The Effect of Federal Policy on For-Profit Higher Education: Evidence from National Elections*

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Abstract

We examine the effect of presidential and congressional elections on the stock prices of for-profit colleges and student loan companies. Identification based on policy announcements is hindered by market anticipation, whereas elections provide well-quantified shocks to the policy environment. For-profit college stocks experienced large and immediate abnormal returns after the last two presidential elections, but little change after prior presidential elections or midterm elections. Private student loan stocks have been sensitive to presidential and congressional results over the last four election cycles. The pattern of estimates is consistent with an important role for recent gainful employment rules, greater data availability, and the expansion of direct federal loans. The effects are largest for colleges with poor debt-to-earnings ratios and high veteran enrollment rates, but abnormal returns are evident across nearly all firms, suggesting that federal policies pose a threat to the profitability and viability of a significant fraction of the industry.

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1 Introduction

The for-profit sector plays a significant role in higher education through for-profit colleges and private student loan companies. As of 2016, for-profit colleges enrolled 1.4 million students and private lenders serviced the majority of student loans (U.S. DOE, 2017a). Policies introduced over the last three decades by the executive and legislative branches of government have significantly altered the role and oversight of these industries. Concerns that for-profit colleges saddle students with high levels of debt and poor employment prospects have prompted policy proposals to address recruiting practices, online classes, accreditation, debt and earnings of graduates, reliance on military aid, and borrower protections. Enacted policies typically carry the threat of losing eligibility for federal student grant and loan aid, which accounts for more than 70 percent of revenue among for-profit colleges (U.S. DOE, 2017b). Likewise, the role of private loan companies has been fundamentally altered by the introduction of federal direct student loans, the elimination of federally guaranteed private loans, and legal action against servicers that provide fraudulent advice. Despite this active policy environment, there is limited direct empirical evidence about how these policies affect the profitability and viability of for-profit colleges and private student loan companies. This paper examines changes in the stock prices of publicly traded companies in the days immediately following the last four presidential and midterm congressional elections to shed light on several important questions.[1] Specifically, we examine: 1) the sign and magnitude of the stock price responses of for-profit colleges and student loan companies for each national election since 2004; 2) differences in the responses to the party controlling the executive and legislative branches; and 3) the distribution of effects for companies that are more or less exposed to federal policy. The abnormal returns after elections are compared to those generated by policy announcements and other major events.

Identification in this paper exploits three important factors. First, support for policies affecting for-profit colleges and private student lenders is largely divided on party lines. Democratic administrations and congresses have introduced the majority of rules and regulations concerning performance standards, recruiting practices, and dependence on federal revenue for colleges. Likewise, they have consistently pushed for increases in grant aid, direct federal loans, and oversight of private loan companies. Second, a number

[1] While there was limited media attention given to postsecondary education stocks in prior elections, the 2016 election was followed by significant coverage. The effect on for-profit college stocks was noted by, for example, Barron's, CNN, Forbes, Fortune, and the Wall Street Journal. A New York Times piece discussed several policy factors that could be driving investor response (Dynarski, 2016). Likewise, the impact on private student loan companies was noted by Barron's, Time, and the Washington Post.

for-profit college and student loan companies are publicly traded, making it possible to estimate responses using stock prices. Fourteen publicly traded companies account for approximately half of for-profit college enrollment during the period of interest, and three publicly traded student loan companies currently service half of all student loans.[2] Stock prices provide a measure of performance that captures expected future profitability and makes it possible to estimate the immediate effect of an election or other event. Observing immediate responses to shocks is crucial due to the large number of other factors that can affect stock prices over time and because there is no natural control group for publicly traded for-profit colleges or student loan companies.[3] Third, national election results represent a sudden and well-quantified shock. The timing of the shock is known and win probabilities are documented through online betting markets in the days leading up to the elections. This is in contrast to, for example, the announcements of rules and regulations that may be anticipated or known to the market or to insiders, and thus could be reflected in stock prices prior to the date of record.[4]

The analysis reveals several interesting results. Among for-profit colleges, the average change in stock prices is similar to that of the market as a whole after the 2004 and 2008 presidential elections, while the Democratic win in 2012 and the Republican win in 2016 generated significant negative and positive abnormal returns, respectively. The magnitudes of the changes in stock prices exceeds the volatility adjusted responses of the U.S. market, the consumer services sector, and other education companies. After adjusting for win probabilities, the effect of having one party win the executive branch rather than the other generated five-day cumulative abnormal returns among for-profit colleges of about 30 percent after both the 2012 and 2016 elections. There is not, however, evidence of meaningful responses to changes in the balance of power in Congress during midterm elections despite several unanticipated changes in the majority party. This suggests a limited role for the legislative branch relative to the executive branch for shaping policies

[2]These statistics are based on data from the National Center for Education Statistics Integrated Postsecondary Education Data System and the quarterly reports published by private student loan companies (U.S. DOE, 2016; Navient, 2018; Nelnet, 2018; and Sallie Mae, 2018). The number of publicly traded for-profit college companies, the enrollment of the colleges and universities that they own, and the volume of student loans serviced by publicly traded companies vary over time, especially in response to the sales and acquisitions of new companies and institutions. For example, Apollo Education Group, which owns the University of Phoenix, went private in 2016, while the publicly traded lending company Nelnet acquired Great Lakes Higher Education Corporation, one of the largest student loan servicing companies, in 2017.

[3]The challenge of identifying a suitable control group for for-profit colleges is evident from the fact that their daily price fluctuations do not strongly covary with those of other consumer services or education stocks. Finding a suitable comparison index for student loan companies is somewhat less problematic, as their stock price changes have a stronger relationship with those of banks and other finance stocks.

[4]Binder (1985) found little effect of regulatory announcements on stock prices and noted that it is "extremely difficult to find announcements in the regulatory process that are unanticipated by the market," thus limiting the usefulness of stock returns for studying the effects of regulation when "the dates that market expectations change are not known exactly."

relevant to the viability of for-profit colleges.

We find little evidence of changes in stock prices in the days immediately following the announcement of the proposed gainful employment rule in June 2010. There is also no response in the days following the publishing of the final rule in October 2010, but there is a large positive return when a revised version of the policy is released in June of 2011. These inconsistent results highlight the potentially important role of market anticipation and the challenges it poses for interpreting responses to formal announcements as a valid measure of policy importance. Estimating the response to the initial policy announcement is further complicated by the the release of a Government Accountability Office (GAO) report on for-profit college recruiting fraud seven days later, and the release of student debt repayment data by the Department of Education (DOE) fifteen days later. Each of these events generated large and immediate negative abnormal returns.[5] Heterogeneity analysis indicates that abnormal returns are highly correlated with the debt-to-earnings ratios of the colleges owned by a publicly traded company, as well as the fraction of students receiving financial aid from the military – two measures of policy exposure. However, nearly all post-secondary education companies experienced abnormal returns exceeding market averages in the last two elections, after the GAO report, and after the debt repayment data release, indicating concerns with the viability of the industry, rather than just those companies that appear most exposed to federal laws and regulations.

Republican presidential wins in 2004 and 2016 resulted in clear and immediate 20 percent positive abnormal returns for private student loan companies relative to other finance companies after adjusting for win probabilities. In contrast, the closely contested Democratic win in 2012 generated little or no abnormal return despite a Republican candidate who favored a greater role for private lenders. The modest effect in 2012 may have been a result of the mediating effects of a Republican controlled House of Representatives, whereas the Republicans controlled the executive branch and both chambers of the legislative branch in 2004 and 2016. An examination of midterm elections supports the hypothesis that the legislative branch plays an important role, as a narrow Democratic victory in the House and Senate in 2006 was followed by a 6 percent negative abnormal return one day after the election. The response of publicly traded student loan stocks to both presidential and congressional elections indicate that a policy environment that favors an expanded role for federal direct loans substantially decreases the value of private loan companies. This

[5]Thus, while changes in stock prices in the days immediately following the gainful employment announcement may be interpreted as stemming from the policy, changes observed in subsequent weeks will reflect these additional information shocks.

explanation is supported by an examination of the release of the 2010 proposed federal budget. The budget proposed eliminating federally guaranteed private loans in favor of direct loans, and resulted in an immediate 40 percent stock price decline. In contrast, we find no evidence of abnormal returns after the introduction of borrower defense rules or the announcement of a lawsuit by the Consumer Federal Protection Bureau alleging fraud by one of the three lending companies. These results suggest that the viability of this sector may be most strongly tied to Republican support for reducing the role of direct federal student loans, rather than the stricter regulatory environment. Consistent with this, we find large election responses for each of the private student loan companies, not just those under the most regulatory scrutiny.

This paper provides systematic evidence of the importance of federal policies for the value of for-profit colleges and private student loan companies. The analysis reveals that: 1) the value of both for-profit colleges and student loan companies is strongly tied to the federal policy environment; 2) for-profit colleges have become more responsive to the party in control of the executive branch, indicating the importance of recent regulations, while private lenders have been consistently responsive to both executive and legislative control; 3) nearly all for-profit education company stocks respond to major shocks, indicating that investors believe that a significant fraction of players in the market are unlikely to meet the standards set out by federal policy. The sensitivity of for-profit colleges to national elections adds market-based evidence to the broader literature examining the quality of for-profit colleges and their effect on earnings and debt (Lang and Weinstein, 2013; Cellini and Chaudhary, 2014; Darolia, Koedel, Martorell, Wilson, and Perez-Arce, 2015; Denice, 2015; Cellini and Darolia, 2015; Cellini and Turner, 2016; Deming, Yuchtman, Abulafi, Goldin, and Katz, 2016; Goodell, 2016; Armona, Chakrabarti, and Lovenheim, 2017). The paper also contributes to studies examining the factors affecting the growth and viability of the for-profit postsecondary education sector (Cellini, 2010; Chung, 2012; Deming, Goldin, and Katz, 2012; Gilpina, Saunders, and Stoddard, 2015; Goodman and Henriques, 2015; Eaton, Howell, and Yannelis, 2018). The role of elections on for-profit postsecondary education companies adds to the literature that examines the stock price implications of national elections and political parties (Wolfers and Zitzewitz, 2016; Born, Myers, and Clark, 2017; Kundu, 2018; Wagner, Zeckhauser, and Ziegler, 2018).

The paper proceeds as follows. Section 2 provides an overview of the for-profit, publicly traded education sector and the role of partisan politics in shaping regulation. Section 3 discusses how for-profit campuses are linked to their stocks and summarizes the national election winners and probabilities. Section 4 introduces the empirical design and challenges to interpretation. Sections 5 and 6 present evidence on the

effects of presidential and congressional elections, and other major events, on for-profit colleges and student loan companies. Section 7 concludes.

2 Background

Enrollment in private for-profit institutions grew from 0.7 million students in 2000 to 2.4 million students in 2010, accounting for 40 percent of private postsecondary enrollment at its peak. The growth of the sector is likely to have stemmed from various factors, including the early adoption of fully online programs and the use of advertising and recruiting practices targeted to non-traditional students (Gilpina et al., 2015; Deming, Lovenheim, and Patterson, 2018). However, by 2016, enrollment had fallen to 1.4 million, a decline that may have stemmed from economic conditions, the greater availability of information about student debt and labor market outcomes, negative media coverage, increased oversight of recruiting practices, and expanded offerings from public and non-profit institutions. Research has found that attending for-profit colleges is generally associated with modest benefits when measured using outcomes such as interview call back rates and earnings (Lang and Weinstein, 2013; Cellini and Chaudhary, 2014; Darolia et al., 2015; Denice, 2015; Cellini and Turner, 2016; Deming et al., 2016; Armona et al., 2017). Further, they generally charge higher tuition than their public college and university counterparts, resulting in greater debt accumulation and default rates (Cellini, 2012; Deming et al., 2012; Cellini and Darolia, 2015; Armona et al., 2017).

In the political realm, both the legislative and executive branches have played a significant role in shaping rules and regulations affecting for-profit colleges. In the early decades of for-profit institutions, Republican politicians often opposed the use of tax dollars to support students attending for-profit colleges (Rothman, 1988). Over the course of the 1990s, however, the current status quo of Republican support and Democratic opposition to for-profit colleges took shape. A Democratic Congress passed the Higher Education Amendments of 1992, which restricted commission-based recruiting practices by colleges and limited the share of an institution's students who could attend class online to 50 percent while maintaining eligibility for federal student aid (US Congress, 1992).[6] In contrast, the Republican majority in Congress in 1998 increased the fraction of college revenue that could come from federal sources from 85 to 90 percent

[6]Specifically, with respect to recruiting, the law states that colleges "will not provide any commission, bonus, or other incentive payment based directly or indirectly on success in securing enrollments or financial aid." With respect to online education, the law states that a college "shall not be considered to meet the definition of an institution of higher education" if it "offers more than 50 percent of such institution's courses by correspondence" or if it "enrolls 50 percent or more of its students in correspondence courses."

