Essays in Finance and Politics

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Thesis submitted to the Faculty of Graduate and Postdoctoral Studies in partial fulfillment of the requirements for the degree: Doctorate in Philosophy Economics

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Abstract

The first chapter explores the extent to which campaign contributions to politicians in the financial sector can influence the economic performance of the banks. In this paper, I study the relationship between campaign contribution, probability of failure and portfolio investment. I find that there is a significant effect of campaign contributions on the probability of failure and riskier investment portfolio using U.S. state banks. This effect is more pronounced for smaller and less geographically diversified banks. The results are robust for the overall risk taking measure ($Z - score$ and volatility of the return). The result is also robust using the magnitude of contributions. Using bivariate model and Blundell-Bond estimate to control for endogeneity of campaign contributions, I find that the results are robust.

Using US legislative data on congressmen from congress.gov, the second chapter (co-authored with Aggey Semenov) investigates the effect of U.S. Congress legislators' non roll–call activity in bill sponsorship and co–sponsorship on campaign contributions from the financial industry. We found that bill sponsorship has positive and significant effect on campaign contributions in both Chambers. Co–sponsorship has positive and significant effect on contributions in the House but not in the Senate. We link this observation to a longer term of senators compare to congressmen; senators have more time to engage in more profitable sponsorship than congressmen. Legislators' efficiency in promoting bills to laws is rewarded by the financial industry. We also conduct robustness checks.

Motivated by a large literature on the determinants of Foreign Direct Investment (FDI), the third chapter (co-authored with Roland Pongou) is assigned to under-

stand whether a leader's longevity in office promotes FDI inflows? We answer this question with a novel dataset on the personal characteristics of African leaders covering the period from 1960 to 2011. We find that political longevity increases FDI inflows. The effect is robust to controlling for leader heterogeneity using leader fixed effects. The results remain unchanged when using plausible instrumental variables for political longevity to address possible endogeneity issues, and when estimating a dynamic model. Importantly, the effect of longevity on FDI inflows is only positive for more democratic regimes. Exploring the mechanism, we find that longevity of leaders improves the rule of laws, bureaucracy, property rights, and infrastructure, and reduces corruption. We also find that unobserved characteristics of leaders such as his ability play a role in its longevity and the improvement of institutions.

Dedication

To my Lord, Jesus Christ.

To my mother, Yaovi Houedakokin.

And to my wife, Stella King Emmanuel.

Acknowledgments

I am deeply indebted to the Heavenly Father, God Almighty, and to the Holy Spirit for equipping me with the wisdom, strength, and sufficient grace to complete the PhD program. He has made everything beautiful in His own time; without Him, it would have not been possible to complete my degree.

I would like to express gratitude to my supervisors, Hector Perez, Roland Pongou, and Aggey Semenov for their devoted time and effort over the past three years. Simple words of thanks cannot describe the extent of their help in the conception and writing of this thesis, in discussing my research and providing comments, suggestions, and words of wisdom whenever I needed encouragement. Aggey has been a wonderful role model, always available to entertain my imprecise ideas, always directing me to the right path. His help has been invaluable in guiding me to considerably improve both presentation skills and important aspects of this thesis. Hector always had an intuitive comment to give and his advice was essential throughout the whole process. Pongou spurred me to be more of a pioneer. A few minutes with him gave me clarity and a clear set of next steps.

Thank you Mrs. Christie Eyeoyibo, Mr. & Mrs. Afolabi, and Mr. Pierre-Ernest Lukanga for your love and prayers. You firmly stood by me throughout the whole process and trusted God for this accomplishment; I sincerely appreciate your presence in my life.

Thank you to my lovely mother, Yaoyi Houedakokin, who looked forward to celebrating this accomplishment with me but has gone too soon, to be with the Lord. Mum, I love you and I miss you. Thank you to my father, Francis Kohoue, for giving

me the privilege to pursue my education. To my uncle Martin Dambo, you have believed in me and trusted my decisions; I am grateful to have you by my side. To my parents in law, Mr. Luc-Stephane Kingwaya and Mrs. Godelive Akarasis, who have adopted me like a son and provided me with parental support and love, I am happy to celebrate this accomplishment with you. Thank you Mrs. Joyce Quist-Therson and Melissa Kingwaya for your love and support. I also thank all my colleagues and friends and other family members for your support and encouragement, with special mention to Michela, Armande, Aymar, and Ferdinand.

Thank you to my wife, Stella King Emmanuel, and my daughter, Abigail Offranel Emmanuel. Stella has always been on my side in every step of these moments; I owe her more than I can give back in a lifetime. Abigail is my joy and her presence in my life has brought unlimited blessings. I am thankful to both of you.

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General Introduction

Political economy studies the relationships between political institutions and economic processes. In recent decades theoretical research in political economy has been supplemented by a broad empirical agenda. Empirical research shed light on how actions of economic agents affect political decisions and how political decisions affect economic outcomes. In particular, in the field of special interest politics, organized firms and industries use campaign contributions to affect the results of elections. During the electoral term of politicians these contributions may influence political or regulatory decisions which affect the economic environment. Conversely, political factors (including political instability, democracy, institutional factors, and political rights) affect economic outcomes such as international trade.

In this thesis I examine interactions between political and economic decisions. Particularly, I am interested in political-economic interactions in special interests politics and international trade. In the first chapter, I attempt to shed light on this question by analyzing the impact of campaign contributions on risk-taking by banks. In the second chapter, we study the effect of political reputation – measured by the number of sponsored or co-sponsored bills – on campaign contributions. Finally, in the third chapter, we study the effect of political longevity on foreign direct investment.

In the first chapter I extend the studies of the impact of campaign contributions on economic outcomes of firms by examining the relationship between banks' risk-taking and campaign contributions. There are two channels through which campaign contributions affect risk-taking in the banking sector. Firstly, politicians make and

vote for the laws which directly affect banks' risk-taking behavior. For example, Calem and Rob (1996) find that the laws on capital requirements increase risk taking in the banking sector. Leung et al. (2016) find that the constituency statutes of U.S. states on stakeholder orientation affects banks' risk-taking behavior in the financial system. Secondly, the budgets, the appointments of heads of agencies, and the jurisdiction of agencies are all determined by politicians who oversee the regulatory agencies in the banking sector.

To test whether campaign contributions affect the risk-taking behaviour of banks, I use two proxies for risk-taking and estimate two different models. The first proxy is the bank's default probability. The motivation for using the default probability is that contributing banks with high probability of default expect assistance from the state government toward state regulation in case of bankruptcy. However, this help from the state government may be insufficient to cover the loss of the bank, thus leading the bank directly to fill the bankruptcy file. The second proxy for risk-taking is the structure of the investment portfolio. Here I argue that the contributing banks with high probability of default are more likely to invest in a riskier portfolio.

To investigate the impact of campaign contributions on the probability of default and on investment portfolios, I estimate probit and OLS models respectively. In order to address endogeneity problems, I employ the bivariate probit model and the System Generalized Method of Moments (System-GMM). I find that state banks that contribute to politicians have a higher probability of default and invest in riskier securities. In order to check what types of contributing banks are more likely to engage in risk-taking, I re-estimate the two models by taking into account large and small banks, and diversified and non-diversified banks. The results suggest that small contributing banks and non-diversified banks have a higher probability of default and invest more in riskier securities. This finding is consistent with the "too big to fail" theory. Using the overall risk-taking measures (Z-score and volatility of the return on assets) and the magnitude of the contributions to check for robustness, the results suggest that contributing banks increase the overall level of risk-taking,

and the amount of contributions is positively associated with the probability of failure and riskier investment.

While the first chapter focuses on why firms give contributions, the second chapter shifts attention to those who receive contributions in the financial sector. We examine the impact of political reputation on campaign contributions. Politicians who receive contributions develop a reputation by sponsoring or co-sponsoring bills that favor contributors. The reasons we use sponsored and co-sponsored bills as a proxy for political reputation are the following. Firstly, sponsoring and co-sponsoring are the mechanisms through which politicians signal their political agenda to important players (interest groups, colleagues' networks, the public). Secondly, special interest groups are among the most attentive followers of politicians' activities because they want to invest in a politician who is active and efficient.

We use a dataset comprised of campaign contributions from the financial industry to members of the U.S. Congress and legislators' non-roll call activity (the number of sponsored or co-sponsored bills by legislators). We use four steps of the legislation procedure through which a bill becomes a law. The first step is the introduction of the bill; we measure the total number of bills sponsored or co-sponsored by a legislator. The second is committee consideration; we estimate the number of bills that passed the appropriate committee consideration. The third step is main floor consideration; we indicate the number of bills that passed the chamber in which the bill originated. The final step is passing both floors (the Senate and the House); we calculate the number of bills that passed this step. The passage of the bills sponsored or co-sponsored by a legislator determines the efficiency of the legislator.

In both chambers of Congress, we find that the number of bills related to the financial sector that passed both floors increases the amount of contributions to the legislators who sponsored them. However, while we find evidence that the number of bills is positively correlated with the level of contributions to the legislator who co-sponsored them in the House, we do not find the same link in the Senate. We also find that bills that passed both floor and have a high probability to become a law are rewarded more than bills that passed only one floor and committee consideration.

This result implies that contributors mostly reward legislators who are efficient.

The positive relationship between campaign contributions and non-roll-call activity can be affected by omitted variables and reverse causality, leading to an endogeneity problem. We use control for observable variables, unobservable selection bias, coefficient stability, and employ 3SLS methods to solve the issue of endogeneity. Using these methods, we find similar results as with the baseline regressions; politicians who develop a reputation are more likely to be rewarded by the financial sector.

The third and final chapter of this thesis focus on the impact of the longevity in power of political leaders on foreign direct investment. Theoretically there are two mechanisms by which the longevity of political leaders can influence the decision of investors. Firstly, political longevity can be perceived by investors as a signal of political stability and policy consistency. Political longevity also makes it possible for leaders to make credible commitment to investor, and for investors to build connection with the political system in place. These factors imply that political longevity is likely to encourage foreign direct investment. However, counterbalancing this view is the fact that leaders who stay too long in power might be perceived by investors as dictators. Political longevity can therefore be viewed as increasing the risk of expropriation of multinational firms and the level of corruption, which are factors likely to discourage investors. It follows that the impact of political longevity on FDI is theoretically unclear. The objective of this chapter is to analyze this question empirically.

We collect data on African leaders' characteristics from 1960 to 2011 to examine the relationship between political longevity and FDI. We find that political longevity positively affects FDI. In order to address potential endogeneity issues, we use an instrumental variables approach. The instrument we use are the average longevity of neighboring leaders, age proximity to neighbors' leaders, and age proximity to the leader of the former colonial power. We continue that leaders who stay longer in power attract more investors. These findings are robust to alternative estimation techniques including GMM and 3SLS. The impact of political longevity on FDI is

larger in more democratic regimes. Exploring the mechanism, we find that political longevity promotes the rule of law, reduces corruption, and improves physical infrastructure. It has no impact on property rights protection, bureaucracy, and corruption.

Chapter 1

Campaign Contributions and Risk-Taking in the Financial Sector

1.1 Introduction

The financial crisis of 2007 highlighted the role of the excessive risk taking by banks on the financial stability of the economy.[1] The agency problem within the financial system, central bankers' lack of control over excessive risk – taking, years of low inflation and financial stability which had fostered complacency and risk taking; these causes can be ultimately linked to poor political decisions. Politicians have created incentives for excessive risk -taking by banks. Among prominent examples on the federal level, there is: repealing of the Glass – Steagall Act, which allowed the creation of "too big to fail" banks; allowing financial innovations such as credit default swaps and other credit derivatives. Legislators' policies on both federal and *state* levels have a significant impact on risk-taking in the financial sector. There are two main channels if for such influence. Firstly, politicians make and vote for the laws which directly affect banks' risk- taking behavior. Secondly, politicians over-

[1] Acemoglu (2009) and Calomiris (2009).

sight regulatory agencies; they determine the jurisdiction of agencies, their budgets, and appointment of heads of agencies. These channels create incentives for financial institutions to influence politicians. Politicians on the other end of this relation respond to this influence. Policies to achieve political ends distort the incentives for risk taking in the banking sector. In the aftermath, the financial crisis has led to a vast movement of changes in banking regulations in the United States. This change in the banking regulation draws much attention in the field of research in political economy and finance to understand the relationship between banks' lobbying activities and legislators' actions towards risk regulation.

To determine the effect of influence by financial sector on the *state* level we study the relationship between campaign contributions from U.S. banks in all states and banks' default. First, to understand the mechanism of influence, we develop a framework of lobbying contributions and its effect on the probability of default or riskiness of the banking sector. We argue that banks that contribute have more incentive to have high probability of default because they expect assistance from the state government toward state regulation (lending limit law, borrowing limit law and etc.) in the case they are in a situation of bankruptcy. Therefore, in the case the help from the state government can not cover the loss, banks find themselves filling the bankruptcy file. We obviously argue that if contributions lead banks to have high probability of default then it may be possible that they invest in riskier securities. Through this argument, we test two hypothesis: first, contributions lead banks to have high probability of default and finally contributing banks are more likely to invest in the riskier portfolio. Secondly, to test empirically the two hypotheses we created a unique database which consists of two types of data. We gathered information related to the characteristics of banks of all *states* in the U.S. (call report data). The second feature of the dataset consists of information on contributions made by banks to the (state) senators, governors and other (state) legislators during *state* elections (state campaign contribution data).

We find that contributing banks are more likely to increase their probability of failure after contributions**.** We examine the differences in probability of default of

small specialized and less geographical diversified banks. Our results suggest that the effect of contributions on probability of failure is stronger among small specialized banks and less geographically diversified banks. There is no effect of contributions on probability of failure by universal banks and geographically diversified banks since our data reveals that no universal and geographical diversified banks failed whether they contribute or not in the 1993-2008 period. This is consistent with the too big to fail story. When we look at investment portfolio of contributing banks, we also find that contributing banks increase their investment in riskier activities.

The results are robust when we check the overall risk-taking of the contributing banks using two dependent variables $Z - score$ and *the volatility of the return on asset.* Using amount of contributions as the independent variable, we find that the amount of contributions increase the probability of default and investment in riskier activities. A further robustness check is about the issue of endogeneity of campaign contributions. Since it is almost impossible to find a valid instrument for campaign contributions, we only re-estimate both probit and OLS estimations using the bivariate probit and GMM estimation (Blundell bond estimation). The results remain robust.

The paper is organized as follows. Section 2 reviews the literature. Section 3 presents a framework on the mechanism of influence of campaign contribution in the financial sector. Section 4 describes the data and the model specification. Section 5 analyses the empirical model and section 6 presents the results and other alternatives specifications. The last section concludes the paper.

1.2 Literature review

The paper is related to a few strands of literature.

Influence in the financial sector: A large literature suggests that financial interest groups influence policy-makers. Stratman (2002) concludes that campaign contributions increase the likelihood of a representative house member voting in

favor of repealing the Glass-Steagall Act. Mian et al. (2010) and Igan and Mishra (2011) study the impact of financial lobbying on financial deregulation. Mian et al. (2010) use campaign contributions as a measure of the influence of interest groups in the mortgage industry and the portion of subprime borrowers as a measure of elector interests in a congressional district to analyze the influence of interest groups and constituent interests on the U.S. government policy towards credit expansion of subprime loans during the 2002 -2007 period. Starting from 2002 the U.S legislators have been aimed by the mortgage industry through a substantial amount of campaign contributions from congressional districts where there is a bigger portion of subprime borrowers. They argue that the influence of the portion of subprime borrowers from congressional districts and the mortgage industry campaign contributions revealed the actions of legislators on congressional votes related to the mortgage legislation bills during the years of credit spread. However, such patterns do not hold for the non-mortgage financial industry. This is consistent with the fact that subprime mortgage agents (borrowers and lenders) exercise an influence on government policy regarding the spread of subprime mortgage credit. Igan and Mishra (2011) constructed a novel data set providing information on lobbying activities, campaign contributions, and political connections on the United States federal government in the financial industry during the 1999-2006 period. They presented evidence suggesting that lobbying expenditure in the financial industry increased the likelihood of a lawmaker to promote deregulation by changing decision in favor of financial bills. They also find that network links between financial industry lobbyists and the lawmakers increased the likelihood of lawmakers to support financial deregulation.

Igan et al. (2011) show that mortgage lenders are more likely to lobby on matters linked to mortgage lending. These lenders engaged in riskier lending before the financial crisis of 2007-2008. They find that lobbying expenditures by lenders is positively associated with riskier loans. Mian et al. (2013) use campaign contributions by special interest groups and argue that special interest groups influence the subprime mortgage credit policy in the United State. Igan and Mishra (2011)

analyze the impact of lobbying by the financial industry on financial deregulation. They find that lobbying activity and political connections of financial industry have positive effect on the deregulation.

Perez and Semenov (2014) examine how campaign contributions affect the State financial institutions mergers and bank expansion in the United States. They constructed a unique database of regulation and expansion including states campaign contributions from the FollowTheMoney and Call reports. They find a positive correlation between campaign contributions and merger activity of banks.

While many scholars have made a great progress to understand the motives of contributors who give money to candidate in primary or general election in the financial sector or others areas, there are no studies on *probability of failure and investment portfolio* by financial institutions and its relations with campaign contributions. Our paper fills a substantial gap in the literature by considering such an effect from empirical angles.

Effect of lobbying on firms performance: There is a small literature that studies the effect of firm lobby on economic outcomes. Khwaja and Mian (2005) studied the relationship between political connections and firms that acquire loans from the Pakistan government and found that in Pakistan the public banks are more likely to give exclusive loan to politically-connected firms which have higher default rates; this sis consistent with a private interest theory. Claessens et al. (2008) constructed political connection indicators using campaign contribution data for the 1998 and 2002 brazilian election and argue that firms that gave money to federal deputies made a higher stock market return around the two periods of election in Brazil. This suggests that contributions influence politicians to change policy in favor of connected firms rather than ideological basis. Faccio (2006), using data on political connected firms in 47 countries, shows that firms that are politically connected to members of the government increase their market value.

Our paper finds the effect of campaign contributions on banks performance, particularly on probability of failure and investment portfolio. Therefore, the paper contributes to this strand of literature as well.

Mechanism of influence: The main difficulty in the research related to the effect of lobbying on policy outcome is that it is hard to identify the mechanism of influence. Lobbyist - politician relations are private and can be hardly quantified.

Kroszner and Stratmann (1998)and Stratmann (2002) show that U.S politicians give more frequent and an better-quality access to firms that donate to them money in United States. Grossman and Helpman (1994) study the impact of lobbying activities on specific policies (for example,see Goldberg and Maggi (1999) for empirical studies). Raddatz and Braun (2009) suggest that politicians and banks interchange favorable regulations and non - executive future positions at banks.

We contribute to the literature by identifying the mechanism of influence. In the empirical model, we use two approaches to determine the impact of campaign contributions on the default of the banks in the financial sector.

1.3 The mechanism

Despite the facts that many scholars find that campaign contributions have no impact on the legislative voting policies, others document that there is some evidence. In this framework, we argued that campaign contributions affect the risk in the financial system through the support of legislative policies. If banks expect that campaign contributions cause politicians to vote policies that allow firms to get more profit by taking a higher risk, contributions should raise the probability of failure of the banks in the financial system because higher risk-taking leads to higher rate of bankruptcy. If the banks expect the support of politicians in the case where risk taking lead them to bankruptcy, we should see that contributions will increase the risk taking of the banks. The interest of the bank system to repeal the Glass-Steagall Act which prohibits commercial banks to engage in investment securities and activities led the banking system to increase its contributions from 1991 to 1998. In the same line, Stratman (2002) confirms this proposition by concluding that the change in contributions between 1991 and 1998 influenced the voting decisions of the House members by increasing the probability of voting with the approval of the repeal.

Approval of the repeal of the Glass-Steagall Act allows banks to possess financial power by controlling people's money (loans or investments), and to engage in riskier securities activities which may lead to substantial losses.

The unified links between banks and governments are the stumbling block to reform. Banks engage in intensive lobbying to influence politicians, and because of the fear of not receiving contributions from banks to finance their campaign election, politicians are incapable of challenging banks. Politicians implement policies in favor of the banks by permitting banks to take higher risk through the investment in riskier securities, high-interest rate credit card loan, subprime mortgage loans, excessive lending, etc. Therefore, if banks lobbies have high risk- taking in the financial system around the election report relative to others, we can deduce that financial lobby experiences some political favors.

However, the legislature affects not only contributing banks but also non-contributing banks. Another channel through which campaign contributions can affect the probability of failure is through the bailout. If firms expect campaign contributions can influence the politicians to bail them out in the situation of failure, then we might see positive links between campaign contributions and probability of failure. Because the aids offered by politicians to prevent the firms from failing, may not be enough to cover the loss of the firms due to higher risk-taking.

Based on the discussion above, we investigate two empirical hypotheses.

Hypothesis 1: Banks that are more likely to contribute are more apt to have high probability of failure.

We will test this hypothesis by investigating whether contributions are correlated with higher probability of failure within contributing banks. We measure failure as a dummy variable that is equal to one if the bank fails and zero otherwise.

Hypothesis 2: There is a positive relationship between Banks' riskier asset and campaign contributions to state politicians.

In some way, state politicians perceive that they are in predicament whenever states adopt bills to regulate the excessive risk taking in the financial system. They have tendencies to beholden to bankers for financing their campaigns. As a con-

sequence, we expect that recipient politicians of campaign contributions vote bills that weaken the supervision of over excessive risk-taking in order to permit bankers to invest in riskier assets. The more they are in predicament, the harder it is for them to control the risk-taking in the banking system. In our empirical model, we will test these two hypotheses.

1.4 Data sources

In this paper, we use two sorts of data. The first data set contains information regarding the characteristics of the banks of all *states* in the U.S. The second data set provides information on contributions made by banks to the (state) senators, governors and other (state) legislators during *state* elections. We describe below both data sets in detail. Moreover, we also use data from the Bureau of Labor Statistics and Bureau of Economic Analysis.

1.4.1 Bank data

The data on individual bank characteristics comes from the Consolidated Report of Condition and Income (called as Call Report).[2] This report has to be filled on a regular basis by all banking institutions regulated by the Federal Deposit Insurance Corporation (FDIC), or the Office of the Comptroller of the Currency. FDIC is one of the federal institutions in charge of collecting all financial reports and informations provided by all regulated financial institutions and storing Call Reports of all insured financial institutions. FDIC provides a unique certificate code to each insured bank. To determine in which states banks operate, we collect geographic information on bank location activity using the summary of deposits (SOD) database from FDIC. In addition, this data permits us to classify the banks from small specialized banks to universal banks and from diversified banks to non-diversified ones. According to FDIC, Small banks are defined as banks with less than two billion assets, otherwise banks are universal or large banks. Diversified banks are banks located in more than

[2]Data are available to download at https://www2.fdic.gov/idasp/warp_download_all.asp

two counties of a U.S state. Non-diversified banks are banks located in one county of a U.S state.

1.4.2 Campaign contributions data

State campaign contributions are provided by the National Institute on Money in State Politics (FollowTheMoney)[3]. The institute is a non-partisan, non-profit research organization aided by many foundation funds and individual contributions. It gathers together information on the contributions of companies to all candidates in primary and general elections in each state. The underlying information comes from government disclosure agencies which publicly communicate funds raised. The government campaign act requires all candidates to file out their campaign finance report with a disclosure agency. The non-partisan institution provides a database of contributions for 50 states made by individuals, firms and others organizations and institutions in all sectors in each year from 1993 to present. Since our study focus on the financial sector, we collect information on all individuals, firms or organizations in the financial sector to candidates in state elections for Governor, state Senate, state House of representative and others from 1993 to 2010. This data set includes all banks that contribute at least once in period 1993-2010. We exclude from our sample banks that report to contribute negative amounts to candidates.[4] We exclude credit unions, thrift institutions and others financial institutions such as foreign banks. We also exclude from our database contributions made by financial consumer organizations, state bank associations, regional state associations or any others type of financial organizations.

