LONDON BUSINESS SCHOOL

Essays in Law, Politics, and Corporate Finance

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A thesis submitted to the London Business School for the degree of Doctor of Philosophy

July 4, 2014

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Declaration

I certify that the thesis I have presented for examination for the Ph.D. degree of the London Business School is solely my own work other than where I have clearly indicated that it is the work of others (in which case the extent of any work carried out jointly by me and any other person is clearly identified in it).

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London, July 4, 2014 *Patrick F. Akey Jr*

Abstract

This thesis examines some of the interaction between law, and politics and corporate finance. These institutions help shape the incentives of firms and other economic actors.

One section of this thesis investigates the value of firm political connections to U.S. congressional candidates in close elections using a regression discontinuity design. It describes the federal political institutions in the United States and construct a database of contributions from publicly traded firms to candidates for federal office. In a sample of off-cycle special elections, set exogenously to the contributing firms, the author compares the outcomes of firms that contributed to winning candidates to firms that contributed to losing candidates, and finds the wedge between these firms to be 1.7% to 6.8% of firm equity value. The author studies which congressional committee assignment seats are most valuable to examine which areas of policy matter most and shows that these connections matter for future sales. The author then documents additional actions that firms take to develop and maintain their political connections – engaging professional lobbyists and directly employing former government employees – and shows that these actions seem to form a cohesive political strategy.

A second section of the thesis studies incentives in civil litigation cases in the United States. The author describes how the institutional setup of the United States' class action shapes the incentives of plaintiffs and defendants and examine whether the market learns about firms by observing their behavior during litigation. The author develops a simple model of litigation and show that with information asymmetries firms may have an incentive to engage in costly litigation to prevent future lawsuits. The author examines the value implications of a firm's decision to settle a class action lawsuit and provides evidence consistent with the model, showing that firms which exit litigation by settlement trade at lower Q ratios. This reduction is not driven by profitability, leverage, size, or bankruptcy risk. Furthermore, firms that ultimately settle, but spend more money during litigation prior to settlement trade at higher Q ratios.

Acknowledgements

The author would like to thank his advisers, Brandon Julio and Julian Franks, for continued guidance and support. The author would like to acknowledge Morten Bennedsen, Ian Cooper, Atif Ellahie, Sapnoti Eswar, Vito Gala, Francisco Gomes, João Gomes, Jan Jindra, Simon Johnson, Steve Karolyi, Ralph Koijen, Anton Lines, Ted Liu, Stefan Lewellen, Amine Ouazad, Alexei Ovtchinnikov, Chris Pantzalis, Chris Parsons, Rodney Ramcharan, Oleg Rubanov, Jordan Siegel, Rui Silva, Elena Simintzi, Janis Sktrastins, İrem Tuna, Vikrant Vig, Paolo Volpin, and Alminas Žaldokas for valuable comments and suggestions. Michelle Lau provided excellent research assistance. The author would like to acknowledge the AXA Research Fund for research support and funding.

I dedicate this to my Father.

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Chapter 1

Introduction

This thesis examines some of the interaction between law, and politics and corporate finance. Differences in legal and political institutions create very different market conditions with different incentives for politicians, firms, and consumers. While deviations from perfect market conditions can mean that there is a valuable role for government intervention and for regulation, an understanding of how political and legal institutions shape the functioning of markets is critical.

Chapter 2 empirically examines the value of political connections in the United States. Two major challenges confront empirical research in this area: accurately measuring political connectedness and causally identifying the effect of political connectedness on firm outcomes. I collect data on the political contributions of publicly traded firms in the United States from 1998-2010 to measure the political connectedness of firms. I focus on the set of firms connected to politicians who narrowly win or lose closely contested elections and implement a regression discontinuity design to isolate quasi-exogenous variation in political connectedness which allows my estimates to have a causal interpretation. Existing literature (e.g Cooper, Gulen, and Ovtchinnikov (2009)) suggests that these connections could represent an investment in political capital that is beneficial for shareholders or could indicate that a firm suffers from agency problems (e.g. Aggarwal, Meschke, and Wang (2012), Coates (2012)).

I find evidence consistent with these connections representing an investment in political capital that benefits shareholders. Specifically, I find that the median value of these connections are 3% of firm equity value over a three to seven day window, for the most econometrically appealing setting. Not all connections appear equally valuable. I compare the value of different congressional committee assignments to examine which areas of policy confer the greatest advantage to connected firms. My results suggest that policy related to taxation, spending, the military, banking/finance, small businesses, and agriculture are the most important, whereas connections to the energy and commerce committees do not seem as valuable. I show that these connections have cash flow implications for firms by establishing that they lead to changes in future sales. In particular, the loss of a connection to the Senate Appropriations committee—the committee responsible for government spending—leads to a loss in future sales of $1.9 billion in the following year. I provide evidence that these results are not simply capturing politicians' preferences for enacting policies that are favorable to certain industries or their constituents.

The connection values that I estimate are too large to plausibly result from a contribution of just several thousand dollars. Firms take other actions to support politicians which may not be observable. Contributions are a good measure of connectedness, but not an accurate measurement of the intensity of the connection or the cost to the firm. To support the previous analysis, I consider two additional actions that firms take to develop and maintain political networks: directly hiring former government employees and engaging the services of professional lobbyists. I find evidence that firms that take these supporting actions benefit more from their political networks.

Chapter 3 examines how incentives in the legal system affect firms' decisions to litigate or to settle lawsuits and whether this is priced by the market. Understanding how legal institutions function is critical to understanding the enforcement of contracts. Effective contract enforcement is critical to the establishment of property rights which are necessary for the functioning of imperfect economic markets. I analyze the question of incentives in litigation both theoretically and empirically. I develop a dynamic, discrete-time model of litigation where firms of unobservably different quality are sued. Firms have the option of engaging in costly litigation or settling a case immediately for lower cost. I solve for a separating equilibrium where firms of "good" quality will prefer to engage in costly litigation to signal their type, while firms of "bad" quality will settle. Given these differences in equilibrium behavior, the market can draw conclusions about firm quality by observing their actions during litigation.

I provide evidence consistent with my model using a sample of securities fraud class action lawsuits. I look at the differences between firms which were sued and a control sample of firms in the same industries who were not sued. I examine the evolution of firm size, Tobin's Q, leverage, profitability, bankruptcy risk and market value during the stages of litigation. I find evidence that firms which were sued on average had higher values of Tobin's Q, were more profitable, less levered, and larger than firms which were not sued. Firms that settle have values of lower Tobin's Q than their counterparts who do not settle, are smaller and less levered. I find that firms which enter litigation experience a permanent decline in equity value. This decline is further magnified if the firm settles the lawsuit. To mitigate endogeneity concerns as best as possible I look *within* firms that settled and show that firms that settled, but incurred a higher cost of litigation prior to settlement have a higher post settlement valuation. This is consistent with a signalling model of litigation. Finally I find that firms which are sued and do not settle are less likely to be acquired than firms which are not sued, but that firms which are sued and do settle are as likely to be acquired as firms which are not sued.

Chapter 2

Valuing Changes in Political Networks: Evidence from Campaign Contributions to Close Congressional Elections

2.1 Introduction

The last decade has seen an increased interest in understanding the links between firms and politicians. Existing studies in finance and political economy offer mixed evidence on the efficacy and value of political connections, leaving unresolved the question of whether corporate political donations are effective in influencing policy decisions [1] .

Two challenges confront research in this area: accurately measuring political connections, and finding an econometric setting in which the endogeneity of firm political behaviour and firm outcomes can be disentangled. In this paper, I measure political connectedness using firm political contributions to US Senators and Representatives, an approach also adopted by other authors. The existing literature suggests that political contributions could represent either an investment in political capital or agency problems within a firm. For example, Cooper, Gulen, and Ovtchinnikov (2009) report a positive association between contributions and future returns to the firm, supporting the political capital hypothesis. On the other hand, Aggarwal, Meschke, and Wang (2012) and Coates (2012) use different empirical approaches and find that this association is negative, which

[1] Ansolabehere, Figuierdo and Snyder (2003) offer a concise survey of this apparent puzzle and avenues for future research.

they interpret as evidence of agency problems.

I propose a novel econometric strategy to overcome the endogeneity challenge and investigate whether campaign contributions are value-enhancing: a regression discontinuity design that isolates exogenous changes in firms' (otherwise endogenous) political contribution networks. I compare the outcomes of firms connected to politicians who just *won* a close election to those connected to politicians who just *lost* a close election. I assume that there is a meaningful component of randomness in the outcome of an ex-post close election (Lee 2008) which allows me to isolate exogenous variation in firms' political networks. Using this exogenous variation, I can then causally estimate the value of a political connection to a firm in terms of election day cumulative abnormal returns.

I measure firm connectedness both directly and indirectly. I define direct connections as contributions from firms directly to politicians who themselves ran in close elections. I define indirect connections as firms giving money to senior politicians who were *not* involved in close elections but transferred money to colleagues who *were*. To support the identifying assumptions, I show that firms connected to winning and losing politicians are comparable along standard dimensions. Moreover, I provide evidence that the outcomes of the elections themselves seem not to have been systematically predictable.

A motivating example of how firms may derive benefits from political connections can be found in Senator John Thune's support of the Dakota, Minnesota, and Eastern Railroad (DM&E) company. In 2004, Thune unseated Tom Daschle, the leader of the Senate Democrats, in a narrow upset election, winning 50.6% percent of the vote. He was a lobbyist for DM&E for two years prior to running for the Senate and received a contribution from the firm during his campaign. In his first year in office, he inserted a provision into a transport bill that allowed DM&E to apply for nearly $2.5 billion in federal funding. As The *New York Times* (2010) noted, "It might be said that Senator John Thune went through the revolving door – backward."

I consider two types of congressional elections: special elections and general elections. Special elections occur to replace sitting politicians who leave office before their terms expire and offer the cleanest setting to estimate the market value of a connection. The dates of these elections are otherwise unrelated to firm specific economic events or broader political events. However, the sample of special elections is smaller and consists only of first time challengers. The interpretation of general election abnormal returns is noisier, but contains a greater heterogeneity of candidates. This allow me to study how connection values vary for incumbent/challengers and to explore how these values vary across committee assignments.

I find that political connections have an economically large, positive value, suggesting that they represent investment in political capital. The median estimate of the wedge, or difference in outcomes, between firms connected to a winning politician and a losing politician is 3% of firm equity value over a three to seven day window. I show that there is not a confounding special election-day effect by considering those special elections that were *not* close. In those elections this wedge does not exist, supporting my contentions that these estimates capture the value of a political connection. In the larger but noisier sample of general elections, I confirm that both direct and indirect connections to winning and losing politicians are priced. The value of indirect connections has a higher economic magnitude: a one standard deviation increase in indirect connections leads to an increase of 120 basis points in abnormal returns, compared to an increase of 50 basis points for direct connections. I suggest that indirect connections are more valuable because influential politicians may be able to exert influence over their junior colleagues through an internal market for political party resources that firms cannot access. In support of this idea, I show that for every one dollar a senior politician transfers to a colleague, the political party spends 10 dollars advertising on his/her behalf. Moreover, this spending represents an important component of the candidate's resources.

Not all connections appear equally valuable. I compare the value of different congressional committee assignments to examine which areas of policy confer the greatest advantage to connected firms. My results suggest that policy related to taxation, spending, the military, banking/finance, small businesses, and agriculture are the most important. I show that these connections have cash flow implications for firms by establishing that they lead to changes in future sales. In particular, the loss of a connection to the Senate Appropriations committee—the committee responsible for government spending—leads to a loss in future sales of $1.9 billion in the following year. I provide evidence that these results are not simply capturing politicians' preferences for enacting policies that are favorable to certain industries or their constituents.

The connection values that I estimate are too large to result plausibly from a contribution of just several thousand dollars. Firms take other actions to support politicians and to develop their political networks that may not be observable. I complement the previous analysis by examining the overlap of firms' contributions and two secondary actions that *are* observable: directly hiring former government employees and engaging the services of professional lobbyists. These actions are subject to fewer constraints than campaign contributions, and I find that firms spend significantly more money on these activities. For every dollar contributed to a congressional incumbent, a firm spends, on average, 19 dollars lobbying. According to my analysis, direct connections are more valuable to firms that hire former government employees, while indirect connections are more valuable to firms that spend money lobbying. Taken together, this analysis suggests that firms engage in a variety of activities designed to develop and to foster political connection networks, and that these activities are valuable to shareholders.

The remainder of the paper has the following structure. Section 2.2 reviews the related literature; Section 2.3 describes the data and the empirical strategy; Section 2.4 reports the results; Section 2.5 investigates political network formation more descriptively; and Section 2.6 concludes.

2.2 Related Literature

The previous research looking at the value of political connections has defined "connectedness" in different ways. Fisman (2001) conducts an event study of firms that an economic consultancy described as connected to President Suharto in Indonesia. He documents negative returns in response to rumors about his worsening health. Faccio (2004) looks at political connections of firms in 47 and documents positive abnormal returns on the order of 1.5% when a demonstrably connected firm member become "active." Goldman, Rocholl, and So (2009) find a positive effect of having a politically connected Board of Directors for S&P 500 companies. Ferguson and Voth (2008) look at the change in value of firms that were connected to the Nazi movement in Germany just after the Nazis seized power in 1933. They find that connected firms outperformed unconnected ones by between 5% and 8%. However, the connection mechanism or events that these papers study can be difficult to interpret. The advantage of studying firms' campaign contributions to politicians in special elections is that there is a clear firm choice to support specific politicians in an event setting with a clear interpretation.

Other authors focus on exogenous connections such as geographical proximity or educational ties to politicians. Faccio and Parsley (2009) look at the CARs of firms geographically located near politicians who unexpectedly die and find that on average a connected firm experiences an abnormal return of -1.7%. In another study, Do et al. (2012) consider educational connections between politicians and board members. They also use a regression discontinuity design comparing CARs of firms connected to politicians who just won a close election to firms connected to politicians who just lost a close election. In contrast with previous studies, they find *negative* CARs for firms connected to politicians who just won a close election. They attribute this to a dilution of a state level connection when the politician into federal politics. On the other hand, Do, Lee, and Nguyen (2013) find that firms with education ties to gubernatorial candidates experience positive returns when these candidates are elected. In contrast with these papers, I look at endogenously chosen connections which are likely to be more economically important than exogenously defined connections and find that endogenously chosen connections have a larger impact on firm value.

Another strand of the literature studies the effects of firms' campaign contributions on firm returns and value, but the research provides conflicting answers as to whether campaign contributions are good or bad for shareholders. The existing research proposes two competing hypotheses. The first hypothesis is that firms are investing in "political capital" that is beneficial for shareholders. Cooper, Gulen, and Ovtchinnikov (2009) look at firms' donations to candidates' election campaigns and find a positive association between contributions and future returns, suggesting that this political behavior is an investment in political capital. The second hypotheses is that politically connected firms suffer from higher agency costs and that managers may maximize their personal political capital to be used to in the event that they are caught expropriating from shareholders. Aggarwal, Meschke, and Wang (2012) find a negative association between political contributions and future returns, which they contend indicates that politically active firms suffer from higher agency problems. Coates (2012) finds that politically connected firms trade at lower Tobin's Q ratios after a Supreme Court case loosened restrictions on campaign contributions than a control group of firms that do not engage in this activity. He suggests that his results are due to higher agency problems in politically active firms. Consistent with the agency story, Fulmer and Knill (2012) and Correia (2014) provide evidence that CEOs who make political contributions are able to delay SEC enforcement and are punished less severely than less politically connected CEOs. Moreover, Yu and Yu (2011) suggest that firms that spend money lobbying are able to delay fraud detection. Bourveau, Coulomb, and Sagnier (2014) provide evidence that politically connected executives are better able to engage in insider trading. In contrast, this paper exploits exogenous variation in firms' connectedness in order to strengthen causal inferences about the value of a campaign contribution connection. The results in this paper are consistent with firms making investments in beneficial political capital as opposed to the contributions indicating agency problems in the politically active firms.

Another area of the literature attempts to pin down the channels through which political connections or political contributions may enhance value for firms, such as government spending. For example, Tahoun (2014), Goldman, Rocholl, and So (2013), and Amore and Bennedsen (2013) provide evidence that political connections affect firm sales. Claessens, Feijen, and Laeven (2008) find that Brazilian firms' leverage ratios increase for connected firms following elections. Another set of papers examines government policies towards firms. Ovtchinnikov and Pantaleoni (2012) present evidence that individuals donate money to politicians who are in a position to help firms in industries that are economically relevant in their congressional district. Faccio, Masulis, and McConnell (2006), and Duchin and Sosyura (2011) find evidence that political connections affect government bailouts of firms. Johnson and Mitton (2003) suggest that Malaysian politicians attempted to prop up firms during the Asian Crisis. Acemoglu et al (2013) examine the performance of banks that have social connections to Timothy Geithner around his appointment as Treasury Secretary. They find that connected banks significantly outperformed unconnected banks which they attribute to perceptions of government policy relying on advice from this small set of connected banks. This paper contributes to this literature by documenting which areas of policy are most important to the contributing firms. Moreover, the best of my knowledge, this is the first paper to study political network formation more broadly by examining the overlap between political contributions, the employment of former government staffers, and the engagement of professional lobbyists, as a cohesive political strategy.

2.3 Empirical Strategy

2.3.1 Econometric Setup and Identification

The ideal empirical setting to study the effect of political connections on firm value would be to observe directly firm connections to politicians who were potentially in power, randomly assign some of them to elected office, and observe firm outcomes after the assignment. One obvious way to examine the effect of connections would be to compare connected firms to a "control" group of unconnected firms in similar industries or with similar geographic operations. However, the choice of whether to engage in political activity, such as making campaign contributions, is endogenous; some unobserved heterogeneity could be driving both the decision of firms to make political donations and the observed differences in outcomes between politically connected and unconnected firms. Accordingly, I apply a regression discontinuity design (RDD) to close elections in order to establish causality as neatly as possible. My identifying assumption is that there is some component of randomness that determines the outcome of a close election, in addition to candidate, region, or time factors (Lee 2008). The RDD framework does not require that the election outcomes be *perfectly* random, only there is a non-trivial random-chance element to the outcome. I compare the outcomes of firms contributing to candidates who just won to outcomes of firms donating to candidates who just lost, and document the causal effect of a "potential" political connection becoming an "active" political connection. I focus on elections that are ex-post close for two reasons. First, close elections are the setting where one would expect to observe meaningful abnormal returns. Second, there is no *direct* way to measure the level of randomness in the outcome of a particular race. In order to conduct this analysis, one must make assumptions about the elections that are most likely to meet this criterion. I follow Do et al. (2012, 2013) in using the subsample of elections that were won or lost by five percentage points or less. I provide empirical and anecdotal evidence in favor of this identifying assumption below.

It may seem straightforward to estimate the "political return" of a dollar spent supporting a politician; however, it is unlikely that the dollar donation to a politician is the sole cost of establishing and maintaining political connections. For example, U.S. Congressional hearings on the 2008 financial crisis found that the mortgage provider Countrywide had a "VIP Loan Program" which gave subsidized loans to influential politicians such as Sen. Chris Dodd, the Chairman of Senate Banking Committee from 2007-2011 (U.S. House of Representatives 2012). More formally, Bertrand et al. (2004) investigate the benefits French politicians receive from firms. They find that firms with educational connections to politicians in power alter their hiring practices in politically sensitive areas during elections. I am implicitly assuming that campaign contributions are a component of the endogenously-chosen relationship between firms and politicians, and that this approach is a reasonable way to measure connectedness. The use of abnormal returns allows me to estimate the expected *net* benefit to a firm of having political connections.

The empirical analysis consists of two sections: the first section studies close special elections, and the second section looks at close elections in the standard US congressional election cycle. It is important to note that I am not looking at the *level* of a firm's political connectedness, since I do not consider all firm donations, but rather exogenous *shocks* to the level of a firm's political connectedness. As described below, most U.S. Congressional elections occur on one fixed day every second year, making the clustering of elections for a direct RDD event study analysis problematic. Since firms can donate to multiple winning and losing candidates on the same day, the interpretation of abnormal returns on election day is much noisier.

2.3.2 Political Fundraising Data Description

Firms, unions, and trade organizations cannot directly make political contributions. A firm must establish a legal body known as a Political Action Committee (PAC) which can solicit contributions from the members of the firm and donate them as the PAC sees fit. I focus on contributions from firm PACs to politicians instead of personal contributions made from firm managers to study the cleanest measure of political connection. Firm PACs are led by a treasurer, frequently a lobbyist, former government employee, or other political specialist who is hired to make the best use of the PAC's funds. In contrast, individuals' personal contributions may reflect their own ideological biases or other characteristics that are unrelated to their firm, so the interpretation of these donations is not as clear as for the PAC donations.[2]

[2]For example, during the 1998 political cycle Goldman Sachs was managed by co-CEOs Jon Corzine and Hank Paulson and had a well-established PAC run by Judah Sommer. Sommer was a longtime aide to former NY Senator Jacob Javits and a lobbyist prior to working for the bank. The PAC, presumably benefiting from Sommer's political knowledge, contributed roughly equal sums to Democrats and Republicans while Corzine donated exclusively to Democrats and Paulson donated almost exclusively to Republicans. Both Corzine and Paulson later took on government positions with the parties to which

Politicians are not allowed to receive money personally from individuals or other organizations. They also establish PACs to raise and spend money running for election. I focus on two types of politician-specific PACs in this paper: Election PACs and Leadership PACs.[3] Politicians use funds from their Election PACs to run election campaigns. I define a contribution from a firm's PAC to a politician's Election PAC as a *direct* connection. These contributions are legally capped at $10,000 per election cycle.

I measure indirect connections using contributions to politicians' Leadership PACs. More experienced politicians often establish Leadership PACs in addition to Election PACs. Contributions to Leadership PACs are subject to the same limits as Election PACs but funds which a Leadership PAC receives are not used for election expenses. They are instead used to pass money around to other politicians who need the money for their election campaign and to consume perquisites that are billed to the Leadership PAC. [4] For example, Charlie Rangel, a long serving Democratic Representative from New York, spent $64,500 on a portrait of himself and paid with funds from his Leadership PAC. These transfers serve as a way for former politicians to remain politically active after leaving office. For example, Sarah Palin's Leadership PAC, SarahPAC, raised $5.7 million and contributed $450,000 to 96 Republican congressional candidates in the 2010 cycle although she was not running for office in that election. I define firms as *indirectly* connected to a politician in a close election if they contributed money to a politician's Leadership, PAC and he/she transferred money to a colleague in a close race.

The FEC data is transaction level data organized by election cycle.[5] I aggregate contributor PAC to recipient PAC donations by year. Table A.2 and Figure A.1 present summary statistics and time series plots of the donations to Congressional Elections PACs and all leadership PACs from PACs affiliated with firms in CRSP. It is clear that total and average levels of donations to both leadership and election PACs are increasing through time. Table A.3 lists the 40 industries with the highest Institutional PAC donations from 1998-2010 using the Center for Responsive Politics' (CRP) industry classification. [6]

they donated, so it is entirely plausible that their contributions were at least in part motivated by personal factors rather than firm factors, such as their post-Goldman Sachs careers.

[3] I exclude "soft money" organizations which were banned by the McCain-Feingold Campaign Finance reform in 2006 since soft money expenditures are not candidate specific. I also do not consider "Super PAC" donations, which were created after the Supreme Court Ruling in Citizens United v. Federal Elections Commission on January 21, 2010, since not all Super PACs are required to disclose their donors, and there is not always a clear mapping between Super PAC donors and the "recipient" politician. Excluding observations from the 2010 election cycle, when Super PACs were in operation, does not affect the results.

[4] FEC documents indicate that funds raised by Election PACs can be used for campaign expenses including operating expenses, loan repayments, and ballot initiatives, along with certain non-campaign expenses for direct duties associated with being an elected official, donations to charities, and transfers to other politicians. No such restrictions are found in FEC documentation for Leadership PACs.

[5] Federal Contribution Data is available from the FEC or the Sunlight Foundation, a non-partisan, non-profit devoted to providing data for US government transparency.

[6] The CRP is a non-profit organization which provides analysis and data on political financing and

2.3.3 Election Data Description and Identification

I obtain election data from the Federal Election Commission (FEC) for all federal elections from 1998-2010. Data for general election results are directly available to be downloaded. United States general elections are held annually in November. However, all House of Representative and Senate general elections occur in even numbered years, while Presidential elections occur in years divisible by four. A special election occurs when a politician's seat becomes open unexpectedly before his/her term has expired. This typically occurs because of a resignation or a death. There were 67 House of Representative and Senate special elections from 1998-2010. Data for special elections is not available to be directly downloaded from the FEC's website, but officials of the FEC Public Records office kindly compiled these results for this study. Table A.4 reports details of the 13 close special elections in the sample.