(U.S. Congress, 1998). In 2002, the Deputy Secretary of Education in a Republican administration sent a widely reported memo stating that the department would not pursue colleges that compensated recruiters on a commission basis, thus undermining the 1992 law. Further, in 2005, a Republican administration proposed eliminating the 50 percent rule regarding online education, and this was introduced into law by a Republican controlled Congress in 2006 (Dillon, 2006).

The political division over for-profit colleges has continued over the last 10 years. A Democratic administration introduced the gainful employment rule in 2010 that restricts access to federal student aid for college programs whose graduates have low loan repayment rates or high debt-to-earnings ratios. Shortly after the announcement of the proposed gainful employment rule, the GAO released a report detailing widespread recruiting fraud among for-profit colleges, and the DOE released data on the debt repayment rates of college programs (U.S. GAO, 2010). Democratic legislators have introduced bills, unsuccessfully, to restore the 85 percent federal revenue maximum and have proposed including military aid (GI Bill and Department of Defense Tuition Assistance) in the total.[7] In June of 2016, the DOE chose not to renew recognition of the Accrediting Council for Independent Colleges and Schools (ACICS), which accredited many for-profit colleges. Most recently, in August of 2018, the DOE under a Republican president announced a proposal to rescind the gainful employment rule (U.S. DOE, 2018). This regulatory history reveals that: a) there is a clear division between the Republican and Democratic parties in terms of their support for policies that are likely to affect for-profit colleges; and b) the executive and legislative branches have both played a role in shaping policies that may affect the potential viability of the for-profit college industry.

The role of private student loan companies has varied significantly over time in response to federal rules and regulations. Currently, publicly traded student lenders service approximately one-half of all outstanding student loan debt and include the largest issuer of private student loans. Similar to for-profit colleges, there is a clear division between parties with respect to policies affecting this industry. Most notably, Republican politicians favor reducing the role of the federal government in the student loan market and expanding the role of private companies, while Democratic politicians favor an expanded role for direct federal loans. A Democratic administration introduced direct federal loans in 1994 that would compete with the privately issued federally guaranteed loans. The College Cost Reduction and Access Act of 2007 (CCRAA), which was introduced and passed by a Democratic Congress, increased Pell Grant levels, reduced

[7] Specifically, a Democratic senators released a commissioned study detailing the pursuit of veterans by for-profit colleges in 2012, and introduced a bill that would close the loophole that treats military aid as non-federal for the purposes of the 90-10 calculation (U.S. Senate, 2012). Additionally, Barack Obama proposed closing the military aid loophole in his 2016 budget (Zillman, 2015).

and fixed the interest rates of private federally guaranteed loans, and reduced annual repayment minimums for these loans. Also in 2007, the Democratic Attorney General of New York announced an investigation into corruption in the private student loan market, including the publicly traded companies Sallie Mae and Nelnet.

Perhaps the most dramatic policy change occurred in 2010, when a Democratic administration and Congress eliminated federally guaranteed private student loans altogether in favor of direct federal loans, eliminating one of the primary components of the private student lending business. Thus, currently, the role of private loan companies is to service federal loans and to issue private loans. Under the same administration, the Consumer Financial Protection Bureau has investigated and sued private lenders for providing advice to students that increases company profits but is not in the best interests of the borrower (CFPB, 2017). In the summer of 2016, the DOE introduced a rule providing loan forgiveness for borrowers who attended (primarily for-profit) colleges that committed recruiting fraud. This history reveals that: a) there has been a sharp partisan divide about the role of private lenders for the past three decades; and b) both branches have played an active role in shaping relevant policies.

3 Data

The empirical analysis is based on three data sources. First, publicly traded for-profit college companies are identified and linked to the college and university campus brands they own and the branch campuses of each of these brands. Second, for-profit college and student loan companies, as well as all companies in potential control indices, are linked to their daily closing stock prices. Finally, we document the results and predicted win probabilities for each presidential election, the majority party and win margins for each congressional election, and the dates of major policy announcements and other notable events relating to for-profit postsecondary education. This section details several of the key steps in this process.

We begin by constructing the list of for-profit postsecondary education companies that are publicly traded as shown in Table 1. In some cases, for-profit college companies operate a single university brand, while in others they operate several for-profits colleges and universities with different names.[8] Each for-profit college or university brand is then linked to all branch campuses for which data is submitted to the

[8]Table 1 lists the college brand with the highest enrollment for each publicly traded company. A complete list of college brands owned by each company is presented Appendix Table A1. Laureate Education is not included because it became publicly traded in 2017, after each event presented in this study.

National Center for Education Statistics Integrated Postsecondary Education Data System (NCES IPEDS). In total, this process reveals 14 publicly traded companies that own 40 college brands that range from small bricks and mortar institutions to regional networks of branch campuses and national online programs. During the peak of for-profit college attendance, these companies accounted for nearly 600 branch campuses and 50 percent of reported for-profit enrollment. Relative to other for-profit postsecondary institutions reporting data to the NCES, campuses owned by publicly traded companies have, on average, larger enrollments, are more likely to be degree rather than certificate granting, and have slightly lower fractions of black and Hispanic students. Publicly traded for-profit colleges received approximately 76 percent of their revenue from non-military federal grants and loans in 2014 and 2015, which is slightly higher than the total for all reporting for-profit campuses.

There are three publicly traded companies whose primary business is issuing or servicing student loans: Sallie Mae, Navient, and Nelnet. Sallie Mae was a government sponsored private enterprise that issued and serviced federally guaranteed student loans for three decades. It gradually transitioned to being a private company between 1997 and 2004, and created Navient as a separate company in 2014. While a large number of major banks issue private student loans, these loans represent a small fraction of their overall revenue and thus shocks to this market are unlikely to be clearly reflected in their stock prices. The publicly traded student loan companies Nelnet and Navient service 700 billion dollars in loans, or approximately half of all outstanding student loan debt, while Sallie Mae is now the largest originator of private student loans.[9]

The closing stock prices of each company are measured at the end of each trading day. The majority of the companies are traded on the Nasdaq, so this is used as the market of interest for estimating abnormal returns. However, attention is restricted to U.S. companies on this exchange since we are interested in the effect of U.S. elections on U.S.-based postsecondary education companies. The closing stock prices are adjusted to account for stock splits and dividend payouts. Treatment of the day of the election is of particular importance. National elections are held on the first Tuesday after November 1st. Thus, the closing price on Monday should reflect expectations about the election rather than realized results. While the closing prices on Tuesday could reflect election results (if exit polls or other information is known to investors), we do not observe such anticipation, and therefore use the closing price on Tuesday as the pre-shock baseline price.

Presidential election years included in the analysis are 2004, 2008, 2012, and 2016, while midterm

[9]Note that the average market capitalization for Sallie Mae presented in Table 1 includes the period prior to the branching off of Navient, so the current market capitalization is much smaller.

congressional elections occur in each intervening even year.[10] Appendix Tables A2 and A3 present presidential results and probabilities and congressional election margins. The relevant shock of an election stems from the probability of the realized results. That is, an election result that is highly expected is likely to have already been capitalized into stock prices, so the response may be small, while an unexpected result may generate a much larger effect. Therefore, translating the stock price response into a comparable measure across elections requires an estimate of the probability of each event. Thus, in addition to presidential election results, we consider the probability of the realized election result in the days leading up to the election using betting markets including Betfair, PredictIt, and Intrade. For congressional elections, historical data on win probabilities is of lower quality and is complicated by the presence of multiple chambers. Thus, we aid interpretation by documenting whether each chamber experienced a change in the majority party and the margin of the win.

4 Empirical Strategy

The analysis examines the abnormal returns of student loan and for-profit college stocks in the days immediately following national elections. We present daily abnormal returns for the days before and after the election or event, as well as the cumulative change relative to the time of the event. Focusing on short-run changes is possible due to the fact that markets appear, in practice, to quickly incorporate information shocks in a way that is consistent with the efficient market hypothesis. This is important due to the fact that, in the longer run, postsecondary education stocks may be affected by earnings reports, policy announcements, product announcements, mergers and acquisitions, and various other factors. That is, the longer the time horizon that is being considered, the greater is the concern that the observed price changes are not being driven by the shock of interest. Further, there is no natural control group or subgroup of colleges and loan companies that is unaffected by national elections, regulatory announcements, and other industry-specific factors. Thus, the most credible estimates of the effects of elections and other events are measured in the short run, while longer-run estimates require much stronger assumptions.

[10] We start the analysis with the 2004 election due to the fact that the 2000 presidential election generated an unclear shock, with a contested recount in Florida, and because there was only one publicly traded student loan company prior to 2004.

4.1 Abnormal Returns

A rich finance literature examines methods of using stock market returns to estimate the effects of presidential elections, regulatory announcements, and other events, as well as the challenges of considering longer-run returns (Schwert, 1981; Huang, 1985; Campbell, Lo, and MacKinley, 1997; Santa-Clara and Valkanov, 2003; Snowberg, Wolfers, and Zitzewitz, 2007). The Trump election of 2016 spawned a particularly large literature examining various market outcomes (Wolfers and Zitzewitz, 2016; Born et al., 2017; Fan, Talavera, and Tran, 2018; Kundu, 2018; Wagner et al., 2018). In the context of for-profit colleges, Eaton et al. (2018) estimate cumulative abnormal returns in the 60 days after the announcement of the gainful employment rule and attribute a 40 percent reduction to this policy.

The abnormal return of a stock is the change in price relative to a comparison index after accounting for differences in volatility. If a stock is more volatile than its comparison index, then it would spuriously appear that the stock had experienced an excess return in response to an event. Thus scaling the returns of the index by a measure of the volatility of each stock of interest, beta, captures the abnormal return. We estimate this measure, β^{Ed}, for each student loan and for-profit college stock based on two years of daily returns prior to the election or event of interest, thus allowing the volatility of a company relative to the index to vary over time.[11] A value of beta exceeding one indicates that the education stock of interest is more volatile than the index, while a value of less than one indicates that it is less volatile. The abnormal daily return (DAR) can then be computed by adjusting the daily return of the index to reflect the volatility of the specific stock in question: $DAR_t^{Ed} = r_t^{Ed} - \hat{\beta}^{Ed} r_t^{Ind}$.[12]

The daily abnormal return is presented for student loan and for-profit college companies in the five days before and after each election or announcement. Stock prices will fully capitalize well-publicized shocks in the short-run under the semi-strong and strong forms of the efficient market hypothesis.[13] Estimates based on longer response windows are more likely to be biased by unobserved factors, as well as overlapping treatments. For example, the announcement of the gainful employment rule was followed by

[11] The estimates are not sensitive to the number of trading days prior to the event used to estimate beta. This is due to the fact that the results in the short run are driven by changes in the stocks of interest and not by large fluctuations in the broader market, sector, or industry.

[12] The estimates are nearly identical when also adjusted for fixed differences in the daily return α^{Ed} between the stock of interest and the index (the constant term from the regression of stock daily returns on index daily returns), as this constant is generally close to 0. Further, the estimates are very similar when β^{Ed} is computed using the Fama-French three factor model that takes into account the differential returns of larger and smaller companies, measured using total market capitalization (Fama and French, 1993).

[13] The immediate capitalization of shocks into stock prices is observed in several presidential elections and after earning reports. That is, in cases where we know the timing of the shock, the evidence is consistent with stock prices adjusting rapidly to new information.

the widely publicized GAO report and DOE debt data release within a three week period, thus making it highly problematic to interpret longer-run stock price changes as stemming from the policy. The cumulative return is the sum of the daily returns after the day of the election, announcement, or event. The resulting estimates reveal the additional return of postsecondary education stocks relative to the index of interest after accounting for differences in volatility. The standard errors are cluster at the stock and day levels to reflect the potential for significant variation in the distribution of stock returns after major events such as presidential elections.[14]

The index used to estimate the abnormal return essentially plays the role of the control group. For both student loan companies and for-profit colleges, the abnormal returns and estimates are computed using three different indices. First, we use the Nasdaq as the baseline comparison index due to the fact that the majority of the stocks of interest are listed on that index. Because we are interested only in domestic student loan and for-profit colleges and their response to national elections, we exclude non-U.S. based companies. A concern with using the market index to estimate abnormal returns is that these companies may belong to sectors and industries that are sensitive to other policies associated with political parties. Thus, as a second approach, we compute the abnormal returns at the sector level by comparing student loan companies to other finance stocks and for-profit colleges to other domestic consumer services companies. This exercise isolates the additional effect of an election or event beyond its impact on the sector as a whole. Finally, we compute the abnormal return of student loan companies relative to publicly traded banks, and for-profit colleges to other companies operating in the education sector, including those that produce educational software, publishing and services, and training services. However, abnormal returns relative to any of these three comparison indices are only likely to be credible in the short run. This is evident empirically, as no subset of stocks appears to provide a close counterfactual for the stocks returns of for-profit college and student loan companies.[15]

[14] An alternative method for conducting statistical inference is to empirically construct the distribution of returns for portfolios of the relevant size for each day. Comparing the returns of the for-profit college and student loan company stock portfolios to these empirically estimated distributions reveals statistical significance similar to that generated by the standard asymptotic approach.