Matching procedure

To be able to clean all the contribution data, we created 51 data sets for the 50 states of U.S and the District of Columbia. For each state, the following matching procedure was applied:

[3]This campaign contribution data in each state is available at the following website: http://www.followthemoney.org/

[4]Such negative amounts are payments for loans from banks. They usually constitute negligible percentage in total observations.

First, we created a new variable called CERT which is a unique FDIC number (Certificate number) for each bank and then we sorted by name and city of the bank and the date the contributions was given. Second, we tried to identify the banks that made contributions to politicians using the name and the city of the bank on that date of the contributions by utilizing http://www.fdic.gov. When we get a match, we inserted the certificate number instead of zero for the matching bank. We also paid attention to the history of the banks and especially the date of mergers since those informations are useful when the bank does not exist any more or was bought by another active bank. We replaced certificate number by 1 and 2 when the contributor is a holding company and a banker's association respectively and we left the certificate number equal to zero when we did not have the institution name. Finally, after we went through all the observations, we utilized contributor's name, the affiliated company and the geographic location such as contributor's city, contributor's zip code and contributor's address to identify more matches bank based on filled neighboring observations. When we weren't sure that a specific contributor of banks still worked for the same bank in a given year, we used Internet sources such as bank websites and social networks to make sure that the bank was correctly identified. We were very careful in matching a contributor's name with the bank because contributors' spouses may have same the address but worked in another bank. In addition, it took more than one week on average to match each state. After we matched each state and the District of Columbia, we appended all 51 data sets for the 50 states of U.S and District of Columbia to create campaign contribution data set in the financial sector.

In order to get a unique data set we combine the two data sets: campaign contribution data and bank data. After combining the data, by dropping all the missing values of variables used in the regression, the years 2009 and 2010 were dropped to reduce the period of our data from 1993 to 2008. We include only banks that are state chartered banks since federal chartered banks may contribute in the same year to politicians in many states and are regulated by the federal government while chartered states banks are regulated by state government and are affected by

state government policies. Since our study focuses on the effect of states campaign contributions of banks that are regulated by state governments on the probability of failure of state banks then, we exclude all federal banks that are affected by federal policies.

To see how campaign contributions evolve every year in the banking industry, consider the evolution of the state campaign contributions depicted in figure 1.1 from 1993 to 2008. This figure shows a significant increase in campaign contributions during election years in the financial sector.

1.5 Empirical results

A. Probit estimates of probability failure

To test empirically our first hypothesis suggesting that contributing banks are more likely to have high probability of failure, we examine the relationship between campaign contributions and failed banks in the U.S. states. To identify the link between banks donations, and probability of failure of the banks, this paper estimates the following probit model from 1993 to 2008 as specified below:

$$P(Failed_{i,t}) = f(C_{i,t}, C_{i,t-1}, Xit, Zit) \tag{1.1}$$

where $Failed$ equals to one if the banks failed during a given year and zero otherwise. $C_{i,t}$, and $C_{i,t-1}$ are the main variables which are equal to one if the banks contribute in periods t and $t-1$ respectively. X_{it} are bank characteristic variables which include assets, age efficiency ratio, etc. Z_{it} are control variables such as year dummy, state dummy, year of economic crisis, etc.[5]

The question here is whether the banks that contribute are more likely to fail than the non-contributing banks. We expect that if banks increase their risk taking,

[5]For the definition of the variables, see appendix A

then they might have higher probability of failures. Even if contributing banks are helped by politicians through the adoption of government policies to intervene in the case of bankruptcy or through the bailout, those banks may still not survive in the market because of the excessive risk-taking. Consequently, the rate of failure among the contributing banks may be higher compared to non-contributing banks. In this study, to analyze the impact of contributions on the probability of failure, we collected data on failed banks from FDIC in the United States. We use failed as the dependent variable, and then we run a probit regression model as specified above which is presented in Table 1.2. Large and diversified banks are excluded in our analysis because they do not experience failure in our period of study. Therefore our sample size is reduced from 105437 to 82767 observations.

In Table 1.2 we report several specifications to examine that contributing banks are more likely to fail compared to non-contributing ones. In columns I, we only control for the main variables of interest, contribution, and lag of contribution and in column II we add only the size of the banks to seize the impact of the size of banks on the failure of banks. In columns III, IV and V, we add variables such as capital adequacy, liquidity asset quality, market sensitivity, Loan charge-off, efficiency ratio, age, management quality, funding mix, and foreclosures which are the fundamental characteristics of the banks that may affect the bankruptcy of the banks. In column V, we add year of economic crisis and regional economic exposure. In all specifications, we control for year and state dummy variables but not for bank dummy. Table 1.2 presents the marginal effects of campaign contributions on the probability of failure from probit model. In all columns, contribution and lag of contribution are positively correlated with the probability of failure and the coefficients are statistically significant, indicating that contributing banks have high probability of failures, and this probability decreases in the next period following the period of contribution. For example, According to Table 1.2 column V, the predicted probabilities of failure is 0.525 and 0.511 percent higher for contributing banks than non-contributing ones in the period of contribution and the next period following the period of contribution respectively. The overall impact of contributions on the

probability of failure when a bank contributes in both current and previous periods is 1.036 percent (the average probability of failure is 2.44 percent). This result confirms our expectation that contributing banks increase the probability of failure in the banking system because they expect the state government to which they contribute will intervene in the case they are going to bankruptcy. This expectation from the state government leads some contributing banks to bankruptcy because of insufficient help they received to exit from bankruptcy.

We also analyze the impact of contributions on the probability of failure in two different types of banks. In Table 1.3, we report the results for two different groups of banks to see the effect of campaign contributions on the probability of failure of firms: small specialized banks and non-diversified banks. Small specialized banks are banks with assets less than two billion while non-diversified banks are banks located in one county of a state. According to columns (I) and (II), the probability of failure increases for contributing banks after their contributions among small specialized and less geographically diversified banks than non-contributing banks. Among large banks and diversified banks, our data indicate that no bank has experienced failure between 1993 and 2008 whether they contributed or not. Three reasons can explain this finding: first, large and diversified banks are more likely to diversify their risk taking by investing into different risky portfolio assets so that the losses in some assets may be compensated by the benefits in others assets. Second, large banks use their political power or their size to force the state government to bail them out in the case of bankruptcy. This is consistent with the too big to fail theory in the financial system. Finally, large banks receive some advantage from government. For example, Simon Johnson and James Kwak (2010) argue the rate of large banks to borrow money is 0.78 percentage points cheaper than the rate of small banks.

B. OLS estimates of a risk

Our results in section A suggest that lobbying activities such as contributions to politicians increase the probability of failure in the banking system. If the rate of bankruptcy among contributing banks is more likely to increase, then it may be

that contributing banks have invested in the risky portfolio which led to big losses. Hence, the goal of this section is to look at the behavior of contributing banks in their investment portfolio by analyzing the impact of campaign contributions on the investment portfolio. We explore this possibility by estimating the following linear model from 1993 to 2008 using fixed effect as specified below:

$$R_{i,r,t} = \pi C_{i,r,t} + \beta C_{i,r,t-1} + \gamma X_{i,t} + \delta E_{r,t} + \alpha GDP_{r,t} + b_i + z_r + \theta_t + \varepsilon_{i,r,t} \quad (1.2)$$

where $R_{i,r,t}$ is the measure of different risky securities of the bank i in the local state market r at time t. Risky securities are measured as the amount of dollars invested by banks in different types of securities assets. The main variables of interest are $C_{i,r,t}$ and $C_{i,r,t-1}$, are the present and the lagged values of campaign contributions by banks. These variables are dummy variables which are equal to one if the banks contributed in years t and $t-1$ respectively. The parameter π and β measure whether campaign contributions of the banks has impact on the riskiness of the banks. In order to take into account the possibility that bank characteristics may change in time between contributed and non-contributed banks, we include time-variant bank characteristics ($X_{i,t}$), such as bank asset, asset quality, capital adequacy and others. We also control for banks heterogeneity by including bank fixed effects b_i, which capture all others differences between contributing and non-contributing banks. To account for heterogeneity in states we include states fixed effect and proxies for year changes in state economic conditions, we also include exposure to state economic shock $GDP_{r,t}$ from the Bureau of labor statistics (BLS) and year of economic crisis $E_{r,t}$. The parameter θ_t denotes a full set of time effects, which absorbs common temporal shocks and year of election in states to the bank riskiness and $\varepsilon_{i,r,t}$ is an error term, capturing all other omitted factors that may affect the riskiness of the banks. In this analysis, large and diversified banks are included in the sample which increases our observations to 105437 while in the probit model, large and diversified banks are excluded due to lack of failure experience. The

reason those banks are included in this analysis is that large and diversified banks can invest in riskier assets even if they do not experience failure. Table 1.4 shows whether contributing banks shift their investment decisions toward riskier securities relative to others assets after giving contributions to politicians. We analyze total securities scale by total asset, riskier securities, lower-risk securities and long-term debt securities. We define riskier securities as mortgage-backed securities excluding agency obligations, equity products, and others domestic and foreign debt securities; lower-risk securities as treasuries and securities issued by state and political subdivisions; and long-term debt securities as debt securities with the remaining maturity greater than five years. Table 1.4 displays OLS analysis of banks' investment portfolio between contributing and non-contributing banks. In table 1.4, column (1) reports that contributing banks increased their riskier securities in the first year of the contributions and the second period of contributions. A bank that contributes to politicians increases their riskier asset by 0.275 billion dollars in the first period and by 0.261 billion dollars in the second period compared to non-contributing ones while at the same time lower riskier securities (column 2) have negative signs but are statistically insignificant relative to non-contributing banks. Column (3) indicates that after campaign contributions, taking into account the maturity of assets, contributing banks increase their long-term securities compared to non-contributing banks. And finally in column (4), the evidence emerges from the studies of total securities to total asset suggest that there is a significant increase in the investment securities in contributing bank assets relative to non-contributing bank securities in the first period of contributions but this effect is completely attenuated in the second period of contributions. For the average contributing banks, the weight of investment securities in bank assets increased by 0.249 percent after contributions. In conclusion, this analysis of investment portfolio indicates that contributing banks, compared to non-contributing banks, increase their investment in riskier securities and long-term debt securities after making contributions to politicians. This is consistent with Dwryer and Hafer (2001) who find that banks that invest in risky investment portfolios have higher probability of failure.

We also examine the effect of contributions on investment portfolio in two different types of banks. In Table 1.5, we depict the results for two different types of banks: small specialized banks and non-diversified banks. Columns (1-4) and column (5-8) of Table 1.5 show the results for small and non-diversified banks respectively. According to Table 1.5, among small and non-diversified banks, banks that contribute to politicians are more likely to invest in riskier investment portfolio than those who do not contribute.

C. Robustness checks

To check the robustness of the results in table 1.2 and 1.4, we perform some sensitivity analysis. Particularly, we examine two different dependent variables measuring risk-taking, used to assess the degree of bank risk-taking in the financial sector.

We use bank risk-taking measure: $Z - score$ and *volatility of the return on asset* to check the robustness since we believe that banks that have high probability of failure and invest in riskier securities will have high risk-taking indicating high probability of insolvency.

The first dependent variable, $Z - score$ of each bank, is measured as the capital asset ratio plus the return on assets divided by the standard deviation of asset returns. As argued by Roy (1952), the $Z - score$ measures the distance from insolvency. The probability of insolvency is defined as prob (-ROA<CAR), where ROA is the return on assets (net income/assets) and CAR is the capital assets ratio (capital/ assets). The inverse of the probability of insolvency equals the sum of capital asset ratio and the return on asset divided by the standard deviation of asset returns under the assumption that banks' assets are normally distributed. The $Z - score$ is measured as the inverse of the probability of insolvency. A higher $Z - score$ signals a lower probability of insolvency. The reason we used $Z - score$ as one of our measure of riskiness for bank is that $Z - score$ is a fair measure of soundness across different groups of institutions such as cooperative banks, commercial banks and saving banks. We think that $Z - score$ is an unprejudiced measure for all

banks (cooperative, commercial and savings) since all banks face the same risk of insolvency.

Our second dependent variable to check the robustness is the volatility of the return on asset. To evaluate how bank risk differs with campaign contributions, we also analyze the volatility of asset returns in order to understand the level to which cross-bank differences in the stability of banks can be represented by the differences in asset. The volatility of asset return is measured as the standard deviation of the quarterly return on asset over the trailing year.

Figure 1.2 compares the riskiness measure of the banks that contribute and those that do not. We use two measures of bank risk taking: the $Z-score$ and the volatility of the return on asset. This figure shows that contributing banks are less likely to take risk than non-contributing banks. As we can remark on the figure 1.2, the $Z-score$ of the contributing banks is notably higher than that of non- contributing banks and the volatility of return on asset of contributing banks is slightly lower than non-contributing banks. In the figure, there is significant difference in the $Z-score$ but an insignificant difference on the volatility of return on asset. Table 1.6 compares the means for the riskiness variables and others variables for the sub-samples of contributing and non-contributing banks. The difference of risk taking $Z-score$ in banking sector is statistically significant for contributing banks and non-contributing banks, however, the difference is similar on the average regarding the risk taking variable ROA volatility. This result of the figure 1.2 is consistent with the findings in difference of $Z-score$ and ROA volatility between contributing and non-contributing banks presented in table 1.6.

We also look the behavior of campaign contributions, $Z-score$ and the volatility of the return on asset among contributing banks. Figure 1.3 depicts the relationship between campaign contributions, $Z-score$ and volatility of the return on asset. Most importantly, according to figure 1.3, campaign contributions and volatility of the return on asset are pro - cyclical, however, campaign contributions and $Z-score$ are countercyclical among contributing banks.

The effect of campaign contributions on banks' risk taking

Using regressions based on a fixed effect model as described above by equation (1.2), we test the significance of the relations between riskiness and campaign contributions of the banks. Table 1.7 presents the result of the regression equation (1.2). Columns (1) of this Table shows that the lagged contributing banks is negatively and significantly associated with $Z - score$ while the contribution of the current period is not statistically significant which means, that banks that contribute are more likely to take risk compared to non-contributing banks after controlling for bank characteristics, bank fixed effect, states fixed effect and year fixed effect for the full sample. According to Table 1.7 column (1), banks that contribute in previous year increase their risk taking by 5.57 percent this year compared to those that did not contribute in previous year. Therefore, contributing banks are more likely to take a risk in the next period following the year of their contributions which means that their probability of insolvency increases after their contributions. This finding is intriguing and indicates two possible explanations. First, it may be that banks are less likely to take a risk during the year of an election, taking into account the fact that most contributions are made in the year of elections, due to the change in the banking committee members in the year of the election. Alternatively, it may be that banks expect politicians in power in the year following the election to help them in the case of bankruptcy. Using *Volatility of the return on asset* as an alternative measure of risk taking in column (4) of Table 1.7, the risk taking of the banks is positively related to campaign contributions but not statistically significant. This result is consistent with Chen et al.(2014) who find that lagged contributions have an impact on the performance of firms. These results are consistent with our findings that contributing banks have high probability of failure and invest in riskier activities than non-contributing ones.

In Table 1.7, Columns (2-3) and (5-6) report the result for two different groups of banks on the effect of campaign contributions on the risk taking of firms: small specialized and non-diversified banks. According column (2) using $Z - score$, the lagged contribution is negative and statistically insignificant among small specialized

banks [6]. However, column (3) shows the lagged contribution is negatively correlated and statistically significant with the risk taking of the banks among non-diversified banks[7]. These results imply that contributions increase the probability of insolvency among non-diversified and small specialized banks. According to table 1.7 using *volatility of the return on asset*, Column (5) and (6) show that contribution and lagged contribution are positively linked to risk taking among small specialized and non-diversified banks, which mean that small specialized and non-diversified banks increase their probability of insolvency after contributions. This result suggests that small specialized and non-diversified banks that contribute are more likely to be risky in one period after the contributions. However, many scholars find that diversification reduces the degree of risk taking of banks and universal banks are less likely to be risky than small specialized banks (Goetz (2012)). This is consistent since small specialized banks are mostly concentrated in one financial product and unlikely to diversified their portfolio compared to large banks who diversified their portfolio. By taking more risk, those small banks have high probability of insolvency compared to large banks. These results confirm our previous findings for the two groups of banks.

We also perform an additional robustness using the amount of contributions measured in dollars as the independent variable. The amount of contributions is measured in 2008 real dollars. If banks that contribute have high rate of bankruptcy by having high probability of insolvency or by investing in riskier assets then it may be possible to see the amount of contributions to be positively correlated with probability of failure. Table 1.8 and 1.9 depict the effect of the amount of contributions on probability of failure and riskier securities assets respectively. Table 1.8 shows that the amount of contributions is positively related to the probability of failure. For example, according to Table 1.8 column (4), an increase in contributions by one dollar increases the probability of failure by 4.13 percent in the year of contributions

[6]Small banks are the banks which have less than two billion assets otherwise the banks are universal banks.

[7]Diversified banks are banks located in more than two counties. Non-diversified banks are banks located in one county.

and by 4.82 percent in the next year following the contributions. Table 1.9 shows that the amount of contributions influences bankers to invest in riskier asset. According to Table 1.9, an increase in contributions by one dollar increases the riskier securities by 21.9 million dollars in the first period and by 20.91 million dollars in the second period following the contributions. these results imply that the larger is the amount of contributions of a bank the higher will be the risk-taking of that bank. In conclusion, using the independent variable contribution as the amount of contributions instead of dummy variable (contribute or not), our results remain consistent with the previous results.

A further robustness matter requires to consider the endogeneity of contributions. While contributions might lead to higher probability of failure and high investment in riskier securities, increased probability of default or a loss from investment in riskier securities might also make banks to give contributions to politicians. One possible reason is that the lack of profit or high loss rate in investment securities induces banks to expect the state government to bail them out from bankruptcy. However, if the risk-loving attitude of banks is a bank time invariant characteristics, then the reverse causality effect of contributions on risk taking is captured by the bank fixed effect. But if the risk-loving attitude of banks is a bank time variant characteristics, then this may lead to an important source of bias in our results. Since it is almost impossible to find valid instruments for campaign contributions, we only re-estimate the two probit and OLS models using bivariate model and GMM estimations (Blundell-Bond estimations) which take into account the endogeneity issue of contributions.

Bivariate probit model

Here we use the simultaneous equation to address the endogeneous issue of risk taking affecting the contributions. Since we don't find valid instruments for contributions to politicians, bivariate probit model helps us to control for reverse causality by using other control variables as instruments for contributions. We estimate the

following equation system:

$$Fail_{i,t} = \begin{cases} 1, & \text{if} Failed^*_{i,t} = C_{i,t} + C_{i,t-1} + Xit + Zit + \epsilon > 0 \\ 0, & Otherwise \end{cases} \tag{1.3}$$

$$C_{i,t} = \begin{cases} 1, & \text{if} C^*_{i,t} = C_{i,t-1} + Xit + Zit + \mu_{i,t} > 0 \\ 0, & Otherwise \end{cases} \tag{1.4}$$

The standard assumption of this bivariate model is: $E(\epsilon_{i,t}) = E(\mu_{i,t}) = 0$

$Var(\epsilon_{i,t}) = Var(\mu_{i,t}) = 1$

$Cov(\epsilon_{i,t}, \mu_{i,t}) = \rho$; for $i = 1, 2, ...n$.

If $Cov(\epsilon_{i,t}, \mu_{i,t}) = \rho > 0$ then contributions in the current period and probability of default are interrelated and this may bias our results due to cross-correlation in the residuals. To remedy this issue, we estimate the two equations above using bivariate probit model.

Table 1.10 and 1.11 report the results of bivariate and Blundell-Bond estimations[8] for the probability of failure and the investment portfolio respectively. According to Table 1.10 and 1.11, banks that contribute are more likely to have high probability of failure and to invest in riskier securities compared to non-contributing ones.

1.6 Conclusion

In this paper, we examined the influence of campaign contributions on the probability of failure and the investment portfolio of banks in the U.S states. First, to understand the mechanism of influence, we developed a framework of lobbying contributions and its effect on default or riskiness of the banking sector. We argue that banks that contribute have more incentive to have high probability of default because they expect an assistance from the state government in the case they are in a situation of bankruptcy. Therefore, in the case the help from the state gov-

[8]For more explanation of the Blundell-Bond estimations, see chapter 3 section 3.5.3

ernment cannot cover the loss banks find themselves filling the bankruptcy file. We obviously argue that if contributions lead banks to have high probability of default then it may be possible that they invest in riskier securities. Through this argument, we test two hypotheses: first, contributions lead banks to have high probability and finally contributing banks are more likely to invest in riskier portfolio. In order to test these hypotheses, we construct a unique data set by combining bank data and campaign contribution data of each bank that contributes from 1993 to 2008. Our result shows that bank lobbying activity is associated with high probability of failure and riskier activities. Our results also suggest that among small specialized and diversified banks, contributing banks tend to engage in a high probability of failure and riskier activities than non-contributing banks. To check the robustness of our result, we used the overall risk taking measure of the banks and the amount of contributions. Using $Z - score$ and *volatility of the return on asset* as the two measures of the overall risk taking, we find that contributing banks tend to increase the risk taking after contributions relative to non-contributing ones. We also find that the amount of contributions increases the probability of failure and riskier activities when we analyze the effect of the amount of contributions on the probability of failure and on investment portfolio. We also check for endogeneity problems, since high probability of failure in the banking system may inspire bankers to form lobby group to influence state government to rescue them from failure. The only problem is that it is difficult to find a valid instrument for campaign contributions. For this reason we used bivariate and GMM models to re-estimate the probit and OLS models and the results are robust.

1.7 Appendix A

1.7.1 Definitions of variables

ROA volatility = Standard deviation of quarterly ROA over the trailing year.

$Z - score$ = ROA plus capital asset ratio divided by the standard deviation of ROA.

Capital adequacy = Tier-1 risk based capital ratio by the ratio of tier-1 capital to risk weighted assets.

Asset quality = Negative of noncurrent loans and leases divided by total loans and leases.

Management quality = Negative of the number of corrective actions that were taken against bank executives by the corresponding banking regulator(FED,OTS,FDIC and OCC)each year.

ROE =Return on Equity measured by the ratio of net income to total equity.

Liquidity = Cash scaled by deposits.

Sensitivity to market Risk= measured by the ratio of the absolute difference between short-term assets and long-term liabilities to earnings assets.

Efficiency ratio = The ratio of non-interest expenses to revenues.

Log asset = Natural logarithm of book assets.

Age = Age in years since the year of an institution was established.

Exposure to regional economic shocks = Weighted average of quarterly changes in the state-coincident macro indicators from the Federal Reserve Bank of Philadelphia across all states in which a given bank maintains active branches. The weights represent the fraction of the banks deposits held in the branches in a given state.

Foreclosures = Backward-looking measure of loan quality and exposure to the crisis measured as the value of foreclosed assets divided by net loans and leases.

Loan charge-off = Ratio of net loan charge-offs to total loans.

Funding Mix = Ratio of deposits funding from purchased money to core deposits.

Long-term debt securities = Debt securities with the remaining maturity greater than five years.

Long-term asset = Assets with the remaining maturity greater than five years.

Riskier Securities = Mortgage-backed securities(excluding government-sponsored agency obligations) other domestic and foreign debt securities, and investments in mutual funds and equity products.

Lower-risk securities = U.S. Treasury securities and securities issued by states and political subdivisions.

HHI = Herfindahl-Hirschman Index measured as the sum of squared of the ratio of the five types of loan specialization.