Panel A of Figure A.2 presents a histogram of the margin of victory for elections in the United States from 1998-2010. The average election was won by a margin of 37.7%, while the median election was won by 33%. The figure shows that a large set of elections are not contested in the general election. The 5% cut-off that I impose for my analysis falls at about the sixth percentile, so in comparison with a generic election, these elections are close. One natural way to think about ex-ante close elections would be to look at polling data or data from prediction markets. Unfortunately, consistent polling data for House of Representative elections is not available. Prediction markets typically do not exist for House of Representative elections, and those markets that do exist for Senate races are typically illiquid. One measure of election closeness that is available ex-ante, however, is candidate fundraising. As described above, politicians must disclose their fundraising receipts at least quarterly. Political publications frequently publish the relative fundraising of candidates after these reports are released as a measure of the competitiveness of each candidate. Panel B of Figure A.2 plots the average proportion of contributions received by the winning candidate against the margin of victory that he/she won by. Unconditionally, these variables are highly correlated, which is unsurprising. However, this proportion is statistically uncorrelated to the margin of victory for elections won by less than 5%. This relationship becomes significantly correlated around a margin of victory of 8%, suggesting that the sample of elections I am using was not ex-ante systematically predictable.

I offer anecdotal evidence about the randomness of several of the elections in the sample. A special election in NY-23 was held on November 3, 2009 to replace Rep. John

lobbying activities in the United States. The CRP provides an industry affiliation for all donations from PACs which includes private firms and non-firm industry organizations, such as the National Restaurant Association. The 40 industries listed in Table A.3 account for more than 60% of the "Institutional PAC" donations.

McHugh who was appointed as Secretary of the Army in Barack Obama's Cabinet. Dierdre Scozzafava ran as a Republican, Bill Owens ran as a Democrat, and Doug Hoffman ran as a Conservative Party candidate. Less than a week before the race, Scozzafava unexpectedly withdrew from the race and endorsed Owens, the Democrat. A Siena Research poll was released the day before the election which indicated that 36% of likely voters would support Owens, 41% of likely voters would support Hoffman, but that 18% of likely voters were undecided (Siena Research 2009). Democratic candidate Bill Owens ultimately beat the Conservative Party candidate Doug Hoffman by a margin of 2.4%. This result marked the first time a Democrat held the seat since 1872 (Congressional Quarterly 2010). Another example comes from the 2010 general election for Senate from Alaska. Lisa Murkowski, the Republican incumbent, narrowly lost the Republican primary to challenger Joe Miller by a margin of 1.8%. She then decided to run for re-election as a write-in candidate in the general election, facing Joe Miller, a Democrat challenger named Scott McAdams, and several minor party candidates. The election day results were 39% for Murkowski, 35% for Miller, and 23% for McAdams. Miller quickly issued a court challenge regarding the validity of enough of the write-in ballots to overturn the election results, however his challenge was unsuccessful. It is likely that in these types of elections, a meaningful component of the outcome was determined by chance.

I obtain balance sheet data from Compustat and construct firm abnormal returns by using the Fama French Three Factor value weighted model.[7] The sample contains 97 firms which made 258 contributions to the special election candidates and have abnormal return data for the analysis. I use two abnormal return windows, (-1,+5) days to remain consistent with previous literature and (-1,+1) days as a closer measurement of the election day effect. Columns (1) - (3) of Table A.5 present summary statistics for the firms connected to politicians in the close special elections. Lee (2008) formalizes the statistical conditions that must be met for RDD analysis to have a causal interpretation. He suggests testing whether there are observable differences between firms connected to winning politicians and firms connected to losing politicians, controlling for the candidate's vote share. I implement this test in columns (4) - (6) of Table A.5. Columns (4)-(6) report the average values for the firms connected to the loser, the average difference for firms connected to the winner, and the p-value of the difference controlling for the vote share in the polynomial specification that I will be using in my later analysis, respectively. Firms connected to the politician who just won are statistically indistinguishable from firms connected to politicians which just lost along standard dimensions. Furthermore, firms did not contribute more money to winning candidates than to losing candidates. While a failure to reject a null hypothesis of non-significance is not conclusive, it seems

[7]Abnormal returns are computed by adjusting the raw return by the Fama-French three factor model. Model parameter estimates are computed with one year's trading data starting a month and a half before the election. The value weighted CRSP index, along with data from Ken French's website, is used for the estimation.

that the firms connected to losing politicians are a valid control group.

2.4 Results

2.4.1 Special Elections

The 13 close special elections all happen on different days, so it is unlikely that there are any event day effects biasing the interpretation of the abnormal returns. I verify that the connected firms do not make announcements in six day event windows using Factiva. In 24 firm/election pairs the firm donated money to both the winning and the losing candidate, effectively hedging itself against the outcome. In the first specification, I consider only the firms i that donated to either the winning candidate or to the losing candidate, but not both. I define a dummy variable *Won* which takes a value of 1 if candidate j won a close election and a value of 0 otherwise. I define another variable *Vote Share* as the positive difference in vote share for a winning candidate or the negative difference in vote share for a losing candidate. For example, in a two person race where the winner obtained 51% of the vote, his/her *Vote Share* value would be +0.02 while the losing candidate's *Vote Share* value would be −0.02. I run the following specifications to see the value of "just winning" an election.

$$CAR_{i,j} = \alpha + f(Vote\,Share_j) + \beta_1 Won_j + Won_j \times g(Vote\,Share_j) + \epsilon_{i,j} \qquad (2.1)$$

Specifications (1)-(5) in Panel A of Table A.6 examine the (-1,+5) day event window, to maintain consistency with previous literature, while Specification (6) examines the (-1,+1) day event window as is more standard in an event study. In this specification, each firm is either connected to a winning or a losing candidate, and β_1 captures the average difference in value for being connected to the winner. The results indicate that the wedge between the firm connected to the winner and the firm connected to the loser is 1.7% to 6.8%. Standard errors are clustered by firm, but the results are more significant when clustering at the election or candidate level, as well as robust to using Eicker-White robust standard errors. When implementing a RDD model, it is important to verify that the discontinuity term actually picks up a discrete change in the average value of the dependent variable and is not spuriously significant because of some underlying non-linearity in the dependant variable. I present a linear model, a linear spline model, a quadratic model, and a quadratic spline model, as is standard in the regression discontinuity literature.[8] The results appear to be robust to model specification. The lower end of range of these estimates is roughly similar to what previous authors have

[8]See for example, Angrist and Pischke (2009) Chapter 6, Cameron and Trivedi (2005) Chapter 25, Lee (2005) Chapter 3, and Lee (2008).

found looking at more exogenous connections; however, the upper bound of 6.8% suggests that the value of an endogenously chosen connection is likely higher than what the literature has previously found.

In unreported results, I shrink the victory margin to 3 percentage points, repeat the estimation, and find that my point estimates remain similar in sign and magnitude. In other unreported specifications I exclude the elections which contain the largest positive returns, the largest negative returns, and the sole Senate election iteratively to ensure that my results are not driven by influential elections, and my results are robust. In further unreported specifications, I include Tobin's Q, log assets, leverage, and firm profitability as controls and find that my results are unchanged. This is not surprising as the event window I am considering is three to six days and, as shown in Table A.5, standard corporate finance variables are uncorrelated with the variable of interest.

I next change the unit of observation by considering the firms which are connected to both the winning and the losing politician (i.e. those who are hedged against the election outcome). I define new variables, *Donated* which takes the value of 1 if a firm donated to only one politician in a special election and zero otherwise, *Don Won* which take a value of 1 if a firm donated to only the winning politician in a special election and zero otherwise. Panel B of Table A.6 reports the results of the following specification.

$$\begin{aligned} CAR_{i,j} =& \alpha + f(Vote\,Share_j) + \beta_1 Donated_{i,j} + Donated_{i,j} \times g(Vote\,Share_j) + \\ & \beta_2 Don\,Won_{i,j} + Don\,Won_{i,j} \times h(Vote\,Share_j) + \epsilon_{i,j} \end{aligned} \tag{2.2}$$

In this specification, β_1 captures the effect of donating to a losing candidate *relative to a hedged firm*. β_2 captures the differential effect of donating only to the winning candidate, the analogue of the variable of interest in the previous specification. The intercept captures the average abnormal return for the hedged firm. Unsurprisingly, the hedged firms do not experience a significant return. This does not indicate that the connection is valueless, but rather that the value has already been priced since there was a 100% probability of the firm having a connection with the politician who wins. The estimated wedges are similar; the difference between being connected to only the winner as compared to only the loser is 1.4% (Specification (1)) to 6.8% (Specification (5)).

Admittedly, it is not immediately obvious how to interpret the differences in the connection value estimates. It is not the case that a particular functional form is a "baseline" specification for a RDD model. One way to think about these results is as producing a range of estimates. In this context, one could think of looking at the mean or median estimate, which are 3.4% and 2.96% respectively, with a standard deviation of 1.48. Although the observations are not independent, one can consider a simple 95% confidence interval of these estimates as giving a range of likely values. Such an interval yields lower and upper bounds of 2.3% and 4.5% respectively, suggesting that my estimates are higher than the estimates found in the existing literature.

I conduct a placebo test to ensure that the close special election regression discontinuity results are not picking up an overall special election event day effect. We would expect that in non-close elections, the analysis should not pick up a wedge between firms connected to winning and losing candidates. I perform the same analysis as in Panel A of Table A.6 on the special elections that occurred on different days, were contested by more than one general election candidate, and were won by a margin larger than 5%. Specifications (1)-(3) of Table A.7 present the regression discontinuity results for the (-1,+5) event window for various polynomial specifications, while specification (4) presents an estimate using the (-1,+1) event window. The coefficient on Won is never statistically significant, in stark contrast with the close general election results. The intercept is positive in all specifications, but never statistically significant at the 5% level. The insignificance of the placebo test results suggests that the results obtained using the close special elections are indeed estimating the connection effect on the contributing firms.

2.4.2 General Elections

While special elections offer the cleanest setting to estimate the magnitudes of political connections, the pool of candidates is necessarily first time challengers. This reduces the heterogeneity of candidates in terms of committee assignments, for example. I look at the average effects for connections made to winning and losing politicians, then look at connections to incumbents or challengers, and finally look at how connections may differ by political party. I examine whether the market also prices firms' indirect connections that are made through Leadership PAC contributions. The use of indirect connections sheds light on some of the internal workings of the political parties. I then isolate the industries that are more politically active in terms of donations and repeat this analysis to see whether connections matter more in these industries. I finally study which areas of policy most important to my sample of firms by evaluating how these connection values vary for different congressional committee assignments.

Firm connections in the general elections are more complicated since 205 close general elections occurred on seven election days in my sample. I construct portfolios of a firm's connection shocks on each election day. I consider two types of campaign contribution connections to construct these portfolios: direct contributions from firms to candidates in close elections, and contributions from firms to Leadership PACs that donated to candidates in close elections.

Looking first at direct connections, I examine at the number of winning and losing candidates j that each firm i supported in the two years (one cycle) prior to the close election at time t. Specifically I compute the following for each firm, cycle, candidate combination:

$$Won(Lost)\,P_{i,t} = \sum_j Donated_{i,j,t} \times Election\,Outcome_{j,t}$$

where $Donated_{i,j,t}$ takes the value of 1 if a firm i's PAC donated to candidate j's Election PAC in cycle t and 0 otherwise. $Election\,Outcome_{j,t}$ takes the value of 1 if politician j won (lost) the close election in cycle t and 0 otherwise. I construct the variable $Total\,P_{i,t}$ as $Won\,P - Lost\,P$ to look at a firm's net political connection portfolio. I then construct this measure to look at the number of winning (losing) incumbents (challengers) that firms i supports in cycle t, creating the variables $Incumbent\,Won\,P$, $Incumbent\,Lost\,P$, $Challenger\,Won\,P$, and $Challenger\,Lost\,P$ to sum the number of winning and losing incumbents and challengers that a firm supported. Finally, I construct this measure splitting winners and losers by political party, creating the variables $Republican\,Won\,P$, $Republican\,Lost\,P$, $Democrat\,Won\,P$, and $Democrat\,Lost\,P$ to capture the portfolios of winning and losing Republican and Democratic candidates. I also construct contribution weighted values of these connection variables, $Amount\,Won(Lost)\,P_{i,t}$.

I also consider indirect connections to the political system made through contributions to firms' Leadership PACs. The intuition for this measure comes from the fact that Leadership PACs are typically operated by members of Congress who hold more senior positions or may seek to advance in the party, and therefore may be in a position to influence internal political workings in ways which outsiders may not be able to. I first measure the connectedness of each Leadership PAC l in election cycle t according to the following formula:

$$LPAC\ Winners(Losers)_{l,t} = \sum_j Donated_{l,j,t} \times Election\,Outcome_{j,t}$$

where $Donated_{l,j,t}$ takes the value of 1 if a Leadership PAC l's PAC donated to candidate j in cycle t and 0 otherwise. $Election\,Outcome_{j,t}$ is defined as above. I then sum the number of winners or losers that a firm is indirectly connected to through its leadership PAC contributions.

$$Indirect\,Won\,(Lost)\,P_{i,t} = \sum_l Donated_{i,l,t} \times LPAC\ Winners(Losers)_{l,t}$$

I finally construct the net portfolio of indirect connections, $Indirect\,Total\,P_{i,t}$ as $Indirect\,Won\,P_{i,t} - Indirect\,Lost\,P_{i,t}$.

Panel A of Table A.8 presents summary statistics of balance sheet data for firms with direct or indirect connections to politicians in close general elections. Panel B of Table A.8 presents summary statistics for the general election connection variables. The different connection measures display a wide variation in values; however, one potential concern is that average value of the $Total\,P$ variable is 0.4, statistically different from 0. If the outcomes of the elections were perfectly random with each candidate winning with equal probability, the average value of this variable should not be different from 0. If firms were consistently able to forecast the outcome of these elections, the identifying assumption underlying the regression discontinuity could be suspect. However, Lee (2008) notes that even when agents have some ability to influence the discontinuity outcome, the RDD can capture the weighted average treatment effect, provided that agents cannot completely predetermine the outcome. [9] In the case of campaign contributions, assuming that there is a cost to supporting a candidate, this sorting would be observed if firms were systematically able to predict the outcome of an election and only donated to the winning candidate. If such firms possessed the ability to forecast or systematically manipulate the outcome of the elections, it should be present throughout time. In unreported results, I examine whether the average value of this variable is consistently positive in different election cycles and find that in some years it is significantly positive, in some years it is significantly negative, and in some years it is insignificantly different from 0. Furthermore, I construct the variables using only those elections that were won or lost at the 1% threshold, those elections that are most likely to be randomly determined, and find that the overall average value is -0.3, which is statistically different from zero at all conventional levels. Looking by cycle, at this threshold, I find that in all but two cycles, the average value of this variable is statistically negative, which suggests that the concern about endogenous sorting is minor. [10]

I first run regressions of the three day abnormal returns on all of the political connection portfolio measures described above, including election cycle and industry fixed effects. Table A.9 reports the results of the analysis. Specification (1) confirms that these connections are priced by the market. I next look at whether this effect is driven by the portfolio of winning politicians or losing politicians. Specification (2) suggests that the market reacts positively to winning connections and negatively to losing connections. The magnitude of these connections is much smaller than the magnitudes that I found in the special elections setting, 7 to 8 basis points. A more natural interpretation of these results may be to look at the effect of a standard deviation change. A one standard

[9] Lee (2008) notes, "In Summary, Propositions 2 and 3 show that localized random assignment can occur even in the presence of endogenous sorting, as long as agents do not have the ability to sort precisely around the threshold." (pp 681)

[10] Eggers et al. (2013) examine the validity of using close elections for regression discontinuity designs and note that imbalances at the election threshold may arise by chance and do not automatically invalidate the identifying assumption.

deviation increase in $Won\,P$ leads to a 22 basis point increase in abnormal returns, while a one standard deviation increase in $Lost\,P$ leads to a 21 basis point decrease in abnormal returns. I next investigate whether these connections are driven by incumbents or by challengers. Specification (3) suggests these results are primarily (negatively) driven by incumbents losing, although there is weaker evidence that both challengers and incumbents winning elections lead to positive changes in value. Specification (4) looks at whether these results differ by party. Although the point estimates are positive for winning connections to both Republican and Democratic connections, it appears that Democratic connections are more consistently priced. Specification (5) looks at the *indirect* connections that a firm has established by making Leadership PAC donations to senior politicians who transferred these donations to politicians in the close elections and finds that the market also prices these connections. Although the magnitude of the $Indirect\,Won\,P$ and $Indirect\,Lost\,P$ coefficients are smaller than the corresponding direct portfolio connections, the effect of a one standard deviation shock is larger. A one standard deviation increase in $Indirect\,Won\,P$ leads to an increase in abnormal returns of 88 basis points, while a one standard deviation increase in $Indirect\,Lost\,P$ leads to a decrease of 83 basis points. Specification (6) looks at the portfolio of connections that firms have made weighted by the donation amount. The signs and economic magnitudes are consistent with previous results, but the p-values are larger (.13 and .08). Clearly, the magnitudes of estimates in general elections are much smaller than the magnitudes found in the context of special elections. In addition to the noisier interpretation of the general election event, it is not clear that all firms or industries would benefit equally from a connection. I next explore whether these values are higher in industries that are more politically active.

I aggregate all industry donations from firms and industry associations to all candidates. The 10 largest donating industries are commercial banks, attorneys and law firms, pharmaceutical manufacturing, physician specialists, insurance companies, accountants, life insurance, telephone utilities, electric utilities, and defense contractors.[11] These industries account for approximately 40% of the CAR observations. I run the same regressions as above on the sample of firms that belong to these industries to see whether connections in these industries are more valuable than the average effect that I found previously.

Table A.10 presents my results. As expected, political connection values seem to be higher in these industries. All variables that were previously significant are still significant, and several variables that were previously insignificant become significant. Moreover, most of the point estimates increase by a factor of two or more. For example, the coefficient on $Won\,P$ changes from 7 basis points to 17 basis points, as shown in

[11]Results are robust to including more or fewer industries with significant aggregate donations.

specification (1), and the corresponding change in the effect of a one standard deviation increase changes from 22 basis points to 52 basis points. The results of Specification (3) suggests that there also seems to be a higher value of incumbent politicians winning re-election and challengers winning a first time seat. These results stand in contrast with the findings of Do et al, (2012), who find that firms with educational connections to politicians which move to higher office have negative abnormal returns. These politicians would form part a firm's portfolio of winning challengers, and the positive, significant coefficient on $Challenger\,Won\,P$ is inconsistent with their findings. This result is not completely unexpected, however, since they argue that a quasi exogenous connection such as an educational tie is "diluted" when a politician moves from state office to federal office. One would expect that if a firm is *choosing* to donate to a politician seeking higher office that the market would react positively to the politician winning a seat. There is now a statistically significant reaction to Republican connections, as well as to Democratic connections as shown in Specification (4). The contribution weighted direct connection measures are statistically significant on the sample of firms in actively donating industries, and have comparable economic magnitudes. A one standard deviation increase in the contribution weighted connection measures lead to changes of the abnormal returns of about 45 basis points. Finally, the indirect connection coefficients are again small in unit magnitude but are economically significant. A one standard deviation change in $Indirect\,Won\,P$ leads to a 120 basis point increase in abnormal returns.

The economic magnitude of the indirect connections is relatively large. One explanation is that firms may be using senior politicians to access an internal market for political resources that they themselves cannot access. Political parties are able to allocate resources to their candidates in ways that firms legally cannot. These resources are controlled by the senior politicians who run Leadership PACs, and this control can give senior politicians leverage over their junior colleagues in need of these resources. They could then use this leverage to have policies enacted that are favorable to the firms that contribute. For example, Political Party PACs, like the Democratic or Republican National Committees, spend large sums of money on direct advertising on behalf of candidates. The Center for Responsive Politics has collected data on direct media expenditures by Political Party PACs from 2000-2010. During this time period, party spending on *advertising alone* amounted to 41% of the *total amount received* in contributions to Representative candidates and 45% of the total amount received in contributions to Senate candidates in close elections.

I examine the correlation between total Leadership PAC contributions and direct political party media expenses to provide evidence that there is coordination of party resources, which may allow senior politicians to exert influence over other members of their caucus. Table A.11 presents the results of this analysis. The dependent variable is the total amount of money the political party spent on behalf of a candidate in a close election. *LPAC Contributions* represents the total amount of Leadership PAC contributions that the candidate received; *Senate* is a binary variable which takes the value of 1 if the candidate is running for the senate and 0 otherwise; *Incumbent* is a binary variable which takes the value of 1 if the candidate is an incumbent and 0 otherwise; *Won* is a binary variable which takes the value of 1 if the candidate ultimately won the election and 0 otherwise. Specification (1) presents the univariate correlation between Leadership PAC contributions without year fixed effects. The variable is highly significant, and suggests that for every dollar a candidate receives as a transfer from a senior politician, the party spends nearly \$10 in additional advertising. This variable alone explains more than 25% of the variation in party advertising expenses. I add year fixed effects in Specification (2) and candidate characteristics in Specification (3). Leadership PAC contributions remain significantly correlated with party advertising expenses. The coefficient on *Senate* is positive since Senate races typically cost more than Representative races since they are statewide. The coefficient on *Incumbent* is negative, since challengers are often at a fundraising disadvantage compared to incumbents and the political party frequently steps in to overcome this disadvantage. The coefficient on *Won* is insignificant, suggesting that the outcome of the race was not sufficiently certain in advance for the parties to reallocate funds away from losing races. The results of this analysis support the idea that politicians in competitive races are dependent on support from their more senior colleagues and the parties at large. This dependence likely makes them more responsive to internal party pressures.

The results presented so far provide strong evidence that the market prices connections between politicians and firms that make direct and indirect campaign contributions. However, politicians may have particular preferences to enact policies that favor certain industries or their home state at large, potentially to aid in future re-election campaigns. This possibility may confound the interpretation of my results since it could be that firms in certain states or industries would have benefited from these politicians' elections anyway. I address the concern about politicians acting favorably to firms that are headquartered in their home state by reconstructing the connection portfolio variables excluding all connections that are formed between politicians and firms located in the same state. These connections only account for about 10% of the close general election connections. Specifications (1)-(4) of Table A.12 present the results of the abnormal return regressions for firms in the most actively donating industries on the modified political connection variables. The results of these regressions are similar to the previous results for the same sample of firms. The number of firm observations declines because some firms have close election portfolios consisting only of politicians from their home state. I address the problem of the political connection valuation being driven by an industry effect rather than a firm effect by including industry/time interactions in the abnormal return regressions, where industry is defined at the three digit SIC level. Specifications (5)-(8) of Table A.12 report the results of these regressions. The results again have similar magnitudes and significance as the previous results; however, the adjusted R-squared increases from nearly 10% in the previous specifications to nearly 30%. This increase in R-squared suggests that in addition to a firm specific connection effect, there is also a large industry component to the CARs.

2.4.3 Congressional Committee Analysis

I next look at the abnormal returns to firms who have donated to different Senate and House of Representative committees.[12] Both the Senate and the House of Representatives have committees that are each responsible for a different area of policy. Congressional committees have a great deal of discretion over the introduction and timing of bills. Bills must be first introduced to and then and pass the relevant committee(s) before they can be considered for a general vote. Only about 5% of congressional bills and resolutions ultimately become enacted laws, suggesting that there is a large scope for committee members to affect policy in their jurisdiction. The close general elections offers a convenient setting to examine the relative value of different congressional assignments and to discover which areas of policy seem to be the most valuable.

I construct net portfolios of the number of winning politicians that a firm is connected to on each committee minus the number of losing politicians which sat on the committee for all standing congressional committees. I present the results for the committee assignments that received the largest number of contributions. I only present the results for the sample of firms in actively donating industries to conserve space. Results are similar in significance but smaller in size for the entire sample. Table A.13 reports the results. Specification (1) in Panel A shows the baseline results for an Senate or House of Representatives connection. Both Senate and House connections are statistically significant. The most valuable Senate committees are those related to agriculture, taxes, banking, and the military with connection values that range from 45 basis points to 63 basis points. The most valuable House committees are those related to spending, taxes, small business, the military, and infrastructure with connection values ranging from 25 to 44 basis points.

2.4.4 Forward Sales Analysis

I next document that these connections have cashflow implications for firms by looking at changes in future values of sales. Congressional politicians have a great deal of influence

[12] Committee assignment data comes from Edwards and Stewart (2006).

over the allocation of discretionary government spending, so this area is a natural place to look for cashflow benefits. I do not claim that sales are the only mechanism through which firms can leverage their connections to extract value, but rather one of many. Belo, Gala, and Li (2013) find that firms with high exposure to government spending experience higher returns and cashflows under Democratic presidencies. Goldman, Rocholl, and So (2013) argue that politically connected boards may help in getting government contracts by looking at changes in the control of federal government branches, so this could be one way that politicians affect their contributors' future sales. However, politicians in power are not permitted to sit on a board of directors, so positive results for winning politicians cannot be picking up the same political benefits that these authors are finding. On the other hand, politicians are also in a position to influence discretionary government spending which board members cannot directly influence. Cohen, Coval, and Malloy (2011) find evidence that changes in political committee chairs lead to changes in government spending policy, which seem to crowd out private sector investment. However, politicians could be directing some of this spending to firms to which they are connected. In order to investigate this formally, I consider the change in sales in the following year. I use this measure because my connections variables capture shocks to, or changes in a firm's political connectedness, and it seems natural to look at the corresponding changes in sales during the following period.