[15] This relationship is examined by regressing the daily price changes for student loan companies against other sector and industry stocks for all dates not included in the analysis, and similarly for for-profit colleges. The exercise reveals that for-profit college stock price changes are not strongly correlated with any sector or industry, while student loan stock price changes are only slightly more strongly correlated with banks and financial stock price changes.

4.2 National Elections

The magnitude of the stock price response will depend on the extent to which the event, whether it be an election, policy announcement, or data release, is unexpected. That is, the estimated abnormal return should be scaled by the probability of an event in order for it to be easily interpreted and comparable across events. The probabilities associated with presidential elections are captured by betting markets as detailed in Appendix Table A2. Online markets reveal that, for example, the winners of the 2004, 2012, and 2018 elections had win probabilities ranging from 54 to 58 percent, 70 to 76 percent, and 21 to 22 percent, respectively. We note that in 2008, the election was not close, with online markets putting the probability of a Democratic win at 92 to 94 percent, limiting the usefulness of the shock.[16] The full effect of having the winning party in power rather than the alternative can be computed as the daily abnormal return divided by one minus the win probability, $DAR_t^{Ed}/(1-WinProb)$, and likewise for the cumulative abnormal return. The extent to which a policy announcement or other event is anticipated by the market, and the day when such anticipation occurs, is generally unknown. Thus the resulting stock price changes may be a lower bound effect. The empirical evidence in this study strongly suggests that many formal policy announcements generated little or no shock.

Examining which national elections generate effects sheds light on which rules and regulations are likely to be driving the estimates. In the case of for-profit colleges, the partisan divide over the 90-10 federal aid limit, college recruiting practices, and the 50 percent online rule existed prior to each of the presidential and congressional elections we examine. Thus, stock prices should reflect concerns about these policies in each national election estimate. By contrast, the introduction of the gainful employment rule and the release of debt and earnings data occurred in 2010 and subsequent years, and efforts to include military aid in the 90-10 rule gained traction in 2012. Thus the impact of these policies should only be reflected in later elections. In the case of student loan companies, the role of direct federal loans has been debated since the early 1990s and thus should be reflected in each election. More recent elections should reflect the elimination of private, federally guaranteed loans, borrower defense rules, and recent legal action against private lenders.

A second challenge for interpretation is that each presidential election is accompanied by a congressional election, so unexpected election results for the House or Senate could generate an additional treatment

[16] The 2008 election also occurred during a period of high volatility (which is evident graphically in the analysis) in the market due to the subprime mortgage crisis and Great Recession.

that amplifies or attenuates the presidential estimates. Two factors aid in addressing this issue. First, some presidential election years are not characterized by close congressional election results or changes in the majority party. For example, there was no change in the majority party, nor a close result, in either chamber in 2004 and 2012. Thus, the change in stock prices after these elections is likely to stem from the presidential election. Second, midterm election years shed light on whether control of the legislative branch affects postsecondary education stocks without the confounding effect of presidential elections. For example, in 2006, the Democratic Party won a narrow 51-49 majority, generating a shock to the policy environment in Congress.

In addition to national elections, we consider several policy announcements and major events that put the magnitude of the election effects into context, and that highlight the challenge of identification when the timing and probability of a shock is not well known. For colleges, we examine the dates of the DOE announcements of the proposed, final, and revised gainful employment rule, the release of a GAO report detailing widespread recruiting fraud by for-profit colleges, and the release of student debt and earnings data for college programs.[17] For loan companies, we examine the announcement of an investigation into fraud by the New York Attorney General, the introduction of the CCRAA of 2007, the release of the President's Fiscal Year 2010 Budget, the announcement of a CFPB lawsuit against Navient, and the announcement of the borrower defense rule.

5 For-Profit Colleges

This section presents estimates of the effect of national elections on the daily and cumulative abnormal returns of publicly traded for-profit colleges. Estimates are also presented for announcements relating to the roll out of the gainful employment rule and several high profile events. The importance of the party winning control of the executive or legislative branch is shaped by the partisan nature of the policies affecting for-profit colleges. As detailed in Section 2, the Democratic Party has been systematically responsible for the introduction of policies increasing oversight of these colleges under the threat of lost eligibility for federal student aid.

While the 2004 presidential election was closely contested, there is little evidence of any impact of

[17] We also examine the effect of two shocks to specific for-profit college companies that may have spillover effects on other companies. The first is the withdrawal of earnings estimates by Apollo Education Group shortly after the gainful employment announcement, GAO report, and debt repayment data release in 2010. The second is the announcement that ITT Tech has lost eligibility for federal aid in 2016.

the resulting Republican win on the stock prices of for-profit colleges. Figure 1 reveals that the average cumulative change in stock prices closely tracks those of the Nasdaq, consumer services sector, and other education companies for five days after the election. The estimates presented in Table 2 confirm this result, with an initial negative abnormal return relative to the sector of less than 3 percent and no significant cumulative abnormal return five days after the election. The magnitudes are confirmed by abnormal return estimates relative to the market and other education companies.[18] As noted in Section 4, the result of the 2008 election was widely anticipated, so observed changes in stock prices are unlikely to stem from an election shock. The resulting estimates from this election are not consistent across comparison indices, which may stem from the high level of volatility at the time. Specifically, for-profit colleges reveal zero abnormal return the day after the election, counterintuitive positive returns in subsequent days relative to the market and sector, and no significant change relative to other education stocks.

The lack of an effect after a Republican win in 2004 is in stark contrast to the large and sudden increase in prices associated with the Republican presidential win in 2016. Relative to the rest of the market, sector, and industry, for-profit colleges had cumulative abnormal returns exceeding 20 percent. While the market as a whole moved upward, the for-profit sector vastly exceeded these returns. Though not as sharp, the Democratic win in 2012 resulted in three consecutive days of statistically significant negative abnormal returns, resulting in a cumulative abnormal return of negative 8 percent relative to the rest of the sector, and negative 7 and 12 percent relative to the market and industry, respectively. Adjusting the 2012 and 2016 three day cumulative abnormal returns by their Betfair win probabilities suggests a 32 percent negative effect of a Democratic win in 2012 and a 28 percent positive effect of a Republican win in 2016. That is, the two elections in the post gainful employment rule era reveal similar net effects of the party in control of the executive branch on the value of for-profit college stocks. The magnitude of these effects indicates that investors view the industry as highly vulnerable to federal policies.

The congressional elections in 2006, 2010, and 2014 shed light on whether the House and Senate impact for-profit college stocks. The 2006 midterm election was characterized by a switch from Republican to Democratic control in both chambers, with a narrow majority of 51-49 in the Senate. Despite the fact that the outcome was unlikely to have been predicted with high probability, the estimates in Table 3 reveal no large or statistically significant abnormal return among for-profit stocks. Likewise in 2010, when the Democrats retained a narrow Senate majority but lost the House majority, and in 2014 when Republicans

[18] As shown in Appendix Table A4, there is no statistically significant abnormal return three days after the 2004 election.

won a new Senate majority, there is no evidence of any statistically significant abnormal returns among for-profit colleges in the days following the elections. That is, despite narrow wins and switching majorities, control of Congress appears to have little effect on this industry. This is an interesting result in and of itself, as it suggests that investors do not perceive the legislative branch as having a strong influence on for-profit colleges. Further, the midterm results suggest that, during the presidential election years of 2004, 2008, 2012, and 2016, when there were no changes in the majority of either chamber, the estimated effects are likely to be driven primarily by the executive branch.

The roll out of the gainful employment rule in 2010 generated very modest short-run effects. Figure 2 reveals a small and gradual change in the price of for-profit college company stocks in the five days after the announcement, which is not consistent with investors perceiving the regulation as a significant threat to firm value. The estimates in Table 4 support this, with a negative 2 percent cumulative abnormal return after three days. Likewise, the announcement of the final rule in October had no significant effect. This lack of a response could stem from anticipation of the policy or from investors not perceiving that the rule would be binding due to a lack of information about the debt and earnings of student who attend for-profit colleges. One year later, however, when the final rule was revised and weakened (allowing a multi-year period before offending programs are closed), stock prices immediately increased by 10 percent, which indicates that the policy change was at least partially unexpected and that investors perceived significant implications for the industry. In 2018, the release of the notice of proposed rulemaking to rescind the gainful employment rule again generated no notable effect on for-profit colleges, suggesting that this was fully anticipated by the market and capitalized into stock prices.[19] The difficulty of interpreting the response to policy announcements highlights the advantage of national elections, which are characterized by shocks that are well-defined in terms of both magnitude and timing.

In contrast to the initial introduction of the gainful employment rule, several events that occurred in the subsequent weeks did generate a sizable stock price response. First, the release of a GAO report documenting recruiting fraud resulted in an immediate abnormal negative return of 12 percent. This effect is likely to reflect the new information it revealed to investors about the health and business practices of

[19]The lack of response to government announcements is not restricted to those associated with gainful employment. The announcement in 2016 that ITT Tech had lost eligibility for federal student aid, leading to its immediate bankruptcy, had little effect on the stocks of other for-profit colleges. This may indicate that this event was fully anticipated by the market or that, by this time, investors were fully aware of the financial health and likelihood of action against each of the publicly traded for-profit colleges. There is also no evidence of a significant stock price effect following the DOE decision not to recognize the accreditation agency ACICS in 2016. The possibility of anticipation of policy changes is evident in, for example, a letter from several prominent economists to the Department of Education in 2017 (Cellini, Deming, Looney, Matsudaira, 2017).

these companies, and fears of additional regulatory action.[20] Of interest is that even this significant event generated a reduction in stock price that was about one-third of the magnitude of changing the party in control of the executive branch. Shortly after the GAO report, the DOE released debt and earnings data for each for-profit college program, generating an immediate 11 percent negative abnormal stock return. Again, this is likely to reflect both the direct effect of new information, and the interaction of this information with the new rule.[21] That is, while there was no notable effect of the gainful employment rule in the short run, a series of subsequent information revelations about the industry generated several sharp negative abnormal returns that are likely to be partially attributable to their interaction with the rule.

There is evidence that the for-profit colleges that are most exposed to potential changes in federal regulation experience the largest changes. After the 2016 election, the largest single shock to the industry, there is a strong positive correlation between a for-profit college company's average debt-to-earnings ratio and the price change they experienced.[22] Appendix Table A5 presents the change in stock price after the election, the debt-to-earnings ratio in 2015, and the dependence on military aid for each company in 2015.[23] A regression of the price change on the debt-to-earnings ratio and percentage of students receiving military aid reveals a strong positive relationship for both predictors of policy exposure. However, it is notable that responses to election shocks and other unanticipated events are not restricted to the most exposed companies. As shown in Appendix Figure A1, nearly every company exhibits an abnormal return of the same sign after each of the four largest shocks. Specifically, nearly every for-profit college company has cumulative price changes exceeding the market immediately following the release of the GAO report in 2010, the release of DOE data in 2010, and the 2012 and 2016 presidential elections. This would not be the case if some for-profit colleges were highly unlikely to be affected by federal policy, or if they could benefit from reduced competition if other colleges became ineligible for aid. That is, investor responses reveal that they believe that the industry as a whole is sensitive to federal policies, not just those campuses that seem most likely to experience significant sanctions.

[20] For example, during the hearing when the GAO report was released, Senator Tom Harkin expressed his desire to examine the accreditation procedure for all for-profit colleges, stating explicitly that the problem was unlikely to be limited to just those campuses that were investigated as part of the report (Lewin, 2010).

[21] In addition to the release of information by government agencies, investors also responded strongly to new information from the for-profit colleges themselves. Two months after the GAO report, Apollo Education Group, whose University of Phoenix has the largest enrollment in the sector, withdrew its earnings outlook for the next year, resulting in an additional 14 percent abnormal negative return that spilled over and generated negative returns for each other for-profit college stock.

[22] The sole exception to this relationship is American Public University, which depends heavily on the GI Bill and Department of Defense Tuition Assistance.

[23] The debt-to-earnings ratio and fraction of student receiving military aid are computed by collapsing DOE data across all branch campuses owned by a publicly traded company weighted by enrollment.

6 Student Loan Companies

As detailed in Section 2, the Democratic and Republican parties are associated with fundamentally different policies relating to student loans. Most notably, Democratic politicians favor direct student loans administered by the government over guaranteed loans and subsidies for private loan companies. In addition, Democratic administrations have taken legal action against private loan companies that provide incorrect and costly information to borrowers, and have implemented rules to protect borrowers who have debt after attending colleges that commit recruiting fraud. In contrast, Republicans in the executive branch and Congress have favored a greater role for private lenders, limiting the level of federal undergraduate grants and loans, and reducing regulatory oversight. This section examines how the stocks of publicly traded private student loan companies respond to the results of presidential elections, congressional elections, and several other major events that have affected the industry.