Figure 1.1: The evolution of the amount and number of contributions by United states banks

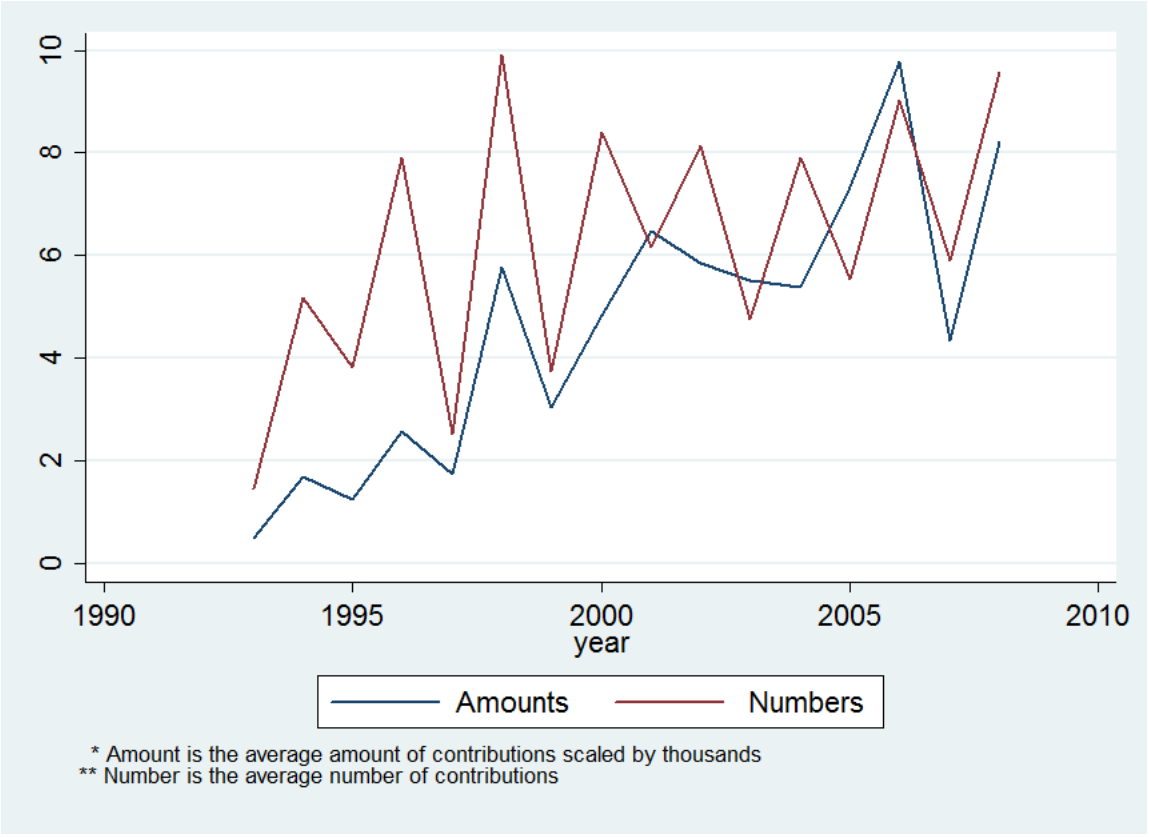


Figure 1.2: Comparison of risk taking measure between contributing and non-contributing banks

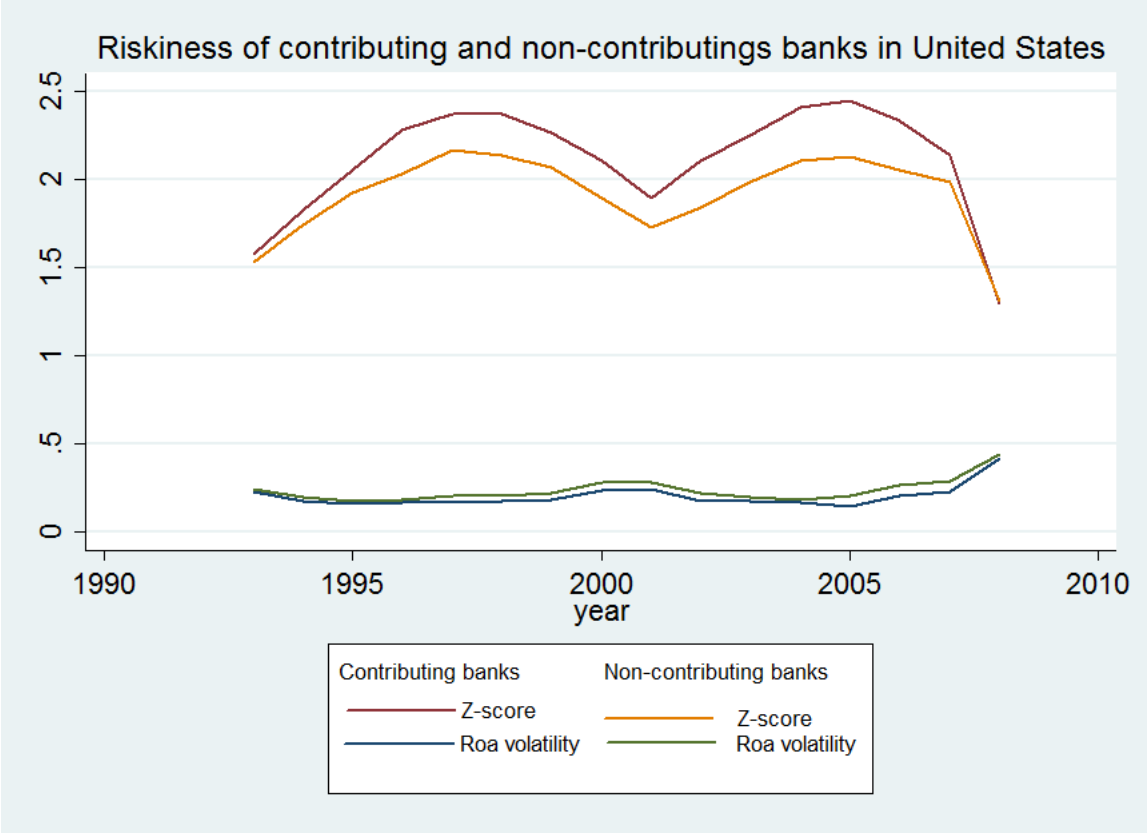


Figure 1.3: Trend of contributions, risk taking measure of contributing banks

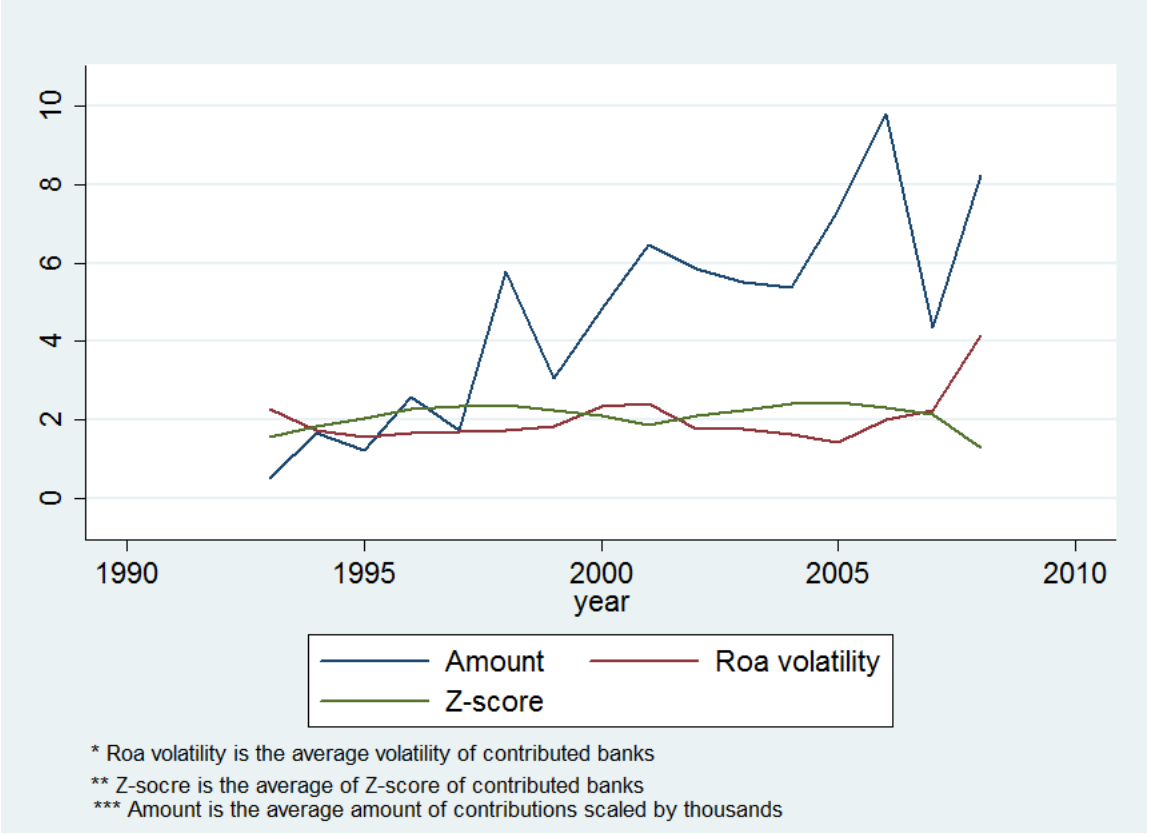


Table 1.1: Descriptive statistics

Variable	Mean	Standard deviation	Observation
Z-score	1.99	2.78	105437
Roa volatility	21.77	61	105437
HHI (%)	51.46	17.75	105437
Log(Assets)	12.86	1.32	105437
Capital Adequacy(%)	17.24	14.16	105437
Liquidity (%)	9.28	22.29	105437
Asset quality (%)	1.12	1.66	105437
Sensitivity to market risk (%)	79.58	25.71	105437
Loan charge off (%)	.16	1.75	105437
Efficiency ratio (%)	67.15	40.48	105437
Age	66.69	41.03	105437
Management quality (%)	2.55	15.77	105437
Funding mix (%)	11.39	15.38	105437
Foreclosures (%)	.76	19.87	105437
Failed (%)	2.44	15.44	105437
Riskier security asset (US$ billions)	5.099228	50.584976	105437
Lower-riskier security assets (US$ billions)	0.07009801	.5843884	105426
Long-term debt security assets (US$ billions)	.3223859	3.35486	10 5437
Security asset ratio (%)	25.92441	.1498373	105437

Table 1.2: The marginal effect of campaign contributions on probability of failure

VARIABLES	(1) column I	(2) Column II	(3) Column III	(4) Column IV	(5) Column V
Contribution	0.00744***	0.00632***	0.00624***	0.00607***	0.00525***
	(0.00185)	(0.00190)	(0.00184)	(0.00183)	(0.00183)
Lag (contribution)	0.00677***	0.00573***	0.00600***	0.00589***	0.00511***
	(0.00187)	(0.00192)	(0.00187)	(0.00186)	(0.00186)
Log (asset)		0.00117**	-0.000997*	-0.000521	0.00318***
		(0.000495)	(0.000567)	(0.000569)	(0.000577)
HHI			0.0706***	0.0642***	0.0646***
			(0.00358)	(0.00361)	(0.00357)
Capital adequacy			-0.0654***	-0.0580***	-0.0734***
			(0.0124)	(0.0116)	(0.0115)
Liquidity			-0.0360***	-0.0362***	-0.0499***
			(0.0125)	(0.0119)	(0.0131)
Asset quality			0.219***	0.219***	0.218***
			(0.0421)	(0.0426)	(0.0436)
Market sensitivity			0.0416***	0.0323***	0.0313***
			(0.00458)	(0.00460)	(0.00455)
Loan charge-off			0.326***	0.297***	0.246**
			(0.101)	(0.0981)	(0.0985)
Efficiency ratio			0.0127***	0.0106***	0.0106***
			(0.00253)	(0.00218)	(0.00216)
Age				-0.000199***	-0.000217***
				(1.68e-05)	(1.68e-05)
Management quality				0.00617**	0.00514*
				(0.00298)	(0.00297)
Funding mix				-0.000150	-0.000164
				(0.000123)	(0.000127)
Foreclosures				0.00148***	0.00189***
				(0.000566)	(0.000564)
Year of crisis					0.00345
					(0.00324)
Economic shock					0.0282***
					(0.00235)
Observations	89,082	89,082	89,082	89,082	89,082
States dummy	YES	YES	YES	YES	YES
Year dummy	YES	YES	YES	YES	YES

This table reports marginal effect from probit model explaining the relation between failure banks and contributing banks across united states banks. The dependent variable is an indicator that equals one if the bank fails and zero otherwise. contribution and lag of contribution are equal to one if the banks contributed at year t and $t-1$ and zero otherwise. Column 1 and 2 include only contribution and lag of contribution except column adds log of asset to control size effect.Column 3 and 3 include bank camels proxies variable except column 4 include bank fundamental variables. Column 5 include year economic crisis and state economic shock. Robust standard errors are in parentheses. *** significant at 1 percent; ** significant at 5 percent; * significant at 10 percent.

Table 1.3: The marginal effect of campaign contributions on probability of failure in different types of banks

VARIABLES	(1) Small banks	(2) Non-diversified banks
Contribution	0.00503***	0.00563***
	(0.00184)	(0.00186)
Lag (contribution)	0.00504***	0.00550***
	(0.00187)	(0.00189)
log (asset)	0.00394***	0.00488***
	(0.000629)	(0.000622)
HHI	0.0634***	0.0631***
	(0.00361)	(0.00366)
Capital adequacy	-0.0732***	-0.0736***
	(0.0115)	(0.0118)
Liquidity	-0.0485***	-0.0484***
	(0.0130)	(0.0135)
Asset quality	0.217***	0.228***
	(0.0437)	(0.0501)
Market sensitivity	0.0315***	0.0325***
	(0.00458)	(0.00464)
Loan charge-off	0.246**	0.235**
	(0.0986)	(0.105)
Efficiency ratio	0.0108***	0.0111***
	(0.00220)	(0.00231)
Age	-0.000216***	-0.000224***
	(1.69e-05)	(1.74e-05)
Management quality	0.00556*	0.00554*
	(0.00299)	(0.00307)
Funding mix	-0.000160	-0.000182
	(0.000122)	(0.000134)
Foreclosures	0.00190***	0.00186***
	(0.000550)	(0.000617)
Year of crisis	0.00290	0.00283
	(0.00326)	(0.00333)
Economic shock	0.0297***	0.0310***
	(0.00239)	(0.00243)
Observations	80,074	82,767
States dummy	YES	YES
Year dummy	YES	YES

This table reports marginal effect from probit model explaining the relation between failure banks and contributing banks across united states banks. The dependent variable is an indicator that equals one if the bank fails and zero otherwise. contribution and lag of contribution are equal to one if the banks contributed at year t and $t-1$ and zero otherwise.All controlled variables are include in regression. Robust standard errors are in parentheses. *** significant at 1 percent; ** significant at 5 percent; * significant at 10 percent.

Table 1.4: The impact of contributions on investment portfolio

VARIABLES	(1) Riskier	(2) Lower-riskier	(3) Long term debt	(4) Security asset ratio
Contribution	0.275***	-0.109	0.211***	0.00249**
	(0.0900)	(1.071)	(0.0521)	(0.00107)
Lag (contribution)	0.261***	-0.475	0.206***	0.00167
	(0.0905)	(0.895)	(0.0540)	(0.00108)
Log (asset)	1.940***	9.697***	1.318***	0.0113***
	(0.423)	(1.553)	(0.237)	(0.00299)
Capital adequacy	0.320	8.059***	0.0290	0.191***
	(0.224)	(2.587)	(0.133)	(0.0420)
Liquidity	-0.00439	-0.0343**	-0.00248	-0.000739***
	(0.00275)	(0.0171)	(0.00182)	(0.000269)
Asset quality	-4.249***	-5.523	-2.373***	0.0234
	(1.005)	(13.71)	(0.631)	(0.0340)
Market sensitivity	-1.106***	3.698**	-1.446***	-0.246***
	(0.289)	(1.864)	(0.177)	(0.00968)
Loan charge-off	-0.561**	-2.614	-0.317*	-0.111***
	(0.255)	(1.737)	(0.169)	(0.0109)
Efficiency ratio	0.287***	1.432***	0.192***	-0.00310
	(0.0986)	(0.503)	(0.0595)	(0.00361)
Year of crisis	-1.312***	-12.85***	-0.933***	-0.123***
	(0.371)	(4.096)	(0.229)	(0.0107)
Age	0.0486*	0.689	0.0393**	0.00204
	(0.0265)	(0.489)	(0.0179)	(0.00130)
Management Quality	0.349**	-0.453	0.315**	0.00584***
	(0.141)	(0.611)	(0.141)	(0.00176)
Funding mix	0.000386**	0.00124	0.000272*	6.64e-06
	(0.000168)	(0.00122)	(0.000150)	(1.41e-05)
Foreclosures	-0.00295	-0.00608	-0.00479	-0.000368
	(0.00671)	(0.0422)	(0.00416)	(0.000424)
Economic shock	3.422***	13.65***	2.322***	-0.0280**
	(0.845)	(3.248)	(0.498)	(0.0135)
Observations	105,437	105,426	105,437	105,437
R-squared	0.034	0.009	0.039	0.318
Bank FE	YES	YES	YES	YES
States FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

This table reports regression explaining the impact of contributions on banks' portfolio investment in three security classes. Data on bank security investments are obtained from call reports from 1993 to 2008. Contribution and lag of contribution are equal to one if the banks contributed respectively in period t and $t-1$ and zero otherwise. Riskier securities comprise mortgage-backed securities (excluding government-sponsored agency obligations), other domestic and foreign debt securities, and investments in mutual funds and equity products. Lower-risk securities include U.S. Treasury securities and securities issued by states and political subdivisions. Long-term debt securities comprise securities with the remaining maturity greater than five years. In order to facilitate the interpretation of regression coefficients, riskier securities and long-term debt securities are scaled by one million, lower-risk securities is scaled by ten thousands. All regression included year fixed effect, bank fixed effect and state fixed effect.Robust standard errors are in parentheses. *** significant at 1 percent; ** significant at 5 percent; * significant at 10 percent.

Table 1.5: The effect of campaign contributions on investment portfolio of the different types of banks

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Samll banks				Non-diversified banks			
VARIABLES	Riskier	Lower-riskier	Long-term debt	Security asset ratio	Riskier	Lower-riskier	long-term debt	Security asset ratio
Contribution	0.00734***	-0.0124	0.00513***	0.00152	0.128**	-0.366	0.0946***	0.00259**
	(0.00244)	(0.0535)	(0.00102)	(0.00116)	(0.0592)	(0.361)	(0.0270)	(0.00113)
Lag (contribution)	0.00970	0.0939	0.00461***	0.000932	0.116**	-0.500*	0.102***	0.00174
	(0.00600)	(0.0939)	(0.000980)	(0.00115)	(0.0534)	(0.295)	(0.0290)	(0.00114)
Log (asset)	0.134***	2.584***	0.0965***	0.0137***	1.520***	8.260***	0.826***	0.0125***
	(0.00696)	(0.122)	(0.00327)	(0.00366)	(0.453)	(1.535)	(0.172)	(0.00333)
HHI	0.00409	0.0672	-0.0324***	-0.0921***	-0.503	2.517	-0.571**	-0.0914***
	(0.0871)	(1.238)	(0.00597)	(0.00878)	(0.808)	(3.916)	(0.289)	(0.00882)
Capital adequacy	0.0400**	3.433***	-0.0755***	0.184***	0.155	7.370***	-0.0976	0.199***
	(0.0175)	(0.894)	(0.0128)	(0.0436)	(0.165)	(2.572)	(0.0693)	(0.0467)
Liquidity	-0.000128	-0.00683**	0.000235***	-0.000975**	-0.00534	-0.0390*	-0.00225	-0.000502*
	(0.000120)	(0.00282)	(7.78e-05)	(0.000401)	(0.00334)	(0.0217)	(0.00161)	(0.000293)
Asset quality	-0.248***	-1.017	-0.0597***	0.0230	-3.562***	7.201	-1.997***	0.0381
	(0.0470)	(1.017)	(0.0203)	(0.0397)	(0.878)	(12.00)	(0.590)	(0.0374)
Market sensitivity	-0.198***	-0.0214	-0.389***	-0.248***	-0.847***	2.085	-1.044***	-0.244***
	(0.0137)	(0.283)	(0.00850)	(0.0102)	(0.273)	(1.475)	(0.119)	(0.0102)
Loan charge-off	-0.0153	-0.116	-0.0149	-0.114***	-0.378*	-1.286	-0.188*	-0.112***
	(0.0250)	(0.477)	(0.0146)	(0.0125)	(0.211)	(1.355)	(0.109)	(0.0119)
Efficiency ratio	0.00600**	0.130*	0.00713***	-0.00185	0.208**	0.913**	0.115***	-0.00257
	(0.00283)	(0.0690)	(0.00207)	(0.00363)	(0.0931)	(0.356)	(0.0405)	(0.00390)
Year of crisis	0.0694***	-4.552***	0.0429***	-0.164***	-1.658**	-17.80**	-0.868***	-0.170***
	(0.00900)	(0.163)	(0.00384)	(0.00549)	(0.660)	(7.455)	(0.271)	(0.0204)
Observations	96,732	96,723	96,732	96,732	97,662	97,653	97,662	97,662
R-squared	0.038	0.036	0.513	0.328	0.027	0.012	0.057	0.319
Bank FE	YES	YES	YES	YES	YES	YES	YES	YES
States FE	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES

This table reports regression explaining the impact of contributions on banks' portfolio investment in three security classes. Data on bank security investments are obtained from call reports from 1993 to 2008. Contribution and lag of contribution are equal to one if the banks contributed respectively in period t and $t-1$ and zero otherwise. Riskier securities comprise mortgage-backed securities (excluding government-sponsored agency obligations), other domestic and foreign debt securities, and investments in mutual funds and equity products. Lower-risk securities include U.S. Treasury securities and securities issued by states and political subdivisions. Long-term debt securities comprise securities with the remaining maturity greater than five years. In order to facilitate the interpretation of regression coefficients, riskier securities and long-term debt securities are scaled by one million, lower-risk securities is scaled by ten thousands. All regression included year fixed effect, bank fixed effect and state fixed effect. We also controlled for all variables. We removed variables such as age, management quality, funding mix, foreclosures and economic shock due to the lack of of space in the table. Robust standard errors are in parentheses. *** significant at 1 percent; ** significant at 5 percent; * significant at 10 percent.

