plus repurchases, of C corporations increased relative S corporations. However, no study has compared how the 2003 change affected the dividend payouts of privately held C corporations, relative pre-2003 privately held C corporations.

Therefore, we extend prior research and examine how the 2003 dividend tax cut affected privately held firms to evaluate if the legislative change met the stated objective of increasing private firm dividend payouts. Private firm data is generally unavailable to researchers. However, drawing from special access to private firm data available through the Internal Revenue Service Statistic of Income Division, we overcame this difficulty. Using confidential tax return data, we empirically examine how the 2003 dividend tax cut affected private firm dividend payouts.⁴ Dividend payouts of private firms increased from 2002 through 2007. However, in our benchmark period, private firm dividend payouts from 1993 through 2001 exceed those demonstrated following the 2003 tax cut. In other words, although dividend payouts by private firms increased from 2003 through 2007, they did not increase sufficiently to reach the pre-2002 levels. Therefore, our results provide evidence of an economic recovery following the 2003 dividend tax cut, but no clear evidence that this regulatory change succeeded in encouraging firms to increase their payouts beyond that payouts made during the 1990s when dividends did not receive preferential tax treatment.

Our findings are consistent with the assessment of Gale and Orszag (2004a-g) that the 2003 dividend tax cut is an inefficient, ineffective way to stimulate the economy. Large public firms may not be greatly affected because a large percentage of their stock is held by institutional investors who may pay no federal income tax (Edgerton, 2013). Private firms may not be affected because they have alternative distribution options. Specifically, because private firm shareholders also commonly serve as active managers (Schulze et al., 2003a), private firms may distribute corporate profits as bonuses to preserve the tax deduction and avoid double-tax (Yurko, 2018). Therefore, for both large, public firms and smaller private firms, the dividend tax cut may have provided little incentive to increase long-term dividend payout policies, consistent with the economy wide evidence.

Our results may provide insight into current policy debates about corporate tax reform. U.S. corporate income is currently taxed at two levels, when earned by the corporation and when distributed as dividends. The 2003 dividend tax rate reduction resulted in reducing the second layer of taxation, but seemingly failed to increase dividend payouts or stimulate the economy. Thus, should congress need to

raise tax revenue in the future, our results indicate that increasing the dividend tax rate may be a way to increase tax revenue without having substantial effects on private firms' dividend payout policies or economic growth. However, we make this tax policy recommendation with a strong caution, recognizing that this type of tax policy recommendation is beyond the scope of this paper.

Section 2 presents the background and prior literature. Section 3 presents the time-series analysis of the U.S. economy. The development of the research question and the research method are presented in Sections 4 and 5, respectively. The sample selection and results are in Sections 6 and 7, respectively. We conclude in Section 8.

BACKGROUND AND PRIOR LITERATURE

In January 2003, the Congressional Budget Office reported that the economy was recovering from the 2001 recession, but observed that the economy still showed signs of weakness.⁵ To strengthen the economy and increase employment, President Bush proposed major tax cuts, first announced on January 7, 2003. The proposals were met by a series of objections from both republicans and democrats (discussion in Lewandoski, 2008). Ultimately, congress passed and Bush signed in to law on May 28, 2003 *The Jobs and Growth Tax Relief Reconciliation Act of 2003* (JGTRRA), retroactively effective January 1, 2003. First, the tax rate on long-term capital gains was reduced from 20% to 15%. Second, dividends were provided the same preferential tax treatment afforded capital gains, which had not been the case since 1990. Therefore, JGTRRA reduced the marginal tax rate on dividends from 38.6% to 15% (Blouin et al., 2011). Because of the many objections to these changes, the preferential treatment provided to dividends was set to expire in 2009. However, following extensions in 2005 and 2010, the equal treatment of dividends and capital gains was made permanent in 2013.

Various studies estimated that JGTRRA would increase real GDP growth rates by 0.2% to 0.9% and employment rates by 0.2% to 0.8% (Auten et al., 2008). Federal officials estimated that stock market valuations would increase five to fifteen percent in response to the tax rate reduction (Fisher, 2003; Amromin et al, 2008). The proponents of the tax cut predicted that the change would encourage more companies to pay dividends, redistribute corporate resources, and stimulate job growth (Amromin et al., 2005). Firms pay dividends to reduce budgetary slack to force efficient behavior upon managers and reduce agency costs (Fama and French, 2002; Chetty et al., 2007) and to signal the firm's high value to investors (Allen et al., 2000).⁶ However, dividends are costly. Because firms pay dividends to the point that the marginal benefit equals the marginal cost, with the passage of JGTRRA, firms would evaluate their existing policies in consideration of the tax change and make the optimal adjustments (Blouin et al., 2011). Because individual shareholders benefit from the 2003 tax reduction, firms may increase or initiate dividend payouts to attract individual investors (Blouin et al, 2011).

In contrast, a series of studies by Gale and Orszag of the Brookings Institute (2003, 2004a-g, 2005) evaluated the 2003 tax cuts, along with the 2001 tax cuts. While predicting that the cuts would produce some mild, initial stimulus, as generally seen following any tax cut, Gale and Orszag (2004d-g, 2005) proposed that any limited benefits to the economy would only be short lived and outweighed by the negative consequence of increasing the federal deficit. Prior studies also support the expectation that JGTRRA would not motivate an increase in dividend payouts. First, firms are slow to modify their dividend policies, changing their practices cautiously to avoid future dividend payout reductions (Arnott and Asness, 2003), and preferring a series of "partial adaptations" to a single, large adjustment (Lintner, 1956). Second, it is the marginal investor which sets the stock price and dividend policy, and the marginal investor is commonly a non-taxable entity, e.g. pension fund, or a symmetrically taxed investor, e.g. securities dealer (Edgerton, 2013). A change to the individual tax rates loses its importance when the marginal investor is not an individual (Dhaliwal et al., 2003). As such, any change in the individual dividend tax rate may have no impact on either firm value or dividend payout policy.