Figure 3 presents graphical evidence of changes in stock prices after each presidential election, showing sharp increases after Republican wins in 2004 and 2016. Using the finance sector as the comparison index, Table 5 reveals that the 2004 Republican presidential win resulted in an immediate 8.4 percent positive abnormal return. Adjusting for the win probability, this indicates that a Republican administration increased the value of these companies by 20 percent on the day after the election. Similarly, the 2016 Republican election win resulted in an immediate 15 percent increase, also corresponding to a 20 percent increase after accounting for the win probability. The effects are even larger when the abnormal returns are relative to the market rather than the financial sector (see Appendix Table A6). That is, both the 2004 and 2016 Republican presidential wins indicate that a policy environment that favors an expanded role for private loans and reduced oversight increase the value of the industry by approximately one-fifth.

While Obama was heavily favored in 2008, making a modest response predictable, it is notable that private lender stocks did not drop after a Democratic win in 2012. This is interesting due to the fact that the Republican candidate favored a greater role for private lenders in the student loan market.[24] One potentially mitigating factor during this election was that Congress was split, with the Republicans retaining control of the House, which is in contrast to the 2004 and 2016 elections when the Republicans controlled the executive and legislative branches. The midterm election estimates in Table 6 provide some evidence of the importance

[24] Republican candidate Mitt Romney's education policy proposal, "A Chance for Every Child," explicitly laid out a plan to reverse the "nationalization of the student loan market" and to "welcome private sector participation" (Romney, 2012).

of Congress, revealing an immediate 6 percent reduction in abnormal returns after the Democrats retained the House and won a narrow majority in the Senate in 2006. This suggests that the legislative branch, through its role in determining the level of Pell Grants and federal loans, may play a greater role for the student loan market than it does for regulating for-profit colleges.

Table 7 presents evidence of three types of policy events that could affect the profitability of private student loan companies. Most notably, the President's Fiscal Year 2010 Budget detailed a plan for reverting from private banks administering loans that were guaranteed by the federal government to direct loans made by the Department of Education. This plan, which fundamentally challenged the business model of for-profit lenders, was clearly unanticipated and resulted in an immediate 40 percent abnormal decrease in stock prices. Figure 4 shows that this change occurred immediately in the day of the budget release. The subsequent laws and implementation of this change did not generate additional changes, suggesting that the information revelation in the budget was the primary shock. However, several key announcements that are likely to affect private lenders did not generate significant abnormal returns. For example, there is no evidence that the introduction of the College Cost Reduction and Access Act of 2007, which undermined the profit margins of private issuers of federally guaranteed loans, resulted in a significant change in stock price.[25] Likewise, the DOE announcement of proposed borrower defense rules had no notable affect in 2016. In addition to policy announcements, there have been several major investigations and lawsuits into corruption and fraud by student loan companies. Two of the most high profile cases were the investigation into the six largest private lenders by the Attorney General of New York in 2007, and the CFPB's lawsuit against Navient for predatory lending servicing practices in 2015. There is no evidence of stock price reductions after the announcement of either of these events. The lack of responses to these major announcements supports the concern that they may be anticipated by the market.

Appendix Figure A2 presents the distribution of abnormal returns for the four events with the largest effect on the stock prices of private student lending companies. This reveals that the change after the 2004 presidential election, 2006 midterm election, 2010 presidential budget, and 2016 presidential election were very similar across each publicly traded private student loan company. This is interesting due to the fact that these companies perform fundamentally different functions (issuing loans versus servicing loans) and have faced differing levels of legal oversight. This is consistent with the stocks responding to the overall

[25] Similarly, examining the dates when the CCRAA was passed by the House and Senate and the date it was signed by the president reveal no abnormal returns.

policy environment generated by administrations that are more or less in favor of increasing the role of direct government involvement in the student loan market.

7 Conclusion

The for-profit sector plays a significant role in postsecondary education through for-profit colleges and the student loan market. This paper exploits abnormal changes in stock prices in order to provide direct empirical evidence of the effect of federal policies on the profitability and viability of publicly traded postsecondary education companies. Stock prices reflect the immediate, efficient market updating of investors' expectations and thus limit bias from confounding factors that change over time. An inconsistent pattern of results indicates that responses to policy announcements are difficult to interpret due to the possibility that they were anticipated by the market. In contrast, national elections provide a well-quantified exogenous shock to the regulatory environment. Both the executive and legislative branches are characterized by clear partisan differences in terms of the policies they support.

The analysis reveals that, over the last two elections, the for-profit college industry has become highly sensitive to control of the executive branch, accounting for approximately 30 percent of company value. However, there is little evidence of that Congress has a significant impact on this industry. In contrast, private student loan companies are sensitive to both branches of government and this has been the case over the last two decades. There is evidence that the effects of changes in party control of the federal government are strongest for companies that are most exposed to federal rules and regulations. That is, that federal policy isolates the lowest performing companies. However, shared positive and negative shocks are typically evident across all for-profit colleges and private lenders. Thus investors also appear to believe that a significant fraction of for-profit colleges will struggle to meet federal regulatory standards and that private companies that issue or service student loans are dependent on favorable federal grant and loan environment.

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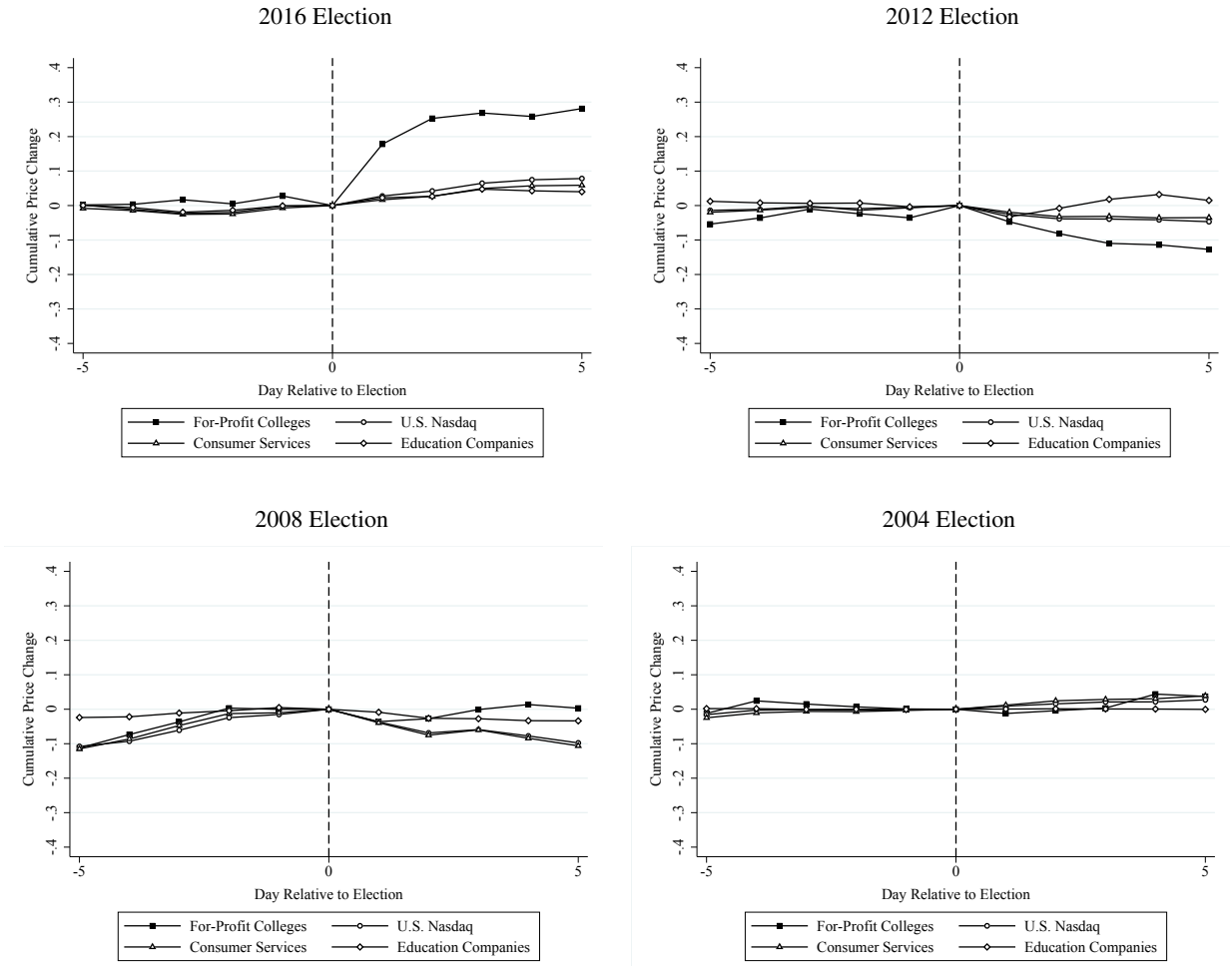
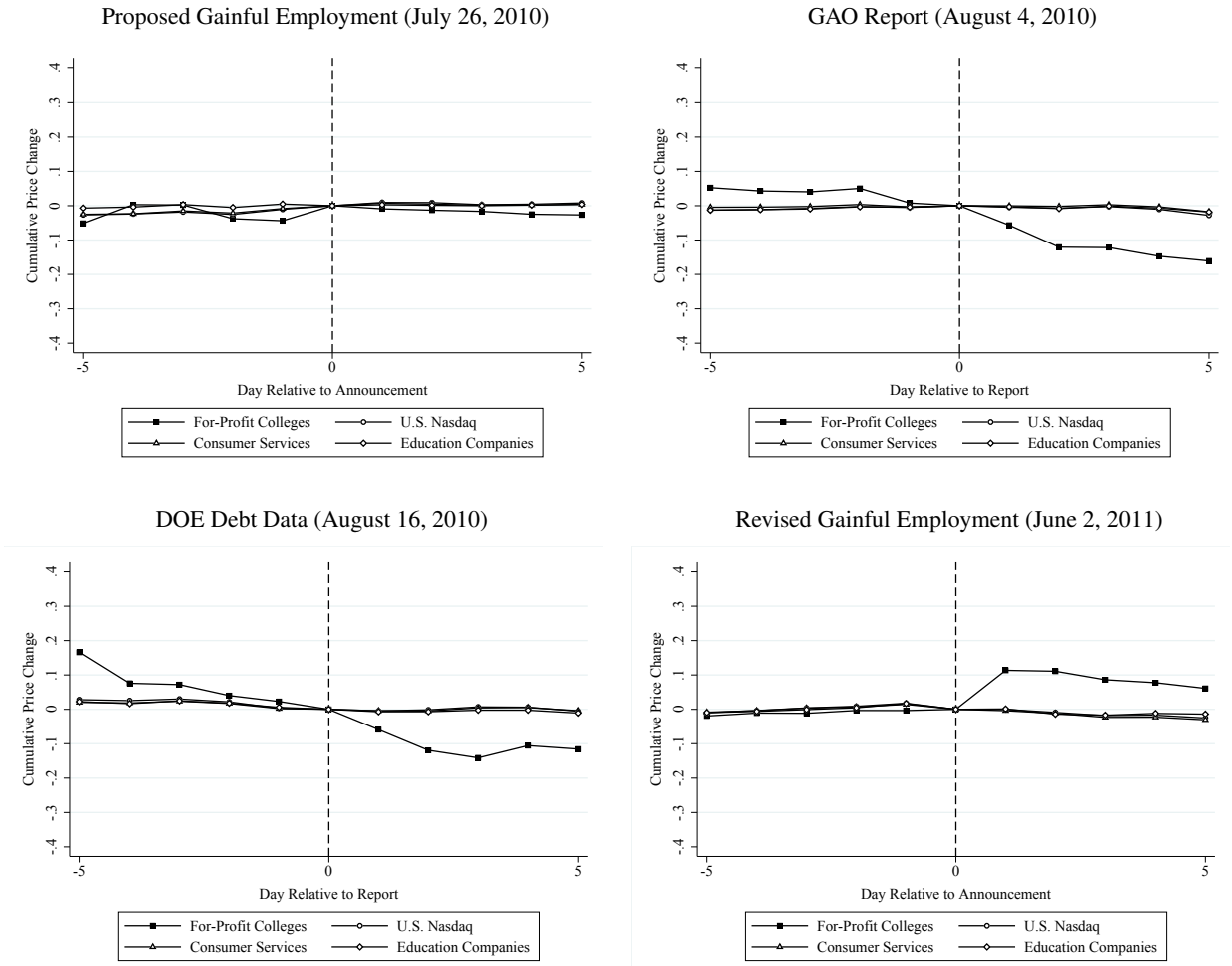
Figure 1: For-Profit College: Cumulative Price Change