Table 1.6: Comparison of the mean between contributing and non-contributing banks

	A Contributing banks (N=50017)	B Non-contributing banks (N=55420)	A-B Difference
Risk			
Z-score	2.10	1.90	0.20***
Roa Volatility (%)	20.15	23.17	-3.01
Controls			
Log (assets)	13.30	12.48	0.81***
Capital adequacy (%)	15.92	18.39	-2.47***
Asset quality (%)	1.07	1.16	-0.09***
Liquidity (%)	8.16	10.27	-2.10*
Sensitivity to market risk (%)	79.40	79.73	-0.32**
Loan charge off (%)	.16	.15	0.004
Foreclosures	0.67	0.83	-0.007*
Funding mix	0.861	0.877	-0.016
Management quality(%)	3.18	2.01	1.17***
Age	66.43	66.37	-0.59
Exposure to economic shocks (%)	12.38	23.38	-11.00**
Efficiency Ratio (%)	66.26	67.93	-1.67**

Table 1.7: The effect of campaign contributions on overall risk taking ($Z-score$ and ROA volatility) of the banks

	(1)	(2)	(3)	(4)	(5)	(6)
		$Z-score$			ROA volatility	
VARIABLES	Full sample	Small banks	Non-diversified banks	Full sample	Small banks	Non-diversified banks
Contribution	0.0110	0.0370	0.00945	0.000536	0.00157	0.00281
	(0.0382)	(0.0419)	(0.0406)	(0.00683)	(0.00789)	(0.00754)
Lag (contribution)	-0.0557*	-0.0500	-0.0653**	0.00448	0.00624	0.00600
	(0.0318)	(0.0324)	(0.0316)	(0.00639)	(0.00725)	(0.00695)
Log (asset)	0.175***	0.284***	0.190***	0.0229	-0.0209	0.0168
	(0.0356)	(0.0414)	(0.0380)	(0.0196)	(0.0250)	(0.0218)
HHI	0.586***	0.595***	0.586***	-0.0793	-0.0588	-0.0923*
	(0.202)	(0.222)	(0.217)	(0.0486)	(0.0478)	(0.0526)
Capital adequacy	1.127***	1.045***	1.095***	0.276***	0.325***	0.332***
	(0.176)	(0.174)	(0.182)	(0.0998)	(0.108)	(0.112)
Liquidity	-0.00769*	-0.0103***	-0.00289	-0.00451	-0.00678*	-0.00318
	(0.00445)	(0.00375)	(0.00333)	(0.00282)	(0.00378)	(0.00480)
Asset quality	-8.823***	-8.621***	-9.390***	3.256***	3.429***	3.899***
	(1.124)	(0.867)	(0.723)	(0.672)	(0.590)	(0.533)
Market sensitivity	-0.676***	-0.659***	-0.655***	-0.0107	0.0100	-0.00902
	(0.111)	(0.113)	(0.114)	(0.0349)	(0.0289)	(0.0376)
Loan charge-off	-1.105	-1.037	-1.007	1.348	1.307	1.299
	(1.125)	(1.037)	(1.031)	(1.007)	(0.965)	(0.962)
Efficiency ratio	-0.672***	-0.608***	-0.654***	0.833***	0.770***	0.797***
	(0.111)	(0.106)	(0.113)	(0.144)	(0.138)	(0.144)
Year of crisis	0.0961	-0.427***	-0.397***	0.0260	0.132***	0.121***
	(0.0655)	(0.0766)	(0.113)	(0.0220)	(0.0385)	(0.0436)
Age	0.00714	0.00973***	0.00716	-0.00182	-0.00253***	-0.00202
	(0.00517)	(0.00159)	(0.00538)	(0.00128)	(0.000536)	(0.00146)
Management quality	-0.160***	-0.152***	-0.153***	0.0810***	0.0811***	0.0832***
	(0.0442)	(0.0469)	(0.0444)	(0.0200)	(0.0224)	(0.0217)
Funding mix	0.000128	0.000302**	0.000134	-0.000634	-0.00121***	-0.000632
	(0.000110)	(0.000137)	(0.000111)	(0.000451)	(0.000437)	(0.000450)
Foreclosures	-0.0363***	-0.0361***	-0.0343***	0.0231**	0.0238**	0.0223**
	(0.00664)	(0.00681)	(0.00655)	(0.0101)	(0.00943)	(0.0102)
Economics shock	-0.158*	0.0483	-0.106	0.214***	0.156***	0.203***
	(0.0931)	(0.0925)	(0.0953)	(0.0646)	(0.0579)	(0.0662)
Constant	-0.249	-2.256***	-0.623	-0.572*	0.0191	-0.470
	(0.598)	(0.565)	(0.630)	(0.334)	(0.385)	(0.364)
Observations	105,437	96,732	97,662	105,437	96,732	97,662
R-squared	0.030	0.026	0.063	0.198	0.207	0.191
Bank FE	YES	YES	YES	YES	YES	YES
States FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES

The table depicts the results of the impact of campaign contribution on the overall risk-taking for all banks, small banks and non-diversified banks. The dependent variables are $Z-score$ and ROA volatility. Higher $Z-score$ means lower probability of insolvency and lower $Z-score$ implies high probability of insolvency. Higher volatility of the return on asset (ROA volatility) implies higher probability of insolvency and lower volatility of the return on asset implies lower probability of insolvency.All variables are include in the regression. We control also for bank fixed effect, year fixed effect and state fixed effect. Robust standard errors are in parentheses. *** significant at 1 percent; ** significant at 5 percent; *significant at 10 percent.

Table 1.8: The marginal effect of amount of contributions on probability of failure

VARIABLES	(1) Column I	(2) Column II	(3) Column III	(4) Column IV	(5) Column V
Amount of contribution	0.0569***	0.0468***	0.0558***	0.0566***	0.0413***
	(0.0165)	(0.0177)	(0.0160)	(0.0170)	(0.0154)
Lag (amount of contribution)	0.0603***	0.0500***	0.0642***	0.0668***	0.0482***
	(0.0173)	(0.0174)	(0.0200)	(0.0229)	(0.0158)
Log (asset)		0.00167***	-0.000516	-5.70e-05	0.00362***
		(0.000475)	(0.000550)	(0.000553)	(0.000560)
HHI			0.0703***	0.0639***	0.0644***
			(0.00357)	(0.00360)	(0.00356)
Capital adequacy			-0.0666***	-0.0591***	-0.0744***
			(0.0126)	(0.0118)	(0.0117)
Liquidity			-0.0368***	-0.0370***	-0.0506***
			(0.0124)	(0.0118)	(0.0130)
Asset quality			0.218***	0.217***	0.217***
			(0.0422)	(0.0427)	(0.0437)
Market sensitivity			0.0415***	0.0322***	0.0312***
			(0.00458)	(0.00459)	(0.00455)
Loan charge-off			0.319***	0.290***	0.240**
			(0.102)	(0.0988)	(0.0992)
Efficiency ratio			0.0128***	0.0107***	0.0107***
			(0.00256)	(0.00221)	(0.00219)
Age				-0.000199***	-0.000217***
				(1.68e-05)	(1.68e-05)
Management quality				0.00623**	0.00519*
				(0.00298)	(0.00297)
Funding mix				-0.000169	-0.000181
				(0.000129)	(0.000133)
Foreclosures				0.00149***	0.00190***
				(0.000567)	(0.000564)
Year of crisis					0.00325
					(0.00322)
Economic shock					0.0285***
					(0.00235)
Observations	89,082	89,082	89,082	89,082	89,082
States FE	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES

This table reports marginal effect of campaign contributions on probability of failure from probit model in the U.S banking sector. The dependent variable is an indicator that equals one if the bank fails and zero otherwise. Amount and lag of amount are equal to the amount of contributions banks contributed respectively in period t and $t-1$. Column 1 and 2 include only contribution and lag of contribution except column adds log of asset to control size effect.Column 3 and 3 include bank camels proxies variable except column 4 include bank fundamental variables. Column 5 include year economic crisis and state economic shock. Robust standard errors are in parentheses. *** significant at 1 percent; ** significant at 5 percent; * significant at 10 percent.

Table 1.9: The effect of amount of contributions on investment portfolio of the banks

VARIABLES	(1) Riskier	(2) Lower-riskier	(3) Long term debt	(4) Security asset ratio
Amount of contribution	21.75***	51.27***	14.38***	-0.00532
	(0.964)	(8.578)	(0.642)	(0.0200)
Lag (amount of contribution)	20.91***	1.143	15.46***	-0.00635
	(0.951)	(8.459)	(0.634)	(0.0197)
Log (asset)	1.905***	9.532***	1.296***	0.0116***
	(0.0392)	(0.348)	(0.0261)	(0.000812)
HHI	-0.962***	1.461	-1.062***	-0.0904***
	(0.151)	(1.341)	(0.100)	(0.00312)
Capital adequacy	0.285*	7.940***	0.00469	0.191***
	(0.148)	(1.313)	(0.0984)	(0.00306)
Liquidity	-0.00412	-0.0339	-0.00228	-0.000737***
	(0.00773)	(0.0688)	(0.00515)	(0.000160)
Asset quality	-4.100***	-5.255	-2.274***	0.0225
	(0.794)	(7.060)	(0.529)	(0.0165)
Market sensitivity	-1.122***	3.718***	-1.457***	-0.246***
	(0.130)	(1.160)	(0.0869)	(0.00270)
Loan charge-off	-0.562	-2.578	-0.318	-0.111***
	(0.579)	(5.145)	(0.385)	(0.0120)
Efficiency ratio	0.286***	1.432***	0.192***	-0.00308***
	(0.0486)	(0.433)	(0.0324)	(0.00101)
Year of crisis	-1.247***	-12.80***	-0.887***	-0.123***
	(0.239)	(2.128)	(0.159)	(0.00496)
Age	0.0447	0.687***	0.0365*	0.00203***
	(0.0288)	(0.256)	(0.0192)	(0.000597)
Management quality	0.340***	-0.473	0.309***	0.00585***
	(0.0744)	(0.662)	(0.0496)	(0.00154)
Funding mix	0.000375	0.00121	0.000265	6.73e-06
	(0.000624)	(0.00555)	(0.000416)	(1.29e-05)
Foreclosures	-0.00306	-0.00758	-0.00493	-0.000376
	(0.0442)	(0.393)	(0.0295)	(0.000917)
Economic shock	3.336***	13.47***	2.264***	-0.0277***
	(0.132)	(1.177)	(0.0882)	(0.00274)
Observations	105,437	105,426	105,437	105,437
R-squared	0.042	0.009	0.048	0.318
Bank FE	YES	YES	YES	YES
States FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

This table reports regression explaining the impact of contributions on banks' portfolio investment in three security classes. Data on bank security investments are obtained from call reports from 1993 to 2008. Amounts and lag of amounts are equal to the amount of contribution banks contributed respectively in period t and $t-1$. Riskier securities comprise mortgage-backed securities (excluding government-sponsored agency obligations), other domestic and foreign debt securities, and investments in mutual funds and equity products. Lower-risk securities include U.S. Treasury securities and securities issued by states and political subdivisions. Long-term debt securities comprise securities with the remaining maturity greater than five years. In order to facilitate the interpretation of regression coefficients, riskier securities and long-term debt securities are scaled by one million, lower-risk securities is scaled by ten thousands. All regression included year fixed effect, bank fixed effect and state fixed effect.Robust standard errors are in parentheses. *** significant at 1 percent; ** significant at 5 percent; * significant at 10 percent.

Table 1.10: The bivariate probit estimate of the effect of campaign contributions on probability of failure

VARIABLES	(1) Column I	(2) Column II	(3) Column III	(4) Column IV	(5) Column V
Contribution	0.202	0.518***	0.696***	0.765***	0.532***
	(0.213)	(0.119)	(0.135)	(0.133)	(0.164)
Lag (contribution)	0.115***	0.118***	0.135***	0.136***	0.115***
	(0.0318)	(0.0327)	(0.0333)	(0.0332)	(0.0339)
Log (asset)		-0.00205	-0.0472***	-0.0416***	0.0297**
		(0.0101)	(0.0116)	(0.0114)	(0.0140)
HHI			1.255***	1.149***	1.162***
			(0.0610)	(0.0622)	(0.0623)
Capital adequacy			-1.154***	-1.031***	-1.292***
			(0.218)	(0.204)	(0.205)
Liquidity			-0.647***	-0.650***	-0.883***
			(0.221)	(0.211)	(0.233)
Asset quality			3.911***	3.926***	3.936***
			(0.741)	(0.753)	(0.778)
Market sensitivity			0.717***	0.558***	0.550***
			(0.0795)	(0.0804)	(0.0806)
Loan charge-off			5.745***	5.259***	4.484**
			(1.763)	(1.718)	(1.746)
Efficiency ratio			0.210***	0.175***	0.180***
			(0.0435)	(0.0374)	(0.0381)
Age				-0.00349***	-0.00382***
				(0.000292)	(0.000296)
Management quality				0.105**	0.0897*
				(0.0523)	(0.0528)
Funding mix				-0.00213	-0.00251
				(0.00209)	(0.00222)
Foreclosures				0.0274***	0.0340***
				(0.00951)	(0.00976)
Year of crisis					0.0269
					(0.0583)
Economic shock					0.474***
					(0.0429)
Observations	105,437	105,437	105,437	105,437	105,437
States FE	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES

The table presents the bivariate probit estimates of the effect of campaign contribution on probability of failure. The dependent variable is an indicator that equals one if the bank fails and zero otherwise.Contributions and lag of contributions are equal to one if the banks contributed respectively in period t and $t-1$ and zero otherwise. Column 1 and 2 include only contributions and lag of contributions except column adds log of asset to control size effect.Column 3 and 3 include bank camels proxies variable except column 4 include bank fundamental variables. Column 5 include year economic crisis and state economic shock. Robust standard errors are in parentheses. *** significant at 1 percent; ** significant at 5 percent; * significant at 10 percent.

Table 1.11: Blundell-Bond estimate of the effect of contributions on investment portfolio of the banks

VARIABLES	(1) Riskier	(2) Lower-riskier	(3) Long term debt	(4) Security asset ratio
Contribution	0.0609***	0.0187***	0.00238	0.00219***
	(0.0211)	(0.00490)	(0.00191)	(0.000591)
Lag (contribution)	0.0728***	0.0542***	0.0170***	0.00334***
	(0.0278)	(0.00752)	(0.00323)	(0.000808)
Log (asset)	-0.0165	-0.0452**	0.581***	0.0226***
	(0.0645)	(0.0223)	(0.00537)	(0.00198)
HHI	0.142	-0.880***	-0.285***	-0.0328***
	(0.421)	(0.0902)	(0.0162)	(0.00559)
Capital adequacy	0.872*	0.351***	-0.0906***	0.330***
	(0.475)	(0.0918)	(0.0278)	(0.0241)
Liquidity	0.000348	-0.00118	-0.000206	0.000135*
	(0.00246)	(0.00317)	(0.000207)	(8.15e-05)
Asset quality	-2.441**	-0.143	-0.303***	0.196***
	(1.043)	(0.371)	(0.0634)	(0.0216)
Market sensitivity	0.320**	-0.141***	-0.760***	-0.129***
	(0.142)	(0.0289)	(0.0257)	(0.00563)
Loan charge-off	-0.477	-0.175	-0.199***	0.128***
	(0.628)	(0.176)	(0.0173)	(0.00612)
Efficiency ratio	-0.301***	0.0378**	0.0518***	0.00330*
	(0.0774)	(0.0187)	(0.0148)	(0.00200)
Year of crisis	0.199**	-0.00707	-0.0681***	-0.0109***
	(0.0925)	(0.00544)	(0.0102)	(0.00281)
Age	0.00397	0.00806***	0.00938*	0.000826
	(0.0405)	(0.00283)	(0.00493)	(0.00135)
Management quality	0.0648	0.00573	-0.00946***	0.00119
	(0.0404)	(0.00774)	(0.00286)	(0.00106)
Funding mix	0.00120	0.0802***	0.000132***	8.59e-05***
	(0.0139)	(0.0214)	(3.91e-05)	(4.74e-06)
Foreclosures	2.291***	-0.194	0.0924***	0.0578***
	(0.738)	(0.159)	(0.0188)	(0.0169)
Economic shock	0.0204	-0.275*	1.628***	-0.0626***
	(0.411)	(0.160)	(0.0689)	(0.0111)
Observations	84,308	84,305	84,953	84,953
Bank FE	YES	YES	YES	YES
States FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

This table reports regression explaining the impact of contributions on banks' portfolio investment in three security classes using Blundell-Bond GMM estimators. Data on bank security investments are obtained from call reports from 1993 to 2008. Contribution and lag of contribution are equal to one if the banks contributed respectively in period t and $t-1$ and zero otherwise. Riskier is riskier securities divided by total securities. Riskier securities comprise mortgage-backed securities (excluding government-sponsored agency obligations), other domestic and foreign debt securities, and investments in mutual funds and equity products. Lower-risk securities include U.S. Treasury securities and securities issued by states and political subdivisions. Long-term debt securities comprise securities with the remaining maturity greater than five years. In order to facilitate the interpretation of regression coefficients, riskier securities and long-term debt securities are scaled by one million, lower-risk securities is scaled by ten thousands. All regression included year fixed effect, bank fixed effect and state fixed effect.Robust standard errors are in parentheses. *** significant at 1 percent; ** significant at 5 percent; * significant at 10 percent.

Chapter 2

Response of Special Interests to Legislators' Activity: Campaign Contributions of the U.S. Financial Industry and Bills Sponsorship and Co-sponsorship

2.1 Introduction

Special interests that contribute to political campaigns benefit from legislation, government procurement contracts, changes in regulatory environment, and other government actions. Stigler (1971), Peltzman (1976), and Grossman and Helpman (1994) have developed theories of regulatory capture and influence. In these classical models, special interest groups offer political support to legislators. Empirically, Cooper et al. (2009) found a positive relationship between contributions and future firms' returns. Correia (2014) established the link between political connections and reducing Securities and Exchange Commission enforcement costs. Igan and Mishra (2014) found that political influence has an effect on regulation. Thus, it is estab-

lished in the literature that special interests seek connections with politicians. On the other hand, politicians – to finance elections – support constituencies and build a reputation within Congress, are interested in campaign contributions.

There are a few possible stories of how matching happens in these political markets (see for example Grossman and Helpman, 2001). Firstly, politicians may approach special interest groups and ask for support. Secondly, there may be a mediator who establishes political connections. Finally, arguably the most effective way of establishing a legislator-special interest group match is for special interests to screen the pool of legislators. The mechanism is as follows:

1.Special interest groups build a legislative agenda and attract the attention of important political players to signal their agenda by actions including roll-call activity (voting on bills and proposals) and non-roll-call activity (meetings, conferences, bills sponsoring and co-sponsoring).

2. Special interests attentively monitor politicians' activity. They respond to signals and invest in active and efficient politicians.

In this paper we consider the non-roll-call activity of politicians as a means to attract contributions. We measure this activity by the number of bills sponsored or co-sponsored by a politician. Two reasons motivate our focus on bills' sponsoring and co-sponsoring. Firstly, these activities signal to audiences (special interests, colleagues' networks, parties) the areas of politicians activity (building agenda). Roll-call activity of politicians instead focuses on the set of pre-determined objectives. By sponsoring or co-sponsoring a bill the legislator delivers more valuable information to the attentive public.[1] Secondly, the legislative process of bills' enactment passes few steps, allowing us to consider the efficiency of the legislator. The further a bill goes through the process of enactment, the more efficient is the legislator or his network in promoting legislation.

Using a dataset of campaign contributions from the financial sector to the mem-

[1]The informative role of bills sponsoring and co-sponsoring is important for the set of bills that matter most for the legislator because these particular bills convey the legislator's interests – that they are in accordance with those of the legislator's party and network . Other bills (mostly co-sponsored) may reflect the short-term objectives of legislators.

bers of the U.S. Congress and politicians' non-roll-call activity we study the effect of bills sponsorship and co-sponsorship on campaign contributions. In both Chambers of the U.S. Congress (the House and the Senate), the number of bills related to the financial sector that passed predicts increases in the amount of campaign contributions to politicians who sponsored them. An increase in the number of bills co-sponsored by politicians in the House predicts increases in campaign contributions. However, we did not find a similar result for the Senate. We also observe that the efficiency of politicians pays off – the effect of a legislator's activity on campaign contributions is stronger if the bill advanced further through the legislative process of enactment. The bills that passed both floors, and most certainly become laws, are rewarded the most. Bills that passed one floor and committee considerations are paid less.

To understand the results we assume that politicians have ideological preferences and that their activities are not solely dictated by the desire to attract contributions. Since politicians have an ideology they, to develop reputation, prefer to choose the "right" bills – bills that are coherent with party/network policy, the legislator's own ideological preferences, and constituencies' preferences. However, the amount of "right" bills may be limited, and therefore not enough to establish the desired reputation during the electoral term. Hence, the legislator refers to co-sponsoring, presumably the less effective signalling device. House representatives have a much shorter electoral cycle than senators – two years versus six years. Thus we observe more co-sponsoring activity in the House. This activity is rewarded by special interests who value politicians' activity during such a short term. Co-sponsoring of senators does not produce the same result because senators have enough time to engage in sponsoring the "right" bills during their six year term. Special interests compensate only the more important sponsoring activity. We conduct a robustness check and test for causality by using the 3SLS procedure.

The structure of the paper is as follows. Section 2.2 surveys the literature and discusses the place of our paper therein. Section 2.3 describes the procedure of bills enactment. Section 2.4 presents a simple model that illustrates the mechanism

of how politicians' activity influences campaign contributions. This section also develops a testable hypotheses based on parameters of the model. In section 2.5 we describe the process of data gathering and present descriptive statistics of politicians' non-roll-call activity and contributions from special interest groups in the financial sector in the U.S. Section 2.6 present results from the House and the Senate. We also conduct a robustness check in this section. Section 2.7 concludes and discusses possible extensions.

2.2 Literature review

Kroszner and Stratmann (2005) study how special interests reward a politicians' reputation by making campaign contributions. A politician's ideological position is uncertain, and reputation can reduce this uncertainty and lead to greater campaign contributions from special interests with similar preferences. However, such a reduction in uncertainty may lead to reducing contributions from opposite special interest groups. The authors consider different conditions which may lead to greater reputational development or less. As a proxy for reputational development, they use the percentage of repeat giving to politicians from special interests.[2] This proxy for reputation is correlated with the dependent variable. Also, the mechanism of how politicians can affect repeat giving by contributors is not clear. We assume that there is no ambiguity in the ideological position of a legislator.[3] In our paper, we clarify the mechanism of the lobbying process. More importantly, our proxy for reputational development is directly related to the legislator's activity – his/her bill sponsoring and co-sponsoring.

There is a political literature that explores connections between bills' sponsorship or co-sponsorship and campaign contributions. Rocca and Gordon (2010) use data from the 103rd and 104th Congresses and employ cross-sectional analysis. They

[2]In Snyder (1992) politicians act in contributors' interests and are rewarded with continued campaign contributions.

[3]In a static model Martimort and Semenov (2008) show that if there is ideological uncertainty then the politician cannot attract contributions from the opposite special interest groups.

find a relationship between bills sponsorship by House Democrats and campaign contributions from special interests in the areas of labor and gun control. They assign each legislator a dummy variable depending on if he/she has sponsored a bill in gun control or labor. We use the number of sponsored bills in the financial area which allows us to extend their research into a different area of policy.

Tanger et al. (2011) use data from the House during the period of 2000-2008 and find a positive impact of the number of co-sponsored bills on campaign contributions. They collect the amount of contributions and number of co-sponsored bills. We match names of co-sponsors and the numbers of bills each member of the Congress has co-sponsored. This allows us to conduct panel data analysis.

Rocca and Gordon (2013) studied the link between campaign contributions and earmarks. They found a two-sided effect of earmarks on contributions. Politicians use earmarks to reward contributing special interests, and special interests initiate earmarks by contributing to politicians' campaigns.[4]

The role of non-roll-call actions of politicians was studied in Kessler and Krehbiel (1996) and Schiller (1995). Kessler and Krehbiel (1996) found that co-sponsorship is used by politicians to signal their preferences to other politicians. Schiller (1995) studied the role of sponsorship as an agenda builder for politicians. Our paper suggests that sponsorship also serves as a signaling device to special interests.

Our paper contributes to the literature on politicians' incentives. Snyder (1991) considers "vote-buying" and Groseclose (1995) considers "favor-trading." Both of these theories predict that a significant part of politicians' activities (particularly bill sponsorship and co-sponsorship) is located in the middle of the ideological spectrum of the House/Senate. These theories, like ours, also predict that a politician's ideology does play a role in bill sponsorship/co-sponsorship. Krehbiel (1995) considers the partisan rationale for bill co-sponsorship. He found that co-sponsorship and waffling can be more motivated by preferences than by partisanship. In this vein, Campbell (1982) and Kessler and Krehbiel (1996) argue that co-sponsorship

[4]Criticism of earmarks (see references in Rocca and Gordon, 2013) led to an end to this activity in Congress.

does not play a significant role in elections.