Prior studies examined how public firms responded to JGTRRA. There is evidence that immediately following the passage in 2003, there was an increase in the number of firms paying dividends, regular and special dividends (Chetty and Saez, 2005; Blouin et al., 2011; Yagan, 2015). The greatest number of

dividend initiations occurred in the third quarter of 2003, immediately following the May 28, 2003 ceremonial signing into law (Chetty and Saez, 2006). The greatest dividend payouts were concentrated in four quarters: the first two following the statute's passage [the second half of 2003] and the two following President Bush's reelection [the first half of 2005] (Chetty and Saez, 2006). Research shows that an increase in dividends was related to a firm's free-cash, size, operating income, and prior dividend yield (Howton and Howton, 2006), and insider ownership (Amromin et al., 2005; Brown et al., 2007; Aboody and Kasznik, 2008; Blouin et al., 2011). A survey of executives revealed that the tax rate was a factor in the dividend payout decision, but it was only a secondary consideration. The firm's cash flow stability and its dividend history were far more important factors (Brav et al., 2008).

Amromin et al. (2008) echoed the conclusion of many researchers when they described the post-JGTRRA increase as "muted." There are several possible explanations. First, firms' preference for a stable "sticky" dividend policy (Lintner, 1956; Arnott and Asness, 2003) may have limited their willingness to increase dividend payouts despite the reduction in corporate tax rates. With firms preferring only modest dividend changes, statistical detection of dividend changes is generally difficult (DeAngelo et al., 1996). Because the tax cut was originally a temporary provision, firms may have been more hesitant to respond than if the change was permanent. Second, this muted response may be partially the consequence of the limited scope of the tax cut, affecting only U.S. individual investors. Shares held through tax favored accounts, such as 401(k)s, by nonprofit organizations, and by corporations are unaffected by the tax change (Chetty and Saez, 2005). Therefore, it is not surprising that the post-JGTRRA increase in public firm dividends increases with individual ownership (Blouin et al., 2011). For those firms with an institutional marginal investor or who focuses on attracting more institutional investment, the tax cut provides little incentive for dividend increases. Third, Brown et al. (2007) provided evidence that the 2003 dividend increases are linked to a reduction of stock repurchases, suggesting that firms did not increase their distributions but only substituted one form of distribution for another. In summary, there is some evidence that JGTRRA motivated firms to increase their cash dividends following the dividend tax cut, but the increase was limited in magnitude and under limited circumstances, such as those firms with a high percentage insider or individual shareholders.

The prior research has set the stage for further research because their analyses focused on large corporations and public firms. JGTRRA applies to all C corporations, including smaller and privately held firms. The relation between a private firm and its owner-managers differs greatly from their public firm counterparts, with private firm executives far less myopic and more concerned with the long-term condition of the firm (Schulze et al., 2003a; Michaely and Roberts, 2006; Miller and Le Breton-Miller, 2006). In one of the two prior analyses which include private firm data, a survey of 328 CFOs, the 176 private firm CFOs ranked the dividend tax rate more important than had the 152 public firm CFOs (Brav et al., 2008). Yet, despite the reported importance of the dividend tax rate to private firm CFOs Yagan (2015) finds that relative to S-Corporations, C-Corporations⁷ increased their total payouts, which includes dividends plus repurchases, immediately following the 2003 dividend tax cut.

Thus, the response of smaller and private firms may differ significantly from the large public firms examined in the prior studies. JGTRRA may have a greater influence on private firm payouts because private firm executives generally possess a greater level of ownership (Gao et al., 2012). Alternatively, with fewer investors and no public disclosure requirements, private firms may have more flexibility regarding cash distributions. For example, private firms may increase bonuses to owner-managers to preserve the tax deduction. Yagan's (2015) results suggest that private firms did increase their payouts immediately following the 2003 dividend tax cut. However, Yagan's (2016) study examined both dividends and repurchases, thereby not focusing on the impact of the granting of preferential treatment to dividends, and used S-Corporations as the benchmark, which may affect the interpretation of the results. The significant differences between S- and C-Corporations, e.g., single versus double layer of tax and shareholder limits, can affect firms' payout policy decisions. Further, the use of a different benchmark, in our study the early 1990's, allows for the triangulation of results from Yagan (2015) and strengthens the validity of the results in both studies. Finally, prior research offers limited insight into whether JGTRRA stimulated the economy and created job growth, the primary stated objective. Therefore, we extend prior