I focus on total sales instead of specifically looking at government contracts because there are other actions that politicians can take to improve a firm's revenues. A very recent example can be seen in Rep. Tom Petri's support of Oshkosh Corporation and Manitowac Company. The Office of Congressional Ethics (OCE) released a report on October 1, 2014, documenting actions that the politician took on behalf of both of these firms that have a history of making political contributions to his Election and Leadership PACs. The OCE found that Petri advocated on behalf of Oshkosh's award of a $3 billion contract with the Department of Defense. Additionally, he facilitated meetings with members of the Foreign Affairs committee regarding federal approval of the sale of military vehicles to the United Arab Emirates and orchestrated meetings with an Egyptian defense officials, another market where Oshkosh sells military vehicles. The OCE also found that Petri intervened on behalf of Manitowac Company's application for an exemption from Environmental Protection Agency regulations. A senior firm employee testified that the exemption would "literally prevent Manitowac from losing roughly $ 500 [million] in revenue."[13] In these cases, all of these effects would be captured by looking at firm sales, but only the first case would be captured by looking at federal contracts.

I run the following regression, where ΔQ is the lagged change in Tobin's Q, $\Delta Leverage$ is the lagged change in leverage, $\Delta Size$ is the lagged change in log total assets, $\Delta Profitability$

[13] The OCE report can be found at http://ethics.house.gov/sites/ethics.house.gov/files/OCE%20Report.pdf.

is the lagged change in operating profit and *Connection* is the measure of political connection under consideration. All specification include firm and cycle fixed effects.

$$\begin{aligned}\Delta\, Sales_{i,t+1} =& \alpha + \beta_1 Connection_{i,t} + \beta_2 \Delta Q_{i,t} + \beta_3 \Delta Leverage_{i,t} + \beta_4 \Delta Size_{i,t} + \\ & \beta_5 \Delta Profitability_{i,t} + \epsilon_{i,t+1}\end{aligned} \tag{2.3}$$

Table A.14 presents the results of this analysis. Specification (1) and (2) show that there is a strong average effect for both connections to winning and losing politicians. These results suggest that an average connection leads to an increase in forward change in sales of 300 million. It seems that these changes are driven by connections to incumbent politicians as shown in Specification (3). In contrast with the abnormal return results, Republican connections appear to matter more for changes in sales.

I explore the specific government mechanism more formally in specifications (5) and (6). As noted above, government contracts are one mechanism through which firms can benefit from government spending. The Senate and House of Representative Appropriations Committees are responsible for the allocation of this spending. I next look at whether connections to the Senate Appropriations committee members lead to changes in sales. Specification (6) presents the results of this analysis. It seems that losses to connections of Appropriation committee members lead to significant loses in future sales, the point estimate on Senate Appropriation committee connections which are lost is -1,915, significant at the 1% level. The magnitude of this coefficient at first glance may be surprisingly large, however, the discretionary component of the US Federal Budget in 2010 was about $1.4 trillion dollars, so this figure represents about 0.15% of the discretionary budget and about 10% of average firm sales, so this is economically sensible. It is also noteworthy that the amounts cited in the OCE's investigation of Representative Petri are in line with the magnitudes that I estimate. I confirm that this is not driven by a simple Senate connection effect in Specification (5), where I regress changes in forward sales against portfolios of Senate and Representative winners and losers. The coefficient on the Losing Senator portfolio is significant at the 10% level, but more than four times smaller than the coefficient on the Senate Appropriations committee loss variable, suggesting that I am not capturing a simple Senator effect. I finally examine whether indirect connections lead to future changes in sales. Specification (7) reports the results of this specification, while the coefficients have the expected signs, the magnitudes are much smaller and the coefficients are insignificant.

In unreported specifications, I test the robustness of these findings by introducing industry/year fixed effects and contribution weighted connection measures, as well as by considering the log of forward sales instead of the change in sales. I generally find similar results, with the most significant results coming from shocks to the Senate Appropriations Committee. Results of these tests are available upon request.

2.5 Discussion

So far, the analysis has shown that firms' political contribution networks have a large, positive value. These magnitudes seem too large to be the effect of a contribution that is capped at $10,000. One interpretation of making contributions is as way for firms to open the door to the political system and to provide access to politicians. The existing laws that regulate the relationships between firms and politicians prevent demonstrable cases of *quid pro quo* exchanges, but may not restrict firms having access to politicians. For example, in a 2014 Supreme Court ruling on campaign finance law, Justice Breyer noted, "Individual donors testify that contributions provide them access to influence federal office-holders on issues of concern to them." [14] Firms may take additional actions to influence politicians through channels that may or may not be observable to the econometrician. In this section, I examine two other types of political behavior that are observable to the econometrician — directly employing former government employees and spending money on professional lobbyists. I show that firms spend more money on these actions and that these actions seem to compliment firms' political strategies. This suggests that, while campaign contributions are a reliable measurement of "connectedness", they may not be an appropriate measure of the intensity of the connection.

Since 1998, professional lobbyists have been required to register with the Office of the United States Senate and to report who their clients are, to quantify their clients' spending, and to provide some details about the area of policy that they are being paid to lobby. In contrast with campaign contributions, lobbying expenditures are not constrained. I match the data to firms in my sample from the most actively donating industries. During the sample, these firms spent $4.7 billion lobbying the federal government, which is 19.2 times larger than the $245 million contributed to congressional incumbents during the same period.

I obtain data on the employment or former government employees from the Center for Responsive Politics (CRP). The CRP provides a searchable database which allows me to collect this data for the sample of firms in the actively donating industries. The majority of these employees worked as staffers for federal politicians in roles such as legislative director, chief of staff, or press relations. I collect data both as a binary variable indicating that a firm currently employs someone that previously worked in

[14]McCutcheon v. Federal Election Commission 572 U.S. ___ (2014)

government, as well as the number of former staffers a firm hires. These employees are typically given titles such as "VP Legislative Affairs" and are employed as government specialists. For example, Time Warner has hired 25 former government employees. Eight were affiliated with the congressional judicial committees; ten were affiliated with the congressional commerce committees; three worked for Republican congressional leaders; one worked for Democratic president Bill Clinton; one worked for Nicolas Mavroules; a Representative who was convicted on 15 counts of corruption. The judicial committees are responsible for anti-trust policy, while the commerce committees are responsible for oversight of the communications industries.

Panel A of Table A.15 presents summary statistics for the lobbying and employment data. Roughly one third of the firms employ former staffers in any given political cycle, while roughly two thirds of the firms engage in lobbying. Firms that hire former staffers, on average have two or three of these employees in a given cycle, while firms that lobby, on average spend \$3.69 million per election cycle.

In order to provide evidence that firms are incurring costs to influence politicians, reliable data at the firm/candidate/time level such as contribution data is necessary. Unfortunately, lobbyists are not required to disclose which politicians they are lobbying. However, as noted above, lobbyists are required to disclose the area of policy that they have been hired to advocate for. I use this data to show that firms are contributing to the same politicians who are responsible for the areas of policy that they are lobbying. Specifically, I match each area of policy in the lobbying records to the relevant committees in the Senate and House using the House and Senate Rules and examine the correlation between total contributions to members of each committee and lobbying expense to the policy area the committee is responsible for. Panel B of Table A.15 presents the results of this analysis. Specification (1) presents this analysis for all observations, while Specification (2) examines only the sample of positive values. The results indicate that for every dollar that a firm contributes to a congressional committee, it is simultaneously spending roughly \$15 lobbying the same area of policy. Since congressional committees have purview over any legislation that falls in their policy domain, these legislators should be the targets of the firm lobbying.

More generally, one can think of firms directly employing former government staffers in government affairs divisions as a more direct strategy to influence government policy, while paying professional lobbyists as a more indirect strategy. These actions, along with forming direct and/or indirect contribution connections, could be complementary actions or substitute actions. I first examine whether firms are more or less likely to lobby if they employ a former government employee, and then examine whether the connection values which were previously estimated differ in firms which lobby or firms which employ former staffers.

Panel C of Table A.15 presents evidence of the likelihood of lobbying and hiring former staffers. In all specification, the independent variable is the binary variable *Employ*. The dependent variable in the regression presented in Specification (1) is the binary variable *Lobby*. The coefficient on *Employ* suggests that firms which employ former staffers are eight percent less likely to spend money lobbying. Specifications (2) and (3) repeat this analysis using the log amount spent lobbying, along with the amount spent scaled by firm assets, and similarly finds a negative relationship between employing former staffers and lobbying. This suggests that the actions are more likely substitutes than compliments.

I explore how the connection values differ in firms which lobby and firms which employ former government employees. I rerun the baseline general election abnormal return regressions including interacting the $Total\,P$ and $Indirect\,Total\,P$ with *Lobby* and *Employ*. Table A.16 presents the results of this analysis. In Specifications (1) and (2) the interaction of the direct connections and *Employ* is significantly positive, while the interaction with *Lobby* is insignificant. These results suggest that the firms that engage in other direct political behavior benefit more from direct connections to politicians. In contrast, in Specifications (3) and (4), the only significant interaction term is the interaction with *Lobby*. These results suggest that firms that engage in other indirect types of political behavior benefit more form indirect connections to politicians.

This analysis has shown that firms engage in a variety of coordinated political actions. Some firms choose to take more direct approaches to political network formation by focusing on direct contributions to lawmakers and by employing former government employees with direct ties to government. Firms that concurrently employ former government staffers and make direct contributions benefit more from these connections than firms that do not employ these staffers. Other firms take actions that are more indirect in nature. They focus on contributions to senior politicians who may use some of these funds to consume private perks or to transfer money to their colleagues to establish and maintain leverage within the party. These senior politicians seem to coordinate important political party resources with these transfers. Firms compliment these indirect contributions by contracting professional lobbyists to advocate on their behalf, a secondary action that is also more indirect than employing former government employees. Firms that engage the services of lobbyists benefit more from their indirect connections than firms that firms that do not. Taken together, this suggests that firms develop their political networks using a variety of actions that are coordinated and that these connections are valuable.

2.6 Conclusion

This paper contributes to the emerging literature that attempts to estimate the value of firms' connections to politicians. I look at firms' endogenous donations to US Congressional election candidates and employ a regression discontinuity design to identify causally the value of these connections. I examine cumulative abnormal returns of firms connected to politicians who narrowly win or narrowly lose a close election.

I first consider the smaller sample of close special elections and document a wedge of 1.7%-6.8% between firms connected to winning politicians and firms connected to losing politicians. This range is higher than the estimates previously reported in the literature. I next consider the larger but noisier setting of close general elections and construct portfolios of winning and losing connections.

On election days, the market reacts positively if a firm is connected to winning politicians and negatively if it is connected to losing politicians, but the magnitudes are smaller than for special elections. These results are driven primarily by incumbent, Democratic candidates. The market reacts more strongly to *indirect* connections, which I measure through contribution to senior politicians' Leadership PACs. I provide evidence that these connections are stronger because of internal party resource allocation, in situations where senior politicians may be able to influence party members in ways that firms cannot. I show that these effects are not driven by politicians' preferences for certain industries or by geographical preferences.

I then identify the areas of policy that matter most to the firms in my sample by examining which committee assignments are the most valuable. Connections to the banking, spending, agriculture, tax, small business, and military committees are the most important. I document a cash flow effect of these connections — future sales. I show that the loss of a connection to a Senator on the committee responsible for overseeing discretionary government spending leads to an average decrease in future sales of $1.9 billion. I conclude by showing that political contributions are part of politically active firms' broader strategies of policy engagement. The results of this paper strongly suggest that firms' campaign contributions represent investments in political capital and they have higher values than previous research has found.

Chapter 3

The Information Content of Firm Behavior During Litigation

3.1 Introduction

The enforcement of contracts is of first order importance to establishing property rights, which in turn, are critical to the functioning of imperfect markets. In the presence of information asymmetries and transaction costs the Coase Theorem cannot hold and the allocation of property rights and the means to enforce those rights becomes important. Transaction costs and information asymmetries make the distinction between *de jure* illegality and *de facto* illegality extremely relevant. An action may be de jure illegal but de facto legal if the costs for the aggrieved party to enforce the law are too high to make enforcement rational.

In the United States the class action lawsuit is an important legal mechanism which is designed to reduce the costs of contract enforcement. It is a type of lawsuit where a group of plaintiffs collectively sue one or more defendants. It is designed to encourage smaller plaintiffs who were subject to a common injury and may be unable individually to pay for the legal costs of suing a large defendant to consolidate their cases to reduce the individual costs of litigation. These lawsuits are important corporate events which prompt very large stock market reactions. For example, Figure B.1 presents histograms of the Cumulative Abnormal Returns (CARs) of US firms in which were defendants in securities class action lawsuits from the day prior to the filing of the lawsuit until the day after. Panel A presents the CARs for the whole sample, while Panel B presents the central 95% of the CAR distribution. The distribution of the CARs for even the central 95% exhibits massive dispersion, with values ranging from roughly negative 50% to positive 20%. The average CAR for the whole sample is -5.22%, while the average return for the central 95% is -4.64%, both statistically significant at all conventional levels.

In this paper I develop a simple model of litigation under the assumption that a defendant (firm) is subject to multiple potential lawsuits and has private information about its prospects at trial if it is sued. In my setting, a firm may have an incentive to engage in costly litigation to signal its private information to prevent future litigation. Using a sample of security class actions filed in the United States from 1996 to 2006 I study whether the market uses a firm's decision to litigate or settle and the amount that a firm spends in litigation prior to an eventual settlement as an informative signal about the its quality. I examine sued and non-sued firms' equity values, Tobin's Q, leverage, size, profitability, and bankruptcy risk prior to, during and post litigation. I find that firms which are sued have lower equity values and lower values of Q after the resolution of a lawsuit, but that firms which settle the lawsuit have even lower values, which is consistent with a signalling model. These results are not driven by changes in size, profitability, leverage, or unlevered bankruptcy risk. I next document a positive relationship between the amount of legal expenses a firm a firm incurred prior to a case settlement and the post settlement Q and equity value which is again consistent with a signalling model. Finally, I find that firms which are sued but do not settle their cases are less likely to be acquired than firms which do settle. This is result is particularly strong for a group of firms who were involved in a particular type of IPO fraud and settled their cases.

The remainder of the paper is as follows: Section 2 reviews the related literature; Section 3-5 describes the United States federal civil litigation procedures class action procedures, and proposes a simple economic model of litigation. Section 6 and 7 describes the data and the empirical results. Section 8 concludes.

3.2 Related Literature

Previous literature in finance, economics and accounting has empirically examined different aspects of litigation, both class action litigation and non-class action litigation. Haslem's (2005) analysis is similar in spirit to what I study. He theorizes that information asymmetries and agency costs dictate a firm's choice of settling litigation suits or taking them to trial. He shows theoretically that the market should react positively to the announcement of a settlement under perfect information, but in the presence of agency costs, managers have an incentive to settle because a lengthy court procedure may transfer inside information or a they may lose private benefits if a firm loses at trial. He documents a statistically negative market reaction to the announcement of a settlement which he interprets as evidence of his model. He considers all kinds of federal litigation, not only class action litigation. However, this model does not consider the dynamic implications of the game, and the author specifically says "the model does not imply that settlement is a separating mechanism between good and bad management". I contend that the market uses a firm's settlement decisions as an informative signal of its quality.

Gande and Lewis (2009) use securities class actions to examine how litigation affects both the firm which is sued and its non-sued industry peers. They focus on the factors which drive the likelihood of being sued and whether firms in an industry are more likely to be sued if a competitor is sued. They find that there is a large industry lawsuit filing spillover effect in addition to factors which were previously shown to predict the filing of a lawsuit. Arena and Julio (2010) find that firms which are exposed to securities litigation hold more cash in anticipation of a settlement. They also find evidence of a spillover effect to other firms in the same industry. Bhattacharya, Galpin, and Haslem (2007) look at differences in trial outcomes for foreign firms which are sued in the United States compared with American firms. They find that American firms seem to enjoy a "home court advantage" and have a higher success rate at trial than foreign firms.

Another branch of the literature looks at the corporate governance implications of litigation. Cheng et al (2010) look at whether institutional shareholders make more effective lead plaintiffs in securities class action lawsuits and whether they can use the litigation process to force firms to make corporate governance changes, either directly through a settlement or via a firm reputation mechanism. They find that institutions are more likely to lead a lawsuit if there is a higher ex-ante likelihood of winning, a larger amount of potential damages, or if an auditor has been named as a co-defendant. The authors find that firms in the cases with institutional lead plaintiffs increase governance while those with individual lead plaintiffs do not. However, only 15% of the sample has an institutional investor as a lead plaintiff, so it is not clear how economically significant this is. Srinivasan (2005) studies individual board member performance using accounting restatements as an indication of board failure. He analyzes audit committee versus non-audit committee member post-restatement outcomes to look at how outside directors are disciplined for failing to monitor firms. He finds that directors, especially on the audit committee do stand a significant risk of being fired from the board. This risk is increasing in their measures of the severity of the restatement. They also find that outside directors lose positions on other boards, a loss which rises in severity and is stronger for audit committee members. Farber (2005) looks at firms which received SEC citations for fraudulent behaviour and finds some evidence that the most fraudulent firms change some of their governance structures following fraud relative to comparison firms.

Anecdotal evidence and a literature in law and economics (e.g. Bebchuk 1984, 1988, Reinganum, and Wilde,1986, Katz 1990, Farmer and Pecorino, 1998, 2007) recognize that plaintiffs may have an incentive to sue defendants even if they do not have a "meritous" or positive expected value case in order to try and extract a settlement. This literature has modeled this process with only one source of information asymmetry, typically the plaintiff having private information. Bebchuk and Klement (2010) offer a concise summary of the negative expected value lawsuit literature. Most existing models consider only static litigation events; that is to say that the models only analyze the expected costs and benefits of settling or litigating a particular case. In practice, however, firms live for multiple periods and may be subject to many instances of litigation risk. Firms which are of higher quality may therefore have an incentive to litigate a particular case rather than to settle it, incurring a higher legal cost for the current case but showing other economic actors that it is of higher quality in order to prevent future litigation. The multiple-period setting and firm specific asymmetry differentiate the model developed in this paper from the other settlement signaling models.

3.3 Institutional Background

3.3.1 The Litigation Process

Federal lawsuits in the United States follow a lengthy process which established by the Federal Rules for Civil Procedure (FRCP). This process includes many important events and ample opportunity for defendants and plaintiffs to bargain in order to end the end the process before and actual jury trial concludes. Plaintiffs who wish to sue a defendant approach a lawyer to discuss the possibility of bringing a lawsuit against the defendant. The lawyer will listen to the plaintiff describe the potential lawsuit and evaluate whether or not to take the case. Assuming that the plaintiff's lawyer takes the case, he/she files a complaint with the court and the defendant will respond to the lawsuit.

Once the lawsuit is filed, the first part is *pleading*, where the court establishes the basic facts about the case. During this stage, defendants typically file one or more motions to dismiss (MTD), and plaintiffs are able to drop their own case if they choose to do so. The judge can rule on MTDs in one of three ways, they can be denied, they can be granted with prejudice, or they can be granted without prejudice. Granting an MTD with prejudice ends the current case and means that the defendant cannot be sued again in the same matter. Granting an MTD without prejudice ends the current case, but gives the plaintiff leave to file an amended case in the near future. Pleading may go through several rounds of dismissals without prejudice until a case is ultimately ended by a dismissal with prejudice, a dismissal without prejudice where the plaintiff does not refile a new lawsuit, a motion by the plaintiff to drop its case, a settlement, or by entering *discovery.*

Discovery is the structured exchange of evidence to be used at trial. This is the stage of the trial where key issues of the lawsuit are clarified. The discovery process is designed to try to avoid surprises during the subsequent trial since prior to this stage parties are not required to disclose their evidence. Both parties are allowed to request specific documents from their opponents and may ask a set of questions which the opponents must truthfully answer. While this may seem like a straightforward process, anecdotal evidence suggests that it is in fact a very time consuming (costly) process. Typically both parties are only interested in a particular set of (potentially incriminating) documents or other records, but their opponents try to make the process of revealing their evidence as difficult as possible by sharing a large quantity of unnecessary information in the hope that the opposing counsel will overlook valuable information. While the discovery process may reduce information asymmetry it is unlikely to completely remove it because of the volume of data which the lawyers must read through, and more fundamentally because the parties will only send the relevant information that they are compelled to by the opposing party's request for information. If the opposing counsel does not request all of a party's private information it will not be revealed during discovery. Expert witnesses are frequently used during discovery to clarify the issues at trial for the court, further adding to the cost of discovery.

Once discovery has been completed, a case will be settled, enter the trial stage, or end in a summary judgment. A summary judgment occurs when a judge makes a ruling based off of the merits of a case as has been presented so far without a jury verdict. If a party can show that there is no dispute in the facts of a case which could lead a jury to rule against it, it can request a summary judgment in its favour. A jury trial will have between six and twelve jurors who must come to a unanimous conclusion. The burden of proof in civil litigation is "to a preponderance of evidence," not "beyond a reasonable doubt" which is the standard of proof in a criminal case. The civil standard normally implies that the party who better argues their case will prevail.

3.3.2 Party Incentives

There are two ways by which plaintiff lawyers can be compensated, the lodestar method where they are paid a fixed fee per hour irrespective of outcome and the percent of settlement method where they are paid a fixed percentage of any settlement or judgment in favor of the plaintiff. The percentage of settlement method is by far the most common compensation scheme, and the percentage which the plaintiff's lawyer is paid typically ranges from 25% to 33%. There are clearly incentive problems inherent in both methods. The lodestar method incentivizes lawyers to maximize "billable hours" which is more costly for the plaintiff. The percentage of settlement method better aligns the incentives of the plaintiff and his/her lawyer, but under this compensation scheme, counsel may have an incentive to try and persuade plaintiffs to accept a (potentially low value) settlement quickly in order to minimize their costs. Additionally, the percentage of settlement method may incentivize plaintiff counsels to bring meritless suits against a defendant since there the plaintiff does not internalize a significant portion of the cost of the lawsuit. Furthermore, since trial litigation is protracted and costly, plaintiffs and lawyers both have an incentive undertake meritless lawsuits in order to extract a settlement from the defendant in order to end the litigation. The following excerpt from a judge's ruling against the plaintiff in a case brought against Alamosa Holdings, one of the cases in the sample, illustrates a meritless lawsuit [1]:

> "'While it is unfortunate that the Plaintiffs in this case lost money in their investments, their misfortune alone does not create a viable cause of action.' 'The federal securities laws should not be mistaken for insurance against risky investments; the federal reporters are replete with failed attempts to do just that.' 'Fraud by hindsight is not an actionable claim under the securities laws. The setting of forward projections which ultimately fail to materialize cannot form the basis for a securities fraud action under the circumstances of this case.' Plaintiffs' Complaint is DISMISSED [sic]."

Prior to discussing the lawsuit with a lawyer, the plaintiff could have attempted to approach the firm directly and negotiate a monetary settlement outside of court, either privately or through an arbitration process. At any time during the court case, the two parties can negotiate a settlement agreement to end the case. Settlement agreements normally include a clause where the defendant states that a settlement agreement does not constitute and admission of guilt in the alleged offence. The non-admission of guilt allows firms' insurance policies to cover some or all of the court and settlement costs. With full or even partial insurance coverage, defendants should be more likely to settle cases quickly since insurance can typically cover settlements but not judgments against a firm found guilty of a civil infraction. Assuming that litigation is costly and that there is a strictly positive probability of the firm being found guilty, defendant firms should be unwilling to engage in protracted litigation after it is apparent that their case will not be dismissed unless there is some non-monetary benefit to doing so which justifies the incremental cost of litigation and incremental chance that the case will be decided against the defendant.

[1] Docket item 60 in case In Re: Alamosa Holdings, Inc. Securities Litigation, case number 03-CV-00289

3.4 A Simple Model of Litigation Settlement

I model the litigation process to be a multi-stage game of asymmetric information where defendants (firms) have asymmetric information about their prospects of winning a judgment at trial. This model allows can serve as a benchmark model to understand the possible tradeoffs between litigation and settlement in a dynamic setting. I consider a separating equilibrium where the act of settlement or litigation in a first round of litigation reveals the private information. This is not the unique equilibrium of the game, but it is an interesting starting place to understand the dynamics of litigation.

I assume that both firms and plaintiffs are risk neutral and do not discount future cash flows. I assume that firms can be of High or Low type with probability ν and $(1-\nu)$ respectively. Firms observe their type, but plaintiffs cannot observe firm type. If a plaintiff files a lawsuit, both parties will incur cost C and if the lawsuit is litigated, both parties will incur cost L, $L > 2C$. A firm will lose in court with probability p^{type} where $p^L > p^H$, and if the firm loses, it will have to pay judgement J. Clearly, $C + L < J$ since there would be no point in a plaintiff litigating if this were not true. I further impose $\frac{3L-C}{2} > J$, since otherwise plaintiffs will not have an incentive to settle a case under a certain set bargaining power assumptions to be further elaborated below. Firms can make an offer to pay settlement S to the plaintiff in order to avoid entering litigation, in which case neither party would pay L. I assume it is profitable to sue low quality firms but not high type firms e.g. $p^L J > C + L$,$p^P J < C + L$, but profitable to sue the expected firm, or that $(\nu)p^H J + (1-\nu)p^L J > C + L$.