Bertrand et al. (2014) established that lobbyists continue to cooperate with politicians with whom they have contracted before. Lobbyists value connections more than expertise. Thus, they show that ideology matters, but less so than connections. We argue that ideology matters no less than connections, and we consider the relationship between giving from the industry and the activity of politicians. Only politicians with a weak ideological stance sacrifice their ideological motives for contributions.

2.3 Legislative procedures of bill enactment

Politicians in Congress are concerned with re-election. To be re-elected there are three main activities required within Congress. Politicians participate in voting on bills (roll-call activity); they establish connections and attain influence within Congress; and they participate in non-roll-call activity among which bill sponsoring and co-sponsoring is the most important.[5] By these means politicians attract contributions from special interests, which may help in elections. Such activity may arise through different channels: access of special interests, buying influence, information signalling, etc (see for example Grossman and Helpman, 2001). Our focus is on non-roll-call behavior: sponsoring and co-sponsoring bills as an activity that attracts campaign contributions.

Schiller (1995) provided a thorough discussion of the legislative process of bill sponsorship. Politicians are very careful in their decision to sponsor bills. They take into account not only the direct consequences of this activity but also far-reaching consequences such as receptiveness of the political environment (colleagues, interest groups, publicity), direct costs (staff, time, information resources, etc).[6] The attrac-

[5]Other non-roll-call activities include delivering floor speeches, holding press conferences, and meeting with peers.

[6]Schiller (1995) conducted interviews with legislators. Here is a quote from one such interview: "A hypothetical example might be a bill to make it illegal for cars to burn gasoline. First, you would want to test the idea on environmental groups because you would need their support for such a bill and they would be most likely to support you. Then you might also check with oil companies who might not want to support you but you want to get their feedback. Third, check with the staff of other senators to see who might support it. Basically the whole process is one of information

tiveness of a bill to a legislator may be stipulated by his/her party belongings. For example, the Democratic party may in general favor stricter regulation of banking activity than Republicans. Also, a legislator may favor specific banking regulation on bankruptcy if the share of subprime mortgages is large in her/his district/state.[7]

A legislator initiates a bill by preparing a draft of the bill. Note that this draft can be initiated or even written by special interests.[8] After the creation of the draft of the bill, the sponsor of the bill can approach any member of the Congress (the House or the Senate) to co-sponsor the bill.[9] The co-sponsor adds his/her name to support the bill.

There are five steps through which a bill passes to become law. The first is the introduction of the bill, the second is committee consideration, the third is main floor consideration (the chamber in which the bill is originated from), the fourth is the second floor consideration (the second chamber in which the bill is not originated from), and the final step is the presidential signature of the bill.

1. The introduction of a Bill: Any member of the Congress can introduce a bill. A legislator who introduces a bill is called a (primary) sponsor. Members who did not participate in the introduction of a bill but show their (written) support for the bill are called co-sponsors. In the House, only one legislator can sponsor a bill, but a bill can have multiple co-sponsors.[10] In the Senate, a bill may have multiple sponsors. During the Congressional Assembly, a member of the Congress can introduce many bills throughout the Congressional session.

2. Committee Consideration: After the bill is introduced, a legislative number is

and intelligence gathering – you want to find the pitfalls to any bill before you introduce it. Lastly, the senator has to sign off on the bill and be aware of the pros and cons because he has to take the political heat. The bill has to be in line with the senator's political agenda for him to sign off. The entire process is one of constant communication between staff and interest groups and the senator."

[7]Jones (2011) on the other hand defines the "right" action of a legislator as one that favors constituencies' opinions.

[8]In the article "Banks' Lobbyists Help in Drafting Financial Bills", Lipton and Protess argue that corporate officers in the financial industry acknowledge their role in drafting legislation, and that this practice is common in Congress. http://dealbook.nytimes.com/2013/05/23/banks-lobbyists-help-in-drafting-financial-bills/

[9]Note that in the U.S. Congress there might be many sponsors and co-sponsors of a bill.

[10]In the House several members may introduce a bill, but only the first signatory is the sponsor of the bill – others are co-sponsors

assigned to the bill, and it is then referred to the appropriate committee for consideration. For example, all the bills in finance are sent to the committee of financial services in the House or to the Committee on Banking, Housing, and Urban Affairs in the Senate. After review, research, and revision, the committee votes for the bill (with or without amendments) to be rejected, or proceeds to the next stage.

3. Main Floor Consideration: After the committee has accepted the bill with or without amendments, the bill is referred to the House or the Senate floor for debates. During debates, each legislator has an opportunity to express his/her interest for or against the bill, and multiple votes are taken in the House or Senate. After all debates are finished, and amendments approved, the Chamber votes for the final passage of the bill. If the majority of the members of the Chamber vote for the bills then the bill is declared as passed; if not the bill failed to pass the main floor.[11] If passed, the bill is referred to the other Chamber.

4. Second Floor Consideration: At this stage, a bill is officially an Act. The second Chamber can accept the Act without amendments, in which case it sends the bill to the president for approval. Otherwise, the Chamber may return the bill to the first Chamber. The process then repeats from stage 3.

5. Presidential Approval: The President has ten days to approve the bill or to veto it. Following the president's approval, the bill becomes law. The president signs most of the bills that passed by both Chambers[12] – the veto rate is 7 percent.

[11] Some bills remain on the level of debates until the end of the Chamber session. If the introducer of the bills is no longer in the Chamber because of the results of the election, these bills will remain at the floor consideration level

[12] If the President vetoes the bill, the bill is sent back to Congress, who may override the President's veto if two-thirds of the Congress supports the bill. In this case the bill becomes law.

2.4 The model and testable hypotheses

In this section, we present a simple model that illustrates our assumptions and presents a mechanism of the effect of bills' sponsorship and co-sponsorship on campaign contributions. The model helps us to develop testable hypotheses.

We assume that a politician can sponsor or co-sponsor a limited number of bills. This limitation comes from the scarcity of resources of the politician: time, effort to prepare a bill, physical restraints on the quantity of available bills, etc. Denote by $B_i^s, i = 1, ..., 2n_s$ bills that the politician may sponsor and by $B_i^c, i = 1, ..., 2n_c$ the set of possible co–sponsored bills. Sponsoring or co-sponsoring bills brings two types of benefits. They attract political contributions from special interests, and they lead to ideological benefits. We interpret these motives very broadly. They may come from the interests of constituencies, which may be linked to re-election prospects. They may be related to the ideological stances of the party or more importantly the network of peers in Congress.[13]A politician, especially a newcomer, may find it hard to act against the platform of the group of congressmen with whom he/she is connected.

If the politician sponsors $B_i^s, i \leq n_s$ the ideological component of his payoff increases by $\alpha > 0$, bill $B_i^s, i > n_s$ decreases the ideological component by β, where $\beta > \alpha$,, reflecting the loss aversion of the politician. For example, going against the party line may generate additional costs for future electoral party support. Co-sponsoring the bill $B_i^s, i \leq n_s$ $(i > n_s)$ yields ideological component change by $\alpha/2$ $(-\beta/2)$ correspondingly.

Parameters α and β summarize non–contribution motives of the legislator. If, say, α is greater than 1 then the legislator's valuation of contributions from the financial industry is smaller than, for example, party support or networking effects. Conversely, if α is less than 1 then the legislator is active in seeking support form the financial industry.

[13]Aleman and Calvo (2013) argue that "Policy networks formed by co-authoring and co-sponsoring bills reflect one of the most important types of connection legislators develop while in office."

We assume that politicians value campaign contributions from special interest group(s). This valuation may come from different sources. Campaign contributions may affect the election outcome; contributions may be related to the "revolving door" phenomena; contributions from the financial industry may signal to peers in Congress the importance of a politician who receives such contributions

If the politician sponsors B_i^s he anticipates an added value of 1 from the industry to his election prospects (Note that we may introduce the randomization of payoffs depending on whether the bill is introduced, passed by the committee, passes one or both floors, or becomes law). If ex-post he is re-elected then the value of an extra number of bills is zero; the politician is indifferent between sponsoring them or not. In other words, if he needs only 3 sponsoring bills to be re-elected, he may sponsor any number of bills greater or equal to three. His payoff is the same, since he is re-elected. If the politician co-sponsors B_i^c then he anticipates 1/2 of the corresponding payoffs. The particular payoff structure is not important as soon as the sponsoring brings more to the politician than co-sponsoring. Sponsoring bills has a bigger reputational impact than co-sponsoring because a) it is costlier to sponsor a bill than to co-sponsor a bill, and b) normally there can be fewer sponsors for a bill than co-sponsors.

Remark 2.1. *For simplicity we assume that the politician cares only about staying in office. His re-election prospects depend on the support of the special interests (campaign contributions) and his ideology (for example, alignment to voters' expectations, party popularity during elections, network, party and Congress support, etc). Pearson (2015) gives many examples of how party loyalty is rewarded in elections.*

The financial industry is organized and contributes to politicians' campaigns (see Grossman and Helpman, 1994). Firms in the industry value political connections (see Akey, 2015 and Bertrand et al. 2014). The industry contributes to the projects (sponsorship and co-sponsorship) which helps a politician to be re-elected or increases her status and is thus to be useful for the industry. We assume for simplicity that the politician correctly anticipates contributions by the industry.

Suppose that to achieve her goals (to be re-elected, to establish good relations with industry after retirement or increase her status) the politician needs to collect at least $T > 0$ from sponsoring and co–sponsoring bills.[14] This aggregate parameter controls for electoral results such as the quality of challengers, historical records for the district (for example whether the district was historically Democratic turf) and the percentage of votes in previous elections. T also depends on whether the running politician was a member of the State Congress.[15]

Timing:

1. The politician chooses s and c, where s is the number of bills sponsored and c the number of co-sponsored bills.

2. The financial industry makes contributions to the politician's campaign.

We assume that the industry contribution schedule is fixed. Therefore the politician is the only decision–maker in the model. If $n_s(1+\alpha) \geq T$ then the number of "right" bills is sufficient for the politician to achieve his goal. Then the politician chooses any number s of bills such that $s(1+\alpha) \geq T$ and $c \geq 0$. The industry chooses to contribute only for the sponsoring of bills. This can be the case when the term of the politician between elections is long; during such a period there is time to accumulate support from the industry in writing bills, or prepare bills by himself using his staff and connections. On the other hand when the period is short, then there might be less opportunity to conduct such activity.

If $n_s(1+\alpha) < T$ then sponsoring the all "right" bills is insufficient for sponsoring only bills having electoral value. If the politician has a strong ideological position, $\alpha > 1$, , then he values the ideological component more than contributions from the financial industry. In that case bill sponsorship or co-sponsorship does not have any value for the politician and the industry; the re-election value of contributions

[14] It is not necessary to assume that having collected T is a sufficient condition for being re-elected. Rather, having collected T is the minimal payoff that makes bills' work worthy for the politician.

[15] The demand of a politician for campaign contributions can be affected by the amount of contributions received by challengers in the electoral cycle (see for example Kroszner and Stratmann 2003, and Levitt 1994). Also demand can be affected by the strength of his/her position in previous elections such as the percentage of votes in the previous elections.

is zero.

For contributions to have some value, it must be that the politician does not have too strong an ideological position (note that this is consistent with findings of Grossman and Helpman 1994 in the case of perfect information and Martimort and Semenov 2008 in the case of imperfect information).

If $\alpha < 1$ then co-sponsorship of bills may have value for the politician. If $n_s(1+\alpha) + n_c\frac{(1+\alpha)}{2} \geq T$, then the politician will sponsor all the "right" bills available to him and co-sponsor c "right" bills such that $n_s(1+\alpha) + c\frac{(1+\alpha)}{2} \geq T$. Then not only sponsored bills will affect contributions from the industry, but also co-sponsored bills.

If $\alpha < 1$ and even co-sponsoring "right" bills is insufficient then the politician may still benefit from the support of the industry. This may be possible if the politician is sufficiently corrupt; he has not the only low ideological value from bills $\alpha < 1$ but also his ideological loss from defecting to "wrong" bills is not big: $\beta < 1$. In that case, the politician may turn to sponsoring and co-sponsoring all available bills he has.

Our testable hypotheses are as follows:

1. The legislator will develop a reputation by enacting bills to enhance his/her electoral prospects. Thus, the number of enacted bills will have a positive effect on campaign contributions.

2. The legislator, unless he is corrupt or has a very different ideological position from the peer network (party, social network, etc), will not support bills that are not in agreement with his/her ideological stance. Therefore, the shorter term of legislators in the House leads co-sponsored bills to have a positive effect on campaign contribution. However, in the Senate, this co-sponsoring effect will not be strong due to the longer term.

3. The stronger the challengers' positions and/or the lower the percentage of votes in previous elections, the stronger the effect of sponsored and co-sponsored

bills on contributions. Similar effects exist for other factors which affect the electoral strength (T) of the politician.

We note a few possible extensions of the model which may be interesting from the theoretical point of view but may not provide new insights into the political process of bills enactment.

Remark 2.2. *The parameter α is a common knowledge. It would be interesting to see implications of private information on contribution patterns (see Martimort and Semenov, 2008).*

Remark 2.3. *The contribution schedule is fixed. It does not come from any optimization program for the industry. The interests of the industry may come from maximization of payoffs.*

Remark 2.4. *Finally, the industry may not be organized. Then the optimal contribution schedules may come from competing interests (more on this in Grossman and Helpman, 1994)*

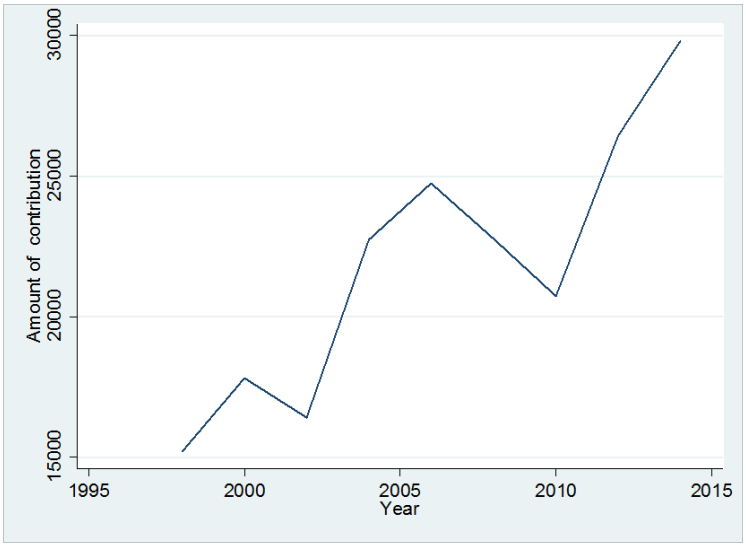
2.5 Data and descriptive statistics

A. Legislative data

Our data on legislation comes from the Library of Congress THOMAS Legislative Database for the period 1997/1998 to 2013/2014. The Library of Congress (congress.gov) records every bill and resolution introduced in the U.S. Congress on every topic. The Library of Congress provides all bills' records and their associated documents such as sponsors, introduction dates, committee considerations, committee reports, Congressional votes, etc.

We gathered data on all bills introduced in Congress regarding the financial sector by every member of the House and the Senate. We also collected data on the number of bills each member of the U.S. Congress co-sponsored and the number of bills sponsored or co-sponsored that passed committees' considerations, one floor (the House or the Senate), and both floors.

Figure 2.1: Campaign contributions in the financial sector



We measure a legislator's political activity by the number of bills sponsored or co-sponsored by the legislator. In the period from 1997/1998 to 2013/2014, there were 2418 bills sponsored and co-sponsored in the area of finance: 1669 bills were introduced by House representatives, and 749 bills were introduced by Senators. Among 2418 bills, 1148 bills passed committee and were referred to the main floor. Only 303 bills passed the main floor, and 97 passed both floors. Among the 97 bills that passed both floors, 90 became law.

B. Contribution data

Information on the campaign contributions to U.S. politicians is obtained from the Centre for Responsive Politics Database (opensecret.org). The Centre for Responsive Politics is a non-profit and independent research group which collects information on the money received by the U.S. politicians at the federal level. We collected data on campaign contributions in the financial sector during each election cycle from 1998 to 2014. The contribution data is measured in real 2014 dollars. We also look the stationary of our contribution data but it is impossible to determine whether the data is stationary or not because of the gaps in our data. The pattern of (yearly) contributions for House representatives is represented in Figure 2.1.

Contributions exhibit an increasing pattern over periods with downward spikes

such as the "dot.com" crisis of 2000-2002 and the Great Recession of 2007-2010.

Table 2.1 presents the descriptive statistics for contributions during election cycles (1997-1998, 1999-2000,..., 2013-2014) and bill information in the House and the Senate.

Panel A contains descriptive statistics for the House. On average a Republican congressman receives more contributions from the financial industry than a Democratic congressman: $27,760 vs. $15,935. Consistently, challengers of Democratic (Republican) congressmen receive more (less) than incumbents: $20,284 ($20,076).

Panel B contains descriptive statistics for the Senate. Senators on average receive much more than congressmen: $527,978 vs. $21,856. This reflects the fact that senators have greater influence on industry legislation and policy than congressmen. However, on average a Republican senator receives less in contributions from the financial industry than a Democratic senators: 451,144 vs. 603,491. This may be related to better networking among Democrats; the longer period allows for formation of Democratic coalitions to support legislation more effectively than Republican networks.

Both Chambers have a similar success rate of introduced bills. The House representative on average introduces 0.41 bills a year of which 0.0194 have passed both floors and most certainly become law. The success rate is thus equal to 4.7%. A senator introduces 0.791 bills a year; of which 0.0315 pass both floors. The success rate is 4%.[16]

A House member co-sponsors 7.284 bills a year of which 0.948 pass both floors: the success rate is 13%. For a senator, the success rate of co-sponsoring is 6.8%.

Table 2.2 presents descriptive statistics for the Senate and its election cycles. Data is gathered for two-year election cycles.

On average a senator receives $374,285 each non-election cycle. During the election cycle contributions increase: on average to $827,018. Also senators' non-roll-call activity increases during an election cycle; average bills passed on both floors

[16]Some states are more efficient in passing bills than the federal legislature.
https://fiscalnote.com/2016/03/10/how-efficient-is-your-state-legislature-nearly-all-are-more-effective-than-congress/

increase from 0.0361 to 0.137 per cycle. The increase in the number of passed bills may be partially explained by the length of bills' enactment procedures. However, such a large increase may also be associated with strategic behavior of politicians, who may for instance pass bills during the election cycle to attract contributions. As we can see the industry responds to this activity by increasing contributions more than twofold during the election cycle compared to the non-election cycle.

C. Other data

We control for other variables that may affect campaign contribution patterns.

Seniority: Seniority may affect repeat giving and building of reputation. Seniority can also signal to a contributor the productivity and expertise of the legislator. Contributors may contribute less to newly elected politicians than to senior ones. We control for two variables on the seniority of the politicians in both chambers by including the log of each variable in our regression.

The first variable measuring seniority is overall Chamber seniority. Chamber seniority is the number of election cycles the politicians has been in the Chamber. The second variable of seniority is committee seniority (the Financial Services Committee in the House or Banking, the Housing and Urban Affairs Committee in the Senate). We define it as the number of election cycles during which the politician has been in the corresponding committee. The data on seniority was collected from the Senate Office of Public Records and the Office of Art and Archives of the House of Representatives.

Ideology: To capture the differences in legislative preference among politicians, we include the DW-Nominate ideology measure (Keith Poole and Howard Rosenthal's DW-Nominate spatial mapping of politicians based on the legislative roll call behavior). This variable allows us to control for politicians who are for or against certain financial policies, as this may affect the patterns of contribution in the financial sector. Since the relationship between ideology and contributions may be nonlinear, we control for ideology squared. We collected the ideology measure of each legislator from the Vote Views DW-NOMINATE Scores websites.

Power: Power in the House or in the Senate may also affect the patterns of

contribution. Politicians who are more powerful may influence legislature more than other politicians. Thus, power may serve as a signal to contributors. Party affiliation may also influence contributions patterns. A party that (historically) supports bills in the financial sector may have established party discipline. To control the power of politicians in the House or in the Senate, we use the fact of leadership position and being a committee chair as a proxy for the degree of power which politicians have in a Chamber. The leadership position equals one if the legislator is the majority leader, majority whip, the speaker of the House (only for the House chamber), or minority whip, and is zero otherwise. The committee chair variable is equal to one if the legislator is the chair of the corresponding Committee. The data were collected from the Senate Office of Public Records and the Office of Art and Archives of House of Representatives. The party affiliation variable equals one if the legislator is a member of the Republican party and zero if he is a member of the Democratic party.

Probability of termination: The probability of retirement, death or losing an election can affect contributions patterns. To control for these factors, we use the probability of termination of the legislator as a proxy. We measure this probability by estimating a probit model in which our dependent variable equals one in the last election in which the legislator is in the House or Senate and zero otherwise. In the probit regression, we control for the characteristics of politicians.

Strength of a challenger: Because politicians in the House have a two-year term, we control for percentage of votes in the previous elections and the challenger's expenditures. The percentage of the votes for the legislator in previous elections gives information about the security of his seat in the House for the next election cycle, which can affect campaign contributions – contributors may contribute more to secure politicians so as to develop ongoing relationships. On the other hand, secure politicians may exert less effort in sponsoring and co-sponsoring bills than insecure politicians. The latter may put more effort into sponsoring and co-sponsoring bills so as to raise more funds for the next election. The challenger's expenditures measure the strength and resources of the challenger to the incumbent legislator. Since

the incumbent can have many challengers, we take the expenditure of challenger who has the highest percentage of votes among all challengers in the election. The challenger's expenditures variable controls for the prospects of the challenger to defeat the incumbent in the election. This may lead the incumbent to raise more contributions for his campaign. We control for the percentage of vote and challenger expenditure in the regression of the impact of political reputation on campaign contributions in the House. We do not control for these two variables in the Senate, as senators serve for a six years term. However, we control for the election period of senators. Senators who are seeking for re-election may exert more effort by sponsoring and co-sponsoring bills. Senators tend to raise more contributions in their years of re-election than in non-re-election years. To control for the effect of election years, we include a dummy variable "election year" which equals one if a legislator in the Chamber is running for election in the current electoral cycle. Data on the percentage of the votes and the challenger's expenditures are obtained respectively from the Federal Election Commission and the Centre for Responsive Politics Database.

2.6 Results

In this section, we present estimates of the impact of political reputations on the contributions received by members of U.S. Congress in both the House of Representatives and the Senate.

2.6.1 A. The House of Representatives

We begin our empirical analysis by investigating the impact of political reputation on campaign contributions to politicians in the House of Representatives from the 1997/1998 to 2013/2014 election cycles. The dependent variable is the log of campaign contributions in dollars.Since our dependent variable is log of contributions, for legislators who receive zero contributions, we assume that their contributions are one dollar so that the log of contribution might be zero dollar. We use a $log - lin$ specification of campaign contributions, and we test the hypotheses that the number

of sponsored and co-sponsored bills positively affect the campaign contributions.

The main independent variable is the number of bills ($bill_{i,t}$) sponsored or co-sponsored by a legislator that passed both floors (the Senate and the House) as a proxy for reputation. To control for the effect of legislator characteristics ($Z_{i,t}$) on campaign contributions we include the following variables: *log* of House seniority (in years); *log* of financial services committee seniority (in years); the DW-nominate ideology measure and a square term; committee chair status (dummy variable); leadership position status (dummy variable); party affiliation; the percentage of votes received by a legislator in previous elections; campaign contributions to the challenger; and the probability of termination. To capture any differences in the election cycle that might affect the contributions patterns of a legislator, we include a year fixed effect (ω_t). To capture any other legislator factors that might lower or increase contributions throughout the career, we include a politician fixed effect (ψ_i). Finally, to capture any differences in the state of legislators that might affect contributions patterns of a legislator, we include state fixed effect ($\phi_{i,t}$).