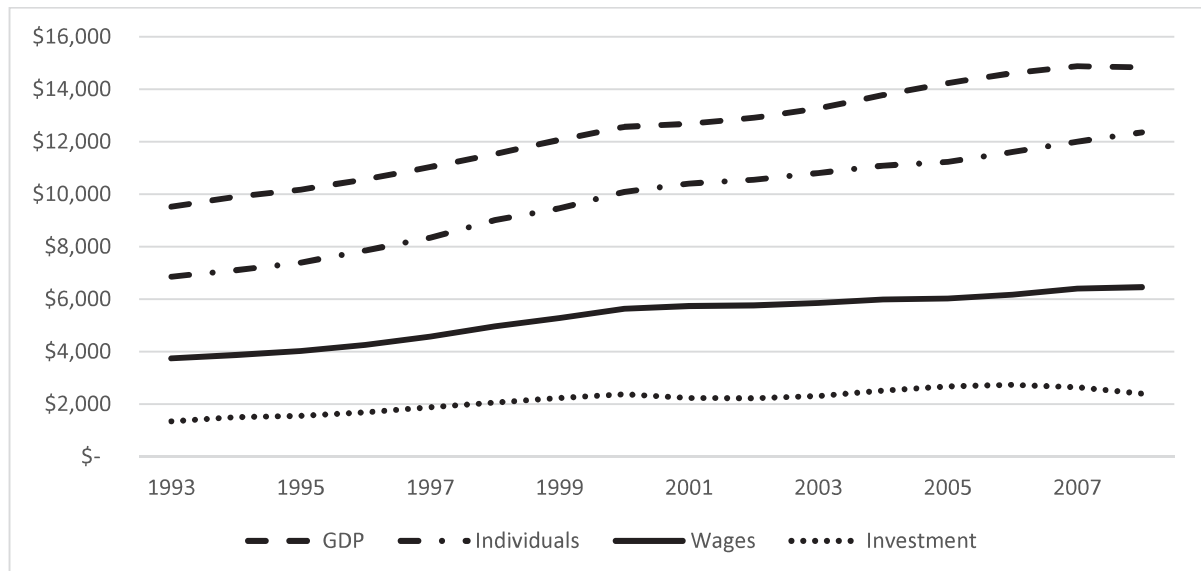
literature and also examine how JGTRRA influenced the U.S. economy, and focus on smaller firms, and private firm dividend payouts.

TIME-SERIES ANALYSIS OF ECONOMY CONSEQUENCES

Because Congress enacted JGTRRA to stimulate the U.S. economy, we examine the U.S. economy, focusing on smaller businesses, from 1993 through 2008, selected for consistency with the private firm sample. The dividend tax cut was designed to motivate firms to redistribute their earnings beyond the firm, and into the broader economy to stimulate economic growth, motivate investment and increase employment. This conjecture aligns with the underlying rationale that cuts to dividend tax rates will substantially reduce firms’ cost of capital by increasing the availability of capital (Poterba and Summers, 1984). Therefore, we first present time-series analysis of the U.S. gross domestic product, total receipts, and employment from 1993 through 2008. A trend analysis illustrates how the 2003 dividend tax cut influenced the pre-change economic trend, with the 1993 through 2002 period providing the pre-change benchmark and the 2003 through 2008 period illustrating the influence of the tax change.

Figure 1 presents the inflation adjusted U.S. gross domestic product, individual income, total individual wages, and gross private domestic investment from 1993 through 2008. While there is a general upward trend for all economic measures during the sample period, there is no strong suggestion that the 2003 tax change accelerated the growth of the economic measures. The post-2001 recession is evident, along with the subsequent recovery. However, the 2003 tax cut does not generate any response that exceeds the growth seen pre-2001. Of particular note, the post-2003 growth of the GDP and individual income exceed that of wages and domestic investment, suggesting private wealth grew at a faster rate than wages and nongovernmental business investments in the post-2003 period.

FIGURE 1
1993 - 2008 U.S. GROSS DOMESTIC PRODUCT (GDP), INDIVIDUAL INCOME, WAGES, AND GROSS DOMESTIC PRIVATE INVESTMENT

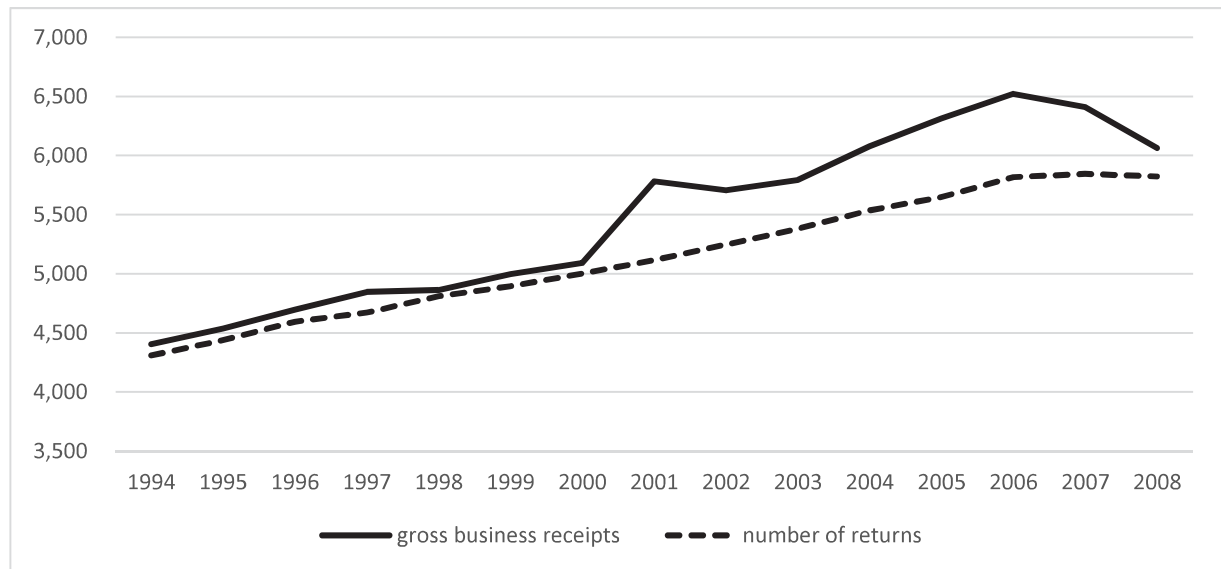


In billions of cpi-adjusted U.S. constant dollars;
 Source: U.S. Department of Commerce Bureau of Economic Analysis, available at:
<http://www.bea.gov/national/nipaweb/DownSS2.asp>