Figure B.2 represents the long form structure of the game. In period 1, the plaintiff sues the firm not knowing the firm type and both parties incur the sunk cost, C. The distributional assumption about the proportion of High and Low type firms renders this decision rational for the plaintiff. The firm privately observes its type, and evaluates its prospects at trial, comparing the expected costs of litigation, $p^{type}J + L$, against a settlement value, which the plaintiff must be willing to accept. In time period 2, the firm chooses to offer a settlement which the plaintiff can accept or reject. If the firm offers a settlement which is less than the plaintiff's reservation value, the case will enter litigation and the firm will either win or lose and both parties will pay the incremental litigation cost L. In period 3, a second plaintiff observes the outcome of the first court case, can update his beliefs about the firm's type, and chooses whether to file a lawsuit against the firm. If the second plaintiff files a lawsuit, both parties again pay cost C and the firm again has the choice of making an acceptable settlement offer or entering litigation. In period 4, the plaintiff will accept or reject the firm's settlement offer and the case will end or proceed to trial as before resulting in final payoffs in time period 5.

I assume a separating equilibrium where high type firms choose to litigate in the first court case while low type firms choose to settle. Since the second plaintiff observes the outcome of the first case he choose to sue or to not sue firms based off of their type, and in this equilibrium, he will not find it profitable to sue high type firms but will find it profitable to sue low type firms. I proceed by backwards induction to show the range of parameters under which this equilibrium exists.

I first consider the settlement offer S in the second litigation round, time period 4. Parties will make or accept a settlement offer if it less costly for them to do so. The alternative to settlement is litigation, therefore a firm will enter a settlement agreement iff:

$S^{type} \leq p^{type}J + L$

A plaintiff will accept a settlement offer if it is better than the outcome of going to litigation. This is true iff:

$S^{type} \geq p^{type}J - L$

Effectively, the two parties are splitting the surplus of litigation costs, L which will not be paid. I abstract away from a bargaining game and assume that the parties split the surplus according to an exogenous parameter $\delta \in (0, 1)$ which captures the parties' relative bargaining power where higher values of δ imply more bargaining power for the firm. [2] In a the separating equilibrium that I have assumed, the firm's type has been revealed by its actions in time period 2. Given that firm type is known in this stage of the game, the second stage equilibrium settlement amount is therefore:

$S^{type} = p^{type}J - \delta L$

In order for this equilibrium to exist, it must be in the interest of the plaintiff to sue a firm that he/she knows is bad, and it must *not* be in the plaintiff's interest to sue a firm that he/she knows is good. This is equivalent to an individual rationality constraint. This implies the following two statements.

$C > S^H$, which implies $p^H < \frac{C+\delta L}{J}$ and

$C < S^L$, which implies $p^L > \frac{C+\delta L}{J}$

Furthermore, these actions must be incentive compatible for the firms in the first round of litigation when firm type is unobserved. The potential payoff for deviation of the low type is that it litigates the first lawsuit knowing it's true likelihood of loss at trial, but is not sued in the later stages of the game. In other words for this equilibrium

[2] The assumption $\frac{3L-C}{2} < J$ made earlier is necessary for $\delta = 1$ in order to consider the entire range of δ and have incentive compatible settlements.

to exist, it must be less costly for the low type firm to settle in both the first stage and the second stage than litigating in the first stage and not being sued in the second stage. This implies equation (1):

$$2S^L + C < p^L J + L \tag{3.1}$$

In the separating equilibrium, the low type settlement was previously computed as $S^L = p^L J + L$, therefore, the incentive compatibility constraint implies:

$$p^l < \frac{(1+2\delta)L - C}{J}$$

The potential payoff for the high type firm from deviation is that it pays a lower settlement amount in both the first and second lawsuits. In order for this equilibrium to exist, it must be cheaper for the high type firm to litigate the first lawsuit, knowing that it has a much lower chance of losing at trial, but incurring the incremental litigation cost of the first trial, and to not be sued in the later stages of the game. Mathematically, the incentive compatibility constraint for the high type firm is as follows:

$$2S^L + C > p^H J + L \tag{3.2}$$

This implies:

$$p^H < 2p^L - \frac{(1+2\delta)L - C}{J}$$

Given that p^{type} are probabilities, they must be between 0 and 1, so the separating equilibrium implies the following conditions on p^H.

$$0 < p^H < Min\left\{2p^L - \frac{(1+2\delta)L - C}{J}, \frac{\delta L + C}{J}\right\} \tag{3.3}$$

The lower bound on p^H in equation (3) implies that $0 < p^H < 2p^L - \frac{(1+2\delta)L-C}{J}$ when the first argument of the upper bound is binding which further implies that $p^L > \frac{(1+2\delta)L-c}{2J}$ The lower bound of 0 will never bind p^L since $\frac{\delta L+C}{J} > 0$.

Therefore, equation (4) gives the bounds on p^L for a separating equilibrium.

$$Max\left\{\frac{(1+2\delta)L - C}{2J}, \delta L + CJ\right\} < p^L < Min\left\{\frac{(1+2\delta)L - C}{J}, 1\right\} \tag{3.4}$$

See Table B.10 for the proof of the existence of this equilibrium parameter space.

The model shows some interesting tradeoffs. One of the most interesting features I show is that conditional on being settled in the second litigation, it is optimal for firms of *both* types to settle, in other words, litigation is not a dominant strategy for the good firm. It is the ability to signal something about its type which drives the litigation decision. If there is an unobservable source of firm quality which is correlated with the likelihood of judgement against a firm, the market can update its valuation of the firm in light of the firm's litigation behaviour. Mechanically, the model also predicts that firms which settle are more likely to be sued in the future, so the market can also update its belief about the likelihood of future litigation costs.

Class actions are a useful set of lawsuits to study the economic effects of litigation because they affect a large number of potential plaintiffs. A potential source of concern in looking at observed lawsuits is that a researcher cannot observe potentially litigable offence resolution which occurs privately between defendants and plaintiffs outside of the legal system. This could potentially bias the sample and results. In the case of class action lawsuits it is unlikely that defendants would be able privately settle with all of the potential plaintiffs in private bargains outside of the legal system since the number of plaintiffs with whom they would need to privately bargain is extremely large. I next review the class action institutional background in the United States with a focus on applicable securities law before describing the data and empirical analysis.

3.5 Class Action Institutional Background

All class action lawsuits are governed according to Rule 23 of the Federal Rules of Civil Procedure (hereafter referred to as "Rule 23") which became effective September 16, 1938 [3]. As noted above, a class action lawsuit is one in which a group of plaintiffs collectively sue one or more defendants. The primary difference between this type of litigation and traditional tort litigation is that the size of a class must be sufficiently large that the "joinder" of all of the different plaintiffs into a traditional lawsuit with several defendants is impractical and a lead plaintiff must be appointed to act on behalf of the class.

Securities fraud class action lawsuits are further regulated by the Private Securities Litigation Reform Act of 1995 (15 U.S.C. §78u), hereafter PSLRA, and the Securities Litigation Uniform Standards Act of 1998 (15 U.S.C. §78bb), hereafter SLUSA. These laws were introduced to try and restrict the ability of plaintiffs to bring meritless lawsuits against firm defendants in cases alleging fraud, and to restrict the ability of plaintiff counsel to exert undue influence over the proceedings in federal securities fraud class actions.

[3] The institutional background on class action lawsuits comes from Klonoff and Bilich (2000) which presents a detailed discussion of complex multi-party litigation procedure in the United States with an emphasis on class action lawsuits

3.5.1 Pleading, Class Action Certification, and Discovery

In addition to arguing the typical questions of fact and of law in a civil case, an intended class action case must address several questions about the suitability of the class action mechanism. The party moving for certification must demonstrate that there is a definable class of litigants and that there is a member of the class who is willing to serve as a representative (the Lead Plaintiff). The litigants must have cases with common questions of law or fact and be so numerous that it is not practical to join the individual cases together. The party must also demonstrate that the Lead Plaintiff has a claim which is "typical of the claims and defenses of the class" and that the lawyers working with the Lead Plaintiff will adequately and fairly represent the class claims at court. Assuming that a securities lawsuit satisfies the above criteria it may be certified as a class action if an individual adjudication would create a risk of inconsistent judgments for different class members or if common trial characteristics predominate individual ones and that the class action mechanism is superior to other adjudication methods.

A case does not qualify as a class action until it has been certified by a judge. The certification decision is one of the most critical points of the litigation of a potential class action case. If a case is not certified, the aforementioned cost savings cannot be realized, and it may no longer be interests of individual class members to continue litigating the case. Once a lawsuit has been certified as a class action the outcome of the case will bind all class members unless they specifically opt out of the class action proceedings. The parties advocating class action certification must specifically demonstrate the necessary pre-conditions described above, and submit a motion to certify the lawsuit as a class action.

The PSLRA establishes evidentiary requirements for securities class action. During pleading, if the plaintiff alleges that the defendant "made an untrue statement of a material fact" or "omitted to state a material fact necessary in order to make the statements made" he/she must specify each alleged misstatement or the omitted information. In order to prevail in a securities fraud case, plaintiffs have must prove that the defendants acted with fraudulent intent. A failure to demonstrate to these requirements will end in a dismissal of the plaintiff's claims.

Furthermore, the PSLRA sets restrictions on the lead plaintiff selection and case filing requirements. All members of the putative class can be considered by the court to be the lead plaintiff, and must certify that they authorize the complaint filed on behalf of the class, did not purchase the security in order to pursue the complaint, are willing to serve as a representative of the class, and will not accept payment for serving as a lead plaintiff beyond what is permitted by the court. The court will consider all applicants to be lead plaintiff and will appoint the applicant(s) which it deems "has the largest financial interest in the relief sought by the class" and which has not served as a lead plaintiff more than four times in the last three years.

3.5.2 Settlement

The class action settlement process is greatly complicated by the involvement of many parties with different incentives. In addition to the defendant and the plaintiff (represented by the Lead Plaintiff), the class council and absent class members also have an interest in settlement negotiation.

Since the class counsel is typically paid as a percentage of the eventual monetary award the class receives but must expend effort litigating the case, it may have an incentive to try and persuade the class representatives to accept a settlement even if they have a strong trial case to hedge against the risk of losing at trial. This may not be in the interests of the class at large, and since in most cases the majority of the case is absent (the reason that the case was consolidated as a class action) there are few who could actively object to this type of settlement. Furthermore, since class counsel are typically awarded 25-33% of the settlement fund, they normally stand to gain much more in any settlement than most or all of the individual class members, which could further incentivize them the try and induce plaintiffs to accept a premature settlement offer.

In order to overcome the problem of conflicting interests in settlement agreements, Rule 23 requires that the court approves all dismissals and settlements of class action lawsuits and that notice must be given to all members of the class. Once a settlement agreement has been reached, parties jointly submit the settlement to the court for approval. Class members are given the option to opt out of the settlement, file a claim to receive a portion of the settlement, object to the settlement, or do nothing. Class members who opt out of the settlement reserve the right to bring a lawsuit against the defendant over the matter at a later time. If a class member does not specifically opt out of the settlement it will be binding on his/her claim. There are several similar legal standards which can be used to approve a settlement. For example, *the Goldgberger Standard* requires judges to weigh six factors with respect to the plaintiff representation, the time and labor spent on the case, the magnitude and complexity of the litigation, the risk to the plaintiff council of going to trial, the quality of representation, the size of fees relative to the settlement, and any public policy implications of the settlement, to determine whether a settlement is "fair, reasonable, and adequate."

3.6 Data and Methodology

3.6.1 Data Description

In order to empirically examine the implications of my model, I use a sample of securities class action litigation compiled by Cornerstone Research and Stanford.[4] Securities fraud is an interesting subset of all class actions since it allows us to identify cases which pertain directly to corporate governance problems and agency conflicts between firm management and shareholders. I consider all cases filed between 1996 and 2006 in order to obtain a sample of cases which are likely to be resolved. This database was previously used by Arena and Julio (2010), Gande and Lewis (2009), and Klausner and Hegeland (2010).

The Stanford data, which forms the basis of my database, includes the filing date of class action lawsuits, along with the dates the alleged frauds began and ended, otherwise known as the beginning and the end of the class period, along with the primary firm defendant of the lawsuit. My sample includes 2,476 security class actions lawsuits filed in the United States. I manually match cases in the Stanford database with cases from the Audit Analytics Litigation database, which gives the case resolution dates where they exist, settlement information, a classification of allegation type, along with all parties named in the class action lawsuit. Not all cases in the Stanford database have an equivalent record in the Audit Analytics database, so the sample of observations which appear in both the Stanford data and Audit Analytics contains 2,138 observations.

From November, 1998 to October, 2000 309 firms, mostly high tech or internet firms went public and engaged in allegedly fraudulent behavior with their offering underwriters. Approximately 75 underwriters allegedly received sums of money in exchange for allocations of the new stocks and they also engaged in activity designed to artificially inflate the post IPO price. During 2001, many of these alleged frauds came to light and investors filed individual class actions naming the firm which went public and typically the underwriters. As these cases were all filed within a relatively short period of time, they were consolidated into one massive class action, titled In re: IPO litigation, on behalf of all the shareholders who were allegedly damaged. This case was finally settled in April 2009, after eight years of contentious litigation, for $586 million. Panel A of Table B.2 shows descriptive statistics for settlement amounts in the class action cases which were not part of In Re: IPO Securities Litigation, along with the average statistics on the length of the class action litigations in the merged sample. The average case length of these cases is roughly 2.5 years, although the range is quite large, with the shortest

[4]The Stanford Class Action Clearing House compiles court documents pertaining to securities class action litigation and summarizes some key information for all securities class action suits since 1996. It can be accessed at http://securities.stanford.edu/

case only taking a week, and the longest case taking 11 years. Even with some extremely lengthy cases, the median case length is about 2 years and 2 months, which not very different from the mean. With the exception of a few outlier "blockbuster" settlements, the typical settlement is not large. While the average settlement is 38.4 million, the median settlement is only 7.25 million, which suggests that the monetary cost of settling this type of lawsuit is quite low in relation to the legal costs of litigation for most cases, given that the average case duration is around 2.5 years. Overall, 63% of cases were settled, including the In re: IPO cases. Excluding those cases, 57% of cases were settled.

I then manually search through court documents available at the Stanford and Audit Analytics databases to collect information about the plaintiff expense awards in the cases which settled.[5] As noted above, class action settlements must be approved by the presiding judge, and one of the factors which the judge must specifically consider is plaintiff lawyer compensation. Plaintiff lawyers are reimbursed for their court expenses, such as expert witness fees, and awarded their fee, a percentage of the settlement, separately. They are required to submit an itemized list of their expenses which the judge is supposed to look over and approve. I further code these settlements as occurring before or after discovery has taken place by reading through the court dockets. Panel B of Table B.2 presents summary statistics for the court awarded expenses along with a kernel density plot of the natural logarithm of expenses for those cases which entered discovery and those which did not.

I match the firms in my Stanford database with Gvkeys and Permnos to obtain balance sheet and return data, along with a sample of control firms for my analysis. I define control firms as all firms in Compustat with the same 4 digit SIC code as the firms in the Stanford Class Action sample which were not sued from 1996, the beginning of the class action sample, until the end of 2010. I compute standard control variables including Tobin's Q, market leverage, operating profit, and Altman's unlevered Z-score with data from Compustat. I measure size as the natural logarithm of total assets. I computed average daily return, volatility, skewness, and kurtosis for each year, along with the maximum and minimum daily return during each year using data from CRSP. See appendix A for details of variable construction. I trim the data at the first and ninety-ninth percentiles of the Tobin's Q and operating profit. Panel A of Table B.3 shows the pooled sample summary statistics for all firms in all years, firms which were never sued in all years, firms which were sued in all years, firms which were sued in years prior to the commencement of the lawsuit, and firms which were years after the resolution of the lawsuit.

[5] When possible, I take the amount awarded in a judicial order, however this document is not always available. When I am unable to find the judicial order, I take the amount that the plaintiff lawyers list as an upper bound on expenses in the notice which is published to the class. In many cases I am able to get both quantities and the correlation between these two numbers is on the order of 0.9.

It is immediately clear that there are fairly systematic differences between the sued and non-sued firms during all time periods, as well as before and after litigation. Firms which were sued on average, and at the median, have less leverage, are more profitable, have a lower bankruptcy risk and are larger. The differences in return characteristics and Tobin's Q do not exhibit consistent patterns. Firm's which were sued tend to have higher Qs than the control group prior to the lawsuit. However, the average Q of the sued firms is lower after the lawsuit concludes than the control group, while the median Q is higher. Unsurprisingly, firms which were sued had more volatile returns as measured by their standard deviation and kurtosis prior to the lawsuit's filing, however, after the lawsuit, both the average standard deviation and kurtosis of returns fell along with the median standard deviation of returns, the median kurtosis of returns increased.

3.7 Empirical Analysis

3.7.1 Differences in Sued Firms versus the Control Sample

The above tests of differences show some interesting patterns, but are spread throughout time and across different industries. I split the unbalanced panel of firm year observations into three categories, (1) observations of firms which were sued before the year of their first lawsuit filing, (2) observations of firms which were sued during or after the year of the their first lawsuit filing, and (3) observations of the comparable firms which were not sued. I look at the differences between categories (1) and (3) since both categories consider firms which have not yet been subject to a lawsuit during the sample, controlling for industry and time fixed effects. I define a binary variable, *SUED*, which takes a value of 1 if the firm eventually is sued in the sample and 0 otherwise and run the following regression

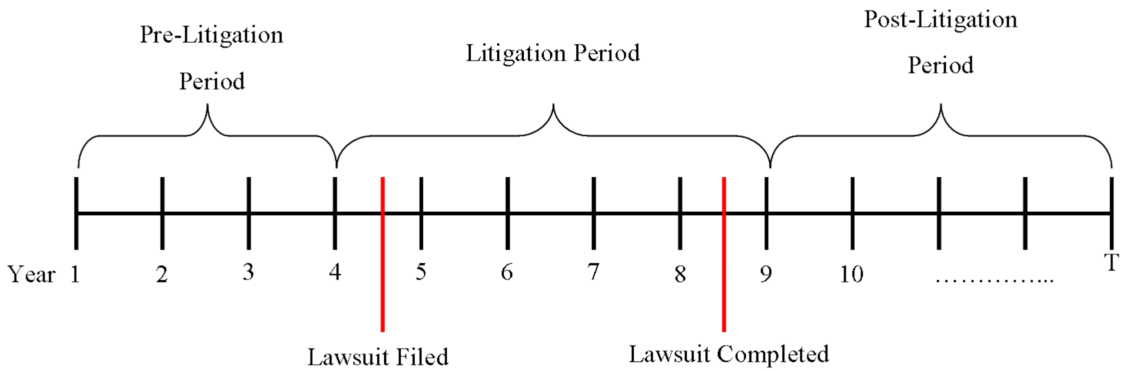
$$Characteristic_{i,t} = \beta_1 SUED_i + \sum_{j=2}^{J} \beta_j Control_{i,t-1} + \kappa_{ind} + \eta_t + \epsilon_{i,t} \tag{3.5}$$

where κ_{ind} is an industry fixed effect measured using 4 digit SIC dummy variables, η_t is a time fixed effect measured using year dummy variables, and $\epsilon_{i,t}$ is the error for firm i in time period t. $Control_{i,t-1}$ are the lagged characteristics.

Table B.4 reports the results of the estimation of equation (5). Firms which were later sued had higher Q ratios prior to being sued, less leverage, were larger and more profitable, controlling for one year lagged values of all of the dependant variables not in the specific specification, along with industry and year fixed effects. There seems to be no significant difference in unlevered bankruptcy risk. The higher Q ratios, lower leverage, and higher profitability would suggest that younger firms are being sued more frequently, however this is at odds with the size results, which would be more common in older firms. Having such significant differences in the pre-litigation period shows that I must be wary of unobserved heterogeneity amongst sued and non-sued firms driving my results.

3.7.2 Differences in Firm Characteristics during Litigation

The comparison of firm which were eventually sued before the filing of their first lawsuit with the control sample showed major differences between the two groups. I next exploit the panel of observations to explore the evolution of these variables through time and in different stages of litigation. I divide the sample of sued firms into three periods as depicted in the following figure. I classify all firm years before the a firm's first lawsuit is filed as the Pre-Litigation Period, all firm years between the year of lawsuit filing and the year of its completion as the Litigation Period, and all firm years after the completion of the lawsuit as the Post-Litigation Period.



I run regressions of the following forms with year and firm fixed effects on different sub-samples of the panel. is $IN\_LITIGATION_{i,t}$ a dummy variable which takes the value of 1 if firm i is in the litigation period in year t, and 0 otherwise. $POST\_LITIGATION_{i,t}$ is a dummy variable which takes the value of 1 if firm i is in the Post-Litigation Period in year t, and 0 otherwise. $SETTLED_{i,t}$ is a dummy variable which takes the value of 1 if firm i is in the post litigation period in time t, and finished the lawsuit by settling. I use lagged control variables different than the dependant variable for each specification to try and limit endogeneity problems.

$$
\begin{aligned}
Characteristic_{i,t} =& \beta_1 IN\_LITIGATION_{i,t} + \beta_2 POST\_LITIGATION_{i,t} + \beta_3 SETTLED_{i,t} \\
&+ \sum_{j=4}^{J} \beta_j Control_{i,t-1} + \theta_i + \eta_t + \epsilon_{1,t}
\end{aligned} \tag{3.6}
$$

The marginal effects of this specification merit a brief explanation. The intercept will capture the average value of the dependant variable controlling for firm and time fixed effects during the Pre-Lawsuit period or of the control firms. β_1 captures the effect of entering litigation on the dependant variable. β_2 captures the effect of exiting the litigation but not settling the lawsuit on the dependant variable relative to the pre-lawsuit period. $\beta_2 + \beta_3$ captures the effect of ending the lawsuit by settlement.

I run a second specification by including indicator variables for whether the case was a part of the IPO fraud case previously mentioned. The variable $IPO\_IN\_LIT_{i,t}$ takes a value of 1 if firm i was involved in the lawsuit and the lawsuit was in the Litigation Period in time t, and 0 otherwise. The variable $IPO\_POST\_LIT_{i,t}$ takes a value of 1 if firm i was involved in the lawsuit and the lawsuit in the Post-Litigation Period in time t, and 0 otherwise.

$$
\begin{aligned}
Characteristic_{i,t} =& \beta_1 IN\_LITIGATION_{i,t} + \beta_2 POST\_LITIGATION_{i,t} + \beta_3 SETTLED_{i,t} \\
&+ \beta_4 IPO\_IN\_LIT_{i,t} + \beta_5 IPO\_POST\_LIT_{i,t} + \sum_{j=6}^{J} \beta_j Control_{i,t-1} + \theta_i + \eta_t + \epsilon_{1,t}
\end{aligned} \tag{3.7}
$$

In this specification, β_1 captures the effect for non-IPO firms of being involved in a lawsuit relative to the intercept value. β_2 captures the effect of the lawsuit finishing by but not by settlement for firms which were non-IPO firms. $\beta_2 + \beta_3$ captures the effect of the lawsuit finished by settlement for non-IPO firms. $\beta_1 + \beta_4$ captures the effect of being in litigation for firms involved in the IPO case. Since the IPO case ended in a settlement for all of the defendants, $\beta_2 + \beta_3 + \beta_5$ captures the effect of exiting the lawsuit by settlement for the IPO firms.

I run regressions (6) and (7) on all firms in the sample and on the set of firms which were eventually sued to see if the results are driven by unobserved heterogeneity in the firms which were sued versus those firms which were not sued. Table B.5 presents the results of the panel regressions with time and firm fixed effects, along with Wald tests of numerous restrictions on the different litigation coefficients.

Firms which enter litigation experience a decrease in Tobin's Q relative to the pre-lawsuit period which continues after the litigation period has ended. Firms which exited litigation by settlement experience a further reduction in Q which is not shared by the firms which do not settle. The first Wald test of Panel B shows that the reduction in Q during the lawsuit is not statistically different than the post litigation reduction, while the second Wald test indicates that the reduction experienced by firms which settled is statistically different at the one percent level from the reduction in Q which firms experience once they are sued. The joint effect of ending a lawsuit by settlement is highly statistically significant. The firms which were sued as part of the IPO litigation seem to have had different outcomes than other firms which were sued in the sample. The Wald tests presented in Panel B of Table B.5 do not show a statistically significant reduction in Q for this particular subset of firms after the lawsuit has finished relative to firms which were not in litigation.