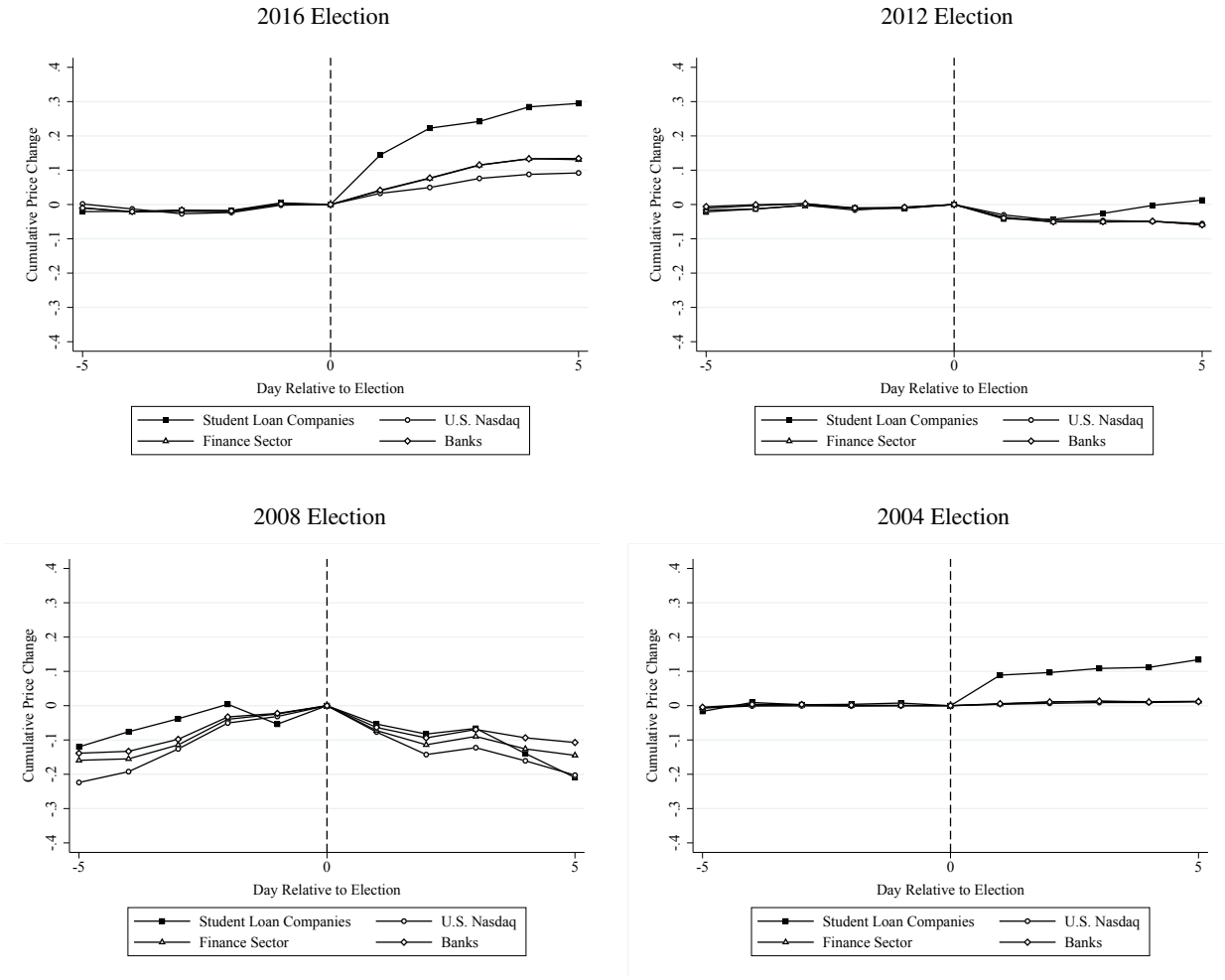
Note: Each graph presents the average cumulative change in prices among for-profit college stocks, the Nasdaq index, the consumer services sector, and publicly traded education companies. The change is measured as a fraction of the baseline closing price on election day (day 0). The comparison indices include only U.S.-based companies and the returns are adjusted by the average beta of the for-profit college stocks in order to match their volatility. Stock prices are daily closing prices adjusted for stock splits and dividends. The presidential election dates were: November 2, 2004; November 4, 2008; November 6, 2012; and November 8, 2016.

Figure 2: For-Profit Colleges: Major Events and Policy Announcements



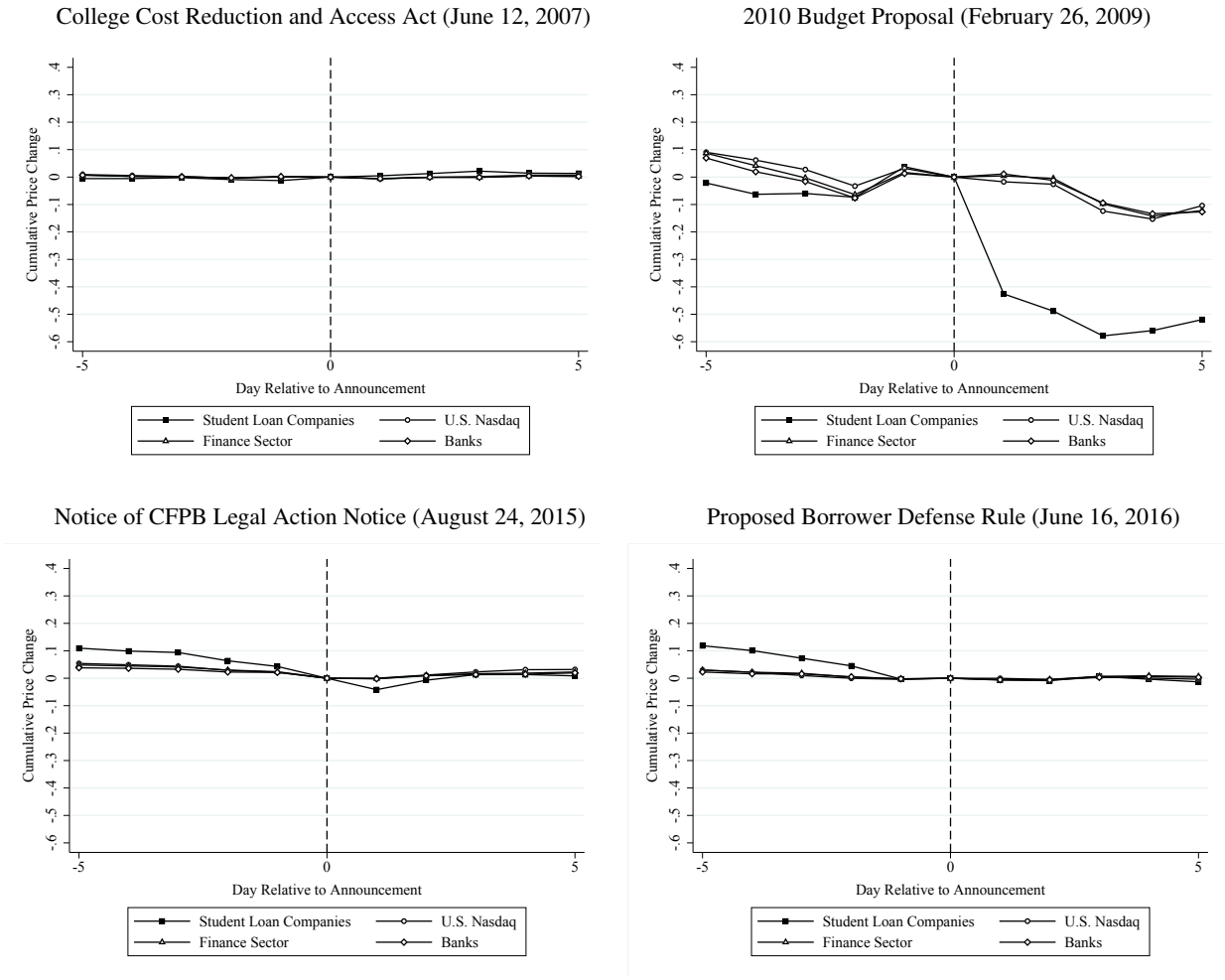
Note: Each graph presents the average cumulative change in prices among for-profit college stocks, the Nasdaq index, the consumer services sector, and publicly traded education companies. The change is measured as a fraction of the baseline closing price on the day before the announcement could be capitalized in prices (day 0). The comparison indices include only U.S.-based companies and the returns are adjusted by the average beta of the for-profit college stocks in order to match their volatility. Stock prices are daily closing prices adjusted for stock splits and dividends. The four events include: a) a proposed rule making for gainful employment on July 26, 2010; b) the release of a GAO Report on August 4th, 2010, based on an undercover investigation and detailing fraud by for-profit colleges; c) the release of student debt information for each college by the Department of Education on August 16th, 2010; and d) revised final regulations for gainful employment on June 2, 2011.

Figure 3: Student Loan Companies: Cumulative Price Change



Note: Each graph presents the average cumulative change in prices among student loan company stocks, the Nasdaq index, the finance sector, and major banks. The change is measured as a fraction of the baseline closing price on election day (day 0). The comparison indices include only U.S.-based companies and the returns are adjusted by beta in order to match the volatility of the student loan companies. Stock prices are daily closing prices adjusted for stock splits and dividends. Presidential election dates were: November 2, 2004; November 4, 2008; November 6, 2012; and November 8, 2016.

Figure 4: Student Loan Companies: Major Events and Policy Announcements



Note: Each graph presents the average cumulative change in prices among student loan company stocks, the Nasdaq index, the finance sector, and major banks. The change is measured as a fraction of the baseline closing price on the day before the announcement could be capitalized in prices (day 0). The comparison indices include only U.S.-based companies and the returns are adjusted by beta in order to match the volatility of for-profit colleges. Stock prices are daily closing prices adjusted for stock splits and dividends. The four events include: a) the introduction of the College Cost Reduction and Access Act in congress on June 12, 2007; b) the release of the President's Proposed 2010 Federal Budget on February 26, 2009; c) the mandatory announcement by Navient that it had been notified by the Consumer Financial Protection Bureau of pending legal action on August 24, 2015; and d) the DOE announcement of a proposed borrower defense rule on June 16, 2016.

Table 1: Publicly Traded Postsecondary Education Companies

For-Profit Colleges

Company	Primary College	Ticker	Publicly Traded	Avg Mkt Cap
Adtalem Education Group	DeVry U	ATGE	1991 - current	$2,316m
American Public Education	Am. Public U	APEI	2007 - current	$607m
Apollo Education Group	U of Phoenix	APOL	1994 - 2016	$7,560m
Bridgepoint Education Group	Ashford U	BPI	2009 - current	$728m
Capella Education Co.	Capella U	CPLA	2006 - current	$783m
Career Education Co.	Am. InterContinental U	CECO	1998 - current	$1796m
Corinthian College	Everest College	COCO	1999 - 2015	$1,042m
Education Management Co.	Argosy U, The Art Inst	EDMC	2009 - current	$1,325m
Grand Canyon Education	Grand Canyon U	LOPE	2008 - current	$1,442m
ITT Educational Services	ITT Tech Inst	ESI	1996 - current	$1,897m
Lincoln Ed Services Co.	Lincoln Tech Inst	LINC	2005 - current	$284m
National American U Holdings	National American U	NAUH	2007 - current	$96m
Strayer Education Inc.	Strayer U	STRA	1996 - current	$1,386m
Universal Technical Institute	Universal Tech Inst	UTI	2003 - current	$285m

Student Loan Companies

Company	Primary Service	Ticker	Publicly Traded	Avg Mkt Cap
Navient Co.	Service fed & private loans	NAVI	2014 - current	$5,713m
Nelnet Inc.	Service fed & private loans	NNI	2003 - current	$1,380m
Sallie Mae Co,	Originate private loans	SLM	1983 - current	$11,017m

Note: This table presents information about publicly traded for-profit college and student loan companies. Column 2 includes the primary college or university brand owned by each for-profit college company. A full list of colleges and universities provided in Appendix Table A1. Column 2 lists the primary services provided by the three student loan companies. Column 3 presents each company's stock ticker, and column 4 shows the range of years during which the company was publicly traded. Column 5 presents the average market capitalization during the period of thus study, though these values frequently vary substantially due to fluctuation in stock price. Only companies that operate primarily in the U.S. are included in this table and the analysis. Laureate Education is not included because it became publicly traded in 2017, after each event examined in the study.