Figure 2 presents total annual gross business receipts from 1994 through 2008 for firms reporting total assets less than \$100 million. Gross receipts increased following 2003, but the growth, if related to

the tax cut, was short lived, ending in 2006. As a whole, these findings suggest that the 2003 tax cut at best, provided only some short-term stimulus, which is expected to accompany any tax cut, but no long-term effect from firms distributing corporate earnings into the economy. These findings are consistent with the predictions of Gale and Orszag (2003, 2004a-g, 2005), who concluded that the dividend tax cut was an inefficient way to stimulate the economy because there would be no long-term positive consequences on economic growth. Similar trends if limited to firms reporting less than \$25 or \$50 million.

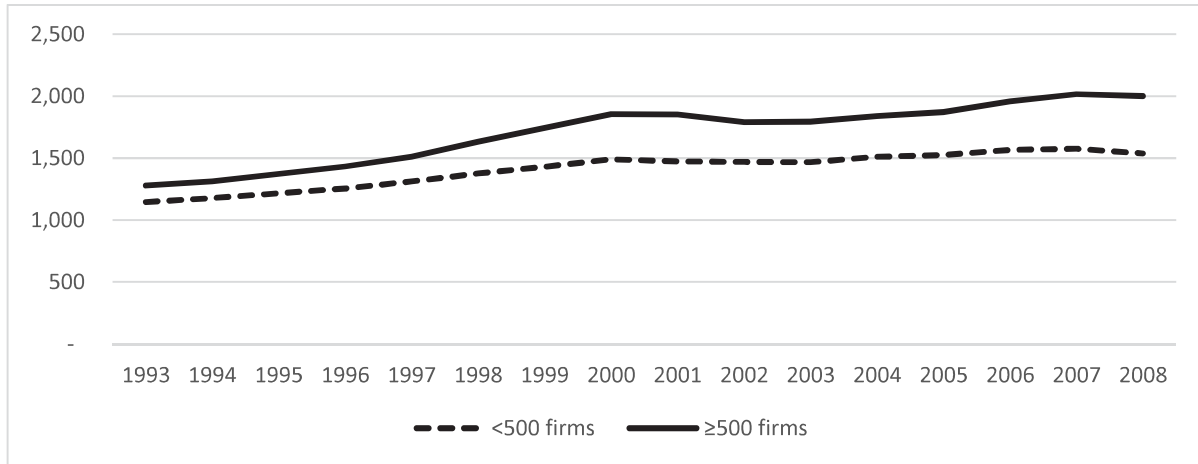
FIGURE 2
1994 - 2008 TOTAL GROSS BUSINESS RECEIPTS AND FORMS 1120



Receipts in billions of cpi-adjusted U.S. constant dollars, Returns in thousands
n=77,132,027 (1993 unavailable); Source: Internal Revenue Service Statistics of Income division, available at:
<https://www.irs.gov/uac/soi-tax-stats-corporation-tax-statistics>

Figures 3 and 4 present time-series analyses of U.S. employment of privately held U.S. firms from 1993 through 2008, for those firms with less than 500 total employees and those with a minimum of 500 total employees. Job growth was the purpose of the 2003 tax change as clearly stated by the legislation’s chosen title, *The Jobs and Growth Tax Relief Reconciliation Act of 2003*. Figure 3 presents the employee total compensation, while Figure 4 provides the number of employees. Both figures clearly indicate a general upward trend over the sample period, but neither indicates a significant increase in the growth following the 2003 tax cut for either type of firm. Thus, there is little evidence that employment opportunities were increased by the dividend tax cut provided by JGTRRA.⁸

FIGURE 3
1993 - 2008 TOTAL PAYROLL FOR U.S. PRIVATELY HELD FIRMS WITH
LESS THAN AND MORE THAN 500 EMPLOYEES



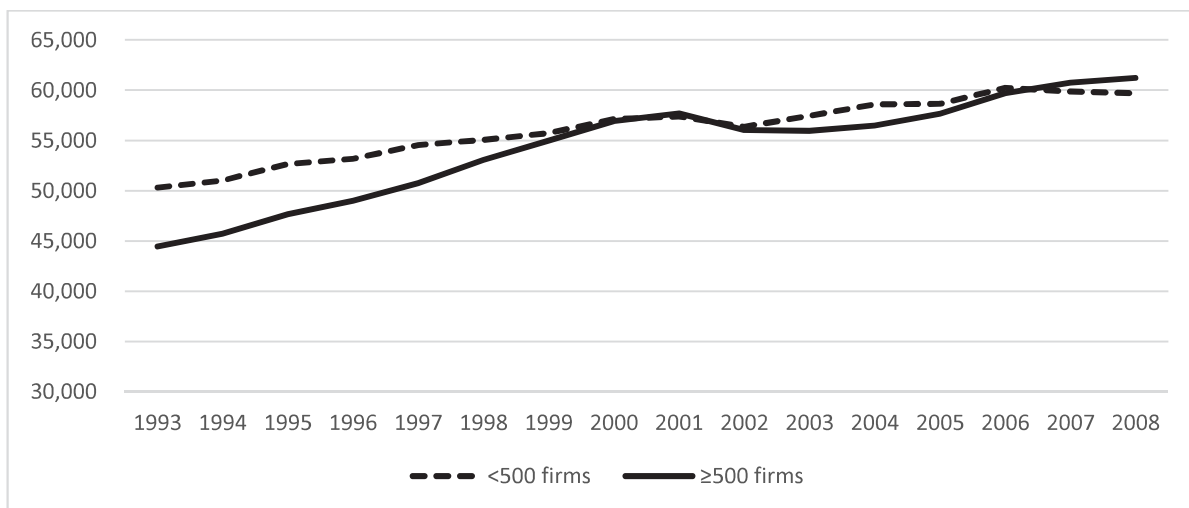
in billions of cpi-adjusted U.S. constant dollars

n=90,425,458 for firms with < 500 employees; n=267,549 for firms with ≥ 500 employees