Litigation outcomes are also highly correlated with leverage ratios. Panel A of Table B.5 presents the estimates of regressions of market leverage ratios on litigation events, controlling for time and firm fixed effects. Firms which enter litigation experience an increase in their leverage ratio which does not persist in comparison with all firms which were not sued or had not yet been sued. This is shown by the Wald tests of the difference between and in Panel B in specifications (5) and (7). These differences are not as robust when the comparison sample is firms who had not yet been sued, shown in specifications (6) and (8). The coefficient on the SETTLED variable is statistically significant at the 5% level in most specifications and at the 10% level in all specifications, again showing a fairly robust difference in pre-lawsuit and post settlement outcomes. Unsurprisingly, firms involved in the IPO litigation again show different patterns with respect to leverage since they were issuing market equity for the first time, their leverage ratios decrease. However, after their settlement, IPO firms do not have statistically different leverage ratios when compared with firms which have not or will not experience litigation as shown in the Wald tests of reported in Panel B.

I next examine the relationship between firm size and litigation stages. Panel C of Table B.5 presents the regression estimates, while Panel D presents Wald tests of various restrictions on the estimated coefficients. Specifications (9) and (11) are run with the full sample of firms and indicate that sued firms in litigation are larger than firms which are never sued or which will be sued but are still in the Pre-Litigation stage. However, compared to firms which will eventually be sued but are in the Pre-Litigation Period, firms become smaller during litigation; shown in specifications (10) and (12). The significance of his reduction seems to be concentrated in firms which were involved in the IPO litigation as shown by the significance of β_1 in specification (10) and of

β_4 in specification (12). After the litigation has finished, there are further differences in size. The positive difference between firms in litigation and pre-litigation or not in litigation suggests that relative to firms which were never sued (the control group) firms which are in litigation are even larger than the coefficients would indicate since β_1 is significantly positive when the comparison group includes control firms and negative when the comparison group does not include control firms. I cannot test this directly including firm fixed effects, since the sued or not sued status is constant through time and would therefore be subsumed in the firm fixed effect. Firms which exit a lawsuit with a case dismissal, compared to all firms not currently in litigation become smaller, than they were during the lawsuit as shown by the Wald tests in Panel D. Firms which exit by settling the lawsuit become even smaller during the post lawsuit years as shown by β_3, the coefficient of the SETTLED variable.

Panels C and D of Table B.5 present results which examine the profitability of the firms during and post litigation, as measured by operating profit. Firms which enter litigation are less profitable than those firms which are not in litigation. Following the end of a lawsuit, both firms which settled and those which did not are less profitable than the control sample, and those firms which settled are not more or less profitable than those which did not settle. This result is somewhat surprising given the results with Tobin's Q.

I finally examine bankruptcy risk using Altman's Unlevered Z-Score. Panels E and F of Table B.5 present the results. Unsurprisingly, I find that the risk of bankruptcy increases during the litigation event, particularly for the IPO firms compared to the larger control sample. Once a firm exits litigation, the increase in Z-Score disappears for both firms which settled and those which did not. Interestingly, compared with the control sample of sued firms in the Pre-Litigation Period, the joint effect of settling shows a statistically significant increase in bankruptcy risk for firms which settled. The Wald Tests of $\beta_2+\beta 3$ in Panel F which examine regressions (18) and (20) show that firms which settled but were not IPO cases, on average had a decrease of 1.6 in the value of their unlevered Z-Score, all else equal compared to the firms which were later sued. IPO firms had an average decrease of 4.80 in their unlevered Z-Score, $\beta_2 + \beta_3 + \beta_5$, all else equal compared to firms which were later sued. The overall correlation between settlement and bankruptcy risk is unclear.

Overall, these results present an interesting picture of sued firms through time. Firms which were sued on average had higher values of Tobin's Q during the Pre-Litigation period, then, on average, experienced a permanent drop in Tobin's Q upon the commencement of the lawsuit, which was further amplified in firms which settled. Sued firms were larger, on average, than the control sample. During the lawsuit, depending on which control sample is considered, sued firms are statistically larger or statistically smaller at conventional levels than the control group considered. These patterns persist after the cases are resolved; however, firms which settle are always statistically smaller than those which do not settle. All else equal, a smaller value of assets implies a larger value of Q, which is contrary to the findings for Q. The decrease in Q that I describe earlier could be explained by a decrease in the profitability of a settled firms. The sued firms are more profitable, on average than, the control firms prior to being sued. Once a firm enters litigation, on average it experiences a significant decline in profitability which persists relative to all firms who had not been sued or would not be sued. There is no systematic variation between the profitability of firms which settle and those which do not in the post litigation period, which suggests that the differential decrease in Q cannot be attributed to the firms which settle being less profitable. Finally, firms which were sued, on average, were less levered than the control sample, and this ratio increased, on average, permanently in most specifications for the firms during and post litigation. Firms which settled, on average, had even higher leverage levels than those which did not settle. Since I consider the market value of leverage, this could be due to an average drop in the value of the firm's equity value.[6] I consider this idea more carefully in the next section.

3.7.3 Market Value Analysis

I next look at value of equity at the various stages of litigation again using the panel of firm year observations. My model suggests that firms which end litigation by settling do so because they are more likely to lose at a trial; whereas firms of a higher type will be have an incentive to litigate in order to reduce future instances of litigation. While quality is unobservable to the market, it can observe a firm's behavior in court, and can update its valuation of that firm after viewing its choice to settle or engage in protracted litigation. This change in valuation can come from at least two potential sources, the first could be mechanically that a firm which settled is more likely to be sued again in the future and will be more likely to incur future costs. In addition to the mechanical increase in costs, the market could infer that there is a source of quality or risk which is correlated with the firm's likelihood of loss at trial, and infers negative information about the firm when it observes a settlement.

I examine the changes of equity value during litigation by estimating the following regressions where LOG_EQ is the natural log of the market value of firm i's equity value in time t. These specifications are the same as were used previously, accept that I now include standard deviation of returns or lagged standard deviation of returns in the

[6] In unreported tests, I run the same panel regressions looking at whether the log of total debt is affected by settlement. Firms which are sued have less debt on average than the control, but there is no statistical difference in debt between those which settle and those which do not. Results are available upon request.

control variables this time to control for idiosyncratic risk in equity. The interpretation of the marginal effects is as before.

$$\begin{aligned} LOG\_EQ_{i,t} =& \beta_1 IN\_LITIGATION_{i,t} + \beta_2 POST\_LITIGATION_{i,t} + \beta_3 SETTLED_{i,t} \\ &+ \sum_{j=4}^{J} \beta_j Control_{i,t-1} + \theta_i + \eta_t + \epsilon_{i,t} \end{aligned} \tag{3.8}$$

β_3 is the primary coefficient of interest, which will capture the difference between firms which exit litigation by settlement and those who have the case dismissed. I again run tests including dummy variables for the firms which were involved in the IPO litigation as follows.

$$\begin{aligned} LOG\_EQ_{i,t} =& \beta_1 IN\_LITIGATION_{i,t} + \beta_2 POST\_LITIGATION_{i,t} + \beta_3 SETTLED_{i,t} \\ &+ \beta_4 IPO\_IN\_LIT_{i,t} + \beta_5 IPO\_POST\_LIT_{i,t} + \sum_{j=6}^{J} \beta_j Control_{i,t-1} + \theta_i + \eta_t + \epsilon_{1,t} \end{aligned} \tag{3.9}$$

Panel A of Table B.6 presents the regression estimates run on the sample of firms which were sued since the model implies that the market is able to learn about the properties of firms which are sued by their actions during litigation. Results are qualitatively similar if I include both firms which were sued and firm which were never sued. Panel B presents the results of Wald test of different restrictions on coefficients β_1, β_2 and β_3. Unsurprisingly, firms experience a decline in equity value once a litigation event begins. This is consistent with the Cumulative Abnormal Returns on the litigation filing date which were presented in the introduction. This reduction in equity value persists after the litigation is finished and is insignificantly different from the decline experienced during the litigation period. Firms which exit by settlement experience a statistically significant reduction in equity value which is stronger than that experienced by firms which do not settle, as shown by the significance of β_3. Depending on the particular controls, this decline in value is sometimes statistically different than the decline experienced during litigation. These results are consistent with the market learning about the quality of a firm by observing its behaviour during litigation.

3.7.4 Settlement Expense Analysis

My previous analysis indicated that firms which exited litigation by settlement traded at lower share prices and had lower values of Tobin's Q post settlement, which is consistent with a signalling model of litigation. My next line of analysis seeks to demonstrate this further, by directly looking at a proxy for litigation cost and for the severity of a potential fraud.

As discussed above, class action settlements are subject to judicial oversight, in contrast with traditional litigation. Notably, plaintiff lawyers are reimbursed for expenses separately from their from their fee (almost always a percentage of the settlement), and this expenses must be approved by the presiding judge. If one assumes that plaintiff and defence legal costs are symmetric, then this number can be used as a proxy for the cost that a firm was willing to incur before it ultimately settled. Unfortunately, these litigation expenses are only available for cases which settled, but a signalling model predicts that those firms which incur a higher cost prior to settlement should trade a higher share prices and have higher values of Tobin's Q.

The information that the market learns by observing a settlement relates to likelihood of having committed fraud (a higher p), or potentially a more severe fraud in a world with different fraud levels, (a higher J). As discussed above, a case may settle before or after it enters discovery, however, if a judge feels that a class action is particularly likely to be meritous, they may not approve a settlement until sufficient discovery has been conducted. Thus, it is more likely that cases which entered discovery involve more severe frauds. The model would therefore predict that firms which settled cases which entered discovery would trade at lower values share prices or have lower valuations.

Table B.7 presents regression estimates of Tobin's Q and the log value of equity on the log of the court approved plaintiff expenses and a binary variable which takes the value of 1 if the case entered discovery prior to settlement, and 0 otherwise in the post settlement period for all non-IPO, settled cases. The market is unable to observe the settlement amount until the case is settled, so I cannot use the pre-settlement periods, and since each firm (case) has only one expense amount, I cannot include firm-fixed effects. I do, however, include industry fixed effects. The coefficient on *LOG_EXPENSES* is positive and statistically significant for both the Tobin's Q and log equity in all specifications, consistent with a signalling story. The coefficient on the discovery dummy variable is negative and significant all specifications where it is included, consistent with the market learning about the a higher likelihood of a firm having engaged in fraud and reducing the its valuation of the firm. Finally, the interaction of *LOG_EXPENSES* and *DISCOVERY* shows that the signalling seems to be less effective in cases which are more likely to be meritous. I do not include *LOG_EXPENSES*, *DISCOVERY* and the interaction because, mechanically, discovery only occurs in the later part of the court procedure, so there is high correlation between *LOG_EXPENSES* and *DISCOVERY*, leading to high multicollinearity.

3.7.5 Merger Outcome Analysis

The revelation of previously unobservable information about a firm's quality may also have implications for the merger market since firms which settle show themselves to be of lower quality. This information may make these firms an attractive target for an acquirer who believes that it would be able to improve the quality of the firm and will now be able to do so at a lower price. On the other hand, the revelation that a firm is of low quality could also deter a potential acquirer because the firm is just low quality.

I consider the cross section of firms, taking the last year in which the firm appears in the sample. I construct a binary variable, $MERGED_i$ equal to 1 if firm i exits Compustat by merger and 0 otherwise. $SUED_i$ is a binary variable which takes the value of 1 if the firm is ever involved in a lawsuit, and 0 otherwise. SET_SUED_i is a binary variable which takes the value of 1 if the firm is sued and settles at least one lawsuit in the sample and 0 otherwise. IPO_i is a binary variable which takes the value of 1 if the firm was involved in the IPO litigation case and 0 otherwise. $LAST\_CONTROL_{i,j}$ is the control variable j in the last year firm i appears in the sample. I estimate the following regression.

$$MERGED_i = \beta_1 SUED_i + \beta_2 SET\_SUED_i + \beta_3 IPO_i \sum_{j=4}^{J} \beta_j LAST\_Control_i + \kappa_{ind} + \eta_t + \epsilon_i \tag{3.10}$$

Table B.8 presents the results of equation (9) in years 1996-2010 since the litigation data begins in 1996. β_1 is the effect of lawsuits on the linear probability of being acquired for a firm which is sued and does not settle. This is not capturing the effect of ongoing litigation since the sample of lawsuits has concluded. β_2 captures the differential effect settling for a non-IPO firm. Since the IPO cases were all settled, the marginal probability of being acquired for an IPO firm is $\beta_1 + \beta_2 + \beta_3$. Firms which were sued and did not settle were statistically less likely to be acquired, while the firms which settled but were not part of the IPO case were not more likely than a firm which was not sued to be acquired. However, firms which were part of the IPO case were much more likely to be acquired than a firm which was not sued.

3.7.6 Alternative Explanations

It is possible that managers choose to settle lawsuits for reasons unrelated to signalling. For example, managers may simply weigh the expected costs and benefits of litigation and decide to settle accordingly. In this case, a settlement would indicate that the firm is pursuing the less negative NPV option. A second possiblility is that firms' settlement decisions are just risk management decisions. Trial outcomes can be difficult to predict, and jury awards can be very costly for firms. Firms could settle as an optimal outcome to manage the risk that their shareholders face. A common empirical implication of both of these possible reasons for settlement would be a non-negative market reaction to case settlements. In the first scenario, firms are choosing a higher NPV project, going from a larger expected loss at trial to a smaller settlement cost. This should be met with positive abnormal returns assuming that the market understands the settlement options. In the second scenario, firms are following an optimal risk management policy, which would predict 0 or positive abnormal returns on the settlement date.

I hand collect data from the court dockets on the dates that class action settlements are proposed in court and the date that they are approved by the judge in order to test this prediction empirically. I compute CARs for two windows, (-1,+1) and (-1,+5), around the settlement dates using the Fama-French three factor model. Table B.9 presents the mean and median CARs for these events. Columns (1) and (2) present mean and median returns for the date when the settlement was proposed in court. The point estimates range from -38 basis points to -43 basis points, however only the median reaction for the event window (-1,+1) is significant. Columns (3) and (4) present the same statistics for the date when the settlement was approved by the judge. The market reaction for this date is strongly negative. it ranges from -55 basis points to -108 basis points. Both the mean and median reactions are negative for both event windows. This large, negative reaction suggests that the market does not view the settlement decisions as simple expected value calculations or as optimal risk management decisions.

3.8 Conclusion

This study uses securities class action lawsuits as a setting to understand the role litigation plays in releasing information to the market about firm quality. I study whether the market learns about the underlying quality of a firm based off of its decision to litigate class action lawsuits or to settle them. I develop a simple model to of the litigation process which implies that firms of different unobservable quality will rationally act differently when faced with litigation. Specifically the model implies that firms of poorer quality will settle lawsuits while better quality firms will litigate in order to prevent future lawsuits. Given these differences in equilibrium behavior, the market can draw conclusions about firm quality by observing their actions during litigation.

I use a sample of nearly 2500 securities class action lawsuits to look at the differences between firms which were sued and a control sample of firms in the same industries who were not sued. I examine the evolution of firm size, Tobin's Q, leverage, profitability, bankruptcy risk and market value during the stages of litigation and document evidence consistent with a signalling model. I find evidence that firms which were sued on average had higher values of Tobin's Q, were more profitable, less levered, and larger than firms which were not sued. Firms which settle have values of lower Tobin's Q than their counterparts who do not settle, are smaller and less levered. This difference in Q does not seem to be driven by changes in profitability. I find that firms which enter litigation experience a permanent decline in equity value. This decline is further magnified if the firm settles the lawsuit. I next show direct evidence that firms which spent more money on litigation prior to a settlement had a higher post settlement valuation, again consistent with a signalling model of litigation. Finally I find that firms which are sued and do not settle are less likely to be acquired than firms which are not sued, but that firms which are sued and do settle are as likely to be acquired as firms which are not sued.

Appendix A

Valuing Changes in Political Networks: Evidence from Campaign Contributions to Close Congressional Elections

Table A.1: Variable Definitions

Variable	Definition	Source
Tobin's Q	(total assets + market equity - common equity - deferred taxes)/ total assets	Compustat
Market Leverage	Total debt / (market equity + Total debt)	Compustat
Book Leverage	Total debt / Total Assets	Compustat
Log Assets	The natural log of total assets	Compustat
Operating Profit	operating income/ total assets	Compustat
Cashflow/Assets	(Income Before Extraordinary Items + Depreciation) / Total asset	Compustat
Investment/Assets	(Capital Expense - Sale of Property) / Total Assets	Compustat
Contribution	Campaign contribution from a Donor PAC to a Candidate's Election PAC	Federal Election Commission
Margin	The percentage points by which a candidate won or lost a close election by	Federal Election Commission
Won	A dummy variable which takes the value of 1 if a firm is donated to a candidate won an election and zero otherwise	Federal Election Commission
Donated	A dummy variable which takes the value of 1 if a firm donated only one candidate and zero otherwise	Federal Election Commission
Don Won	A dummy variable which takes the value of 1 if a firm donated only to the winning candidate and zero otherwise	Federal Election Commission
Democrat	A dummy variable which takes the value of 1 if a firm donated to a Democrat candidate	Federal Election Commission
Abnormal Returns	Value weighted Cumulative Abnormal Returns computed using the Fama French three factor model for different daily event lengths	Eventus

ΔQ	The change in Tobin's Q (defined above)	Compustat
ΔLev	The change in Market Leverage	Compustat
$\Delta Size$	The change in log assets	Compustat
$\Delta Profitability$	The change in Operating Profit	Compustat
Won P	The number of winning candidates involved in a close general election that a firm donated to prior to the election	Federal Election Commission and Authors's Computation
Lost P	The number of losing candidates involved in a close general election that a firm donated to prior to the election	Federal Election Commission and Authors's Computation
Total P	Won P-Lost P	Federal Election Commission and Authors's Computation
Incumbent Won P	The number of incumbent winning candidates involved in a close general election that a firm donated to prior to the election	Federal Election Commission and Authors's Computation
Incumbent Lost P	The number of incumbent losing candidates involved in a close general election that a firm donated to prior to the election	Federal Election Commission and Authors's Computation
Challenger Won P	The number of challenger winning candidates involved in a close general election that a firm donated to prior to the election	Federal Election Commission and Authors's Computation
Challenger Lost P	The number of challenger losing candidates involved in a close general election that a firm donated to prior to the election	Federal Election Commission and Authors's Computation
Republican Won P	The number of Republican winning candidates involved in a close general election that a firm donated to prior to the election	Federal Election Commission and Authors's Computation
Republican Lost P	The number of Republican losing candidates involved in a close general election that a firm donated to prior to the election	Federal Election Commission and Authors's Computation
Democrat Won P	The number of Democratic winning candidates involved in a close general election that a firm donated to prior to the election	Federal Election Commission and Authors's Computation
Democrat Lost P	The number of Democratic losing candidates involved in a close general election that a firm donated to prior to the election	Federal Election Commission and Authors's Computation
Senate Won P	The number of winning Senate candidates involved in a close general election that a firm donated to prior to the election	Federal Election Commission and Authors's Computation
Senate Lost P	The number of losing Senate candidates involved in a close general election that a firm donated to prior to the election	Federal Election Commission and Authors's Computation
House Won P	The number of winning House of Representatives candidates involved in a close general election that a firm donated to prior to the election	Federal Election Commission and Authors's Computation
House Lost P	The number of losing House of Representatives candidates involved in a close general election that a firm donated to prior to the election	Federal Election Commission and Authors's Computation
Indirect Won P	The number of winning candidates involved in close general election that a firm indirectly supports via donations to Leadership PACs	Federal Election Commission and Authors's Computation
Indirect Lost P	The number of losing candidates involved in close general election that a firm indirectly supports via donations to Leadership PACs	Federal Election Commission and Authors's Computation
Indirect Total P	Indirect Won P-Indirect Lost P	Federal Election Commission and Authors's Computation
Amount Won P	The number of winning candidates involved in a close general election that a firm donated to prior to the election weighted by the firm's contribution to the candidate	Federal Election Commission and Authors's Computation

Amount Lost P	The number of losing candidates involved in a close general election that a firm donated to prior to the election weighted by the firm's contribution to the candidate	Federal Election Commission and Authors's Computation
Amount Total P	Amount Won P-Amount Lost P	Federal Election Commission and Authors's Computation
Log Amount Won P	The natural log of 1+ Amount Won P	Federal Election Commission and Authors's Computation
Log Amount Lost P	The natural log of 1+ Amount Lost P	Federal Election Commission and Authors's Computation
Log Amount Total P	The natural log of $Amount\,Total\,P + \sqrt{Amount\,Total\,P^2 + 1}$	Federal Election Commission and Authors's Computation

Table A.2: CRSP Firm PAC Election and Leadership PAC Donation Summary Statistics
Panel A of the following table reports aggregate summary statistics for PACs donations affiliated with firms in CRSP to Senate and House Election PACs and all Leadership PACs by year. Panel B reports the same statistics for donations to individual Senate and House candidate Election PACs and all Leadership PACs by year.

Panel A - Aggregate CRSP Firm PAC contributions Summary Statistics

	To Election PACs				**To Leadership PACs**			
Year	Total (mil)	Mean (thou)	St Dev (thou)	Number	Total (mil)	Mean (thou)	St Dev (thou)	Numbe
1997	21.92	30.74	53.93	713	0.86	4.61	5.68	187
1998	40.75	52.92	96.75	770	2.59	9.15	14.14	283
1999	26.87	38.01	82.95	707	2.03	7.13	14.17	285
2000	47.11	61.98	106.39	760	3.87	13.08	23.57	296
2001	33.06	48.13	93.30	687	3.89	13.01	27.08	299
2002	48.47	65.51	127.23	740	5.28	14.38	29.54	367
2003	41.33	57.57	121.79	718	7.46	18.29	33.74	408
2004	52.72	66.90	115.01	788	9.95	23.14	40.46	430
2005	48.15	63.78	112.12	755	12.48	27.98	50.38	446
2006	59.68	75.16	128.94	794	12.85	29.95	49.81	429
2007	59.28	80.66	139.98	735	8.65	23.01	49.38	376
2008	66.48	85.77	153.72	775	15.02	38.51	68.85	390
2009	57.49	81.55	165.95	705	8.37	22.76	58.06	368
2010	69.63	92.10	163.23	756	16.59	42.87	92.30	387

Panel B - CRSP Firm PACs to Individual PAC Summary Statistics

	To Election PACs				**To Leadership PACs**			
Year	Total (mil)	Mean (thou)	St Dev (thou)	Number	Total (mil)	Mean (thou)	St Dev (thou)	Numbe
1997	21.92	1.63	1.78	13,431	0.86	2.49	2.44	347
1998	40.75	1.73	1.85	23,528	2.59	2.91	2.68	891
1999	26.87	2.00	2.28	13,427	2.03	2.60	2.65	781
2000	47.11	1.95	1.98	24,118	3.87	3.14	2.74	1,234
2001	33.06	2.27	2.38	14,545	3.89	3.66	3.37	1,062
2002	48.47	2.19	2.20	22,085	5.28	3.29	2.91	1,602
2003	41.33	2.71	2.60	15,277	7.46	3.78	3.19	1,974
2004	52.72	2.42	2.23	21,787	9.95	3.83	2.93	2,598
2005	48.15	2.95	2.71	16,330	12.48	4.02	3.14	3,103
2006	59.68	2.74	2.40	21,790	12.85	4.23	3.06	3,035
2007	59.28	3.13	2.79	18,958	8.65	4.14	3.06	2,089
2008	66.48	2.90	2.49	22,914	15.02	4.87	3.29	3,084
2009	57.49	3.19	2.94	18,018	8.37	4.00	3.09	2,095
2010	69.63	2.99	2.56	23,317	16.59	4.94	3.17	3,359

Table A.3: 40 Most Actively Donating Industries

The following table presents the 40 industries with the largest Institutional PAC donations from 1998-2010.