Table 2: For-Profit Colleges: Presidential Elections

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Daily Abnormal Return				Cumulative Abnormal Return			
Election	2016	2012	2008	2004	2016	2012	2008	2004
Day -5	-0.008	0.019	0.027***	-0.007	0.021	0.028	0.039*	-0.013
	(0.022)	(0.018)	(0.009)	(0.012)	(0.040)	(0.025)	(0.023)	(0.031)
Day -4	0.008	0.013	0.013	0.024*	0.029	0.009	0.012	-0.005
	(0.005)	(0.008)	(0.008)	(0.013)	(0.020)	(0.016)	(0.024)	(0.023)
Day -3	0.025***	0.019**	-0.002	-0.013	0.021	-0.004	-0.001	-0.029*
	(0.008)	(0.009)	(0.018)	(0.009)	(0.019)	(0.015)	(0.020)	(0.016)
Day -2	-0.011	-0.008	0.006	-0.007	-0.005	-0.023	0.001	-0.017*
	(0.017)	(0.012)	(0.011)	(0.006)	(0.018)	(0.015)	(0.017)	(0.010)
Day -1	0.006	-0.015	-0.005	-0.010**	0.006	-0.015	-0.005	-0.010**
	(0.009)	(0.010)	(0.010)	(0.004)	(0.009)	(0.010)	(0.010)	(0.004)
Day 1	0.161***	-0.028***	0.003	-0.024***	0.161***	-0.028***	0.003	-0.024***
	(0.054)	(0.005)	(0.005)	(0.005)	(0.054)	(0.005)	(0.005)	(0.005)
Day 2	0.050***	-0.023***	0.046***	-0.004	0.211***	-0.051***	0.050***	-0.028***
	(0.014)	(0.006)	(0.016)	(0.006)	(0.062)	(0.009)	(0.017)	(0.009)
Day 3	-0.011	-0.032**	0.010	0.004	0.201***	-0.083***	0.060***	-0.025**
	(0.007)	(0.015)	(0.007)	(0.006)	(0.065)	(0.020)	(0.022)	(0.011)
Day 4	-0.011	-0.001	0.040***	0.039***	0.190***	-0.084***	0.100***	0.014
	(0.010)	(0.004)	(0.008)	(0.009)	(0.056)	(0.021)	(0.026)	(0.012)
Day 5	0.014	-0.017**	0.014***	-0.015***	0.204***	-0.100***	0.114***	-0.001
	(0.009)	(0.007)	(0.005)	(0.005)	(0.063)	(0.025)	(0.026)	(0.016)
R-Squared	.384	.243	.293	.447	.476	.426	.43	.192
Mean Dep	.018	-.004	.013	-.002	.094	-.032	.034	-.012
Observations	121	154	121	77	121	154	121	77

Note: This table presents the daily and cumulative abnormal returns of for-profit college stocks relative to other U.S.-based consumer service stocks traded on the Nasdaq. Estimates are presented for the five days before and after presidential elections, with Day 0 representing election day and acting as the baseline date for cumulative returns. The daily and cumulative returns of the comparison index are adjusted by beta in order to account for differences in volatility. Stock prices are daily closing prices adjusted for stock splits and dividends. Presidential election dates were: November 2, 2004; November 4, 2008; November 6, 2012; and November 8, 2016. Standard errors are clustered at the stock and day level. The symbols *, **, and *** represent statistical significance at 10, 5, and 1 percent respectively.

Table 3: For-Profit Colleges: Congressional Elections

	(1)	(2)	(3)	(4)	(5)	(6)
	Daily Abnormal Return			Cumulative Abnormal Return		
Election	2014	2010	2006	2014	2010	2006
Day -5	0.021	-0.034**	0.007	0.013	-0.009	-0.009
	(0.014)	(0.016)	(0.005)	(0.021)	(0.026)	(0.007)
Day -4	-0.007	0.008	-0.011***	-0.008	0.025	-0.016*
	(0.007)	(0.008)	(0.004)	(0.023)	(0.016)	(0.008)
Day -3	0.006	0.005	0.012***	-0.000	0.017	-0.005
	(0.011)	(0.005)	(0.004)	(0.020)	(0.014)	(0.009)
Day -2	-0.000	0.007	-0.013***	-0.006	0.012	-0.017**
	(0.012)	(0.007)	(0.004)	(0.019)	(0.010)	(0.007)
Day -1	-0.006	0.005	-0.004	-0.006	0.005	-0.004
	(0.012)	(0.006)	(0.004)	(0.012)	(0.006)	(0.004)
Day 1	-0.009	-0.013	0.019	-0.009	-0.013	0.019
	(0.015)	(0.016)	(0.013)	(0.015)	(0.016)	(0.013)
Day 2	0.005	-0.024	-0.025	-0.004	-0.037	-0.005
	(0.018)	(0.016)	(0.018)	(0.025)	(0.028)	(0.026)
Day 3	0.014	0.001	-0.023***	0.011	-0.036	-0.029
	(0.014)	(0.005)	(0.007)	(0.024)	(0.025)	(0.028)
Day 4	-0.013**	0.018***	-0.001	-0.003	-0.018	-0.030
	(0.006)	(0.004)	(0.004)	(0.025)	(0.023)	(0.030)
Day 5	0.002	0.022	0.003	-0.001	0.004	-0.026
	(0.006)	(0.016)	(0.004)	(0.029)	(0.029)	(0.032)
R-Squared	.089	.138	.284	.008	.072	.116
Mean Dep	.004	0	-.003	-.001	-.005	-.011
Observations	154	154	88	154	154	88

Note: This table presents the daily and cumulative abnormal returns of for-profit college stocks relative to other U.S.-based consumer service stocks traded on the Nasdaq. Estimates are presented for the five days before and after congressional elections, with Day 0 representing election day and acting as the baseline date for cumulative returns. The daily and cumulative returns of the comparison index are adjusted by beta in order to account for differences in volatility. Stock prices are daily closing prices adjusted for stock splits and dividends. Congressional election dates were: November 7, 2006; November 2, 2010; November 4, 2014. Standard errors are clustered at the stock and day level. The symbols *, **, and *** represent statistical significance at 10, 5, and 1 percent respectively.

Table 4: For-Profit Colleges: Major Events and Policy Announcements

	(1)	(2)	(3)	(4)	(5)
	Cumulative Abnormal Return				
	GE Proposed	GAO Report	Debt Data	GE Final	GE Revised
Day -5	0.007	-0.047***	-0.144***	0.001	0.019
	(0.014)	(0.009)	(0.031)	(0.024)	(0.013)
Day -4	-0.004	-0.049***	-0.092***	0.005	-0.010
	(0.012)	(0.008)	(0.027)	(0.024)	(0.013)
Day -3	-0.059***	-0.039***	-0.027**	-0.022	-0.013**
	(0.014)	(0.006)	(0.010)	(0.022)	(0.005)
Day -2	-0.053***	-0.033***	-0.020**	-0.026	-0.005
	(0.010)	(0.004)	(0.008)	(0.021)	(0.007)
Day -1	-0.021**	-0.037***	0.002	0.008	-0.009
	(0.008)	(0.006)	(0.004)	(0.008)	(0.005)
Day 1	-0.019***	-0.052***	-0.055***	0.007	0.114***
	(0.006)	(0.014)	(0.005)	(0.007)	(0.021)
Day 2	-0.022**	-0.118***	-0.122***	0.012	0.120***
	(0.009)	(0.025)	(0.029)	(0.010)	(0.021)
Day 3	-0.020**	-0.125***	-0.154***	0.017	0.108***
	(0.009)	(0.030)	(0.027)	(0.013)	(0.019)
Day 4	-0.030**	-0.146***	-0.112***	0.004	0.099***
	(0.012)	(0.031)	(0.029)	(0.019)	(0.018)
Day 5	-0.036***	-0.144***	-0.111***	-0.020	0.092***
	(0.013)	(0.031)	(0.029)	(0.032)	(0.019)
R-Squared	.395	.621	.59	.041	.654
Mean Dep	-.023	-.072	-.076	-.001	.047
Observations	154	154	154	154	154

Note: This table presents the daily and cumulative abnormal returns of for-profit college stocks relative to other U.S.-based consumer service stocks traded on the Nasdaq. Estimates are presented for the five days before and after the event or announcement. The daily and cumulative returns of the comparison index are adjusted by beta in order to account for differences in volatility. Stock prices are daily closing prices adjusted for stock splits and dividends. In chronological order, the following events and announcements are examined: 1) a proposed rule making for gainful employment on July 26, 2010; 2) the release of a GAO Report on August 4th, 2010, based on an undercover investigation and detailing fraud by for-profit colleges; 3) the release of student debt information for each college by the Department of Education on August 16, 2010; 4) the final regulations for gainful employment on October 29, 2010; and 5) revised final regulations for gainful employment on June 2, 2011. Standard errors are clustered at the daily level. The symbols *, **, and *** represent statistical significance at 10, 5, and 1 percent respectively.

Table 5: Student Loan Companies: Presidential Elections

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Daily Abnormal Return				Cumulative Abnormal Return			
Election	2016	2012	2008	2004	2016	2012	2008	2004
Day -5	0.011	0.001	-0.001	-0.002	0.026	0.012**	-0.066***	0.017
	(0.011)	(0.004)	(0.005)	(0.010)	(0.016)	(0.004)	(0.010)	(0.021)
Day -4	0.013	0.001	0.046**	0.020	0.014	0.011***	-0.065***	0.019
	(0.009)	(0.004)	(0.017)	(0.025)	(0.011)	(0.000)	(0.015)	(0.031)
Day -3	0.000	0.005	-0.004	-0.007	0.001	0.010**	-0.111***	-0.001
	(0.005)	(0.004)	(0.034)	(0.006)	(0.009)	(0.004)	(0.032)	(0.006)
Day -2	0.001	0.007	-0.035***	0.003	0.001	0.005	-0.108***	0.006***
	(0.003)	(0.007)	(0.004)	(0.006)	(0.005)	(0.008)	(0.001)	(0.000)
Day -1	-0.000	-0.002***	-0.073***	0.003	-0.000	-0.002***	-0.073***	0.003
	(0.005)	(0.001)	(0.006)	(0.006)	(0.005)	(0.001)	(0.006)	(0.006)
Day 1	0.104***	-0.005	0.019	0.084***	0.104***	-0.005	0.019	0.084***
	(0.031)	(0.008)	(0.025)	(0.015)	(0.031)	(0.008)	(0.025)	(0.015)
Day 2	0.033***	0.013	0.012	0.001	0.138***	0.008	0.031**	0.085***
	(0.007)	(0.014)	(0.013)	(0.002)	(0.025)	(0.006)	(0.012)	(0.014)
Day 3	-0.020***	0.018	-0.007	0.009	0.118***	0.026	0.024***	0.094***
	(0.005)	(0.017)	(0.016)	(0.022)	(0.021)	(0.023)	(0.004)	(0.008)
Day 4	0.016***	0.021	-0.041	0.004	0.134***	0.047	-0.017	0.098***
	(0.003)	(0.026)	(0.025)	(0.003)	(0.020)	(0.050)	(0.021)	(0.006)
Day 5	0.011	0.025	-0.063	0.019	0.145***	0.072	-0.079	0.117***
	(0.009)	(0.015)	(0.035)	(0.017)	(0.020)	(0.064)	(0.056)	(0.023)
R-Squared	.823	.509	.689	.814	.927	.539	.890	.950
Mean Dep	.015	.008	-.01	.012	.062	.017	-.04	.048
Observations	33	22	22	22	33	22	22	22

Note: This table presents the daily and cumulative abnormal returns of student loan company stocks relative to other U.S.-based finance stocks traded on the Nasdaq. Estimates are presented for the five days before and after presidential elections, with Day 0 representing election day and acting as the baseline date for cumulative returns. The daily and cumulative returns of the comparison index are adjusted by beta in order to account for differences in volatility. Stock prices are daily closing prices adjusted for stock splits and dividends. Presidential election dates were: November 2, 2004; November 4, 2008; November 6, 2012; and November 8, 2016. Standard errors are clustered at the day level. The symbols *, **, and *** represent statistical significance at 10, 5, and 1 percent respectively.