To examine the effect of passed bills on contributions (in the financial sector), we estimate the following log-linear regression:

$$\log(contribution_{i,t}) = \pi bill_{i,t} + \lambda Z_{i,t} + \psi_i + \omega_t + \phi_{i,t} + \varepsilon_{i,t} \tag{2.1}$$

In Table 2.3, we depict our results for four specifications. Models (1-3) include politician fixed effects. Model 4 does not control for this effect, but it includes all the legislator characteristics mentioned above. Model 2 includes log seniority, log banking committee seniority, leadership position, chairing of the banking committee, and the ideology (DW-nominate score) and ideology squared of the politicians. In all models, we include year fixed effects. We find support for our hypotheses:

Hypothesis 1. In all specifications, an increase in number of bills related to the financial sector – that passed both floors – increases campaign contributions.

Hypothesis 2. Table 2.2 shows that an increase in the number of bills co-sponsored by politicians in the financial sector increases campaign contributions

to politicians who co-sponsored them. This is consistent with our discussion in Section 2.4 – that bill co-sponsorship is an opportunity for the legislator to raise campaign contributions from financial sector to finance electoral campaigns.

Our results show that contributors in the financial sector make a rational choice by giving contributions to politicians who have developed a reputation for passing financial bills. Consistent with the discussion in Section 4 we also show that politicians' sponsorship has a greater impact on campaign contributions than co-sponsorship. Columns 3 and 7 in Table 3 (Model 3) show that an increase in the number of sponsored bills increases campaign contributions by *45%* $(= (e^{0.373} - 1) * 100)$ for politicians who sponsored them, while an increase in the number of bills co-sponsored increases campaign contributions by *16%* $(= (e^{0.146} - 1) * 100)$ for a legislator who co-sponsored them. Bill sponsoring has a greater impact on campaign contributions. Contributors value sponsoring more than co-sponsoring, as sponsoring has a big impact on reputation development; the legislator who sponsors the bill is more likely to exert a lot effort preparing and passing the bill than a co-sponsor. This legislator prepares the bill, recruits co-sponsors using personal contacts and/or by writing letters to colleagues (see also Campbell, 1982). Reputation thus developed is rewarded with contributions.

We check the effect of the status of the bills. Table 2.4 reports the results of the effect of the number of bills on campaign contributions. The number of bills sponsored by politicians that passed Steps 1-3 increases campaign contributions. There is also an effect of the number of bills co-sponsored by politicians on campaign contributions in Steps 1-3.

We also found that the effect of having a leadership position is positive and significant. Contributors are more likely to contribute more to a legislator who has a bigger influence on promoting bills.

2.6.2 B. The Senate

Senators serve six-year terms. In each election cycle, one-third of senators seek re-election. Our data show that the other two-thirds of the senators still receive

contributions in each election cycle from 1997/1998 to 2013/2014. To examine the effect of political reputation on campaign contributions we use the number of the bills supported (sponsored or co-sponsored) by each senator in the financial sector as a proxy for political reputation. The dependent variable is the *log* of contributions received by politicians in the Senate. Since our dependent variable is log of contributions, for legislators who receive zero contributions, we assume that their contributions are one dollar so that the log of contribution might be zero dollar.The main independent variable is the number of supported bills. We also include other politician characteristics ($Z_{i,t}$): *log* of Senate seniority (in years); *log* of banking committee seniority (in years); DW-nominate ideology and ideology squared of politicians; committee chair status (dummy variable); leadership position (dummy variable); party affiliation; year of election; and probability of termination.

We estimate the following model:

$$\log(contribution_{i,t}) = \pi bills_{i,t} + \lambda Z_{i,t} + \psi_i + \omega_t + \gamma_s + \varepsilon_{i,t} \tag{2.2}$$

where ψ_i is a parameter that controls for senator fixed effects, capturing the ability of the Senate legislator to raise campaign contributions throughout their career. The parameter ω_t denotes a full set of time effects, which captures all time shocks (for example a financial crisis shock) that may affect contributions to the politicians. We also control for state fixed effect (γ_s) to capture the amount of the contributions received by the legislators in the state with many banks.

Table 2.5 shows results for four specifications. In Model 1 we include the number of bills that passed both floors. Model 2 adds *log* seniority,*log* banking committee seniority, leadership position, chair of the banking committee, ideology and ideology squared of the politicians. Models 3 and 4 include all politicians' characteristic variables – except Model 4 does not include politician fixed effects (Models 1 and 2 do). In all models, we control for year and state fixed effects. Columns 1-4 show the results for sponsored bills that passed both floors. Columns 5-8 present the results for co-sponsored bills that passed both floors.

We find that politicians who sponsor bills that passed both floors (the Senate and the House) are more likely to receive significant amounts of campaign contributions than those who sponsor bills that did not pass both floors. Column 3 of Table 5 shows that senators who sponsor bills that passed both floors experience an increase in campaign contributions by *85%* $(= (e^{0.617} - 1) * 100)$. However, we find that co-sponsorship bills that passed both floors have no effect on contributions. A legislator who sponsored a bill gives a strong signal to contributors about his/her efforts to pass the bill and recruit co-sponsors. The legislator who sponsored the bill activates his network to promote the bill. Hence sponsors who have large network relationships may have support from a majority of politicians – which increases the probability of the passage of bills in the Senate.

We analyze the impact of the status of bills on campaign contributions. Table 2.6 shows that an increase in the number of bills passing Steps 1 and 2 increases contributions received by senators who sponsor them. There is no significant evidence of the impact of the number of bills that passed only the Senate's floor on campaign contributions. Columns 1 and 2 show that sponsored bills that passed Steps 1 and 2 increase contributions by *23.24%* $(= (e^{0.209} - 1) * 100)$ and *43%* $(= (e^{0.357} - 1) * 100)$.

To control for election year effects, we include a dummy variable. Models 3 and 4 show that the effect of the year of re-election is positive and significant. This is consistent with Baron and Grossman-Helpman finding that campaign contributions have an influence on the election outcome.

To control for the impact of the probability of termination on campaign contributions we do probit regression where the dependent variable is equal to one for the last election in which a legislator is in the Senate. We control for legislator characteristics, year and state fixed effects and politician fixed effects. We derived the predicted probability of termination from the probit and added it into Models 3 and 4. We find that the probability of termination has a negative and significant impact. This implies that an increase in the probability of termination of senators decreases the amount of campaign contributions. This result is consistent with Kroszner and Stratman (2005) who find that the probability of termination decreases with the

percentage of repeat givers.

2.6.3 Do sponsored bills increase contributions every congressional year?

In this section, we check if sponsored bills that passed both floors (Senate and House) increase contributions to legislators who sponsored them in each congressional year. Tables 2.14 and 2.15 report the results for each congressional year for the House and the Senate respectively. We find that legislators who sponsored bills that passed both floors receive more contributions in the congressional year – except during the years of financial crises (2001-2003) and (2007-2010). These results may have two explanations. Firstly, during financial crises, firms have lower profit and cannot divert resources to lobbying. Secondly, legislators' ideological concerns may overweigh their interests for contributions in a time of crises. As a result, politicians focus on policies that solve the financial crisis regardless of whether these policies are in favor or against the financial sector. As an example, during the financial crisis of 2007-2010, politicians denied bailouts for Lehman Brothers, a step which contributed to the demise of one of oldest financial institutions and shook the foundations of the whole financial industry.

2.6.4 Robustness

Positive correlations between sponsored and co-sponsored bills and campaign contributions in the previous section is consistent with the hypothesis that political activity induces the industry to contribute more to active (and efficient) politicians. However, this result can also be explained by the correlation between the omitted variables. For instance, suppose that a member of federal Congress were instead a member of state Congress (state House of Representative or state Senate) before being elected to the federal Congress. If the member of the state Congress had built a reputation that attracted contributions in the financial areas, and if this member became a member of federal Congress then this could establish a positive link between legislator's activity and campaign contributions.

In this subsection, we use three strategies to check robustness and determine the direction of causality between politicians' activities and contributions. First, we include other observable characteristics of a legislator that may be related to activity and contributions. Second, the unobserved heterogeneity across members may also drive the results. To assess this issue, we conduct selection on observable variables. Finally, we use the 3SLS model to determine whether the correlation is due to reverse causality between reputation and contributions.

Controlling for observable variables: state members and district interests.

An important potential omitted variable is previous political reputation. A legislator has built reputation up until the last election cycle in Congress. If a member of the Federal Congress with high political reputation also had a good political reputation in a state Congress, then this can affect current contributions. Hence, we control for membership in a state Congress. The state Congress member variable equals to one if the member of the Federal Congress was previously a member of one of the state congresses. We collected data for this variable from the congressional biographies directory.

Using data from the Bureau of Economic Analysis (BEA) on state counties' employment, we map county employment data in the financial sector onto legislator districts using two-digit Standard Industrial Classification. Our proxy for district interests is district employment measured as the average of employment in the financial sector in the legislator's district. Our objective when controlling for these variables is to capture any possible effect of non-sponsorship or non-co-sponsorship influence on long-term contributions. Note we include only state congress members for the Senate regression.

Table 2.7 presents the results of equations 2.1 and 2.2 with the inclusion of additional factors. The estimated sponsorship or co-sponsorship and non-sponsorship or non-co-sponsorship coefficients in every step of the bills' progression is positive and statistically significant in the House. Table 8 shows the results for the Senate. The estimated coefficients on sponsorship are positive and statistically significant

but the estimated coefficients of co-sponsorship remain positive and insignificant in every step of the bill's enactment.

Unobservable selection bias and coefficients stability

Despite the fact that we control for additional factors in the previous section, unobservable variables that are correlated with selection of sponsored and co-sponsored bills and future contributions may lead to bias in the results in Tables (2.2-2.5). To overcome this issue we use two strategies of coefficient stability to assess the importance of unobservable variable bias.

The first strategy is based on the Altonji et al. (2005) coefficient stability approach. This approach measures the ratio between the coefficients of the regression of the full of set of controls and the difference in the coefficients of the regression of the restricted set of controls and the full set of controls: $ratio = \frac{\pi^F}{\pi^R - \pi^F}$. Here π^F is the coefficient from the regression of the full set controls and π^R is the coefficient from the regression of restricted set of controls. The higher is the ratio, the less likely the estimation effect is driven by selection on unobservable factors and the more stable are the estimates.

The second strategy is based on the Oster (2015) coefficient stability approach. The effect of unobservable factors on the estimated coefficients ignores not only the variation in the estimated coefficients but also variations in R-squared. Oster (2015) argues that when taking into account R-squared, the consistent estimator of the effect of the independent variables on the dependent variable is given by:

$$\pi = \pi^F - (\pi^R - \pi^F) * (\frac{R_{\max} - R^F}{R^F - R^R})$$

where π^F and R^F are the coefficients estimated and R–squared is from the regression with the full set of controls, and π^R and R^R are the coefficient estimates and R–squared from the regression with the restricted set of controls. $R_{\max} = \min\{\Pi R^F, 1\}$ with the estimated parametrization $\Pi = 1.5$ for the House and $\Pi = 1.3$ for the Senate.

Table 2.9 shows the results of the Altonji et al. (2005) ratio and the coefficient stability of Oster (2015). Panels A and B present the results for the House of Representatives and Senate. Panel A, Column 3 of Table 2.9 shows that the Altonji et al. ratio is greater than two in every step of legislative procedures for bills. This implies that the effect of selection on unobservable factors on our estimates must be two times greater than the effect of selection on observable factors in order to assign our estimates to selection effects. Column 4 of Table 2.9 shows that our consistent estimator is positive in every step of the bills. According to Table 2.9, Column 3 of Panel B reports that the Altonji et al. (2005) ratio is less than one when the bills passed both floors and greater than eight when the bills are introduced and pass committee consideration in the Senate. Column 4 of Panel B also indicates that our coefficient stability measure is positive in Step 3 of the process (passed both floors, Committee consideration, and Introduction).

Thus we conclude that our estimates of the effect of bills on contributions are less likely to be driven by unobservable factors in the House of Representatives and the Senate.

3SLS estimates

It is possible that there is reverse causality: the members of the Congress who receive campaign contributions will sponsor or co-sponsor bills in return for contributions. Politicians then will make more effort to ensure that the bills become law. Thus campaign contributions will increase bills sponsorship or co-sponsorship.

To address this issue, the use of instruments is usually required. We tried many instruments, such as lags of sponsorship and co-sponsorship bills, education in financial areas, years of experience in the financial industry, and business ownership in the financial industry – but we failed to find evidence that those instruments are valid. Therefore we use a 3SLS model which consists of simultaneously estimating two equations (equations 1 and 2). In equation 1, the *log* of contributions is the dependent variable and sponsored and co-sponsored bills are independent variables. In equation 2, sponsored and co-sponsored bills are dependent variables, and the*log*

of contributions is the independent variable. In equation 1, we used lag of contributions as an instrument for current contributions and in equation 2, we use age of legislators as an instrument for sponsored and co-sponsored bills. The results of the 3SLS estimates are presented in Tables 2.10 and 2.11 for the House and the Senate respectively. Sponsored and co-sponsored bills and contributions affect each other. Comparing the effect of each variable on each other, we found that the effect of sponsored bills that passed both chambers on contributions is 330 (1.393/0.00422) and 95 (1.656/0.0174) times bigger than the effect of contributions on bills in the House and the Senate respectively. Thus, we conclude that the effect of contributions on bills is negligible.

Alternatives approach: Tobit model

In the dataset of campaign contributions, some members of the Congress have negative contributions. We replaced negative campaign contributions with zero for every member of Congress with negative contributions. Since our dependent variable is log of contributions, for legislators who receive zero contributions, we assume that their contributions are one dollar so that the log of contribution might be zero dollar. The OLS regression which ignores the presence of the floor effect in campaign contribution measurements can cause our coefficient estimates to be biased. To remedy this issue, we use a Tobit model to account for the censoring in campaign contributions. Our results for the Tobit regression model are reported in Tables 2.12 and 2.13 for the House and the Senate. Table 2.12 shows that sponsored or co-sponsored bills increase contributions to legislators who sponsored or co-sponsored them in House. Table 2.13 shows that sponsored bills increase contributions to legislators who sponsored them in the Senate. However, this effect disappears when legislators co-sponsored bills in the Senate. Thus, the Tobit regression's results are the same as for the OLS estimation.

2.7 Conclusion

In this paper, we study the effect of legislators' non-roll-call activity on campaign contributions. Bill sponsoring has a positive and significant effect on campaign contributions from the financial sector in the U.S. in both chambers of Congress. A longer term for senators allows them to signal their agenda and efficiency by using only bill sponsorship. This does not mean that senators do not engage in co-sponsorship as actively as congressmen do. However, special interests compensate only bill sponsorship for senators. A shorter term for congressmen does not allow them to sponsor enough "right" bills to demonstrate their activity and efficiency to special interests. Thus, politicians in the House resort to bill co-sponsoring as a signalling device, and special interests reward this activity.

There are many directions in which the paper may be extended. One of them is related to the ideological rationale in the Congress. Politicians' activity also acts as a signal to networks of politicians. Closely ideologically related politicians form a network which may coordinate in the bills' enactment process. For example co-sponsoring networks may consist of ideologically close politicians. On the other hand, strategic behavior by legislators may stipulate creation of co-sponsoring networks with ideologically opposed politicians to neutralize the effect of opposition to bills. These two hypotheses can be tested using data on legislators' activity.

To extend the results, it is possible to detail the meaning of the "right" bill. We assume that for each politician there is an exogenous division of bills into two groups. One group presents "right" bills. These bills are the ones that agree with the ideological position of the politician. The "rightness" of bills may be affected by party belonging, seniority, and importance in Congress. More importantly, the rightness of bills is related to the district's characteristics: number of banks, competitiveness of the banking industry in the district, mortgage and bankruptcy situation, and macroeconomic characteristics (unemployment, income, etc).

Finally, a similar approach can be applied to state politicians. Using the database in Perez et al. (2016), it is possible to have a more detailed description of the special

interests and their influence on politicians. Using state legislatures may lead to cleaner results since state politicians do not have a previous reputation. However, special interests may be less active in states than at the federal level due to the relative importance of federal legislation on the financial industry – many of laws can be applied only on the federal level.

2.8 Appendix B:Tables

Table 2.1: Descriptive statistics for campaign contributions and bills

	Panel A: House of representatives														
	All					Democrat					Republican				
VARIABLES	mean	p50	sd	min	max	mean	p50	sd	min	max	mean	p50	sd	min	max
Contribution															
Amount(in billions)	0.218	0.0125	0.0294	0	0.456	0.0154	0.008	0.0214	0	0.212	0.0277	0.018	0.035	0	0.456
Incumbent	0.0219	0.0125	0.0300	0	0.456	0.0162	0.0092	0.0217	0	0.219	0.0274	0.0172	0.0357	0	0.456
Challenger	0.0201	0.052	0.0335	0	0.193	0.0202	0.005	0.0336	0	0.193	0.0200	0.005	0.0335	0	0.193
Sponsor bills															
passed both floor	0.0194	0	0.138	0	1	0.0125	0	0.111	0	1	0.0263	0	0.160	0	1
passed one floor	0.0607	0	0.327	0	5	0.0314	0	0.237	0	5	0.0899	0	0.394	0	5
Committee	0.262	0	0.888	0	22	0.238	0	0.887	0	22	0.286	0	0.888	0	11
Introduction	0.410	0	1.144	0	24	0.409	0	1.184	0	24	0.410	0	1.103	0	12
Co-sponsor bills															
Passed both floor	0.948	0	1.382	0	8	0.942	0	1.332	0	7	0.955	0	1.429	0	8
Passed one floor	2.158	1	2.359	0	17	1.978	1	2.237	0	17	2.338	2	2.462	0	14
Committee	4.615	3	4.257	0	36	5.008	4	4.490	0	36	4.222	3	3.974	0	30
Introduction	7.284	6	5.897	0	50	8.057	7	6.160	0	37	6.513	5	5.517	0	50
	Panel B: Senate														
Contribution															
Amount(in billions)	0.527	0.156	2.079	0	44.28	0.603	0.154	2.473	0	44.28	0.451	0.169	1.579	0	31.43
Sponsor bills															
Passed both floor	0.0315	0	0.213	0	4	0.0172	0	0.130	0	1	0.0459	0	0.273	0	4
Passed one floor	0.0662	0	0.334	0	4	0.0667	0	0.338	0	3	0.0656	0	0.331	0	4
Committee	0.0922	0	0.397	0	5	0.0796	0	0.377	0	4	0.105	0	0.416	0	5
Introduction	0.791	0	1.392	0	11	0.946	0	1.479	0	8	0.632	0	1.279	0	11
Co-Sponsor bills															
Passed both floor	0.329	0	0.668	0	4	0.318	0	0.687	0	3	0.339	0	0.650	0	4
Passed one floor	0.677	0	0.998	0	5	0.759	0	1.058	0	5	0.593	0	0.928	0	5
Committee	0.927	0	1.304	0	7	0.935	1	1.241	0	7	0.919	0	1.367	0	7
Introduction	4.854	3	4.849	0	44	5.361	4	4.424	0	22	4.337	2	5.202	0	44

Panel A and B contain descriptive statistics for campaign contributions and bills in the house of representatives and senate respectively. Amount is the total amount of contributions receive by the each member of the congress in the period of re-election. Challenger is the amount of contributions received by the incumbent challenger during the incumbent re-election. Incumbent is the amount of campaign contributions received by the incumbent in the congress. passed both floor is the number of bills passed both house and senate floor. Passed one floor is the number of bills that passed only the main floor consideration. Committee consideration indicate the number of bills that passed the committee consideration. Introduction is the number of bills introduced in the chamber.

Table 2.2: Descriptive statistics for Senate chamber

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	non-congressional election year					congressional election year				
VARIABLES	mean	p50	sd	min	max	mean	p50	sd	min	max
amount of contribution	374,285	84,860	2.455e+06	0	4.428e+07	827,018	616,169	933,899	0	5.835e+06
Sponsor bills										
passed both floor	0.0361	0	0.187	0	1	0.137	0	0.405	0	4
passed one floor	0.0558	0	0.275	0	3	0.0863	0	0.426	0	4
committee consideration	0.0837	0	0.364	0	4	0.109	0	0.454	0	5
introduction	0.788	0	1.387	0	11	0.796	0	1.404	0	10
Co-Sponsor bills										
passed both floor	0.327	0	0.659	0	4	0.332	0	0.687	0	3
passed one floor	0.673	0	0.968	0	5	0.684	0	1.056	0	5
committee consideration	0.934	1	1.300	0	7	0.914	0	1.314	0	7
Introduction	4.795	3	4.704	0	25	4.968	3	5.126	0	44

This descriptive statistics table show the average amount of contributions received by legislators and the average number of bills sponsored by legislators in non-congressional election years and congressional election. Non-congressional year indicate the first two congressional year of the senators in the congress and congressional election is the last congressional year in which the senator in the congress has to be re-elected.

Table 2.3: The effect of legislators reputation (sponsor or co-sponsor bills) on campaign contributions in the House of Representatives

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Sponsor bills				Co-sponsor bills			
VARIABLES	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
passed both floor	0.437***	0.353**	0.373**	0.543***	0.156***	0.155***	0.146***	0.296***
	(0.152)	(0.145)	(0.153)	(0.152)	(0.0490)	(0.0482)	(0.0497)	(0.0512)
Log(house seniority)		0.0426	-0.384	-0.293		0.0421	-0.348	0.228
		(0.0551)	(0.282)	(0.251)		(0.0548)	(0.285)	(0.291)
Log(committee seniority)		0.438***	-0.153	0.549		0.410***	-0.124	1.737***
		(0.131)	(0.437)	(0.387)		(0.131)	(0.444)	(0.434)
DW-nominate score		0.164	-0.120	-0.00836		0.163	-0.0905	0.551*
		(0.139)	(0.267)	(0.240)		(0.139)	(0.270)	(0.287)
DW-nominate square		0.205	0.164	0.106		0.211	0.170	0.0320
		(0.259)	(0.271)	(0.220)		(0.257)	(0.269)	(0.239)
Committee chair		0.467*	3.211	1.113		0.471*	2.970	-3.593*
		(0.253)	(2.157)	(1.886)		(0.252)	(2.184)	(2.124)
Leadership position		1.686***	1.775***	1.657***		1.830***	1.876***	2.125***
		(0.494)	(0.468)	(0.205)		(0.491)	(0.463)	(0.200)
Party affiliation			0.135	0.679***			0.162	1.465***
			(0.320)	(0.257)			(0.326)	(0.293)
Previous election vote			0.0104	0.00628			0.0105	-0.00154
			(0.0102)	(0.00897)			(0.0101)	(0.0105)
Challenger expenditure			-6.35e-08	-2.94e-07			-6.33e-08	-7.34e-07
			(4.32e-07)	(4.36e-07)			(4.33e-07)	(4.79e-07)
Probability of termination			23.17	7.057			21.08	-31.02*
Constant	9.335***	9.151***	4.711	7.461**	9.216***	9.034***	4.986	14.08***
	(0.0943)	(0.145)	(3.370)	(3.024)	(0.0949)	(0.146)	(3.407)	(3.356)
Observations	4,022	4,021	3,789	3,789	4,022	4,021	3,789	3,789
R-squared	0.022	0.035	0.043		0.026	0.038	0.046	0.111
Representative FE	YES	YES	YES	NO	YES	YES	YES	NO
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
State FE	YES	YES	YES	YES	YES	YES	YES	YES

Notes: This table reports the results of the effect of sponsor and co-sponsor bills on campaign contributions. Passed both floor is the number of bills sponsored or co-sponsored by the legislators that passed both House and Senate. In Model 1 we include the number of bills that passed both floors. Model 2 adds log seniority, log financial services committee seniority, leadership position, chair of financial services committee, ideology and ideology square of the legislators. Models 3 and 4 include all legislators characteristic variables except Model 4 does not include legislators fixed effect (Models 1 and 2 include legislators fixed effect). In all models, we control for year and U.S. states fixed effect. Columns 1-4 show the results for sponsored bills that passed both floors. The columns 5-8 present the results for co-sponsored bills that passed both floor. The robust standard errors are in parentheses. *** significant at 1 percent; ** significant at 5 percent; * significant at 10 percent.