Rank	Industry	Total Donation	Proportion
1	COMMERCIAL BANKS & BANK HOLDING COMPANIES	85,075,893	0.042
2	ATTORNEYS & LAW FIRMS	73,753,969	0.037
3	PHARMACEUTICAL MANUFACTURING	57,131,329	0.028
4	OTHER PHYSICIAN SPECIALISTS	55,595,388	0.028
5	INSURANCE COMPANIES, BROKERS & AGENTS	53,552,071	0.027
6	ACCOUNTANTS	48,972,131	0.024
7	LIFE INSURANCE	46,177,074	0.023
8	TELEPHONE UTILITIES	46,130,608	0.023
9	ELECTRIC POWER UTILITIES	40,544,218	0.020
10	DEFENSE AEROSPACE CONTRACTORS	39,676,284	0.020
11	SECURITY BROKERS & INVESTMENT COMPANIES	38,046,708	0.019
12	GAS & ELECTRIC UTILITIES	32,539,756	0.016
13	EXPRESS DELIVERY SERVICES	30,326,784	0.015
14	RAILROADS	29,872,022	0.015
15	REAL ESTATE AGENTS	28,574,455	0.014
16	HOSPITALS	28,467,001	0.014
17	ACCIDENT & HEALTH INSURANCE	28,120,859	0.014
18	PHYSICIANS	27,884,362	0.014
19	DEFENSE ELECTRONIC CONTRACTORS	27,744,974	0.014
20	CREDIT AGENCIES & FINANCE COMPANIES	26,481,583	0.013
21	LIQUOR WHOLESALERS	24,852,117	0.012
22	CABLE & SATELLITE TV PRODUCTION & DISTRIBUTION	24,435,234	0.012
23	TRIAL LAWYERS & LAW FIRMS	22,766,845	0.011
24	RESTAURANTS & DRINKING ESTABLISHMENTS	22,473,553	0.011
25	TOBACCO & TOBACCO PRODUCTS	22,270,573	0.011
26	DEPARTMENT, VARIETY & CONVENIENCE STORES	21,355,292	0.011
27	AUTO DEALERS, NEW & USED	20,725,900	0.010
28	CREDIT UNIONS	20,688,281	0.010
29	INDUSTRIAL/COMMERCIAL EQUIPMENT & MATERIALS	20,459,876	0.010
30	SUGAR CANE & SUGAR BEETS	19,481,683	0.010
31	ENGINEERING, ARCHITECTURE & CONSTRUCTION MGMT SVCS	18,911,599	0.009
32	REAL ESTATE DEVELOPERS & SUBDIVIDERS	18,846,854	0.009
33	HMOS	18,576,294	0.009
34	RESIDENTIAL CONSTRUCTION	18,029,785	0.009
35	DENTISTS	17,831,471	0.009
36	PUBLIC WORKS, INDUSTRIAL & COMMERCIAL CONSTRUCTION	17,678,592	0.009
37	MAJOR (MULTINATIONAL) OIL & GAS PRODUCERS	17,023,408	0.008
38	MILK & DAIRY PRODUCERS	16,758,888	0.008
39	NURSING HOMES	15,500,982	0.008
40	PETROLEUM REFINING & MARKETING	15,279,398	0.008

Table A.4: Close Special Elections 1997-2010

The following table presents the candidates, seats, and outcomes of special elections from 1997 to 2010 which were won by a margin of less than 5 percentage points. Victory margin is the percentage that the candidate won (lost) the election by. D refers to the Democratic Party, R refers to the Republican Party, and C refers to the Conservative Party. All data comes from the Federal Election Commission.

Candidate	Date	State	District	Party	Victory Margin
Bill Redmond	05/13/1997	NM	3	R	0.030
Eric Serna	05/13/1997	NM	3	D	-0.030
Heather Wilson	06/23/1998	NM	1	R	0.050
Phillip Maloof	06/23/1998	NM	1	D	-0.050
David Vitter	05/29/1999	LA	1	R	0.015
David Treen	05/29/1999	LA	1	R	-0.015
Randy Forbes	06/19/2001	VA	4	R	0.042
Louise Lucas	06/19/2001	VA	4	D	-0.042
Randy Neugebauer	06/03/2003	TX	19	R	0.010
Mike Conaway	06/03/2003	TX	19	R	-0.010
Stephanie Herseth	06/01/2004	SD	0	D	0.011
Larry Diedrich	06/01/2004	SD	0	R	-0.011
Jean Schmidt	08/02/2005	OH	2	R	0.033
Paul Hacket	08/02/2005	OH	2	D	-0.033
Brian Bilbray	06/06/2006	CA	50	R	0.046
Francine Busby	06/06/2006	CA	50	D	-0.046
Paul Broun	07/17/2007	GA	10	R	0.008
Jim Whitehead	07/17/2007	GA	10	R	-0.008
Don Cazayoux	05/03/2008	LA	6	D	0.029
Woody Jenkins	05/03/2008	LA	6	R	-0.029
Bill Owens	11/03/2009	NY	23	D	0.024
Douglas Hoffman	11/03/2009	NY	23	C	-0.024
Scott Murhpy	03/31/2009	NY	20	D	0.005
Tim Tedisco	03/31/2009	NY	20	R	-0.005
Scott Brown	01/19/2010	MA	Senate	R	0.048
Martha Coakley	01/19/2010	MA	Senate	D	-0.048

Table A.5: Special Election Firm Donor Summary Statistics

Columns (1) through (3) of Panel A of the following table present summary statistics of firms in the years that they gave donations to candidates in the sample of special elections. Column (4) presents the average value of firms which donated only to the losing candidate. Column (5) presents the average difference of firms who donated only to the winning candidate conditioning on the voteshare of the winning candidate using a quadratic spline functional form. Column (6) reports the p-value of the difference reported in column (5) computed using Robust standard errors. All variables are defined in the appendix. Panel B reports the number frequency of firms donating to more than one candidate during the elections in the sample.

Panel A - Averages and Differences of Donating Firms around the Discontinuity						
	All Firms			**Losing vs. Winning Firms**		
	Mean	Median	St Dev	Mean	Difference	P Value
	(1)	(2)	(3)	(4)	(5)	(6)
Tobin's Q	1.776	1.462	1.178	1.816	-0.303	(0.5455)
Market Leverage	0.284	0.248	0.216	0.102	0.213	(0.1038)
Book Leverage	0.279	0.263	0.153	0.197	0.097	(0.3566)
Log Assets	10.170	10.246	1.339	10.119	0.295	(0.8071)
Equity Value (Millions)	52,793	17,707	83,008	83,833	-48,388	(0.6090)
Operating Profit	0.137	0.123	0.067	0.178	-0.065	(0.1182)
Cash Flow/Assets	0.092	0.086	0.061	0.108	-0.024	(0.5146)
Investment/Assets	0.043	0.033	0.030	0.036	-0.003	(0.9198)
Contribution	1902.5	1000.00	1773.76	1534.68	196.34	(0.8910)

Table A.6: Special Election CAR Regression Discontinuity Results

Panel A of the following table presents estimates of a Regression Discontinuity estimation on (-1,+5) and (-1,+1) Cumulative Abnormal Returns computed using the Fama French Three Factor Model. The estimation is performed using sample of elections which were won or lost by a margin of 5% or less and for the sample of firms which only donated to one candidate in the election. Won is a dummy variable which takes a value of 1 if candidate which the firm donated to won a close election and 0 otherwise. The estimation is performed using a number of polynomial and polynomial spline functional forms, as suggested by Lee (2008). Panel B reports the results of a Regression Discontinuity estimation using the entire sample of firms who donated to candidates in the special elections.*Donated* is a dummy variable which takes a value of 1 if a firm donated to only one candidate in a particular special election and zero if a firm donated to both the winning and losing candidate in a particular election. *Donated**Won* is the interaction of *Donated* and *Won*. P-values clustered at the firm level are reported in parentheses.

Panel A - Winner vs. Loser Results					
	(1)	(2)	(3)	(4)	(5)
Event Window	(-1,+5)	(-1,+5)	(-1,+5)	(-1,+5)	(-1,+1)
Won	0.0176*	0.0300**	0.0260*	0.0683***	0.0369**
	(0.0997)	(0.0160)	(0.0658)	(0.00675)	(0.0159)
Intercept	-0.00603	-0.0203**	-0.0122	-0.0621***	-0.0491***
	(0.305)	(0.0336)	(0.158)	(0.0046)	(0.0001)
Observations	234	234	234	234	234
R-squared	0.018	0.026	0.021	0.036	0.040
Functional Form	Linear	Linear Spline	Quadratic	Quadratic Spline	Quadratic Spline

Panel B - Winner vs. Loser in Comparison with Hedger Results						
	(1)	(2)	(3)	(4)	(5)	(6)
Event Window	(-1,+5)	(-1,+5)	(-1,+5)	(-1,+5)	(-1,+5)	(-1,+1)
Donated	-0.0193	-0.0188	-0.0307**	-0.0179	-0.0934**	-0.0789***
	(0.107)	(0.293)	(0.0375)	(0.318)	(0.0146)	(0.0001)
$Donated * Won$	0.0142	0.0300**	0.0255*	0.0292**	0.0683***	0.0369**
	(0.178)	(0.0163)	(0.0683)	(0.0299)	(0.0060)	(0.0164)
Intercept	0.0142	-0.0015	0.0175*	-0.0032	0.0313	0.0298*
	(0.131)	(0.920)	(0.0705)	(0.849)	(0.315)	(0.0633)
Observations	258	258	258	258	258	258
R-squared	0.015	0.028	0.020	0.028	0.043	0.051
Functional Form	Linear	Linear Spline	Quadratic	Partial Quadratic Spline	Full Quadratic Spline	Full Quadratic Spline

Table A.7: Special Election Regression Discontinuity Placebo Test

The following table presents estimates of a Regression Discontinuity estimation on (-1,+5) and (-1,+1) Cumulative Abnormal Returns computed using the Fama French Three Factor Model. The estimation is performed using all special elections which were won or lost by a margin of more than 5% looking at the sample of firms which only donated to one candidate Won is a dummy variable which takes a value of 1 if candidate which the firm donated to won a close election and 0 otherwise. The estimation is performed using a number of polynomial and polynomial spline functional forms, as suggested by Lee (2008). P-values clustered at the firm level are reported in parentheses.

Regression Discontinuity Placebo Test Results				
	(1)	(2)	(3)	(4)
Event Window	(-1,+5)	(-1,+5)	(-1,+5)	(-1,+1)
Won	-0.0099	-0.0187	-0.0056	0.0000
	(0.151)	(0.133)	(0.796)	(0.998)
Intercept	0.0086*	0.0138*	0.0074	0.0074
	(0.0910)	(0.0699)	(0.721)	(0.600)
Observations	1,091	1,091	1,091	1,091
R-squared	0.002	0.004	0.009	0.013
Functional Form	Linear	Quadratic	Quadratic Spline	Quadratic Spline

Table A.8: General Election Firm Connection Summary Statistics

Panel A of the following table presents summary statistics for the firms in the sample. Panel B presents summary summary statistics for the firm direct and indirect connections to candidates in close general elections held from 1998 to 2010. Details and definitions of the variables can be found in the text and Appendix A.

Panel A - Firm Summary Statistics						
Variable	**Mean**	**Median**	**Std. Dev.**	**Max**	**Min**	**Number**
$Tobin's\,Q$	1.68	1.29	1.20	15.92	0.43	3,757
$Market\,Leverage$	0.33	0.29	0.24	1.00	0	4,272
$Book\,Leverage$	0.29	0.26	0.21	3.68	0	4,274
$Log\,Sales$	8.43	8.47	1.57	13.04	-0.04	4,290
$Log\,Total\,Assets$	8.98	8.97	1.81	15.07	2.64	4,290
$Operating\,Profitability$	0.12	0.11	0.09	0.86	-0.90	4,233
$Investment/Assets$	0.05	0.03	0.05	0.61	-0.37	2,390
Panel B - Political Connection Summary Statistics						
Variable	**Mean**	**Median**	**Std. Dev.**	**Max**	**Min**	**Number**
$Total\,P$	0.40	0	2.37	15	-10	4,135
$Won\,P$	2.91	2	3.21	27	0	4,135
$Lost\,P$	2.51	2	2.66	18	0	4,135
$Incumbent\,Won\,P$	1.93	1	2.51	23	0	4,135
$Incumbent\,Lost\,P$	1.81	1	2.08	16	0	4,135
$Challenger\,Won\,P$	0.98	0	1.42	10	0	4,135
$Challenger\,Lost\,P$	0.70	0	1.19	15	0	4,135
$Democrat\,Won\,P$	0.98	0	1.83	21	0	4,135
$Democrat\,Lost\,P$	0.66	0	1.39	17	0	4,135
$Republican\,Won\,P$	1.89	1	2.34	18	0	4,135
$Republican\,Lost\,P$	1.85	1	2.36	16	0	4,135
$Amount\,Total\,P$	926.70	0	9,635	89,000	-48,500	4,135
$Amount\,Won\,P$	8,472.59	3,250	14,626	206,000	0	4,135
$Amount\,Lost\,P$	7,545.90	3,000	12,216	123,500	0	4,135
$Indirect\,Total\,P$	1.40	1	18.99	118	-157	3,134
$Indirect\,Won\,P$	53.88	21	87.60	913	0	3,134
$Indirect\,Lost\,P$	52.48	21	82.77	795	0	3,134
$Indirect\,Amount\,Total\,P$	20,140.89	9,777	135,100	643,883	-1,121,987	3,134
$Indirect\,Amount\,Won\,P$	325,360.92	131,843	512,656	4,593,377	0	3,134
$Indirect\,Amount\,Lost\,P$	305,220.03	125,000	469,317	4,175,175	0	3,134

Table A.9: General Election CARs Regressions - Full Sample

The following table presents regression estimates of various measures of political connections on Cumulative Abnormal Returns for firms which donated to candidates in close general Congressional elections from 1998-2010. CARs are computed using the Fama French 3 factor value weighted model over the (-1,+1) event window. All regressions include industry and year effects. All connection variables are defined in the text and in Appendix A. P-values clustered at the firm level are reported in parentheses.

	(1)	(2)	(3)	(4)	(5)	(6)
Total P	0.0007**					
	(0.0131)					
Won P		0.0007**				
		(0.0143)				
Lost P		-0.0008**				
		(0.0252)				
Incumbent Won P			0.0006*			
			(0.0852)			
Incumbent Lost P			-0.0013***			
			(0.0038)			
Challenger Won P			0.0011*			
			(0.0584)			
Challenger Lost P			0.0004			
			(0.526)			
Democrat Won P				0.0016***		
				(0.0013)		
Democrat Lost P				-0.0015**		
				(0.0143)		
Republican Won P				0.0002		
				(0.596)		
Republican Lost P				-0.0005		
				(0.272)		
Indirect Won P					0.0001***	
					(0.0023)	
Indirect Lost P					-0.0001***	
					(0.0016)	
Amount Won P						9.08e-08
						(0.134)
Amount Lost P						-1.34e-07*
						(0.0817)
Observations	3,761	3,761	3,761	3,761	2,810	3,761
R-squared	0.084	0.084	0.085	0.085	0.094	0.083

Table A.10: General Election CARs - Most Actively Donating Industries

The following table presents regression estimates of various measures of political connections on Cumulative Abnormal Returns for firms which donated to candidates in close general Congressional elections from 1998-2010 in the sample from the 10 industries which have the largest percentage of donations to all elections. CARs are computed using the Fama French 3 factor value weighted model over the (-1,+1) event window. All regressions include industry and year fixed effects. All connection variables are defined in the text and in Appendix A. P-values clustered at the firm level are reported in parentheses.

	(1)	(2)	(3)	(4)	(5)	(6)
Total P	0.0017***					
	(0.0002)					
Won P		0.0017***				
		(0.0002)				
Lost P		-0.0016***				
		(0.0028)				
Incumbent Won P			0.0011**			
			(0.0340)			
Incumbent Lost P			-0.0017**			
			(0.0164)			
Challenger Won P			0.0029***			
			(0.0003)			
Challenger Lost P			-0.0014			
			(0.127)			
Democrat Won P				0.0027***		
				(0.0006)		
Democrat Lost P				-0.0018*		
				(0.0580)		
Republican Won P				0.0010*		
				(0.0547)		
Republican Lost P				-0.0015**		
				(0.0174)		
Indirect Won P					0.0002***	
					(0.0074)	
Indirect Lost P					-0.0002**	
					(0.0115)	
Amount Won P						3.14e-07***
						(0.0020)
Amount Lost P						-3.32e-07***
						(0.0099)
Observations	1,505	1,505	1,505	1,505	1,139	1,505
R-squared	0.070	0.070	0.072	0.072	0.068	0.067

Table A.11: Political Party Advertising Expenditures

The following table presents regression estimates of Leadership PAC contributions to candidates in close general elections on political party media expenditures to the same candidates. Specifications (2) and (3) include year fixed effects. P-values with robust standard errors are reported in parentheses.

	(1)	(2)	(3)
LPAC Contributions	9.903***	9.189***	6.956***
	(0.000)	(0.000)	(0.000)
Senate			1,741,445***
			(0.000)
Incumbent			-614,944***
			(0.000)
Won			173,777
			(0.237)
Observations	366	366	366
R-squared	0.2709	0.3255	0.4666

Table A.12: General Election CARs - Robustness Tests

The following table presents regression estimates of various measures of political connections on Cumulative Abnormal Returns for firms which donated to candidates in close general Congressional elections from 1998-2010 in the sample from the 10 industries which have the largest percentage of donations to all elections. Specifications (1)-(4) present estimates of models in which the political connection variables do not include politicians located in the same state as the donating firm and include year and industry fixed effects. Specifications (5)-(8) present estimates of models in which the connection variables include all politicians irrespective of state, but include industry interacted with year fixed effects. CARs are computed using the Fama French 3 factor value weighted model over the (-1,+1) event window. All connection variables are defined in the text and in Appendix A. P-values clustered at the firm level are reported in parentheses.

	Out of State Connections Only				**Industry/Year Interactions Included**			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Total P	0.0014***				0.0014***			
	(0.0015)				(0.0016)			
Won P		0.0014***				0.0014***		
		(0.0012)				(0.0016)		
Lost P		-0.0011**				-0.0015***		
		(0.0443)				(0.0053)		
Incumbent Won P			0.0005				0.0012**	
			(0.344)				(0.0302)	
Incumbent Lost P			-0.0007				-0.0015**	
			(0.318)				(0.0334)	
Challenger Won P			0.0036***				0.0019**	
			(0.0000)				(0.0214)	
Challenger Lost P			-0.0019**				-0.0015	
			(0.0457)				(0.111)	
Democrat Won P				0.0021***				0.0025***
				(0.0082)				(0.0010)
Democrat Lost P				-0.0001				-0.0016*
				(0.369)				(0.0855)
Republican Won P				0.0001*				0.0007
				(0.0774)				(0.184)
Republican Lost P				-0.0010				-0.0014**
				(0.104)				(0.0226)
Observations	1,376	1,376	1,376	1,376	1,505	1,505	1,505	1,505
R-squared	0.040	0.041	0.046	0.042	0.297	0.297	0.297	0.299

Table A.13: General Election Congressional Committee CARs - Most Actively Donating Industries

The following table presents regression estimates of various measures of political connections on Cumulative Abnormal Returns for firms which donated to candidates sitting on different congressional committees in close general Congressional elections from 1998-2010 in the sample from the 10 industries which have the largest percentage of donations to all elections. Panel A presents results from Senate Committees, while Panel B presents results from House Committees. CARs are computed using the Fama French 3 factor value weighted model over the (-1,+1) event window. All regressions include industry and year fixed effects. P-values clustered at the firm level are reported in parentheses.

Panel A - Senate Committee Results							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Senate	0.0022***						
	(0.0015)						
House	0.0013**						
	(0.0102)						
Energy		0.0016*					
		(0.0503)					
Commerce			0.0014				
			(0.344)				
Banking				0.0048***			
				(0.0006)			
Agriculture					0.0063***		
					(0.0003)		
Finance						0.0052**	
						(0.0425)	
Armed Services							0.0045**
							(0.0163)
Observations	1,505	1,505	1,505	1,505	1,505	1,505	1,505
R-squared	0.070	0.062	0.061	0.067	0.070	0.064	0.065
Panel B - House Committee Results							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Transportation	0.0025**						
	(0.0115)						
Financial Services		0.0023*					
		(0.0693)					
Agriculture			0.0013				
			(0.216)				
Small Business				0.0044***			
				(0.0001)			
Armed Services					0.0035***		
					(0.0084)		
Ways and Means						0.0032**	
						(0.0141)	
Appropriations							0.0037**
							(0.0395)
Observations	1,505	1,505	1,505	1,505	1,505	1,505	1,505
R-squared	0.064	0.063	0.061	0.067	0.064	0.063	0.063

Table A.14: One Year Forward Change in Sales Regressions

The following table presents regression estimates of various measures of political connections on the one year forward change in sales (in millions) for firms which donated to candidates in close general Congressional elections from 1998-2010. All regressions include firm and year fixed effects. All regressions include lagged changes in Tobin's Q, leverage, size, and profitability, coefficients are not reported to conserve space. All variables are defined in Appendix A. P-values clustered at the firm level are reported in parentheses.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$Total\,P$	300.2***						
	(0.0098)						
$Won\,P$		263.6**					
		(0.0229)					
$Lost\,P$		-372.0**					
		(0.0210)					
$Incumbent\,Won\,P$			402.0***				
			(0.0025)				
$Incumbent\,Lost\,P$			-775.2**				
			(0.0100)				
$Challenger\,Won\,P$			9.106				
			(0.972)				
$Challenger\,Lost\,P$			443.5				
			(0.303)				
$Republican\,Won\,P$				365.7**			
				(0.0271)			
$Republican\,Lost\,P$				-406.3**			
				(0.0200)			
$Democrat\,Won\,P$				74.20			
				(0.704)			
$Democrat\,Lost\,P$				-255.1			
				(0.216)			
$Senate\,Won\,P$					304.7		
					(0.178)		
$Senate\,Lost\,P$					-470.9*		
					(0.0997)		
$House\,Won\,P$					238.7*		
					(0.0653)		
$House\,Lost\,P$					-315.6*		
					(0.0634)		
$Appropriations\,Won\,P$						544.5	
						(0.228)	
$Appropriations\,Lost\,P$						-1,915***	
						(0.0075)	
$Indirect\,Won\,P$							18.18
							(0.156)
$Indirect\,Lost\,P$							-17.96
							(0.187)
Observations	3,252	3,252	3,252	3,252	3,252	3,252	2,462
R-squared	0.042	0.043	0.051	0.043	0.043	0.043	0.050

Table A.15: Lobbying and Employment of Former Government Staffers

Panel A of the following table presents summary statistics for lobbying and employment of former staffer data. *Employ* is a binary variable which takes the value of 1 if a firm employs a former government employee in the current time period and 0 otherwise. *Lobby* is a binary variable which takes the value of 1 if a firm spent money lobbying the federal government in the current time period and 0 otherwise. *Number of Employees* is the number of former government employees a firm employs in the current time period. *Lobby Expense* is the amount of money that a firm spent in the current time period lobbying the federal government. The summary statistics for *Number of Employees* and *Lobby Expense* are for non-zero values. Panel B presents regression estimates the total amount of campaign contributions firm PACs gave to members of a congressional committee on the amount the firm spent lobbying about a policy area under the jurisdiction of the committee. Specification (1) is run on the full sample of observations. Specification (2) is run on the subsample of positive observations. All regressions include year fixed effects. P-values with robust standard errors are reported in parentheses. Panel C presents regression estimates of *Employ* on various measures of firm lobbying. All regressions include year fixed effects. P-values with robust standard errors are reported in parentheses.

Panel A - Lobbying and Employment of Former Staffer Summary Statistics			
	Mean	St. Dev.	N
Employ	0.328	0.470	1,928
Lobby	0.666	0.472	1,928
Number of Employees	2.34	2.29	633
Lobby Expense (Mil)	3.69	6.13	1,284
Panel B - Lobbying Policy and Congressional Committee Contributions			
	(1)	(2)	
Congressional Contribution	14.37***	16.69***	
	(0.000)	(0.000)	
Observations	56,222	12,780	
R-squared	0.118	0.1432	
Panel C - Likelihood of Lobbying and Employing Former Staffers			
	(1)	(2)	(3)
Dep. Variable	*Lobby*	$Log(1 + Lob. Amount)$	$Lob. Amount/Assets$
Employ	-0.0836***	-1.202***	-0.0006***
	(0.000)	(0.000)	(0.000)
Observations	1,928	1,928	1,928
R-squared	0.0069	0.007	0.0114

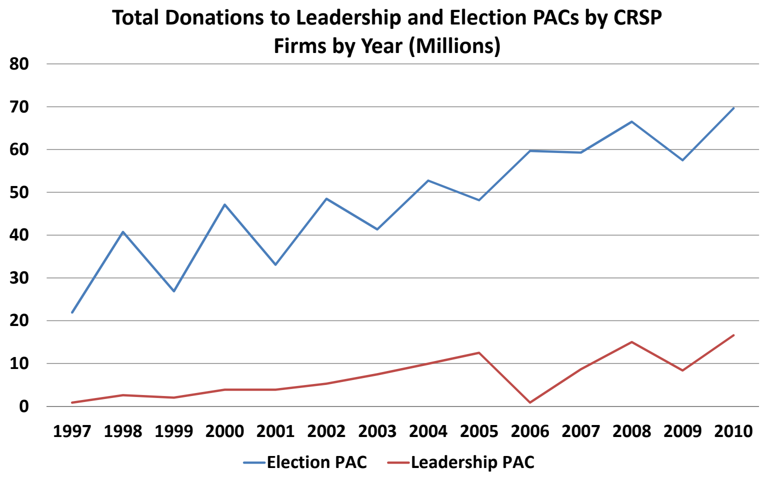
Table A.16: Lobbying and Employment of Former Government Staffers

The following table presents regression estimates The following table presents regression estimates of direct and indirect connections interacted with binary variables to indicate lobbying activity or employment of a former government employee on Cumulative Abnormal Returns for firms which donated to candidates in close general Congressional elections from 1998-2010 in the sample from the 10 industries which have the largest percentage of donations to all elections. All regressions include industry and year fixed effects. P-values clustered at the firm level are reported in parentheses.