Source: U.S. Small Business Administration: <https://www.sba.gov/advocacy/firm-size-data>

In total, these time series analyses do not provide strong evidence that the 2003 dividend tax cut produced an enduring stimulus to the U.S. economy. There is some weak suggestion of a two- to three-year increase in receipts, but no evidence that the tax cut had an enduring effect and no clear evidence that post-tax cut growth exceeded that seen during the 1990s when dividends were not provided preferential tax treatment. Therefore, our examination of the U.S. economy does not provide evidence that JGTRRA had an enduring, positive influence on the economy and smaller businesses.

FIGURE 4
1993 - 2008 TOTAL NUMBER OF EMPLOYEES FOR U.S. PRIVATELY HELD FIRMS
WITH LESS THAN AND MORE THAN 500 EMPLOYEES



Number of employees in thousands;

n=90,425,458 for firms with < 500 employees; n=267,549 for firms with ≥ 500 employees

Source: U.S. Small Business Administration: <https://www.sba.gov/advocacy/firm-size-data>

DEVELOPMENT OF THE RESEARCH QUESTION

Because our time-series analysis does not indicate that the post-JGTRRA growth surpassed that seen in the 1990s, when dividends were taxed at the higher ordinary income tax rate, we ask the following question: *Did JGTRRA increase the dividend payouts of private firms?*

It is logical to assume that dividend taxes constrain dividend payouts (Howton and Howton, 2006; Aboody and Kasznik, 2008). Therefore, when the tax rate on dividends was reduced in 2003, prior literature predicted and documented that JGTRRA increased the dividend payout rates of public firms, at least in the short term (Chetty and Saez, 2005; Chetty and Saez, 2006; Blouin et al., 2011). However, private firms differ significantly from their public firm counterparts, which may greatly influence their dividend payouts. While agency theory provides that firms pay dividends to minimize budgetary slack and force efficient behavior on managers, (Fama and French, 2002; Jiraporn et al., 2011), private firm managers are commonly owners, which may reduce agency concerns (Ke et al., 1999; Miller and Le Breton-Miller, 2006; Gao et al., 2012). Signaling theory provides that firms pay dividends to signal the firm's high value to investors, especially large institutional investors (Allen et al., 2000; Julio and Ikenberry, 2004). However, private firms may have few or even no minority interest shareholders (Michaely and Roberts, 2006), and owners may have no intention of selling their interests to outside investors (Schultz et al., 2003a, b; Burkart et al., 2003). Therefore, the reasons that private firms pay dividends likely differs systematically from public firms and, consequently, the private firm response to JGTRRA may differ significantly from public firms.

There is some evidence to suggest that the 2003 tax cut should have a greater positive influence on private firm dividend payouts relative to public firms. The prior literature documents that a post-JGTRRA dividend increase is positively linked to individual ownership, specifically insider ownership that links the dividend recipients to the decision making authority and to personally benefitting from the cut of the individual dividend tax rate (Amromin et al., 2005; Brown et al., 2007; Aboody and Kasznik, 2008; Blouin et al., 2011). Because private firm managers are commonly owners, this suggests that private firm positive response may be significantly stronger than that seen at public firms.

However, managerial equity ownership is not the only difference between public and private firms. The relationship between the private firm and its owners bear little resemblance to that demonstrated by their public firm counterparts (Miller and Le Breton-Miller, 2006). The unification of ownership and control at the private firm level has important implications for business decisions, including incentives (Anderson and Reeb, 2003; Carney et al., 2015). With no public reporting requirements, private firm executives may have greater flexibility than public firm executives regarding reward options and be more motivated by concern for preserving firm value (Schulze et al., 2003b). For example, private firm shareholders may elect to receive more of their reward as compensation to preserve the federal corporate income tax deduction.

Because of competing theories, we make no prediction, but propose the following research question:

Research Question: *Did the 2003 individual dividend tax rate reduction increase private firm dividend payouts?*

RESEARCH METHOD

To examine how JGTRRA affected private firm dividend payouts, we use a dividend prediction model based on Fama and French's (2002) adaptation of Lintner's (1956) model, Equation (1). Lintner's (1956) model defines a firm's dividend payout, $DIV_{i,t}$, as a function of its target payout, $TP_{i,t-1}$, established at the end of the prior year, and the current year's firm performance, which we measure as Return on Assets, $ROA_{i,t}$, limited to Form 1120 information.

$$DIV_{i,t} = \alpha + TP_{i,t-1} \times ROA_{i,t} + \varepsilon \quad (1)$$

Following the Fama and French (2002) model, we define the dependent variable, DIV , as dividends scaled by total assets, and the target payout, $TP_{i,t-1}$ as a function of various prior year factors that influence dividend payouts, $CONTROL\ VARIABLES_{i,t-1}$, Equation (2).