Table 2.4: The effect of the first three step of the bills on campaign contributions in House of Representatives

	(1)	(2)	(3)	(4)	(5)	(6)
	Sponsor bills			Co-sponsor bills		
VARIABLES	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Introduction	0.108***					
	(0.0358)					
Committee consideration		0.104**				
		(0.0521)				
Passed one floor			0.233***			
			(0.0834)			
Introduction				0.0320***		
				(0.0119)		
Committee consideration					0.0286**	
					(0.0126)	
Passed one floor						0.0909***
						(0.0282)
Observations	3,789	3,789	3,789	3,789	3,789	3,789
R-squared	0.044	0.043	0.043	0.046	0.044	0.047
All controlled factors	YES	YES	YES	YES	YES	YES
Representative FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
State FE	YES	YES	YES	YES	YES	YES

Note: The table presents the estimates of the effect of the first three steps of a bill to become law on Campaign contribution. Introduction is the number of bill a legislators has introduced in the house. Committee consideration is the number of bills sponsor or co-sponsor by a legislator that passed committee consideration. Passed one floor is the number of bills sponsored or co-sponsored by a legislator that passed only the main floor (house). We include all legislators characteristics such as log of house seniority, log of financial services committee seniority, ideology and ideology square, committee chair, leadership position, previous election vote, party affiliation, challenger expenditure and probability of termination in all column. We removed previous election vote, challenger expenditure and probability of termination in the table due to lack of space. We control for legislator and year fixed effect. The robust standard errors are in parentheses. *** significant at 1 percent; ** significant at 5 percent; * significant at 10 percent.

Table 2.5: The impact of sponsor and co-sponsor bills on campaign contributions in the Senate chamber

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Sponsor bills				Co-sponsor bills			
VARIABLES	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
passed both floor	1.323***	1.284***	0.617***	0.828***	0.148	0.140	0.0348	0.281
	(0.199)	(0.212)	(0.215)	(0.271)	(0.159)	(0.158)	(0.160)	(0.176)
Log(senator seniority)		0.755**	0.545	-0.105		0.803***	0.554	-0.114
		(0.293)	(0.337)	(0.212)		(0.295)	(0.336)	(0.210)
Log(committee seniority)		-0.328	-0.222	0.101		-0.300	-0.202	0.0610
		(0.270)	(0.250)	(0.174)		(0.266)	(0.245)	(0.178)
DW-nominate score		-0.0611	-0.212	-0.479		-0.134	-0.249	-0.502
		(0.299)	(0.323)	(0.402)		(0.296)	(0.319)	(0.397)
DW-nominate square		0.337	0.524	-0.424		0.251	0.505	-0.376
		(0.609)	(0.611)	(0.714)		(0.609)	(0.611)	(0.720)
Committee chair		0.296	0.594	0.733		0.474	0.660	0.832
		(0.500)	(0.541)	(0.545)		(0.485)	(0.552)	(0.549)
Leadership position		-0.0460	9.06e-05	0.722		-0.0571	-0.00541	0.753
		(1.186)	(1.181)	(0.665)		(1.298)	(1.233)	(0.694)
Party affiliation			-1.184	0.101			-1.209	0.114
			(1.062)	(0.374)			(1.071)	(0.379)
Re-election			1.851***	1.562***			1.901***	1.637***
			(0.136)	(0.192)			(0.130)	(0.188)
Probability of termination			-4.548**	-5.494**			-4.463**	-5.137**
			(2.111)	(2.522)			(2.194)	(2.546)
Constant	10.57***	9.436***	10.06***	9.831***	10.51***	9.687***	10.05***	9.625***
	(0.232)	(0.500)	(0.758)	(0.554)	(0.282)	(0.545)	(0.783)	(0.547)
Observations	922	920	920	920	922	920	920	920
R-squared	0.058	0.068	0.252	0.284	0.037	0.049	0.248	0.281
Senator FE	YES	YES	YES	NO	YES	YES	YES	NO
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
State FE	YES	YES	YES	YES	YES	YES	YES	YES

Notes: The table presents estimates of the effect of legislators reputation on campaign contribution in the senate using sponsor and co-sponsor as proxy for legislators reputation. Passed both floor is the number of bills sponsored or co-sponsored by the legislators that passed both House and Senate. In Model 1 we include the number of bills that passed both floors. Model 2 adds log seniority, log committee seniority, leadership position, chair of banking committee, ideology and ideology square of the legislators. Models 3 and 4 include all legislators characteristic variables except Model 4 does not include legislators fixed effect (Models 1 and 2 include legislators fixed effect). In all models we control for year and U.S. states fixed effect. Columns 1-4 show the results for sponsored bills that passed both floors. The columns 5-8 present the results for co-sponsored bills that passed both floor. The robust standard errors are in parentheses. *** significant at 1 percent; ** significant at 5 percent; * significant at 10 percent.

Table 2.6: The effect of the first three steps of bills on campaign contributions in the Senate

	(1)	(2)	(3)	(4)	(5)	(6)
	Sponsor bills			Co-sponsor bills		
VARIABLES	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Introduction	0.209***					
	(0.0768)					
Committee consideration		0.357**				
		(0.148)				
Passed one floor			0.0886			
			(0.163)			
Introduction				0.0366		
				(0.0255)		
Committee consideration					0.118	
					(0.0928)	
Passed one floor						0.123
						(0.0875)
Observations	920	920	920	920	920	920
R-squared	0.258	0.251	0.248	0.251	0.250	0.250
Senator FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
State FE	YES	YES	YES	YES	YES	YES

Notes: The table presents estimates of the effect of sponsor and co-sponsor bills in the first three steps of a bill to become a law on campaign contributions in the senate. Introduction is the number of bill a legislators has introduced in the senate. Committee consideration is the number of bills sponsor or co-sponsor by a legislator that passed committee consideration. Passed one floor is the number of bills sponsored or co-sponsored by a legislator that passed only the main floor(senate). We include all legislators characteristics such as log of senate seniority, log of banking committee seniority, ideology (DW-nominate) and ideology square, committee chair, leadership position, party affiliation, re-election and probability of termination in all columns. We control for legislator and year fixed effect. The robust standard errors are in parentheses. *** significant at 1 percent; ** significant at 5 percent; * significant at 10 percent.

Table 2.7: Control for additional observable factors: District interests and member of state congress in the House of Representatives

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Sponsored bills				Co-sponsored bills			
dependent variable: log of contribution	Passed both floor	Passed one floor	committee consideration	Introduction	Passed both floor	Passed one floor	Committee consideration	Introduction
Bills	0.399***	0.240***	0.107**	0.109***	0.148***	0.0927***	0.0305**	0.0331***
	(0.154)	(0.0835)	(0.0526)	(0.0362)	(0.0496)	(0.0281)	(0.0126)	(0.0119)
Log(house seniority)	-0.370	-0.360	-0.357	-0.397	-0.331	-0.344	-0.330	-0.362
	(0.280)	(0.282)	(0.282)	(0.282)	(0.284)	(0.285)	(0.284)	(0.284)
Log(committee seniority)	-0.110	-0.115	-0.113	-0.220	-0.0781	-0.167	-0.0887	-0.190
	(0.435)	(0.437)	(0.437)	(0.442)	(0.443)	(0.443)	(0.436)	(0.437)
DW-nominate	-0.0891	-0.0826	-0.0745	-0.114	-0.0578	-0.0756	-0.0566	-0.0861
	(0.267)	(0.268)	(0.268)	(0.267)	(0.271)	(0.273)	(0.269)	(0.271)
DW-nominate square	0.157	0.152	0.155	0.156	0.163	0.175	0.147	0.152
	(0.272)	(0.272)	(0.271)	(0.269)	(0.270)	(0.267)	(0.275)	(0.272)
Committee chair	3.030	2.962	2.957	3.256	2.775	2.857	2.764	2.992
	(2.143)	(2.150)	(2.151)	(2.152)	(2.173)	(2.182)	(2.163)	(2.173)
Leadership position	1.758***	1.748***	1.743***	1.757***	1.859***	1.908***	1.797***	1.877***
	(0.466)	(0.454)	(0.459)	(0.453)	(0.461)	(0.465)	(0.468)	(0.476)
Party affiliation	0.164	0.154	0.170	0.118	0.193	0.101	0.190	0.148
	(0.319)	(0.322)	(0.322)	(0.323)	(0.325)	(0.325)	(0.321)	(0.323)
Previous election vote	0.00940	0.00968	0.00926	0.0102	0.00941	0.0100	0.00870	0.00919
	(0.0104)	(0.0105)	(0.0105)	(0.0105)	(0.0103)	(0.0103)	(0.0102)	(0.0102)
Challenger contribution	-1.09e-06	-1.08e-06	-1.10e-06	-1.11e-06	-1.16e-06	-1.08e-06	-1.16e-06	-1.19e-06
	(1.05e-06)	(1.05e-06)	(1.05e-06)	(1.05e-06)	(1.04e-06)	(1.04e-06)	(1.04e-06)	(1.04e-06)
Probability of termination	21.47	20.99	20.91	23.60	19.26	20.34	19.29	21.35
	(17.74)	(17.82)	(17.78)	(17.81)	(17.98)	(18.06)	(17.88)	(17.97)
District employment	1.64e-07***	1.60e-07***	1.61e-07***	1.52e-07**	1.55e-07**	1.61e-07***	1.61e-07***	1.66e-07***
	(5.98e-08)	(5.99e-08)	(5.97e-08)	(6.15e-08)	(6.10e-08)	(5.93e-08)	(5.91e-08)	(5.90e-08)
Member of state congress	0.344***	0.344***	0.343***	0.339***	0.341***	0.351***	0.353***	0.349***
	(0.114)	(0.114)	(0.114)	(0.114)	(0.114)	(0.114)	(0.115)	(0.115)
Observations	3,789	3,789	3,789	3,789	3,789	3,789	3,789	3,789
R-squared	0.045	0.046	0.046	0.047	0.048	0.049	0.047	0.048
Representative FE	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
State FE	YES	YES	YES	YES	YES	YES		

Note: Passed both floor is the number of bills sponsored or co-sponsored by the legislators that passed both House and Senate. Committee consideration is the number of bills sponsored or co-sponsored by the legislators that passed the appropriate committee consideration. Passed one floor is the number of bills sponsored or co-sponsored by the legislators that passed only the main floor (House or Senate floor). Introduction is the total number of bills sponsored or co-sponsored by the legislators in the House or in the Senate. All the characteristics of the legislators plus district employment and state congress member are controlled. State congress member is equal to one if the member of federal congress was previously a member of his own state congress.Legislators and year fixed effect are controlled. The robust standard errors are in parentheses. *** significant at 1 percent; ** significant at 5 percent; * significant at 10 percent.

Table 2.8: Control for additional observable factors: Member of state congress in the Senate

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Sponsor bills				Co-sponsor bills			
Dependent variable: log of contribution	Passed both floor	Passed one floor	Committee Consideration	Introduction	Passed both floor	Passed one floor	committee consideration	Introduction
Bills	0.616***	0.101	0.361**	0.212***	0.0323	0.120	0.115	0.0364
	(0.213)	(0.167)	(0.145)	(0.0764)	(0.160)	(0.0886)	(0.0946)	(0.0256)
Log(Senate seniority)	0.472	0.479	0.456	0.389	0.480	0.459	0.440	0.416
	(0.407)	(0.411)	(0.410)	(0.392)	(0.406)	(0.404)	(0.393)	(0.386)
log(committee seniority)	-0.237	-0.231	-0.251	-0.358	-0.217	-0.207	-0.223	-0.210
	(0.255)	(0.259)	(0.260)	(0.238)	(0.250)	(0.257)	(0.251)	(0.253)
DW-nominate score	-0.204	-0.252	-0.256	-0.244	-0.241	-0.218	-0.203	-0.222
	(0.321)	(0.318)	(0.316)	(0.317)	(0.316)	(0.317)	(0.318)	(0.318)
DW-nominate square	0.543	0.518	0.557	0.466	0.524	0.533	0.570	0.496
	(0.605)	(0.605)	(0.605)	(0.610)	(0.604)	(0.606)	(0.605)	(0.605)
Committee chair	0.601	0.659	0.578	0.699	0.667	0.614	0.593	0.642
	(0.541)	(0.541)	(0.553)	(0.547)	(0.553)	(0.547)	(0.566)	(0.542)
Leadership position	0.0146	0.0107	-0.0621	-0.107	0.00914	0.0393	0.0297	0.0484
	(1.172)	(1.224)	(1.207)	(1.217)	(1.224)	(1.220)	(1.222)	(1.215)
Party affiliation	-1.177	-1.196	-1.117	-1.169	-1.202	-1.211	-1.216	-1.189
	(1.068)	(1.077)	(1.073)	(1.054)	(1.077)	(1.076)	(1.081)	(1.088)
Re-election	1.851***	1.902***	1.901***	1.903***	1.901***	1.901***	1.902***	1.888***
	(0.137)	(0.130)	(0.130)	(0.131)	(0.131)	(0.131)	(0.131)	(0.131)
Probability of termination	-4.528**	-4.579**	-4.825**	-4.562**	-4.451**	-4.167**	-3.741*	-4.228**
	(2.111)	(2.108)	(2.124)	(2.057)	(2.189)	(2.096)	(2.233)	(2.074)
Member of state congress	-0.183	-0.198	-0.205	-0.246	-0.185	-0.156	-0.152	-0.182
	(0.305)	(0.310)	(0.307)	(0.296)	(0.307)	(0.309)	(0.311)	(0.306)
Observations	920	920	920	920	920	920	920	920
R-squared	0.253	0.248	0.252	0.259	0.248	0.250	0.250	0.251
senator FE	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
State FE	YES	YES	YES	YES	YES	YES	YES	YES

Note: Passed both floor is the number of bills sponsored or co-sponsored by the legislators that passed both House and Senate Committee consideration is the number of bills sponsored or co-sponsored by the legislators that passed the appropriate committee consideration Passed one floor is the number of bills sponsored or co-sponsored by the legislators that passed only the main floor (House or Senate floor) Introduction is the total number of bills sponsored or co-sponsored by the legislators in the House or in the Senate. All the characteristics of the legislators plus state congress member are controlled. State congress member is equal to one if the member of federal congress was previously a member of his own state congress.Legislators and year fixed effect are controlled. The robust standard errors are in parentheses. *** significant at 1 percent; ** significant at 5 percent; * significant at 10 percent.

Table 2.9: Unbervable selection bias and coefficient stability for House of Representatives and Senate

VARIABLES	(1) Restricted set of control	(2) Full set of control	(3) Altonji et al.(2005) ratio	(4) Oster (2015) stability coefficient
		Panel A: House of Representatives		
Sponsor bills				
passed both floor	0.437***	0.399***	10.5	0.361
R-square	0.022	0.045		
passed one floor	0.317***	0.240***	3,11	0.159
R-square	0.024	0.046		
committee consideration	0.123**	0.107**	6,68	0.091
R-square	0.023	0.046		
Introduction	0.146***	0.109***	2.95	0.0671
R-square	0.026	0.047		
Co-sponsor bills				
passed both floor	0.156***	0.148***	18,5	0.139
R-square	0.026	0.048		
passed one floor	0.119***	0.0927***	3,52	0.0686
R-square	0.030	0.049		
Committee consideration	0.0430***	0.0305**	2,44	0.0165
R-square	0.026	0.047		
Introduction	0.0458***	0.0331***	2,60	0.0170
R-square	0.029	0.048		
All controlled factor	NO	YES		
Observations	4,022	3,789		
Representative FE	YES	YES		
Year FE	YES	YES		
State FE	YES	YES		
		Panel B: Senate		
Sponsor bills				
Passed both floor	1.323***	0.616***	0.88	0.340
R-square	0.058	0.253		
Committee consideration	0.405***	0.361**	8,20	0.345
R-square	0.040	0.252		
Introduction	0.216**	0.212***	53	0.210
R-square	0.047	0.259		
All controlled factors	NO	YES		
Observations	920	920		
Senator FE	YES	YES		
Year FE	YES	YES		
State FE	YES	YES		

Note: While Column 1 of table reports the coefficients of restricted set of regression without controlled variables. Column 2 indicates the results of the full set of regression with all variables including additional controlled factors. Column 3 shows altonji et al. (2005) ratio. Column 4 shows oster (2015) coefficient stability. Panel A and B shows the results respectively for House and Senate. *** significant at 1 percent; ** significant at 5 percent; * significant at 10 percent.

Table 2.10: 3SLS estimation of sponsor and co-sponsor bills on campaign contributions in the House of Representatives

	(1)	(2)	(3)	(4)
	Sponsor bills		Co-sponsor bills	
VARIABLES	Log(contribution)	passed both floor	Log(contribution)	passed both floor
passed both floor	1.393***		0.217***	
	(0.288)		(0.0282)	
Log(contribution)		0.00422***		0.0721***
		(0.000903)		(0.00932)
Log(house seniority)	0.156	0.0720***	0.206	0.284
	(0.364)	(0.0202)	(0.363)	(0.208)
Log(committee seniority	1.689***	0.138***	1.725***	0.769**
	(0.552)	(0.0306)	(0.550)	(0.316)
DW-nominate score	0.470	0.0543***	0.518	0.151
	(0.323)	(0.0179)	(0.322)	(0.185)
DW-nominate square	0.0625	-0.00118	0.0770	-0.0729
	(0.206)	(0.0114)	(0.206)	(0.118)
Committee chair	-3.029	-0.427***	-3.288	-1.817
	(2.622)	(0.145)	(2.616)	(1.501)
Leadership position	2.019***	-0.0453**	2.070***	-0.637***
	(0.332)	(0.0185)	(0.332)	(0.191)
Party affiliation	1.373***	0.0723***	1.431***	0.203
	(0.367)	(0.0204)	(0.366)	(0.210)
Previous election vote	-0.00270	-0.00104	-0.00150	-0.0132
	(0.0160)	(0.000886)	(0.0160)	(0.00915)
Challenger expenditure	-7.26e-07*	-2.47e-08	-6.94e-07*	-2.68e-07
	(3.93e-07)	(2.18e-08)	(3.92e-07)	(2.25e-07)
Probability of termination	-26.38	-3.921***	-29.08	-15.17
	(22.52)	(1.248)	(22.46)	(12.89)
Constant	13.71***	0.674***	14.00***	2.958
	(4.202)	(0.233)	(4.192)	(2.409)
Observations	3,788	3,788	3,788	3,788
R-squared	0.094	0.077	0.094	0.029
Representative FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
State FE	YES	YES	YES	YES

Notes: The table reports the estimates of sponsor and co-sponsor bills on campaign contributions using 3SLS estimator in the House of Representatives. Passed both floor is the number of bills sponsored or co-sponsored by the legislators that passed both House and Senate. 3SLS model estimates simultaneously the two equations. The first equation is the effect of sponsor and co-sponsor bills on contributions and the second equation is the effect of campaign contributions on sponsor and co-sponsor bills. we include all legislators characteristics such as log of house seniority, log of financial services committee seniority, ideology and ideology square, committee chair, leadership position, previous election vote, party affiliation, challenger expenditure and probability of termination in all column. We control for legislator and year fixed effect. The robust standard errors are in parentheses. *** significant at 1 percent; ** significant at 5 percent; * significant at 10 percent.

Table 2.11: 3SLS estimation of sponsor and co-sponsor bills on campaign contributions in the Senate

	(1)	(2)	(3)	(4)
	Sponsor bills		Co-sponsor bills	
VARIABLES	log(contribution)	passed both floor	log(contribution)	passed both floor
passed both floor	1.656***		0.521***	
	(0.320)		(0.181)	
Log(contribution)		0.0174***		0.0166***
		(0.00335)		(0.00595)
Log(senate seniority)	-0.126	0.0336*	-0.140	0.133***
	(0.170)	(0.0174)	(0.172)	(0.0308)
Log(committee seniority)	0.107	-0.00446	0.0305	0.152***
	(0.194)	(0.0199)	(0.196)	(0.0355)
DW-nominate score	-0.429	-0.0540**	-0.478*	-0.0954**
	(0.264)	(0.0270)	(0.265)	(0.0478)
DW-nominate square	-0.385	-0.0320	-0.303	-0.298***
	(0.478)	(0.0489)	(0.481)	(0.0868)
Committee chair	0.549	0.193***	0.761	0.215*
	(0.646)	(0.0663)	(0.645)	(0.117)
Leadership position	0.683	0.0253	0.748	-0.0231
	(0.515)	(0.0534)	(0.516)	(0.0933)
Party affiliation	0.00733	0.0769**	0.0473	0.187***
	(0.303)	(0.0310)	(0.304)	(0.0550)
Re-election	1.486***	0.0690***	1.635***	-0.000367
	(0.183)	(0.0192)	(0.180)	(0.0340)
Probability of termination	-5.071**	-0.395	-4.471*	-2.652***
	(2.398)	(0.246)	(2.449)	(0.435)
Constant	9.915***	-0.298***	9.521***	0.176
	(0.783)	(0.0864)	(0.786)	(0.153)
Observations	919	919	919	919
R-squared	0.281	0.152	0.281	0.519
Senator FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
State FE	YES	YES	YES	YES

Note: The table reports the estimates of sponsor and co-sponsor bills on campaign contributions using 3SLS estimator in the Senate. Passed both floor is the number of bills sponsored or co-sponsored by the legislators that passed both House and Senate. 3SLS model estimates simultaneously the two equations. The first equation is the effect of sponsor and co-sponsor bills on contributions and the second equation is the effect of campaign contributions on sponsor and co-sponsor bills. we include all legislators characteristics such as log of senate seniority, log of banking committee seniority, ideology and ideology square, committee chair, leadership position, party affiliation, re-election and probability of termination in all column. We control for legislator and year fixed effect. The robust standard errors are in parentheses. *** significant at 1 percent; ** significant at 5 percent; * significant at 10 percent.