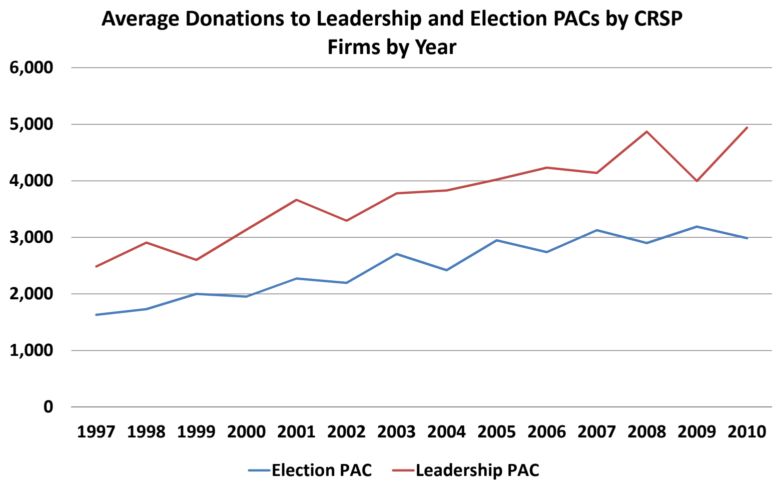
	(1)	(2)	(3)	(4)
Total P	0.0021**	0.0007		
	(0.044)	(0.217)		
Total P × Lobby	-0.0005			
	(0.630)			
Total P × Employ		0.0017**		
		(0.040)		
Indirect Total P			-0.00004	-0.00004
			(0.692)	(0.750)
Indirect Total P × Lobby			0.00028**	
			(0.026)	
Indirect Total P × Employ				0.00014
				(0.299)
Obs.	1,711	1,711	1,317	1,317
R-squared	0.0465	0.0494	0.0408	0.0355

Figure A.1: CRSP PAC Donations to Election and Leadership PACs

Figure (a) shows the total donations of PACs associated with firms in CRSP to all Leadership PACs and House and Senate Election PACs by year. Figure (b) plots the average donation to a Leadership PAC or a Senate or House Election PAC by year.



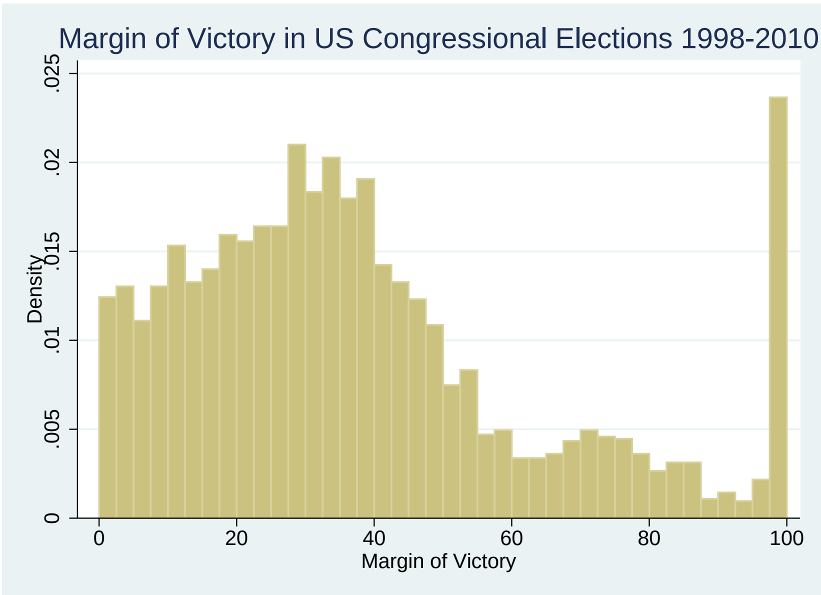
(a) Total Donations



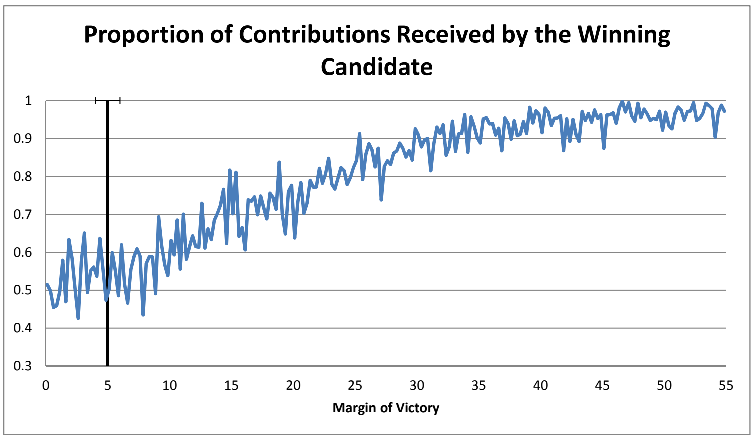
(b) Average Donations

Figure A.2: Electoral Statistics

Figure (a) presents a histogram of the margin of victory for all U.S. general elections from 1998-2010. Figure (b) plots the average proportion of total contributions given to the winning candidate of an election on the Y-axis against the margin of victory that the candidate won the election by on the X-axis.



(a) Margin of Victory



(b) Proportion of Contributions Received by the Winning Politician

Appendix B

The Information Content of Firm Behavior During Litigation

Table B.1: Variable Definitions

Variable Name	Description	Source
Q	Tobin's Q: (total assets + market equity − common equity − deferred taxes)/ total assets	Compustat
LEV	Market Leverage: Total debt (book value) / (market equity + Total debt)	Compustat
SIZE	The natural log of total assets	Compustat
PROF	Operating profit: operating income/ total assets	Compustat
ZSCORE	Altman's Unlevered Z-Score: (3.3 * pre-tax income + sales + 1.4* retained earnings + 1.2 * (current assets − current liabilities)) / total assets	Compustat
L_Q	The first lag of Q	Compustat
L_LEV	The first lag of LEV	Compustat
L_SIZE	The first lag of SIZE	Compustat
L_PROF	The first lag of PROF	Compustat
L_ZSCORE	The first lag of ZSCORE	Compustat
L2_Q	The second lag of Q	Compustat
L2_LEV	The second lag of LEV	Compustat
L2_SIZE	The second lag of SIZE	Compustat
L2_PROF	The second lag of PROF	Compustat
L2_ZSCORE	The second lag of ZSCORE	Compustat
LAST_Q	The first lag of Q	Compustat
LAST_LEV	The first lag of LEV	Compustat
LAST_SIZE	The first lag of SIZE	Compustat
LAST_PROF	The first lag of PROF	Compustat
LAST_ZSCORE	The first lag of ZSCORE	Compustat
CONTROL	A binary variable which takes the value of 1 if the firm has never been sued or if the firm was eventually sued but the lawsuit had not yet been filed in a time period and 0 otherwise	Stanford and Audit Analytics
SUED	A binary variable which takes the value of 1 if the firm is ever sued and 0 otherwise	Stanford and Audit Analytics

IPO	A binary variable which takes the value of 1 if the firm is one which was a part of the class action In Re: IPO Securities Litigation and 0 otherwise	Stanford and Audit Analytics
SET_SUED	A binary variable which takes the value of 1 if the firm is ever sued and settles and 0 otherwise	Stanford and Audit Analytics
IN_LITIGATION	A binary variable which takes the value of 1 if a firm is in involved in a litigation case in the current year	Stanford and Audit Analytics
POST_LITIGATION	A binary variable which takes the value of 1 if a firm has been in a litigation case but it has been resolved by the current year	Stanford and Audit Analytics
IPO_IN_LIT	A binary variable which takes the value of 1 if a firm is in involved in a litigation case in the current year and is a firm which was involved in the class action In Re: IPO Securities Litigation and 0 otherwise	Stanford and Audit Analytics
IPO_POST_LIT	A binary variable which takes the value of 1 if a firm has been in a litigation case but it has been resolved by the current year and is a firm which was involved in the class action In Re: IPO Securities Litigation and 0 otherwise	Stanford and Audit Analytics
SET_SUED	A binary variable which takes the value of 1 if a firm has been in at least one litigation during the sample period and it exited at least one case by settlement and 0 otherwise	Stanford and Audit Analytics
AVG_R	The average daily return in a given year	CRSP
STD	The standard deviation of daily returns in a given year	CRSP
SKEW	The skewness of daily returns in a given year	CRSP
KURT	The kurtosis of daily returns in a given year	CRSP
MIN_R	The minimum daily return in a given year	CRSP
MAX_R	The maximum daily return in a given year	CRSP
L_AVG_R	The first lag of the average daily return in a given year	CRSP
L_STD	The first lag of the standard deviation of daily returns in a given year	CRSP
L_SKEW	The first lag of the skewness of daily returns in a given year	CRSP
L_KURT	The first lag of the kurtosis of daily returns in a given year	CRSP
L_MIN_R	The first lag of the minimum daily return in a given year	CRSP
L_MAX_R	The first lag of the maximum daily return in a given year	CRSP
Car_m1_p1	Firm Cumulative Abnormal returns net of the CRSP equally weighted return one day one day before to one day after an event	EVENTUS

Table B.2: Class Action Case Summary Statistics

Panel A of the following table shows summary statistics about the length of all cases (settled and dismissed) in the sample, along with summary statistics about the settlement amounts of the cases which settled. Panel B shows summary statistics for the court approved Plaintiff expense reimbursements in levels as as a fraction of the case settlement. The first two columns present summary statistics for the whole sample of settlements, while the final four columns split the cases by those which entered discovery and those which did not. The Kernal Density Plot which follows Panel B depicts the natural logarithm of the expenses for cases which did and did not enter discovery.

Panel A - Non-IPO Class Action Summary Statistics					
	Mean	**Median**	**St. Dev.**	**Max**	**Min**
Settlement (millions)	$39.43	$7.25	$123.18	$1,142.78	$0.1
Case Length (years)	2.50	2.18	1.68	11.02	0.02

Panel B - Settlement Expense Summary Statistics by Discovery						
	Full Sample		**Did Not Enter Discovery**		**Entered Discovery**	
	Mean	**Median**	**Mean**	**Median**	**Mean**	**Median**
Expenses	604,046	200,172	146,538	119,035	1,183,566	495,523
Expenses/Settlement	0.0464	0.0286	0.0365	0.0250	0.0581	0.0355

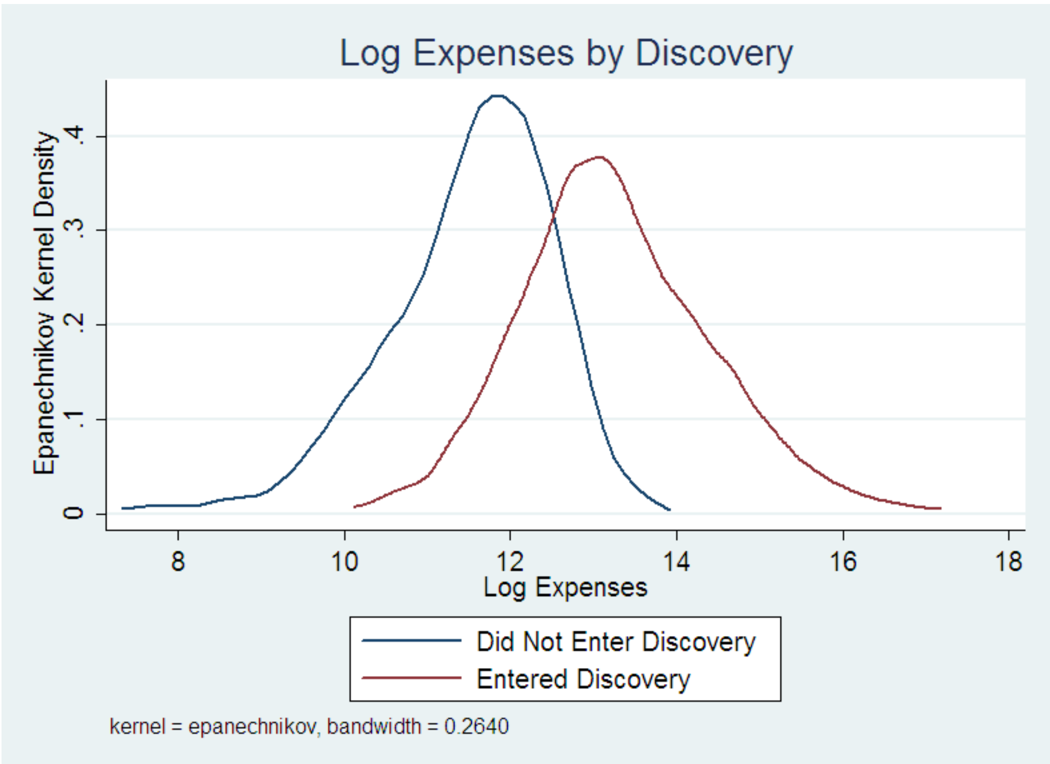


Table B.3: Firm Year Characteristic Summary Statistics

Panel A of the following table gives the mean and median values of the firm specific variables in the pooled sample, along with the number of observations. Q is Tobin's Q, LEV is the market value of the firm's leverage ratio, PROF is the firm's operating profit, ZSCORE is the value of each firm's unlevered Altman Z-Score, SIZE is the natural log of total assets, AVG_R is the average value of the firm's daily stock return in each year, STD is the annual standard deviation of each firm's daily returns, SKEW is the annual skewness of each each firm's daily returns, MAX_R and MIN_R are the maximum and minimum daily return in a given year. Panel B reports difference of mean and median tests, *, **, and *** denote significance at the 10, 5, and 1 percent levels respectively.

Panel A - Summary Statistics

	Full Sample [1]			**Control Firms [2]**			**Sued Firms Prior to Lawsuit[3]**			**Sued Firms After to Lawsuit[4]**		
	Mean	**Median**	**N**	**Mean**	**Median**	**N**	**Mean**	**Median**	**N**	**Mean**	**Median**	**N**
Q	2.523	1.438	123399	2.525	1.419	108188	3.061	1.809	6915	2.091	1.466	4150
LEV	0.259	0.175	139957	0.264	0.184	123464	0.202	0.107	7390	0.246	0.148	4719
PROF	-0.042	0.072	157769	-0.047	0.070	140044	0.013	0.104	8630	0.011	0.082	4709
ZSCORE	-3.089	0.965	129410	-3.412	0.956	113412	0.602	1.326	7729	-1.716	1.038	4194
SIZE	5.100	5.100	163429	4.976	4.997	145306	5.701	5.469	8836	6.783	6.648	4828
AVG_R	0.040	0.001	55850	0.041	0.001	49405	0.066	0.001	3464	0.005	0.000	1137
STD	0.325	0.043	55833	0.317	0.042	49390	0.634	0.043	3464	0.105	0.040	1137
SKEW	0.911	0.431	55815	0.913	0.433	49373	1.004	0.362	3464	0.879	0.472	1136
KURT	22.952	4.256	55794	22.901	4.142	49353	28.490	4.868	3463	17.154	5.218	1136
MIN_R	-0.193	-0.145	55850	2.993	0.170	49405	6.557	0.171	3464	0.970	0.182	1137
MAX_R	3.100	0.173	55850	-0.190	-0.143	49405	-0.209	-0.153	3464	-0.193	-0.155	1137

Panel B - Test of Differences

	Test of Means				**Test of Medians**			
	[3] - [2]	**T-Stat**	**[4] - [2]**	**T-Stat**	**[3] - [2]**	**Chi Squared**	**[4] - [2]**	**Chi Squared**
Q	0.537	10.75***	-0.433	6.88***	0.391	480.42***	0.048	9.42***
LEV	-0.063	19.689***	-0.018	4.52***	-0.076	333.10***	-0.036	36.80***
PROF	0.060	11.16***	0.058	7.97***	0.034	446.90***	0.013	51.21***
ZSCORE	4.014	4.71***	1.695	1.46	0.370	221.87***	0.082	8.01***
SIZE	0.725	25.11***	1.807	46.73***	0.472	147.92***	1.651	1100***
AVG_R	0.025	2.04**	-0.036	1.73*	0.000	36.57***	0.000	15.92***
STD	0.317	5.41***	-0.211	2.25**	0.001	5.22**	-0.002	4.28**
SKEW	0.090	1.28	-0.034	0.29	-0.070	13.62***	0.039	1.75
KURT	5.588	6.427***	-5.748	3.92***	0.726	19.47***	1.076	32.52***
MIN_R	3.564	2.57**	-2.023	2.02**	0.001	13.19***	0.012	8.04***
MAX_R	-0.019	5.67***	-0.003	0.26	-0.010	0.02	-0.012	6.28**

Table B.4: Differences in Firm Characteristics between Sued Firms prior to a lawsuit and Non-Sued Firms

The following table presents OLS regression estimates of various firm-year characteristics of observatations which occur either in a firm which was never sued or in years prior to the filing of a firm's first lawsuit. Sued is a binary variable which takes a value of 1 if the the firm is sued during the sample period and 0 otherwise. Q is the firm's measure of Tobin's Q, LEV is the market value of leverage, SIZE is the logarithm of the firm's total assets PROF is the firm's operating profit, ZSCORE is the value of Altman's Unlevered Z-Score. L_ indicates a variable which is the first lag of the variable following the underscore. The sample considers all firm years as previously defined from 1990 until 2006 since the sample of lawsuits ends in 2006. Industry fixed effects are computed at the 4 digit SIC level. Q and PROF have been trimmed at the fist and ninety-ninth percentiles. Results are robust to alternative triming levels. All variables are defined in Appendix A. Robust t-statistics are in parenthesis. *, **, and *** denote significance at the 10, 5, and 1 percent levels respectively.

	Q	**LEV**	**SIZE**	**PROF**	**ZSCORE**
	(1)	(2)	(3)	(4)	(5)
SUED	0.9422	-0.0366	1.434	0.0342	-0.1682
	(15.32)***	(10.38)***	(42.54)***	(5.80)***	(0.79)
L_Q		-0.0101	-0.0116	-0.028	-0.6048
		(30.29)***	(3.40)***	(17.89)***	(4.20)***
L_LEV	-1.4421		0.2114	-0.0426	-5.8644
	(17.30)***		(4.93)***	(3.78)***	(7.30)***
L_SIZE	-0.2124	0.007		0.075	1.4942
	(15.26)***	(11.62)***		(37.80)***	(12.85)***
L_PROF	-2.4117	-0.0435	1.6848		13.4777
	(15.38)***	(11.50)***	(39.39)***		(12.98)***
L_ZSCORE	-0.0277	-0.0007	0.0075	0.0025	
	(3.93)***	(4.27)***	(4.42)***	(3.37)***	
Observations	45308	45311	45561	45426	45481
R-squared	0.27	0.25	0.45	0.31	0.18
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes

Table B.5: Firm Characteristics During Litigation

Panel A of the following table presents the results of OLS panel regressions explaining Tobin's Q and Market Leverage at various points during firm litigation events. Odd numbered specifications are run using all firms in the sample, while even numbered specifications consider only firms which were eventually sued. Panel B presents Wald test results of various restrictions on the OLS estimates in Panel A. All variables are defined in Appendix A. Robust t-statistics are in parenthesis. *, **, and *** denote significance at the 10, 5, and 1 percent levels respectively.

Panel A - OLS Results								
	Q				LEV			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
IN_LITTIGATION [1]	-0.6919	-0.8428	-0.702	-0.8805	0.0353	0.0553	0.0378	0.0582
	(10.82)***	(10.27)***	(10.72)***	(10.45)***	(8.75)***	(10.68)***	(9.10)***	(11.03)***
POST_LITIGATION [2]	-0.6886	-0.8946	-0.694	-0.9164	0.0077	0.0362	0.0084	0.0372
	(8.16)***	(7.65)***	(8.19)***	(7.79)***	(1.37)	(4.55)***	(1.49)	(4.67)***
SETTLED [3]	-0.3234	-0.2937	-0.3484	-0.3265	0.018	0.0153	0.0166	0.0144
	(2.72)***	(2.50)**	(2.89)***	(2.74)***	(2.38)**	(2.06)**	(2.16)**	(1.92)*
IPO_IN_LIT [4]			0.4034	0.9041			-0.0489	-0.0641
			(1.4)	(2.99)***			(3.03)***	(3.86)***
IPO_POST_LIT [5]			0.9533	1.5771			-0.0012	-0.0275
			(2.39)**	(3.95)***			(0.05)	(1.07)
L_Q					-0.0052	-0.0043	-0.0053	-0.0047
					(23.74)***	(8.90)***	(23.74)***	(9.19)***
L_LEV	-0.2142	-0.6593	-0.215	-0.6657				
	(2.76)***	(4.33)***	(2.78)***	(4.37)***				
L_SIZE	-0.8203	-0.791	-0.8199	-0.7894	0.0393	0.0303	0.0392	0.03
	(26.05)***	(15.18)***	(26.05)***	(15.19)***	(30.96)***	(10.74)***	(30.92)***	(10.59)***
L_ZSCORE	-0.0176	0.0052	-0.0176	0.0061	-0.0008	-0.0029	-0.0008	-0.0029
	(3.75)***	-0.51	(3.75)***	(0.6)	(5.20)***	(4.78)***	(5.20)***	(4.79)***
L_PROF	-0.7536	-0.9192	-0.7543	-0.9418	-0.0506	-0.0412	-0.0507	-0.0412
	(6.24)***	(2.59)***	(6.24)***	(2.65)***	(15.43)***	(3.88)***	(15.45)***	(3.87)***
Sample	All Firms	Sued Firms	All Firms	Sued Firms	All Firms	Sued Firms	All Firms	Sued Firms
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	93829	12246	93829	12246	94024	12309	94024	12309
R-squared	0.56	0.48	0.56	0.48	0.68	0.7	0.68	0.7
Panel B - Wald Test Results								
	Q				LEV			
[1] − [2] = 0	-0.0033	0.0518	-0.008	0.0359	0.0276	0.0191	0.0294	0.021
Pvalue	0.9671	0.5445	0.9193	0.675	0.000***	0.0032***	0.000***	0.675
[2] + [3] − [1] = 0	-0.3201	-0.3455	-0.3404	-0.3624	-0.0096	-0.0038	-0.0128	-0.0066
Pvalue	0.001***	0.001***	0.000***	0.000***	0.1103	0.5554	0.038***	0.000***
[2] + [3] = 0	-1.012	-1.1883	-1.0424	-1.2429	0.0257	0.0515	0.025	0.0516
Pvalue	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***
([2] + [5] +[3]) - ([1] + [4])=0			0.9613	1.5412			-0.0306	-0.0485
Pvalue			0.4475	0.2518			0.093*	0.2518
[2] + [3] + [5] = 0			-0.0891	0.3342			0.0238	0.0241
Pvalue			0.8179	0.3899			0.3581	0.3899
[5] + [2] + [3] − [2] = 0			0.6049	1.2506			0.0154	-0.0131
Pvalue			0.1259	0.002***			0.5611	0.002***

Table B.5: Firm Characteristics During Litigation

Panel C of the following table presents the results of OLS panel regressions explaining firm size and profitability at various points during firm litigation events. Odd numbered specifications are run using all firms in the sample, while even numbered specifications consider only firms which were eventually sued. Panel D presents Wald test results of various restrictions on the OLS estimates in Panel A. All variables are defined in Appendix A. Robust t-statistics are in parenthesis. *, **, and *** denote significance at the 10, 5, and 1 percent levels respectively.