$$DIV_{i,t} = \alpha + (\beta_0 + \sum_1^j \beta_j CONTROL\ VARIABLES_{i,t-1}) \times ROA_{i,t} + \varepsilon \quad (2)$$

The model includes $CONTROL\ VARIABLES_{i,t-1}$ consistent with prior literature (Aboody and Kasznik, 2008; Fama and French, 2002; Michaely and Roberts, 2006, 2012), but limited to the data reported by firms on the Forms 1120. When firm performance produces extra cash, firms can choose to invest in growth opportunities, reduce obligations, or pay dividends. Therefore, dividend payouts are influenced by firm profitability, liquidity, investment opportunities, and leverage (Fama and French, 2002). Because the selection between dividends and debt affects the firm's interest expense, which is deductible as a tax expense, we use earnings before interest and taxes, $EBIT$, to measure firm performance. To control for liquidity and cash flow constraints (Aboody and Kasznik, 2008), the model includes scaled total cash, $CASH$, and the change in total cash, $\Delta CASH$. Growth firms have more investment opportunities. Therefore, following Fama and French (1998, 2002), the model includes the firm's scaled change in total assets, $\Delta ASSETS$, to control for firm growth opportunities. The model includes total book value of property, plant and equipment to control for the assets already in place, PPE (Michaely and Roberts, 2012), and the change of PPE to control for the growth of noncurrent assets, ΔPPE . PPE and ΔPPE may also influence dividend payouts because firms with greater tangible assets have a greater debt capacity (Flannery and Rangan, 2006). Current obligations may have a greater influence on dividend payouts compared to long-term obligations. Therefore, the model includes scaled current liabilities, $CURR_LIAB$; the change of current liabilities, $\Delta CURR_LIAB$; total liabilities, $TOTAL_LIAB$; and the change of total liabilities, $\Delta TOTAL_LIAB$. Dividend payouts may be affected by firm volatility, proxied by total book value of assets, $ASSETS$. Because a firm's interest expense is tax deductible, but dividend payouts are not, the model includes both the firm's annual federal income tax expense, TAX , and interest expense, $INTEREST$, as controls. To control for the influence of various omitted variables, and because public firm dividend payouts are *sticky* (Lintner, 1956), the model includes the scaled, prior year dividend payouts, $DIV_{i,t-1}$. We include year indicators to identify how payouts changed over time.

To examine how JGTRRA influenced dividend payouts of privately held firms, we estimate Equation (3). The coefficients on the year indicators provide a time-series analysis of how dividend payouts change over time. A statistically significant positive (negative) coefficient on each year indicator provides evidence that a firm's dividend payouts are positively (negatively) related to the base year, 2008.

$$DIV_t = \alpha + ROA_{i,t} * (\beta_0 + \beta_1 EBIT_{i,t-1} + \beta_2 CASH_{i,t-1} + \beta_3 \Delta CASH_{i,t-1} + \beta_4 \Delta ASSETS_{i,t-1} + \beta_5 PPE_{i,t-1} + \beta_6 \Delta PPE_{i,t-1} + \beta_7 CURR_LIAB_{i,t-1} + \beta_8 \Delta CURR_LIAB_{i,t-1} + \beta_9 TOTAL_LIAB_{i,t-1} + \beta_{10} \Delta TOTAL_LIAB_{i,t-1} + \beta_{11} ASSETS_{i,t-1} + \beta_{12} TAX_{t-1} + \beta_{13} INTEREST_{i,t-1} + \beta_{14} DIV_{i,t-1}) + \sum Year\ Indicators + \varepsilon_t \quad (3)$$

Variable Definitions:

DIV = total dividends, scaled by average total assets

$EBIT$ = net income before interest and taxes, scaled by end of year total assets

$CASH$ = cash, scaled by end of year total assets

$\Delta CASH$ = the change of cash from the prior year, scaled by end of year total assets

$\Delta ASSETS$ = the change in total assets, scaled by end of year total assets

PPE = gross property, plant and equipment, scaled by end of year total assets

ΔPPE = the change of gross property, plant and equipment, scaled by end of year total assets

$CURR_LIAB$ = total current liabilities, scaled by end of year total assets

$\Delta CURR_LIAB$ = the change of total current liabilities, scaled by end of year total assets

$TOTAL_LIAB$ = total liabilities, scaled by end of year total assets

$\Delta TOTAL_LIAB$ = the change of total liabilities, scaled by end of year total assets

ASSETS = the natural logarithm of end of year total book assets
TAX = corporate income tax on page 1, line 31, of the firm's Form 1120, scaled by net income
INTEREST = Interest Expense for the Year
ROA = net book income/average total assets
where subscripts *i*, and *t* represent firm and year, respectively

SAMPLE SELECTION

The Statistics of Income (SOI) division of the U.S. Internal Revenue Service supplied the sample data, using all Forms 1120 filed with the U.S. Internal Revenue Service between 1993 and 2008 (sample period determined by the SOI). The following procedures, provided in the next paragraph, define firm admittance into the private firm sample to exclude public firms, which prior studies examined, and "closely-held" corporations, defined in this study as firms owned by less than five shareholders. We exclude closely-held firms because there may be only a blurred-line between owner-and-firm, so that courts are far more willing to *pierce the corporate veil* of closely-held firms (Thompson, 1991), which may inject extreme noise into the analysis.