Table 6: Student Loan Companies: Congressional Elections

	(1)	(2)	(3)	(4)	(5)	(6)
	Daily Abnormal Return			Cumulative Abnormal Return		
Election	2014	2010	2006	2014	2010	2006
Day -5	0.001***	-0.011	0.017***	0.036***	-0.036	0.009
	(0.000)	(0.011)	(0.005)	(0.004)	(0.054)	(0.018)
Day -4	0.010***	-0.004	-0.001	0.035***	-0.025	-0.008
	(0.001)	(0.012)	(0.005)	(0.004)	(0.043)	(0.024)
Day -3	-0.000	-0.008	-0.001	0.025***	-0.020	-0.007
	(0.005)	(0.020)	(0.010)	(0.003)	(0.031)	(0.019)
Day -2	0.011***	-0.010**	0.005	0.025***	-0.013	-0.005
	(0.002)	(0.004)	(0.006)	(0.002)	(0.010)	(0.009)
Day -1	0.013***	-0.003	-0.010***	0.013***	-0.003	-0.010***
	(0.003)	(0.014)	(0.003)	(0.003)	(0.014)	(0.003)
Day 1	0.006*	0.005	-0.054***	0.006*	0.005	-0.054***
	(0.003)	(0.007)	(0.004)	(0.003)	(0.007)	(0.004)
Day 2	0.009	-0.000	-0.006**	0.016	0.004	-0.060***
	(0.007)	(0.001)	(0.002)	(0.010)	(0.008)	(0.006)
Day 3	-0.001	0.008	-0.000	0.014	0.012**	-0.060***
	(0.005)	(0.013)	(0.002)	(0.014)	(0.005)	(0.008)
Day 4	-0.003	-0.009**	0.007	0.011	0.004**	-0.053***
	(0.004)	(0.003)	(0.004)	(0.017)	(0.001)	(0.003)
Day 5	0.001	0.016	-0.013	0.012	0.020	-0.066***
	(0.002)	(0.014)	(0.016)	(0.019)	(0.013)	(0.019)
R-Squared	.561	.523	.881	.695	.328	.906
Mean Dep	.004	-.004	-.005	.018	-.005	-.029
Observations	33	22	22	33	22	22

Note: This table presents the daily and cumulative abnormal returns of student loan company stocks relative to other U.S.-based finance stocks traded on the Nasdaq. Estimates are presented for the five days before and after congressional elections, with Day 0 representing election day and acting as the baseline date for cumulative returns. The daily and cumulative returns of the comparison index are adjusted by beta in order to account for differences in volatility. Stock prices are daily closing prices adjusted for stock splits and dividends. Congressional election dates were: November 7, 2006; November 2, 2010; November 4, 2014. Standard errors are clustered at the day level. The symbols *, **, and *** represent statistical significance at 10, 5, and 1 percent respectively.

Table 7: Student Loan Companies: Major Events and Policy Announcements

	(1)	(2)	(3)	(4)	(5)
	Cumulative Abnormal Return				
	NY AG Investigation	CCRAA Introduction	2010 Budget	CFPB Lawsuit	Borrower Defense
Day -5	-0.018***	-0.007	0.149***	-0.033***	-0.081***
	(0.000)	(0.015)	(0.031)	(0.004)	(0.012)
Day -4	-0.018***	0.001	0.124***	-0.031***	-0.079***
	(0.005)	(0.006)	(0.039)	(0.006)	(0.013)
Day -3	-0.021***	-0.002	0.139***	-0.026***	-0.072***
	(0.005)	(0.007)	(0.034)	(0.009)	(0.014)
Day -2	-0.003**	-0.009	0.102***	-0.026**	-0.058***
	(0.001)	(0.010)	(0.031)	(0.010)	(0.009)
Day -1	0.009	-0.008	0.059	-0.013	-0.042***
	(0.010)	(0.005)	(0.061)	(0.008)	(0.013)
Day 1	-0.005	0.011**	-0.409***	-0.042**	-0.006
	(0.006)	(0.004)	(0.118)	(0.018)	(0.005)
Day 2	-0.016	0.014**	-0.484***	-0.017	-0.004*
	(0.012)	(0.006)	(0.004)	(0.016)	(0.002)
Day 3	-0.011	0.020**	-0.560***	-0.008	0.002
	(0.013)	(0.007)	(0.005)	(0.014)	(0.008)
Day 4	-0.006	0.008***	-0.481***	-0.015	-0.004
	(0.021)	(0.001)	(0.048)	(0.017)	(0.015)
Day 5	-0.025	0.006*	-0.442***	-0.021	-0.010
	(0.022)	(0.003)	(0.085)	(0.015)	(0.012)
R-Squared	.611	.659	.974	.669	.902
Mean Dep	-.01	.003	-.164	-.021	-.032
Observations	22	22	22	33	33

Note: This table presents the daily and cumulative abnormal returns of private student loan stocks relative to other U.S.-based finance stocks traded on the Nasdaq. Estimates are presented for the five days before and after each event and announcement of interest. The daily and cumulative returns of the comparison index are adjusted by beta in order to account for differences in volatility. Stock prices are daily closing prices adjusted for stock splits and dividends. The following events and announcements are examined: 1) the 2007 announcement of a New York Attorney General Investigation of private student lenders on March 16, 2007; 2) the introduction of the College Cost Reduction and Access Act in congress on June 12, 2007; 3) the release of the President's Proposed 2010 Federal Budget on February 26, 2009; 4) the mandatory announcement by Navient that it had been notified by the Consumer Financial Protection Bureau of pending legal action on August 24, 2015; and 5) the DOE announcement of a proposed borrower defense rule on June 16, 2016. Standard errors are clustered at the day level. The symbols *, **, and *** represent statistical significance at 10, 5, and 1 percent respectively.

Appendix

Table A1: For-Profit Colleges and Universities by Company

Ticker	Company	Colleges and Universities
APOL	Apollo Education Group	Axia College
		College for Financial Planning
		University of Phoenix
		Western International University
ATGE	Adtalem Education Group	Becker Professional Education
		Carrington College
		Chamberlain University
		DeVry University
		Keller Graduate School of Management
		Ross University School of Medicine
APEI	American Public Education	American Public University
		American Military University
		Hondros College of Nursing
BPI	Bridgepoint Education Group	Ashford University
		University of the Rockies
CPLA	Capella Education Co.	Capella University
		Capella Learning Solutions
		DevMountain & Hackbright Academy
		Sophia Online
CECO	Career Education Co.	American InterContinental University
		Colorado Technical University
COCOQ	Corinthian College	Everest College and University
		Heald College
		WyoTech
EDMC	Education Management Co.	Argosy University
		The Art Institutes
		Brown Mackie College
		South University
ESI	ITT Educational Services	Daniel Webster College
		ITT Technical Institutes
LINC	Lincoln Ed Services Co.	Euphoria Institute of Beauty Arts & Sciences
		Lincoln College of New England
		Lincoln College of Technology
		Lincoln Culinary Institute
		Lincoln Technical Institute
LOPE	Grand Canyon Education	The Coangelo College of Business
		Grand Canyon University
NAUH	National American U Holdings	National American University
STRA	Strayer Education Inc.	Strayer University
UTI	Universal Technical Institute	Universal Technical Institute

Note: This table presents a full list of college and universities owned by publicly traded postsecondary education companies. The colleges and universities are order alphabetically. In some cases new colleges are introduced or acquired after the company is already public.

Table A2: Presidential Election Winning Parties and Probabilities

Election Year	Winning Party	Probability	Source
2016	Republican	22%	Betfair
		21%	PredictIt
2012	Democrat	76%	Betfair
		70%	Intrade
2008	Democrat	94%	Betfair
		92%	Intrade
2004	Republican	58%	Betfair
		54%	Tradesports
		56%	Iowa Electronic Market

Note: This table presents presidential election probabilities based on betting markets and prediction websites. The betting websites that were open and have active trading vary across elections, and include Betfair, PredicIt, Intrade, Tradesports, and IEM. FiveThirtyEight generated widely cited election prediction for the 2012 and 2016 elections. The probabilities for the winning candidate are based on data for the day before the election. The probabilities reveal the extent to which the election results were unexpected.

Table A3: Congressional Election Majority Parties and Seat Margins

Election Year	Chamber	Change	Majority Party
2016	Senate	Democrats gain 2 seats	Republicans retain majority (52-48)
2016	House	Democrats gain 6 seats	Republicans retain majority (241-194)
2014	Senate	Republicans gain 9 seats	New Republican majority (54-46)
2014	House	Republicans gain 13 seats	Republicans retain majority (247-188)
2012	Senate	Democrats gain 2 seats	Democrats retain majority (55-45)
2012	House	Democrats gain 8 seats	Republicans retain majority (234-201)
2010	Senate	Republicans gain 6 seats	Democrats retain majority (53-47)
2010	House	Republicans gain 63 seats	New Republican majority (242-193)
2008	Senate	Democrats gain 8 seats	Democrats retain majority (59-41)
2008	House	Democrats gain 21 seats	Democrats retain majority (257-178)
2006	Senate	Democrats gain 5 seats	New Democratic majority (51-49)
2006	House	Democrats gain 31 seats	New Democratic majority (233-202)
2004	Senate	Republicans gain 4 seats	Republicans retain majority (55-45)
2004	House	Republicans gain 3 seats	Republicans retain majority (232-202)

Note: This table presents the results of Senate and House of Representatives elections for each midterm and presidential election year from 2004 to 2016. Column 3 indicates the net change in seats that occurs between the period immediately before and after the election. Column 4 indicates whether a party retained its majority or became the new majority party and the size of its majority. Note that prior election results plus gains during the election may not equal the new total due to changes during the intervening period, including retirements and special elections. Independents who do not align with the Democratic or Republican parties are included with their caucus party.

Table A4: Alternative Index Comparisons: For-Profit College Cumulative Abnormal Returns

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Nasdaq (U.S. Companies)				Education Stocks			
Election	2016	2012	2008	2004	2016	2012	2008	2004
Day -5	0.018	0.039	0.061**	-0.004	0.027	0.066***	0.181***	0.020
	(0.040)	(0.025)	(0.024)	(0.031)	(0.041)	(0.025)	(0.028)	(0.031)
Day -4	0.032	0.016	0.027	0.001	0.031	0.039**	0.098***	0.019
	(0.020)	(0.016)	(0.025)	(0.024)	(0.020)	(0.017)	(0.025)	(0.024)
Day -3	0.018	-0.000	-0.002	-0.024	0.023	0.015	0.054***	-0.020
	(0.019)	(0.015)	(0.021)	(0.016)	(0.019)	(0.015)	(0.020)	(0.016)
Day -2	-0.008	-0.019	-0.008	-0.014	-0.005	-0.013	0.024	-0.014
	(0.018)	(0.015)	(0.017)	(0.010)	(0.018)	(0.015)	(0.017)	(0.010)
Day -1	0.005	-0.018*	-0.012	-0.008*	0.010	-0.000	-0.012	-0.006
	(0.009)	(0.010)	(0.010)	(0.004)	(0.009)	(0.010)	(0.010)	(0.004)
Day 1	0.150***	-0.022***	0.001	-0.021***	0.155***	-0.014**	-0.027***	-0.013***
	(0.054)	(0.006)	(0.005)	(0.005)	(0.054)	(0.006)	(0.006)	(0.005)
Day 2	0.196***	-0.045***	0.043**	-0.020**	0.212***	-0.077***	-0.001	-0.005
	(0.063)	(0.009)	(0.018)	(0.009)	(0.063)	(0.009)	(0.016)	(0.008)
Day 3	0.186***	-0.075***	0.059**	-0.017	0.203***	-0.134***	0.027	0.003
	(0.066)	(0.020)	(0.023)	(0.011)	(0.065)	(0.020)	(0.021)	(0.010)
Day 4	0.174***	-0.078***	0.093***	0.023*	0.204***	-0.153***	0.047*	0.044***
	(0.058)	(0.021)	(0.026)	(0.011)	(0.057)	(0.021)	(0.024)	(0.011)
Day 5	0.186***	-0.088***	0.105***	0.010	0.223***	-0.152***	0.038	0.038**
	(0.065)	(0.025)	(0.026)	(0.016)	(0.063)	(0.025)	(0.023)	(0.015)
R-Squared	.429	.384	.413	.147	.491	.662	.557	.248
Mean Dep	.087	-.026	.033	-.007	.098	-.038	.039	.006
Observations	121	154	121	77	121	154	121	77

Note: This table presents the cumulative abnormal returns of for-profit college stocks relative to: a) all U.S.-based stocks traded on the Nasdaq, and b) all education stocks traded on the Nasdaq or New York Stock Exchange, including software, publishing, and training companies. Estimates are presented for the five days before and after presidential elections, with Day 0 representing election day and acting as the baseline date for cumulative returns. The cumulative returns of the comparison indices are adjusted by beta in order to account for differences in volatility. Stock prices are daily closing prices adjusted for stock splits and dividends. Presidential election dates were: November 2, 2004; November 4, 2008; November 6, 2012; and November 8, 2016. Standard errors are clustered at the stock and day levels. The symbols *, **, and *** represent statistical significance at 10, 5, and 1 percent respectively.