Panel C - OLS Results								
	SIZE				**PROF**			
	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
IN_LITTIGATION [1]	0.2156	-0.0411	0.242	-0.0259	-0.0589	-0.0813	-0.0583	-0.0833
	(12.56)***	(2.00)**	(14.04)***	(1.25)	(9.68)***	(10.07)***	(9.54)***	(10.45)***
POST_LITIGATION [2]	0.17	-0.1409	0.1778	-0.1365	-0.0274	-0.0853	-0.0277	-0.0869
	(6.78)***	(4.35)***	(7.09)***	(4.20)***	(3.36)***	(7.41)***	(3.40)***	(7.58)***
SETTLED [3]	-0.1119	-0.1042	-0.1147	-0.1134	-0.0071	-0.0061	-0.0129	-0.0128
	(3.37)***	(3.28)***	(3.45)***	(3.57)***	(0.63)	(0.57)	(1.14)	(1.19)
IPO_IN_LIT [4]			-0.6036	-0.3215			0.0255	0.0767
			(5.83)***	(3.33)***			(0.76)	(2.22)**
IPO_POST_LIT [5]			-0.3877	-0.0127			0.1817	0.2553
			(2.23)**	-0.08			(3.18)***	(4.48)***
L_Q	0.0094	0.0162	0.0088	0.0145	-0.0041	0.0008	-0.0041	0.0013
	(5.92)***	(5.68)***	(5.55)***	(4.86)***	(3.68)***	(0.45)	(3.62)***	(0.67)
L_LEV	-0.0223	-0.1456	-0.0235	-0.1506	-0.0131	0.0182	-0.0132	0.0184
	(1.09)	(2.97)***	(1.15)	(3.07)***	(1.39)	(1.1)	(1.4)	(1.12)
L_SIZE					0.042	0.0101	0.0421	0.0104
					(12.51)***	(2.22)**	(12.51)***	(2.28)**
L_ZSCORE	0.0067	0.0256	0.0066	0.0255	0.0012	0.0059	0.0012	0.0059
	(5.42)***	(6.20)***	(5.41)***	(6.17)***	(3.25)***	(4.74)***	(3.25)***	(4.81)***
L_PROF	0.4491	0.4911	0.448	0.4886				
	(18.48)***	(8.17)***	(18.48)***	(8.12)***				
Sample	All Firms	Sued Firms	All Firms	Sued Firms	All Firms	Sued Firms	All Firms	Sued Firms
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	94736	12365	94736	12365	94406	12315	94406	12315
R-squared	0.94	0.94	0.94	0.94	0.65	0.62	0.65	0.63
Panel D - Wald Test Results								
	SIZE				**PROF**			
[1] − [2] = 0	0.0456	0.0998	0.0642	0.1106	-0.0315	0.004	-0.0306	0.0036
Pvalue	0.0635*	0.000***	0.009***	0.000***	0.001***	0.6957	0.001***	0.7207
[2] + [3] − [1] = 0	-0.1575	-0.204	-0.1789	-0.224	0.0244	-0.0101	0.0177	-0.0164
Pvalue	0.000***	0.000***	0.000***	0.000***	0.007***	0.28	0.050*	0.082*
[2] + [3] = 0	0.0581	-0.2451	0.0631	-0.2499	-0.0345	-0.0914	-0.0406	-0.0997
Pvalue	0.031**	0.000***	0.020**	0.000***	0.000***	0.000***	0.000***	0.000***
([2] + [5] +[3]) - ([1] + [4])=0			-0.4519	-0.1233			0.2123	0.2517
Pvalue			0.7546	0.4515			0.001***	0.002***
[2] + [3] + [5] = 0			-0.3246	-0.2626			0.1411	0.1556
Pvalue			0.060*	0.1048			0.013**	0.007***
[5] + [2] + [3] − [2] = 0			-0.5024	-0.1261			0.1688	0.2425
Pvalue			0.004***	0.441			0.003***	0.000***

Table B.5: Firm Characteristics During Litigation

Panel E of the following table presents the results of OLS panel regressions explaining Altman's Unlevered Z-Score at various points during firm litigation events. Odd numbered specifications are run using all firms in the sample, while even numbered specifications consider only firms which were eventually sued. Panel F presents Wald test results of various restrictions on the OLS estimates in Panel A. All variables are defined in Appendix A. Robust t-statistics are in parenthesis. *, **, and *** denote significance at the 10, 5, and 1 percent levels respectively.

Panel E - OLS Results	ZSCORE			
	(17)	(18)	(19)	(20)
IN_LITTIGATION [1]	-1.05	-1.615	-1.4068	-0.9042
	(4.48)***	(6.00)***	(5.48)***	(3.85)***
POST_LITIGATION [2]	0.2588	0.4565	0.5241	0.3163
	(0.65)	(1.52)	(1.76)*	(0.79)
SETTLED [3]	-1.9675	-1.5345	-1.4968	-1.948
	(2.62)***	(1.90)*	(1.80)*	(2.53)**
IPO_IN_LIT [4]			-5.139	-3.4175
			(2.52)**	(1.84)*
IPO_POST_LIT [5]			-4.839	-3.1732
			(2.08)**	(1.42)
L_Q	0.2018	-0.1893	-0.1939	0.1819
	(3.76)***	(2.17)**	(2.21)**	(3.42)***
L_LEV	-5.6618	-8.5928	-8.5974	-5.6894
	(2.89)***	(11.73)***	(11.74)***	(2.90)***
L_SIZE	2.3998	5.4675	5.4606	2.3779
	(4.62)***	(17.32)***	(17.30)***	(4.57)***
L_ZSCORE				
L_PROF	10.033	7.4561	7.4496	10.0375
	(6.45)***	(9.18)***	(9.17)***	(6.46)***
Sample	All Firms	Sued Firms	All Firms	Sued Firms
Year Fixed Effects	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes
Observations	12317	94455	94455	12317
R-squared	0.49	0.48	0.48	0.49

Panel F - Wald Test Results	ZSCORE			
$[1] - [2] = 0$	-1.3088	-2.0715	-1.9309	-1.2205
Pvalue	0.000***	0.000***	0.000***	0.001***
$[2] + [3] - [1] = 0$	-0.6587	0.537	0.4341	-0.7275
Pvalue	0.4732	0.3288	0.5765	0.2944
$[2] + [3] = 0$	-1.7087	-1.078	-0.9727	-1.6317
Pvalue	0.1928	0.024**	0.2538	0.036**
([2] + [5] +[3]) - ([1] + [4])=0			-2.9081	-1.9527
Pvalue			0.5746	0.7169
$[2] + [3] + [5] = 0$			-5.8117	-4.8049
Pvalue			0.008***	0.023**
$[5] + [2] + [3] - [2] = 0$			-6.3358	-5.1212
Pvalue			0.004***	0.016**

Table B.6: Equity and Litigation Results

Panel A of the following table presents the results of OLS estimation results of the natural logarithm of market equity value, LOG_EQ. L_ indicates the first lag of the following variable name. All variables are defined in Appendix A. The sample considers only firms which were eventually sued. Panel B presents Wald Tests examining various restrictions on the estimated coefficients. Robust t-statistics are in parenthesis. *, **, and *** denote significance at the 10, 5, and 1 percent levels respectively.

Panel A - OLS Results						
			LOG_EQ			
	(1)	(2)	(3)	(4)	(5)	(6)
IN_LITTIGATION [1]	-0.591	-0.615	-0.7241	-0.7572	-0.7465	-0.777
	(19.79)***	(20.47)***	(14.66)***	(14.94)***	(15.03)***	(15.26)***
POST_LITIGATION [2]	-0.5394	-0.5515	-0.6355	-0.6509	-0.63	-0.6447
	(12.57)***	(12.85)***	(7.05)***	(7.20)***	(6.90)***	(7.04)***
SETTLED [3]	-0.1066	-0.1247	-0.2527	-0.2566	-0.2332	-0.2359
	(2.74)***	(3.17)***	(2.75)***	(2.78)***	(2.50)**	(2.52)**
IPO_IN_LIT [4]		0.6209		0.5052		0.4673
		(4.41)***		(2.74)***		(2.45)**
IPO_POST_LIT [5]		0.9671		0.4927		0.4005
		(5.25)***		(1.52)		(1.23)
L_LEV	-2.2349	-2.2291	-2.4164	-2.412	-2.464	-2.4595
	(25.88)***	(25.78)***	(16.10)***	(16.09)***	(16.27)***	(16.23)***
L_SIZE	0.6268	0.6299	0.5571	0.5619	0.6123	0.617
	(41.41)***	(41.73)***	(19.49)***	(19.63)***	(21.77)***	(21.88)***
L_ZSCORE	-0.0026	-0.002	0.0021	0.0029	-0.0053	-0.0049
	(1.17)	(0.91)	(0.43)	(0.57)	(1.73)*	(1.55)
L_PROF	0.2702	0.259	0.2299	0.2174	0.1261	0.117
	(4.33)***	(4.16)***	(2.31)**	(2.17)**	(1.24)	(1.15)
L_Q	0.0839	0.0875	0.0723	0.0768	0.074	0.078
	(17.34)***	(17.17)***	(11.14)***	(10.70)***	(11.21)***	(10.74)***
STD			0.0222	0.0219		
			(2.14)**	(2.09)**		
L_STD					-0.0042	-0.0027
					(0.92)	(0.58)
Sample	Sued Firms	Sued Firms	Sued Firms	Sued Firms	Sued Firms	Sued Firms
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	12318	12318	4600	4600	4704	4704
R-squared	0.91	0.91	0.87	0.87	0.87	0.87
Panel B - Wald Test Results						
[1] − [2] = 0	-0.0516	-0.0635	-0.0886	-0.1063	-0.1165	-0.1323
Pvalue	0.1284	0.0617*	0.2537	0.1717	0.1379	0.0923*
[2] + [3] − [1] = 0	-0.055	-0.0612	-0.1641	-0.1503	-0.1167	-0.1036
Pvalue	0.108	0.0807*	0.0169**	0.0324**	0.0962*	0.1493
[2] + [3] = 0	-0.646	-0.6762	-0.8882	-0.9075	-0.8632	-0.8806
Pvalue	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***

Table B.7: Settlement Expense Equity and Tobin's Q Results

The following table reports OLS coefficients of the natural log of plaintiff reimbursed expenses, a binary variable for whether a case entered discovery or not prior to settlement, and the interaction of these two variables on Tobin's Q and the the log of the firm's market value of equity during the post settlement period. Industry and time fixed effects are included in all specifications. All variables are defined in Appendix A. Robust t-statistics are in parenthesis. *, **, and *** denote significance at the 10, 5, and 1 percent levels respectively.

	Q			**LOG_EQ**		
	(1)	(2)	(3)	(4)	(5)	(6)
LOG_EXPENSE	0.101	0.2387	0.2532	0.0424	0.0792	0.0781
	(2.64)***	(4.09)***	(4.01)***	(1.84)*	(2.63)***	(2.44)**
DISCOVERY		-0.4711			-0.127	
		(3.46)***			(2.09)**	
LOG_EXPENSE*			-0.0367			-0.0087
DISCOVERY			(3.36)***			(1.78)*
L_Q				0.1721	0.17	0.1702
				(6.04)***	(5.94)***	(5.95)***
L_LEV	-0.8566	-0.8258	-0.8306	-2.4212	-2.4279	-2.4301
	(3.28)***	(3.14)***	(3.16)***	(16.30)***	(16.26)***	(16.28)***
L_SIZE	-0.0652	-0.0801	-0.0791	0.9821	0.979	0.9797
	(1.85)*	(2.19)**	(2.16)**	(75.22)***	(73.18)***	(73.24)***
L_PROF	-2.2049	-2.1501	-2.1499	0.428	0.4365	0.4356
	(3.77)***	(3.68)***	(3.68)***	(3.14)***	(3.19)***	(3.18)***
L_ZSCORE	-0.0109	-0.0107	-0.0108	-0.0119	-0.0119	-0.0119
	-0.64	-0.63	-0.64	(4.49)***	(4.47)***	(4.48)***
Observations	1661	1638	1638	1667	1643	1643
R-squared	0.27 0.28	0.28	0.9	0.9	0.9	

Table B.8: Merger Cross Section Regression Results

The following OLS specifications are run on a binary dependant variable which takes a value of 1 if the firm exits compustat by merger from 1996 to 2010 and 0 otherwise. SUED is a binary variable which takes a value of 1 if the firm is sued during the sample period and 0 otherwise. SUT_SUED is a binary variable which takes a value of 1 if the sued firm ever settles a case during the sample period and 0 otherwise. IPO is a binary variable which take a value of 1 if the firm was involved in the 2001 IPO case consolidation and 0 otherwise. LAST_Q is the firm's measure of Tobin's Q in the last year the firm appears in the sample, LAST_LEV is the market value of the firm's leverage ratio in the last year that the firm appears in the sample, LAST_PROF is the firms operating profit during the last year that it appears in the sample, LAST_ZSCORE is the value of Altman's Unlevered Z score in the last year the firm appears in the sample. All control variables are defined in Appendix A. Industry fixed effects are computed at the 4 digit SIC level. Q and PROF have been trimmed at the first and ninety-ninth percentiles. Results are robust to alternative trimming levels. Robust t-statistics are in parenthesis, *, **, and *** denote significance at the 10, 5, and 1 percent levels respectively.

Panel A - Regression Results							
				MERGED			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
SUED				-0.0683	-0.0679	-0.0437	-0.0453
				(3.14)***	(2.94)***	(2.77)***	(2.71)***
SET_SUED				0.0711	0.0676	0.0475	0.0463
				(2.47)**	(2.23)**	(2.29)**	(2.14)**
IPO				0.1746	0.1936	0.1249	0.1324
				(4.09)***	(4.47)***	(4.17)***	(4.31)***
LAST_SIZE	0.0151	0.0493	0.0505	0.0136	0.0158	0.0496	0.0508
	(8.10)***	(30.68)***	(29.54)***	(7.80)***	(8.34)***	(30.39)***	(29.31)***
LAST_Q	-0.0003	0.0042	0.0036	-0.0001	-0.0001	0.0042	0.0037
	(0.46)	(6.43)***	(5.36)***	(0.15)	(0.24)	(6.56)***	(5.50)***
LAST_LEV	-0.2042	-0.2975	-0.3042	-0.1953	-0.2007	-0.2956	-0.302
	(14.15)***	(21.70)***	(20.60)***	(14.43)***	(13.88)***	(21.56)***	(20.45)***
LAST_PROF	0.0554	0.0493	0.0504	0.0566	0.0553	0.0491	0.0502
	(13.38)***	(10.66)***	(10.70)***	(13.73)***	(13.36)***	(10.63)***	(10.68)***
LAST_ZSCORE	0		-0.0002		0		-0.0002
	(0.89)		(2.06)**		(0.79)		(2.06)**
Year FE	No	Yes	Yes	No	No	Yes	Yes
Industry FE	No	Yes	Yes	No	No	Yes	Yes
Obs.	10928	12033	10928	12033	10928	12033	10928
R-squared	0.05	0.49	0.49	0.04	0.05	0.49	0.49

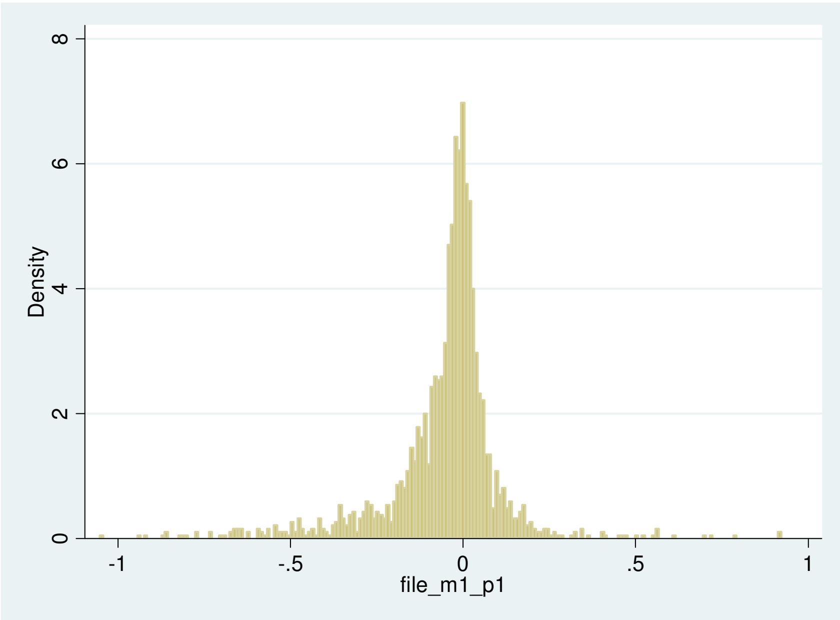
Table B.9: Settlement Cumulative Abnormal Returns

The following tables present Cumulative Abnormal Returns around different events during class action settlements. Columns (1) and (2) present CARs around the date a settlement was brought before a court for approval. Columns (3) and (4) present CARs around the date that the settlement was approved by judge. Columns (1) and (3) are computed from one day before the event until one day after the event. Columns (2) and (4) are computed from one day before the event date until five days after the event date. T-statistics are in parenthesis, *, **, and *** denote significance at the 10, 5, and 1 percent levels respectively.

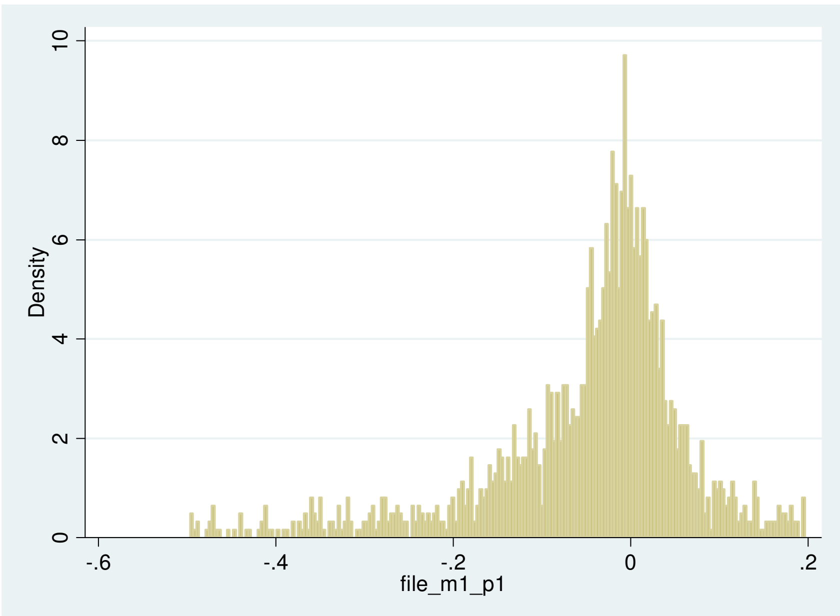
Settlement Cumulative Abnormal Returns				
	Brought to Court		**Approved**	
	(1)	(2)	(3)	(4)
Event Window	(-1, +1)	(-1,+5)	(-1, +1)	(-1,+5)
Mean	-0.0043	-0.004	-0.0099	-0.0108
	(-1.16)	(-1.16)	(-3.19)***	(-2.24)**
Median	-0.0038	-0.0035	-0.0055	-0.0096
	(-2.12)**	(-0.23)	(-3.69)***	(-2.607)***
N	368	368	499	499

Figure B.1: Class action Filing Date Cumulative Abnormal Returns (-1,+1)

Figure (A) of the following diagram shows a histogram of the Cumulative Abnormal Returns one day before to one day after the filing date of a securities class action lawsuit. Panel (B) shows the histogram of the central 95% of the same returns.



(a) Abnormal returns considering the whole sample



(b) Abnormal returns excluding the top and bottom 2.5 percentiles

Figure B.2: Long Form Litigation Game Representation

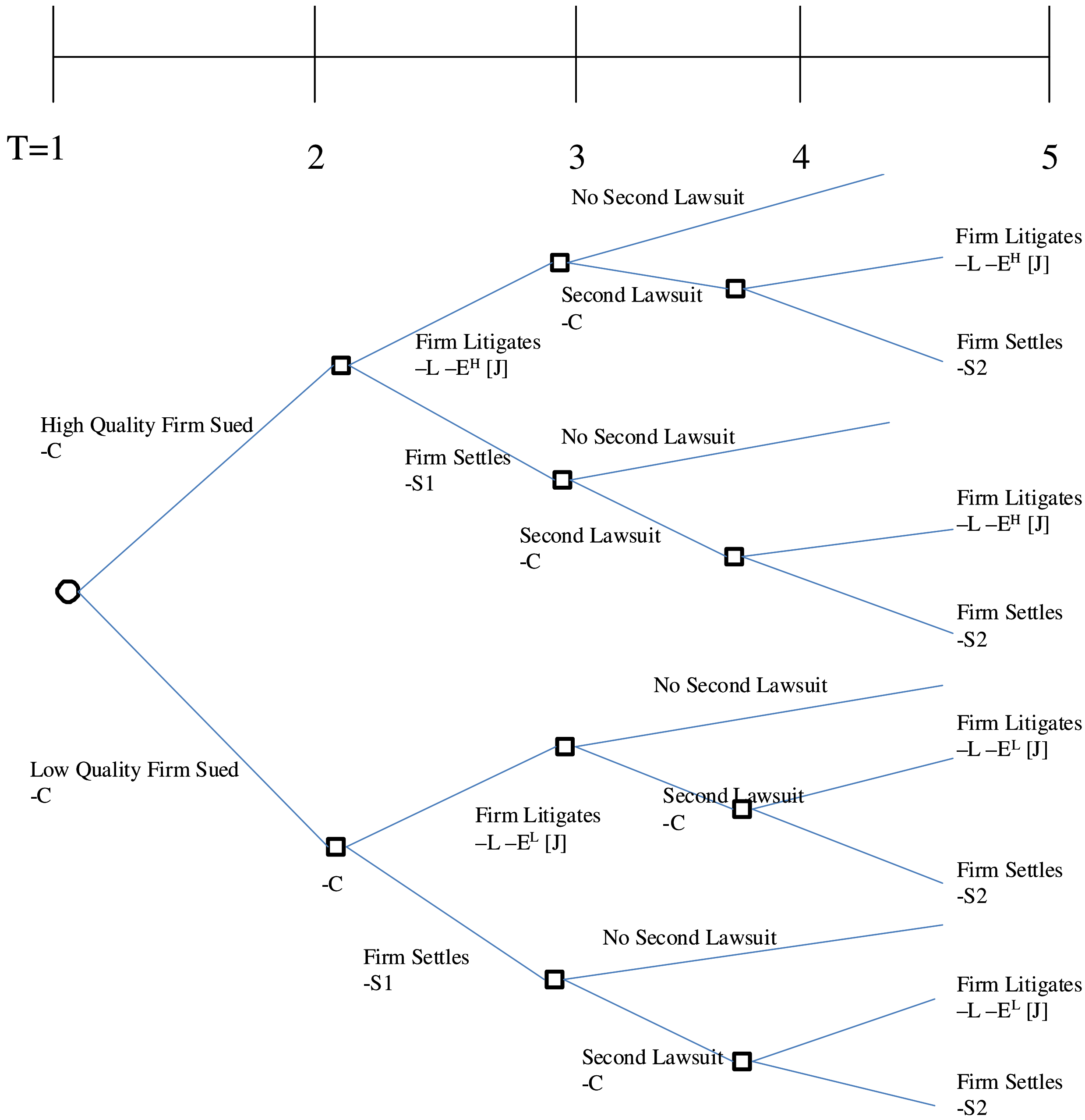


Table B.10: Proofs

B1 Proof of the existence of the separating equilibrium.
I wish to show the existence of the equilibrium parameters p^L and p^H which satisfy:

$$Max\left\{\frac{(1+2\delta)L-C}{2J}, \delta L + CJ\right\} < p^L < Min\left\{\frac{(1+2\delta)L-C}{J}, 1\right\}$$

$$0 < p^H < Min\left\{2p^L - \frac{(1+2\delta)L-C}{J}, \frac{\delta L + C}{J}\right\}$$

I have assumed:
(B1) $p^L > p^H$
(B2) $C + L < J$
(B3) $p^L J > C + L$
(B4) $(\nu)p^H J + (1-\nu)p^L J > C + L$
(B5) $p^H J < C + L$
(B6) $\frac{3L-C}{2} > J$
(B7) $L > 2C$
I first show that p^L exists. In order for this to be true:
(1) $\frac{\delta L+C}{J} < 1$ B2 implies this directly since $\delta \in (0,1)$
(2) $\frac{(1+2\delta)L-C}{2J} < 1$ This inequality can be rewritten as $(1+2\delta)L - C > 2J$ given the restrictions on δ the largest value that $(1+2\delta)L - C$ can take is $3L - C$, assumption (B6) implies this restriction.
(3) $\frac{\delta L+C}{J} < \frac{(1+2\delta)L-C}{J}$ This is implied by B2 again since $\delta \in (0,1)$.
(4) $\frac{(1+2\delta)L-C}{J} > \frac{(1+2\delta)L-C}{2J}$ This is evident since the numerators are identical and the the right hand side is divided by a larger positive constant.
Next I show that p^H exists. In order for this to be true:
(5) $\frac{\delta L+C}{J} > 0$ This is clearly true since $J, L, C,$ and δ are all positive constants.
(6) $2p^L - \frac{(1+2\delta)L-C}{J} \geq 0$
The minimum values p^L can take are (A) $\frac{(1+2\delta)L-C}{2J}$ and (B) $\frac{\delta L+C}{J}$. I consider the conditions under which (A) or (B) will bind.
$\frac{(1+2\delta)L-C}{2J} > \frac{\delta L+C}{J}$ implies that (A) binds when $L > 3C$.
I first assume $L > 3C$:
This implies $2\frac{(1+2\delta)L-C}{2J} - \frac{(1+2\delta)L-C}{J} \geq 0$ which is obviously true since $0 = 0$.
I next assume that $L < 3C$:
This implies $2\frac{\delta L+C}{J} - \frac{(1+2\delta)L-C}{J} \geq 0$ which reduces to $3C - L \geq 0$ which is true by assumption.
The maximum values p^L can take are (C) $\frac{(1+2\delta)L-C}{J}$ and (D) 1.
I first consider the conditions under which (C) or (D) will bind. (C) will bind iff $\frac{(1+2\delta)L-C}{J} > 1$. This is true when $(1+2\delta)L - C < J$.
This implies $2\frac{(1+2\delta)L-C}{J} - \frac{(1+2\delta)L-C}{J} \geq 0$ which implies $(1+2\delta)L/geC$ given the restrictions on δ, assumption (B7) is a stronger condition for positive L, C.
Next I assume that $(1+2\delta)L - C > J$ which implies $2 - \frac{(1+2\delta)L-C}{J} \geq 0$ which was demonstrated in the proof of (2).

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