Each Form 1120 is a firm-year observation. We excluded all firms that identified themselves as publicly traded on the Schedule M-3, that did not provide the number of shareholders on Schedule K to exclude public firms, and that reported less than five shareholders to exclude closely-held firms. Further, we excluded all firms with less than \$1 million total book assets to adjust the sample size to conform to SOI computation limitations, to eliminate the noise that may be associated with extremely small firms, and to provide a sample set more comparable to the public firms examined by prior studies, resulting in 1,237,150 firm-year observations. Lastly, we excluded the 665,961 observations that lacked the Equation (3) information. The final sample of private firms includes 571,189 firm year observations; 140,231 unique firms with a mean of 4.07 years.⁹

Because of data access restrictions to Forms 1120, this study's access to the private firm descriptive statistics was limited. However, the criteria for admittance into the private firm sample, detailed above, was strictly defined to protect the integrity of the analysis. The private firms must have had a minimum of five shareholders, \$1 million in total book assets, and had reported all of the variables required for the analysis. Within these restrictions, this study examines a large segment of the U.S. economy that is generally beyond the reach of researchers. Treasury Department data is now tightly guarded, with researchers generally limited to subsamples of firms, typically large public firms, to minimize security risks. While recognizing the data limitations, this study's examination of all U.S. privately held corporations provides valuable insight into private firm business decisions that outweighs those limitations.

RESULTS

The research question is whether the 2003 individual dividend tax rate reduction resulted in an increase in private firm dividend payouts. Insight into changes in private firm dividend payouts following 2003 is obtained through an examination of the year indicator coefficients contained in Equation (3). Table 1 presents the Equation (3) estimation results, presenting the year indicators that examine how JGTRRA influenced dividend payouts from 1993 through 2008. For ease of exposition, we plot the year indicator coefficients on Figure 5 to illustrate how private firm dividend payouts changed over time.

If the analysis was restricted to examining only the years 2002 through 2008, our results would suggest that JGTRRA increased dividend payouts, because private firm dividend payout rates increased with the passage of JGTRRA in 2003 through 2007. However, this does not provide sufficient insight into whether the 2003 individual dividend tax rate reduction motivated private firms to increase in dividend payouts. Thus, to be thorough and tell the "whole" story, our sample begins in 1993 to include, as a baseline of normal dividend payout policy of private firms, those years where dividends did not benefit from the same preferential tax treatment afforded capital gains. The results clearly demonstrate that private firm dividend payout rates before the tax cut, from 1993 through 2001, exceeded the dividend

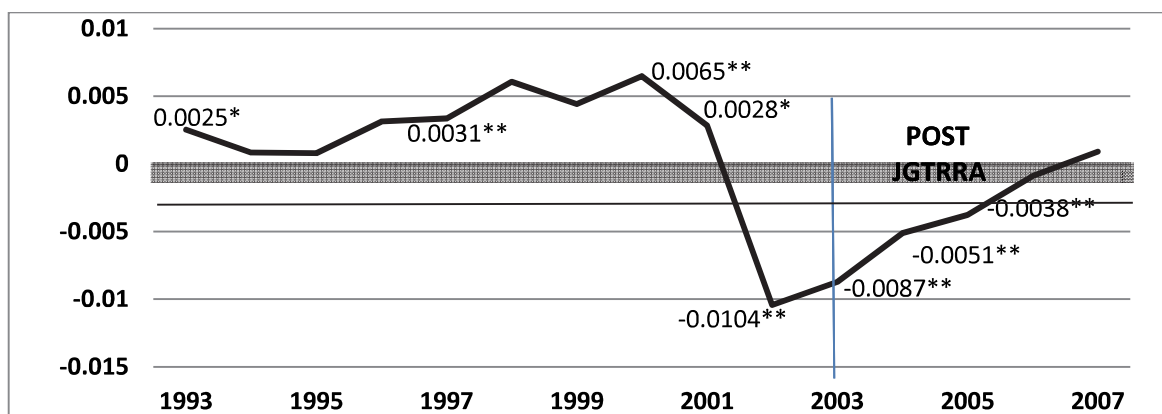
payout rates following the tax rate cut, from 2002 through 2008. The dividend rate decreased significantly from 2001 to 2002 ($p < .0001$), coinciding with the recession that motivated the passage of JGTRRA. While the dividend rate increased following the 2003 dividend tax rate reduction, the private firm dividend payout rates did not increase sufficiently before the end of our sample period to reach the pre-JGTRRA levels, when dividends were subject to the higher regular income tax rates.

TABLE 1
EQUATION (3) ESTIMATION RESULTS: A TIME-SERIES EXAMINATION OF HOW DIVIDEND PAYOUTS CHANGED FROM 1993 THROUGH 2008 (BASE-YEAR)

Years Prior to the 2003 Dividend Tax Cut:										
YEAR	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
estimate	0.003	0.001	0.001	0.003	0.003	0.006	0.004	0.007	0.003	-0.010
p-value	(0.036)	(0.482)	(0.506)	(0.008)	(0.004)	(<.001)	(<.001)	(<.001)	(0.011)	(<.001)
Years Following the 2003 Dividend Tax Cut:										
YEAR	2003	2004	2005	2006	2007					
estimate	-0.009	-0.005	-0.004	-0.001	0.001					
p-value	(<.001)	(<.001)	(<.001)	(0.186)	(0.188)					
CONTROLS INCLUDED, Coefficients not presented for brevity										
R-square	0.0274									
F Value	535.38									
n	571,189									

If the 2003 tax cut significantly affected private firm dividend payout decisions, we would expect to see a reasonably quick, significant increase in dividend payouts to levels in excess of those seen prior to the tax change. Private firm executives are less concerned with how the market responds to dividend changes because private firm stock is not publicly traded. Therefore, private firm dividend payout policies may be less “sticky” and more flexible in adapting quickly to changes than dividend payout policies of publicly traded firms. Since the dividend payout rates of the 1990s exceed those seen in the 2000s, there is no strong evidence supporting the proposition that the 2003 tax cut motivated private firms to significantly increase their dividend payouts. Thus, the post-JGTRRA increase in payouts observed in Yagan (2015), and other studies likely reflects the general economic recovery that occurred during that period rather than a tax change adjustment.