Table A5: Stock Price Changes, Debt-to-Earnings Ratios, and Military Aid

Company	Stock Ticker	2016 Election 3-Day Change	Debt-to-Earn Ratio	Pass Rate	Receive Military Aid
Adtalem Education Group	ATGE	19%	7.90	0.84	0.17
American Public Education	APEI	52%	3.42	1.00	0.69
Bridgepoint Education Group	BPI	25%	6.00	0.83	0.22
Capella Education Co.	CPLA	12%	6.36	0.99	0.30
Career Education Co.	CECO	29%	8.97	0.59	0.25
Education Management Co.	EDMC	83%	12.83	0.35	0.13
Grand Canyon Education	LOPE	13%	4.58	0.94	0.13
Lincoln Ed Services Co.	LINC	9%	7.17	0.82	0.06
National American U Holdings	NAUH	0%	9.11	0.60	0.15
Strayer Education Inc.	STRA	17%	6.27	0.95	0.28
Universal Technical Institute	UTI	39%	8.23	0.67	0.18

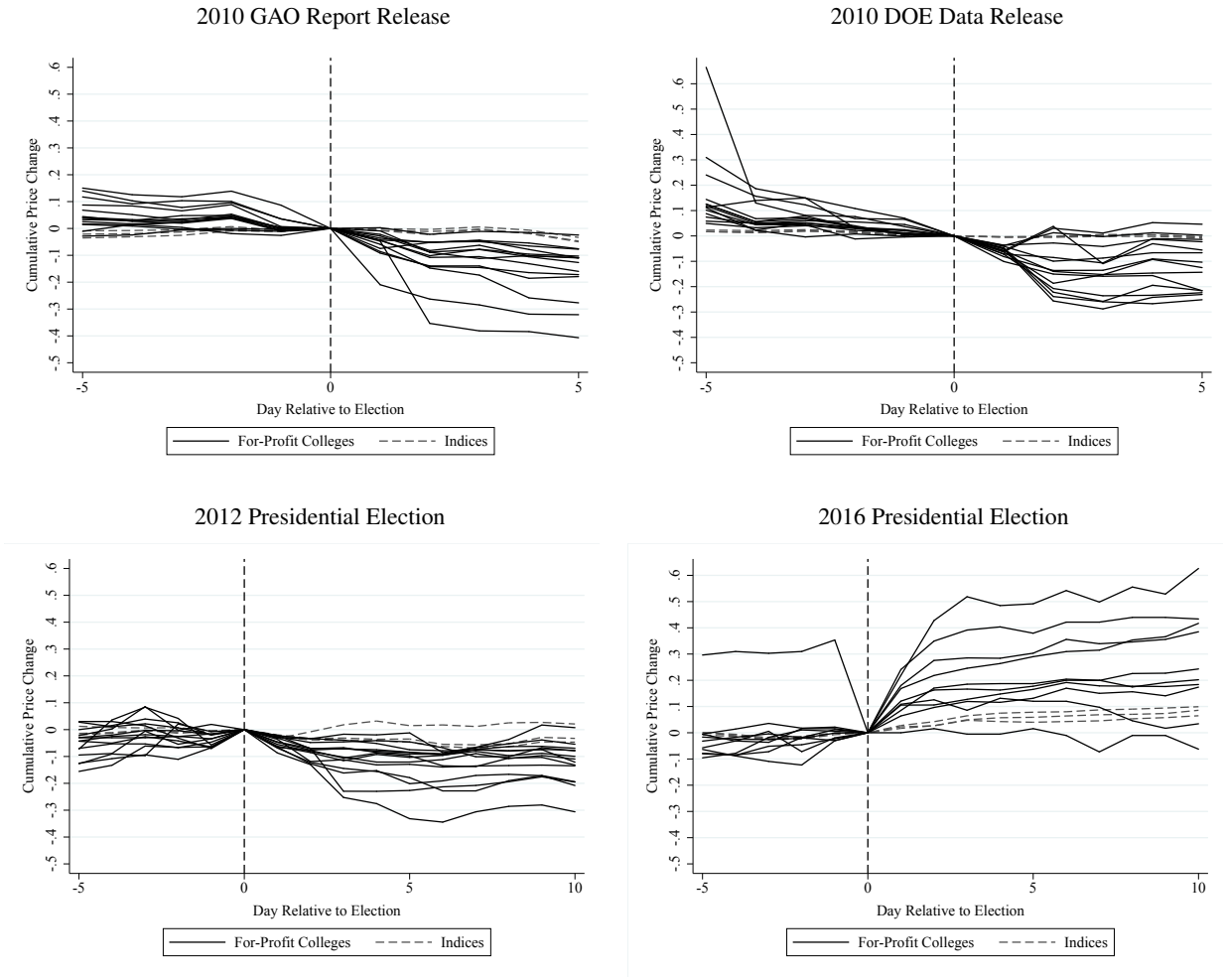
Note: This table presents several policy-relevant characteristics of for-profit colleges and the change in stock price they experienced after the 2016 election. The debt-to-earnings ratio is based on 2015 data reported by the Department of Education. The value for each company is weighted by enrollment in each program for each college or university brand. The same method is used to determine the fraction of students enrolled in programs that are deemed passing by DOE policy. The fraction of student receiving GI Bill or DOD aid is based on 2015 data reported by the National Center for Education Statistics Integrated Postsecondary Education Data System.

Table A6: Alternative Index Comparisons: Student Loan Company Cumulative Abnormal Returns

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Nasdaq (U.S. Companies)				Bank Stocks			
Election	2016	2012	2008	2004	2016	2012	2008	2004
Day -5	0.041**	0.005	-0.106***	0.022	0.023	0.015***	-0.041***	0.020
	(0.017)	(0.005)	(0.006)	(0.020)	(0.015)	(0.004)	(0.004)	(0.021)
Day -4	0.029**	0.002**	-0.131***	0.019	0.014	0.013***	-0.045***	0.020
	(0.011)	(0.001)	(0.015)	(0.030)	(0.010)	(0.000)	(0.011)	(0.031)
Day -3	0.014	-0.003	-0.146***	-0.002	0.003	0.010**	-0.090***	0.001
	(0.010)	(0.003)	(0.031)	(0.006)	(0.009)	(0.004)	(0.029)	(0.005)
Day -2	-0.003	-0.003	-0.113***	0.005***	0.006	0.002	-0.092***	0.008***
	(0.006)	(0.008)	(0.003)	(0.000)	(0.004)	(0.008)	(0.004)	(0.000)
Day -1	0.001	-0.009***	-0.077***	0.003	0.002	-0.003***	-0.068***	0.004
	(0.006)	(0.000)	(0.006)	(0.006)	(0.005)	(0.001)	(0.006)	(0.006)
Day 1	0.112***	-0.012	0.023	0.085***	0.103***	-0.002	0.010	0.083***
	(0.030)	(0.008)	(0.026)	(0.015)	(0.032)	(0.008)	(0.026)	(0.015)
Day 2	0.164***	0.003	0.061***	0.089***	0.137***	0.007	0.011	0.085***
	(0.023)	(0.005)	(0.013)	(0.012)	(0.026)	(0.006)	(0.015)	(0.013)
Day 3	0.155***	0.022	0.058***	0.098***	0.117***	0.025	0.003**	0.094***
	(0.018)	(0.022)	(0.004)	(0.010)	(0.022)	(0.023)	(0.001)	(0.009)
Day 4	0.178***	0.048	0.020	0.101***	0.135***	0.047	-0.050*	0.100***
	(0.017)	(0.048)	(0.022)	(0.007)	(0.021)	(0.050)	(0.025)	(0.006)
Day 5	0.182***	0.069	-0.017	0.118***	0.142***	0.073	-0.118*	0.118***
	(0.017)	(0.063)	(0.056)	(0.024)	(0.021)	(0.064)	(0.061)	(0.023)
R-Squared	.958	.526	.930	.953	.921	.541	.868	.951
Mean Dep	.079	.011	-.039	.049	.062	.017	-.044	.049
Observations	33	22	22	22	33	22	22	22

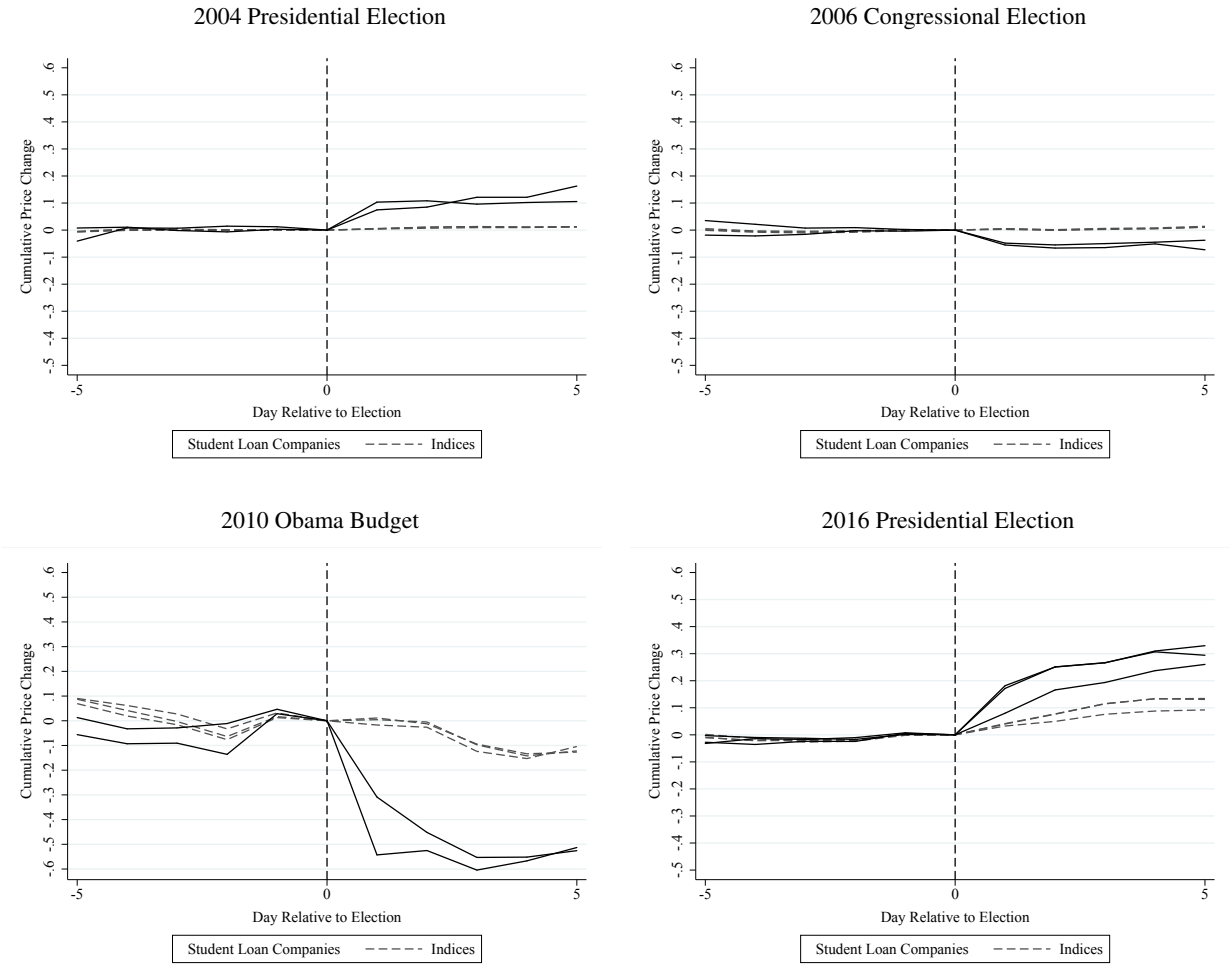
Note: This table presents the cumulative abnormal returns of student loan company stocks relative to: a) all U.S.-based stocks traded on the Nasdaq, and b) all banks traded on the New York Stock Exchange. Estimates are presented for the five days before and after presidential elections, with Day 0 representing election day and acting as the baseline date for cumulative returns. The cumulative returns of the comparison indices are adjusted by beta in order to account for differences in volatility. Stock prices are daily closing prices adjusted for stock splits and dividends. Presidential election dates were: November 2, 2004; November 4, 2008; November 6, 2012; and November 8, 2016. Standard errors are clustered at the day level. The symbols *, **, and *** represent statistical significance at 10, 5, and 1 percent respectively.

Figure A1: For-Profit Colleges: Cumulative Stock Returns



Note: Each graph presents the average cumulative change in prices for each for-profit college stock, the Nasdaq index, the consumer services sector, and education companies. The change is measured as a fraction of the baseline closing price on election day or the day before the announcement could be capitalized in prices (day 0). The comparison indices include only U.S.-based companies and the returns are adjusted by beta in order to match the volatility of the for-profit colleges. Stock prices are daily closing prices adjusted for stock splits and dividends. Presidential election dates were: November 2, 2004; November 4, 2008; November 6, 2012; and November 8, 2016.

Figure A2: Student Loan Companies: Cumulative Stock Returns



Note: Each graph presents the average cumulative change in prices for each student loan company stock, the Nasdaq index, the finance sector, and major banks. The change is measured as a fraction of the baseline closing price on election day or the day before the announcement could be capitalized in prices (day 0). The comparison indices include only U.S.-based companies and the returns are adjusted by beta in order to match the volatility of the student loan companies. Stock prices are daily closing prices adjusted for stock splits and dividends. Day 0 corresponds to the day of the presidential election and is used as the baseline closing price for measuring the cumulative change. Presidential election dates were: November 2, 2004; November 4, 2008; November 6, 2012; and November 8, 2016.