FIGURE 5
EQUATION (3) ESTIMATION RESULTS, YEAR INDICATOR COEFFICIENTS ARE PLOTTED TO PRESENT A TIME-SERIES ANALYSIS WHICH EXAMINES HOW PRIVATE FIRM DIVIDEND PAYOUTS CHANGED FROM 1993 THROUGH 2008



*,** Indicates statistical significance at the .05 and .01 level, respectively
 All coefficients are plotted, but only a select few are listed.
 Only 1994,1995, 2006 and 2007 fail to demonstrate statistical significance.

Supplemental Analysis.

To compare the pre-JGTRRA dividend payout rate to post-JGTRRA dividend payouts, we estimate Equation (3), replacing the year indicator variables with *POST*. *POST* equals one for observations in 2003 and later, and zero otherwise. Therefore, a negative (positive) coefficient indicates that the dividend payout rate following the tax reduction is less (greater) than the dividend payout rate prior to the change. Consistent with the time-series analysis illustration of Figure 5, in untabulated results, the coefficient on *POST* is negative and marginally significant (-0.001, $p=0.134$), marginal likely because of 2002. Figure 5 illustrates that the lowest dividend rate occurred in 2002, immediately prior to the tax change. With the exception of 2002, the pre-JGTRRA dividend payout rate exceeded that seen post 2003. Therefore, this supplemental analysis provides additional evidence that the pre-JGTRRA dividend payout rate, when dividends were not provided preferential tax treatment, exceeded the post-JGTRRA dividend payout rate, when dividends benefitted for a lower individual income preferential tax treatment. These findings provide additional support for the conclusion that the 2003 individual dividend tax rate failed to increase dividend payouts and is an ineffective mechanism for stimulating the economy.

CONCLUSION

This study examines the influence of JGTRRA on dividend payout rates, focusing on small- to mid-size firms and privately held firms. Congress anticipated that the tax cut would increase dividend payouts, which would stimulate the economic growth and employment opportunities. However, our time-series analyses do not provide significant evidence that the 2003 dividend tax cut stimulated economic growth, employment opportunities, or dividend payouts, for the economy as a whole or smaller private firms. Our results extend prior literature and provide new evidence that the 2003 tax cut did not result in private firms significantly increasing their payout rates beyond that seen during the 1990s, which dividends were not provided preferential tax treatment.

Beyond extending prior research, our findings offer insight into future policy decisions regarding corporate taxation. U.S. corporate income is taxed at two levels, at the corporate level and again at the shareholder, which helps to keep corporate tax reform as a constant and important consideration for legislators. Taken in conjunction with prior literature that has documented that the dividend tax rate reduction provided only muted, short term stimulus to dividend payouts at public firms, our analysis suggests that legislators should consider alternative tax reform measures to stimulate economic growth. The flip side to this statement is that legislators could consider eliminating, to some degree, the preferential tax rate provided dividends to increase tax revenue without significantly impacting firms' dividend payout policies or economic growth. Our findings are consistent with and support the predictions of Gale and Orszag (2003, 2004a-g, 2005), who concluded that the dividend tax cut was an inefficient way to stimulate the economy because the only certain long-term consequence is the expansion of the federal deficit.

ENDNOTES

1. For example: <http://time.com/5015271/republican-tax-plan-deficits-trillion/>
2. For example: <https://taxfoundation.org/2017-tax-cuts-jobs-act-analysis/>
3. The Small Business Administration reports that firms with up to 500 employees generate roughly two-thirds of new job opportunities.
4. The private firm analysis was conducted using confidential Forms 1120, to which access was granted thanks to the Internal Revenue Service Statistics of Income Division. We want to expressly thank the analysts at the Internal Revenue Service Statistics of Income Division for their cooperation and excellent work in this analysis.
5. Congressional Budget Office, The Budget And Economic Outlook: Fiscal Years 2004-2013 (January 2003), available at https://www.cbo.gov/sites/default/files/108th-congress-2003-2004/reports/entirereport_witherrata.pdf

6. For a discussion of *The Dividend Puzzle*, i.e. why firms pay dividends, see Miller and Modigliani (1961), DeAngelo et al., (1996), Fama and French (2001), Grullon and Michaely (2002), Chetty and Saez (2005), Howton and Howton (2006), and, Auerbach and Hassett (2007).
7. Yagan's (2015) study examined a random sample of firms, heavily weighted toward including larger firms in their sample, but capped at \$1 billion of average total assets and \$1.5 billion of average total sales over the years 1996-1997. Yagan's (2015; p. 3,541) study admitted firms that were private in 1997, and kept them in the sample even if they went public during the sample period.
8. For Figure 3, similar trends are demonstrated using the payroll information reported on Forms 1120, using a variety of firm size divisions, available at: <https://www.irs.gov/uac/soi-tax-stats-corporation-tax-statistics>
9. Because of data access limitations, this study is unable to provide the number of firms initially included and excluded in each step of the sample selection process. However, we closely monitored the selection process and provide the specific selection criteria used to exclude firms from the sample.

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