Table 2.12: Tobit regression of the impact of bills on contributions in the House of Representatives

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Sponsor bills				Co-sponsor bills			
Dependent variable: log of contribution	Passed both floor	Passed one floor	Committee Consideration	Introduction	Passed both floor	Passed one floor	committee consideration	Introduction
Bills	0.590**	0.300**	0.143***	0.114***	0.231***	0.151***	0.0352***	0.0343***
	(0.275)	(0.117)	(0.0478)	(0.0382)	(0.0459)	(0.0247)	(0.0119)	(0.00932)
log(house seniority)	-0.292	-0.277	-0.282	-0.317	-0.239	-0.246	-0.232	-0.259
	(0.359)	(0.358)	(0.358)	(0.359)	(0.358)	(0.357)	(0.358)	(0.358)
log(committee seniority)	0.614	0.609	0.589	0.497	0.638	0.492	0.639	0.543
	(0.550)	(0.549)	(0.549)	(0.552)	(0.548)	(0.548)	(0.549)	(0.549)
DW-nominate score	0.0204	0.0322	0.0348	0.000671	0.0676	0.0596	0.0770	0.0537
	(0.320)	(0.319)	(0.319)	(0.320)	(0.319)	(0.318)	(0.319)	(0.319)
DW-nominate square	0.107	0.0982	0.108	0.107	0.106	0.113	0.0914	0.0951
	(0.220)	(0.220)	(0.220)	(0.220)	(0.220)	(0.219)	(0.220)	(0.220)
Committee chair	1.036	0.937	0.979	1.244	0.705	0.749	0.670	0.866
	(2.585)	(2.583)	(2.583)	(2.585)	(2.579)	(2.575)	(2.582)	(2.579)
Leadership position	1.726***	1.714***	1.721***	1.727***	1.845***	1.924***	1.759***	1.829***
	(0.422)	(0.422)	(0.421)	(0.422)	(0.421)	(0.421)	(0.422)	(0.423)
Party affiliation	0.736**	0.730**	0.739**	0.700*	0.789**	0.679*	0.802**	0.777**
	(0.371)	(0.371)	(0.371)	(0.372)	(0.370)	(0.370)	(0.371)	(0.371)
previous election vote	0.00562	0.00575	0.00556	0.00624	0.00544	0.00586	0.00457	0.00497
	(0.0148)	(0.0148)	(0.0148)	(0.0148)	(0.0148)	(0.0148)	(0.0148)	(0.0148)
Challenger contribution	-1.16e-06	-1.15e-06	-1.18e-06	-1.19e-06	-1.29e-06	-1.15e-06	-1.23e-06	-1.25e-06
	(1.02e-06)	(1.02e-06)	(1.02e-06)	(1.02e-06)	(1.02e-06)	(1.02e-06)	(1.02e-06)	(1.02e-06)
Probability of termination	5.908	5.182	5.513	7.905	2.974	3.939	2.846	4.615
	(22.13)	(22.11)	(22.10)	(22.13)	(22.07)	(22.04)	(22.10)	(22.07)
Observations	3,789	3,789	3,789	3,789	3,789	3,789	3,789	3,789
Representative FE	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
State FE	YES	YES	YES	YES	YES	YES	YES	YES

This table report tobit model results of the relationship between bills and campaign contribution in the House chamber. Passed both floor is the number of bills sponsored or co-sponsored by the legislators that passed both House and Senate. Committee consideration is the number of bills sponsored or co-sponsored by the legislators that passed the appropriate committee consideration. Passed one floor is the number of bills sponsored or co-sponsored by the legislators that passed only the main floor (House floor). Introduction is the total number of bills sponsored or co-sponsored by the legislators in the House. All the characteristics of the legislators plus district employment and state congress members are controlled. State congress member is equal to one if the member of federal congress was previously a member of his own state congress. Legislators and year fixed effect are controlled.State fixed effect is also controlled. The standard errors are in parentheses. *** significant at 1 percent; ** significant at 5 percent; * significant at 10 percent.

Table 2.13: Tobit regression of the impact of bills on contributions in the Senate

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Sponsor bills				Co-sponsor bills			
Dependent variable: log of contribution	Passed both floor	Passed one floor	Committee Consideration	Introduction	Passed both floor	Passed one floor	committee consideration	Introduction
Bills	0.599**	0.115	0.368**	0.217***	0.0348	0.121	0.119*	0.0372*
	(0.267)	(0.218)	(0.183)	(0.0600)	(0.131)	(0.0850)	(0.0722)	(0.0210)
Log (senate seniority)	0.455*	0.460*	0.437	0.369	0.462*	0.442	0.421	0.398
	(0.270)	(0.271)	(0.271)	(0.270)	(0.271)	(0.271)	(0.272)	(0.273)
Log(committee seniority)	-0.237	-0.233	-0.253	-0.362	-0.217	-0.206	-0.224	-0.209
	(0.253)	(0.256)	(0.254)	(0.255)	(0.254)	(0.254)	(0.254)	(0.254)
DW-nominate score	-0.233	-0.281	-0.284	-0.272	-0.270	-0.245	-0.230	-0.249
	(0.250)	(0.250)	(0.249)	(0.248)	(0.250)	(0.250)	(0.251)	(0.250)
DW-nominate square	0.597	0.575	0.614	0.520	0.581	0.589	0.628	0.553
	(0.489)	(0.490)	(0.489)	(0.487)	(0.490)	(0.490)	(0.490)	(0.489)
Committee chair	0.608	0.661	0.581	0.702	0.671	0.614	0.592	0.641
	(0.482)	(0.484)	(0.484)	(0.479)	(0.484)	(0.484)	(0.485)	(0.482)
Leadership position	0.0116	0.00790	-0.0659	-0.113	0.00603	0.0360	0.0270	0.0451
	(0.570)	(0.572)	(0.572)	(0.569)	(0.572)	(0.571)	(0.571)	(0.571)
Party Affiliation	-1.247	-1.266	-1.185	-1.241	-1.273*	-1.281*	-1.285*	-1.260
	(0.771)	(0.773)	(0.773)	(0.768)	(0.774)	(0.773)	(0.772)	(0.772)
Re-election	1.884***	1.934***	1.933***	1.936***	1.934***	1.933***	1.934***	1.921***
	(0.129)	(0.128)	(0.128)	(0.127)	(0.128)	(0.128)	(0.128)	(0.128)
Probability of termination	-4.509**	-4.560**	-4.810***	-4.531**	-4.418**	-4.124**	-3.682**	-4.174**
	(1.802)	(1.809)	(1.809)	(1.795)	(1.848)	(1.827)	(1.875)	(1.815)
Observations	920	920	920	920	920	920	920	920
Senator FE	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
State FE	YES	YES	YES	YES	YES	YES	YES	YES

This table report tobit model results of the relationship between bills and campaign contribution in the Senate chamber.Passed both floor is the number of bills sponsored or co-sponsored by the legislators that passed both House and Senate. Committee consideration is the number of bills sponsored or co-sponsored by the legislators that passed the appropriate committee consideration. Passed one floor is the number of bills sponsored or co-sponsored by the legislators that passed only the main floor (Senate floor). Introduction is the total number of bills sponsored or co-sponsored by the legislators in the Senate. All the characteristics of the legislators plus state congress member are controlled. State congress member is equal to one if the member of federal congress was previously a member of his own state congress.Legislators and year fixed effect are controlled. The standard errors are in parentheses. *** significant at 1 percent; ** significant at 5 percent; * significant at 10 percent.

Table 2.14: Do sponsor or co-sponsor legislators receive more contributions in each congressional year in the House of Representatives?

VARIABLES	(1) 1997/1998	(2) 1999/2000	(3) 2001/2002	(4) 2003/2004	(5) 2005/2006	(6) 2007/2008	(7) 2009/2010	(8) 2011/2012	(9) 2013/2014
passed both floor	0.632	1.251	-0.513	0.887***	0.852**	0.227	0.153	1.164***	1.688***
	(0.511)	(0.862)	(1.545)	(0.278)	(0.355)	(0.354)	(0.784)	(0.299)	(0.468)
Log(house seniority)	-0.0773	-0.216	-0.0486	-0.147	-0.0760	-0.560***	-0.453***	-0.110	-0.467***
	(0.198)	(0.222)	(0.193)	(0.109)	(0.211)	(0.167)	(0.168)	(0.152)	(0.171)
Log (committee seniority)	0.482	0.415	1.817***	0.911***	1.156***	1.163***	1.210***	1.182***	0.872***
	(0.336)	(0.381)	(0.269)	(0.232)	(0.175)	(0.122)	(0.208)	(0.155)	(0.253)
DW-nominate score	-0.101	-0.414	-0.128	-0.147	0.465	-0.0261	0.931**	0.134	0.299
	(0.350)	(0.326)	(0.320)	(0.220)	(0.331)	(0.288)	(0.381)	(0.341)	(0.426)
DW-nominate square	-0.482	-0.183	0.553	0.220	0.216	0.456	0.147	-0.241	-0.959
	(0.743)	(0.614)	(0.504)	(0.327)	(0.522)	(0.414)	(0.817)	(0.564)	(0.785)
Committee chair	0.0308	-1.055*	0.242	0.0781	0.430*	0.461*	-0.496	-0.675	0.487
	(0.705)	(0.577)	(0.634)	(0.212)	(0.235)	(0.241)	(0.553)	(0.600)	(0.432)
Leadership position	1.802***	1.709**	1.859***	1.981***	2.139***	2.432***	3.188***	1.982***	2.203***
	(0.273)	(0.674)	(0.484)	(0.242)	(0.220)	(0.338)	(0.510)	(0.640)	(0.273)
Party affiliation	0.762***	0.466*	0.923***	0.943***	1.076***	0.788***	0.472*	1.584***	0.899***
	(0.232)	(0.247)	(0.245)	(0.197)	(0.237)	(0.196)	(0.255)	(0.244)	(0.246)
Previous election vote	-2.605**	0.00973	-1.691**	0.132	-2.640***	-2.077**	-3.077***	-0.258	0.470
	(1.325)	(0.00851)	(0.762)	(0.577)	(0.986)	(0.927)	(1.067)	(0.879)	(1.113)
Challenger expenditure	-3.83e-07	-5.27e-07	-2.15e-06	8.06e-07	-2.32e-06	2.41e-06***	-1.92e-06	-1.34e-06	8.34e-07
	(1.37e-06)	(6.62e-07)	(1.77e-06)	(7.39e-07)	(1.81e-06)	(7.66e-07)	(2.38e-06)	(1.18e-06)	(1.42e-06)
Constant	10.01***	8.931***	9.008***	8.622***	10.22***	11.06***	11.37***	8.462***	9.151***
	(0.914)	(0.567)	(0.485)	(0.544)	(0.898)	(0.724)	(0.805)	(0.667)	(0.847)
Observations	422	385	446	428	429	418	421	416	424
R-squared	0.059	0.030	0.112	0.115	0.157	0.161	0.137	0.199	0.116
State FE	YES	YES	YES	YES	YES	YES	YES	YES	YES

Notes: The table reports the results of the impact of bills that passed both floor on contribution received by legislators in each congressional year. Passed both floor is the number of bills sponsored or co-sponsored by the legislators that passed both House and Senate. We include all legislators characteristics such as log of house seniority, log of financial services committee seniority, ideology and ideology square, committee chair, leadership position, previous election vote, party affiliation, challenger expenditure and probability of termination in all column. We control for legislator fixed effect. The robust standard errors are in parentheses. *** significant at 1 percent; ** significant at 5 percent; * significant at 10 percent.

Table 2.15: Do sponsor or co-sponsor legislators receive more contributions in each congressional year in the Senate chamber?

VARIABLES	(1) 1997/1998	(2) 1999/2000	(3) 2001/2002	(4) 2003/2004	(5) 2005/2006	(6) 2007/2008	(7) 2009/2010	(8) 2011/2012	(9) 2013/2014
passed both floor	0.843	4.531**	0.832	1.718***	0.830	1.532	0.484	3.460***	2.516**
	(0.588)	(2.074)	(1.787)	(0.373)	(0.517)	(1.347)	(1.641)	(0.808)	(1.205)
Log(senate seniority)	-0.611	-0.867**	0.753	-1.031**	-0.961	-0.00719	0.297	-0.950**	-0.0166
	(0.728)	(0.419)	(0.706)	(0.481)	(0.633)	(0.442)	(0.696)	(0.364)	(0.822)
Log(committee seniority)	1.110	0.519	0.779	-0.766	-0.784	-0.400	-0.0247	0.371	0.521
	(1.572)	(0.839)	(0.915)	(0.518)	(0.616)	(0.689)	(1.018)	(0.596)	(0.893)
DW-nominate score	0.182	2.786**	-1.541	-0.354	1.722**	-0.390	-0.316	2.471**	-1.279
	(2.438)	(1.307)	(2.552)	(1.524)	(0.823)	(1.899)	(1.267)	(1.073)	(1.125)
DW-nominate square	3.070	1.885	-0.525	0.899	0.150	0.137	2.393	0.674	-0.737
	(4.009)	(1.653)	(4.135)	(2.626)	(1.269)	(2.442)	(2.954)	(1.469)	(1.604)
Committee chair	-2.590***	2.555*	1.416	2.293	0.485	3.276	1.464	-1.978	-0.497
	(0.926)	(1.477)	(1.245)	(2.554)	(1.616)	(3.155)	(2.417)	(2.437)	(2.787)
Leadership position	4.209***	1.716	-2.491**	1.187	-0.119	-1.948	3.612	1.970*	0.986
	(0.960)	(1.077)	(1.095)	(1.322)	(1.469)	(2.683)	(2.482)	(1.108)	(1.627)
Party affiliation	0.816	0.501	-1.751	-1.003	0.696	-0.279	-1.224	0.496	-0.337
	(1.386)	(0.918)	(1.636)	(1.066)	(0.915)	(0.997)	(1.818)	(0.677)	(1.044)
Constant	10.63***	12.87***	8.298**	14.43***	11.75***	11.87***	11.86***	12.75***	12.45***
	(3.446)	(2.085)	(3.883)	(1.488)	(3.791)	(2.085)	(1.874)	(0.701)	(2.234)
Observations	100	101	101	100	101	102	110	101	104
R-squared	0.553	0.638	0.450	0.647	0.523	0.410	0.454	0.693	0.447
State FE	YES	YES	YES	YES	YES	YES	YES	YES	YES

The table reports the results of the impact of bills that passed both floor on contribution received by legislators in each congressional year. Passed both floor is the number of bills sponsored or co-sponsored by the legislators that passed both House and Senate. We include all legislators characteristics such as log of Senate seniority, log of banking committee seniority, ideology and ideology square, committee chair, leadership position, party affiliation, re-election and probability of termination in all column. We control for legislator and state fixed effect. The robust standard errors are in parentheses. *** significant at 1 percent; ** significant at 5 percent; * significant at 10 percent.

Chapter 3

Does Political Longevity Attract Foreign Investors

3.1 Introduction

This paper assesses two opposing views on the role that a leader's political longevity plays in economic development in a weak institutional environment. In particular, we examine whether leaders who stay longer in power are more able to attract foreign investors. Such an analysis is most pertinent in a context where political institutions depend on leaders. We focus on Africa, and this is for two reasons. The first is that ruling leaders in this region have been found to wield excessive power over institutions, manipulating constitutional rules and bending laws to accommodate private interests (Hodder-William, 1984; Braton and Van de Walle, 1997; Amutabi and Nasong'o, 2012). The second reason, which follows from the first, is that Africa remains the only continent in which political longevity is very high. Our data reveals that the longevity of an average African leader is 18 years, which is more than four consecutive presidential terms in the United States.

From a theoretical viewpoint, the role of political longevity in attracting foreign investors into a country depends on how longevity affects such factors as political stability, policy consistency, physical infrastructure, bureaucracy, and the protection

of property rights. Indeed these factors have been found to affect foreign investment (Alesina and Perotti, 1996; Biglaiser and Staats, 2010; Asiedu, 2005). For example, it is argued that lower rates of turnover of leaders indicate both political and policy stability (Alesina and Perotti, 1996 and Huntington, 1973). Moreover, according to Korschgen et al (2011), long-term leaders have time to adopt policies that improve the quality of institutions and infrastructure because significant changes in institutions do not happen in one or two years. They also argue that long-term leaders have time to build strong relationships with legislators in order to see policies through. As such, long-term leaders are more able to design long-term policies that protect foreign property rights. The stability enjoyed by long-term leaders also makes it possible to build long-term connections with foreign investors, favoring a climate of mutual trust. For all these reasons, such leaders might be more credible in the eyes of investors than new leaders.

Counterbalancing the arguments above is the view that long-term leaders are generally viewed as autocrats or dictators. This perception might limit the inflows of foreign investment, owing to the fact that autocratic regimes generally suffer from endemic corruption and an absence of the rule of law, all of which are viewed as high-risk factors by investors (Wei, 1997, 2000). Also, the longer a leader stays in power and the more an investor considers him as a dictator, he will infer to some extent that the degree of expropriation in the host country is higher. This is because autocratic regimes, in addition to being corrupt and lacking the rule of law, are characterized by unreliable legal mechanisms ensuring property rights protection (Nieman and Thies, 2014). Due to their excessive hold on power, too strong leaders may easily decide to adopt policies that allow them to expropriate foreign properties or renegotiate investors' contracts to satisfy populist demand. In this sense, political longevity will deter foreign investment.

It follows from these opposing arguments that the role of political longevity in attracting foreign investment into a country is theoretically ambiguous. Therefore, this question is best answered empirically. In order to answer it, we collect novel data on African leaders' characteristics from 1960 to 2011.

Ordinary least squares estimations show that an additional year in power increases foreign direct investment by about 0.20 billion dollars (average annual FDI is 2.53 billion dollars). The findings are robust to controlling for country characteristics including population size, the presence of natural resources, and the one-year lags of GDP growth and inflation. We also control for leader characteristics including age, affiliation to a majority ethnic group, whether a leader came to power through elections, and whether a leader is the independence president. Moreover, we control for country and year fixed effects, therefore accounting for a country's time-invariant characteristics that might simultaneously affect a leader's political longevity and FDI inflows, and for global factors (e.g., global economic prosperity) that might affect these two variables. The OLS estimates are remarkably robust to all of these controls.

There may be several issues that prevent from interpreting the OLS effects as causal, even after controlling for country and time fixed effects. First, the OLS estimates might suffer from omitted variables bias. For example, the ability of a leader might affect both his political longevity and his likelihood to attract investors. Indeed, a leader that has the ability to gain popular support and to credibly commit to protecting property rights will increase simultaneously the length of his time in office and the number of multinational firms in his country. The second endogeneity issue we face is the reverse causality issue. In fact, the economic growth resulting from foreign investment might help a leader gain political popularity and hence additional years in power. Also, a leader who grants specials rights to foreign investors – such as import licenses, entry regulation, tax exemption, and entry barriers into the host market – can get the support from multinational firms for his re-election. Multinational firms can mobilize political support for the incumbent host leader by contributing to his re-election campaign.

In order to address the first endogeneity concern, we control for leader fixed effects. Leader fixed effects indeed control for all the time-invariant personal characteristics of a leader, including his innate ability. We still find that an additional year in power has a positive and statistically significant effect on FDI inflows.

We use several identification approaches to address the second endogeneity issue. The first approach is the use of instrumental variables. These instruments are based on the theories of institutional contagion and peer effects. These theories are based on the idea that economic agents imitate or copy from those to whom they are connected in a social network. For example, in a recent paper examining the effect of democracy on economic development, Acemoglu et al. (2014) instruments the level of democracy reached by a country by the average level reached by the other countries in the region. Recent political events suggest that this approach is plausible. For example, the Arab Spring that started with the Tunisian revolution and led to the stepping down of President Ben Ali spread into the neighboring countries of Libya, Algeria, and Egypt. Another example of institutional contagion is the revolution of Burkinabe people to protest against the change of the constitution by Blaise Campaore, which affected the decisions of some neighbor presidents, such as former Benin Republic President Yayi Boni, who reversed his decision to change the constitution in order to be re-elected. These examples suggest that there is a domino effect between a country and its neighbors. Our domino effect hypothesis is that longevity of a country's leader is affected by the average longevity of neighbor leaders. Therefore, one instrument we use is the average of longevity of neighbor presidents. The second instrument is a variable measuring the extent to which a president is close in age to neighbor presidents. This instrument indicates whether a president is a peer of his neighbors. The third instrument is a variable measuring the extent to which, for each year, a president is an age-peer of the president of the former colonial power (e.g., the age difference between Ali Bongo of Gabon and Nicolas Sarkozy of France in 2010). The idea is that a president is likely to affect the longevity of a peer without affecting the decision of foreign investors to invest in the country of that peer.

Using these variables as instruments for a leader's longevity, we find that an additional year in office increases FDI inflows. The IV estimates are larger than the OLS estimates, suggesting that the latter estimates are a lower bound of the true effect of political longevity.

We explore other identification strategies for robustness checks. The fact that we do not control for lagged FDI in the IV model may be causing the large IV effect, as lagged FDI may be both correlated with current FDI and longevity. To take this possibility into account, we use the Arellano-Bond and the Blundell-Bond GMM methods. The Blundell-Bond GMM method generates internal instruments and the Arellano-Bond GMM method uses the lagged of the endogenous variable and our external instruments as instruments. The two methods capture the effect of lagged FDI on current FDI. They deliver similar results to OLS.

We also use the 3SLS estimation technique in which we assume that political longevity and FDI inflows mutually influence each other. The 3SLS helps to capture the real effect of longevity of leader on FDI. We instrument political longevity using our external instruments. Again, we find that political longevity positively affects FDI inflows, and its effect is very close to the OLS estimate.

Next, we identify certain conditions under which political longevity affects FDI inflows. Despite the fact that investors may view a leader who has lasted long as guaranteeing political stability, there may be drawbacks – especially when the leader has been in power for too long. As already argued, the longer a leader stays in power, the more an investor will consider him/her as a dictator and will infer to some extent that the degree of expropriation in the host country is higher. Political longevity is therefore likely to positively affect FDI inflows only if the regime is not perceived as dictatorial. We test this hypothesis by interacting political longevity and democracy and estimating the effect of this variable in a regression controlling for both political longevity and democracy in addition to the other variables controlled so far. We find that, in general, political longevity positively affects FDI inflows mainly under a democratic regime. This finding is robust to all of our identification strategies including OLS, IV and GMM.

Finally, we inspect the mechanism by which political longevity positively affects FDI by analyzing how longevity impacts institutional variables that have been found to promote FDI. We find that longevity of political leaders positively affects the rule of law, the protection of property rights, corruption and infrastructure. But when

we controlled for unobserved characteristics of leaders using leader fixed effect, the effect of longevity of leaders remains statistically significant only for the rule of law and physical infrastructure.

The remainder of this paper is organized as follows. Section 3.2 situates our paper within the extant literature on the institutional determinants of FDI. Section 3 explores the basic conceptual framework of the effect of longevity on FDI inflows. Section 3.4 describes the data and the model specification used to test the relationship between longevity and FDI. Section 3.5 presents the empirical results. Section 3.6 investigates the effect of political longevity on FDI under political regimes. Section 3.7 explores the mechanism throughout which longevity of leaders affects FDI. In the last section, we conclude.

3.2 Literature review

A large literature examining the determinants of FDI points out two important factors: macroeconomic and institutional factors. In this section, we only focus on institutional factors, given our interest in the effect of political longevity. Recent studies have looked at the impact of democracy on FDI in developing countries, finding an ambiguous effect (Li and Resnick, 2003; Busse and Hefeker, 2007). Hayes (2009) and Hiscox (2002) argue that democratic leaders are less likely to offer preferential treatment to multinational companies that compete with domestic companies, as leaders must satisfy domestic interests by implementing policies in favor of domestic firms. Similarly, Bueno de Mesquita et al (2003) and Li (2006) suggest that democracies are constrained by a large number of vetoes by political actors from making favorable entry arrangements and offering tax incentives to multinational companies. Thus, democracy may discourage FDI. Counterbalancing this argument, some studies point out several advantages of democracy on FDI. Democracy includes institutions in the form of property rights and the rule of law that may increase FDI. A democratic leader may encourage policies supporting FDI to increase competition in wages between domestic and multinational firms since labor is the largest political

constituency (Li and Resnick, 2003; Busse and Hefeker, 2007; Jensen, 2008). Other studies suggest that the impact of democracy on FDI depends on natural resources, property rights and corruption. In a democracy with well-developed property rights, a lower level of corruption and fewer natural resources, FDI has a tendency to increase over time compared to authoritarian regimes (Asiedu and Lien, 2011; and Nieman and Thies, 2014). Similarly, Li (2009) finds that expropriation of FDI depends on political institutions and differs between democracy and autocracy. For example, in a host country with higher executive brain drain and fewer political constraints, a democratic leader is more likely to expropriate than is an autocratic leader with fewer political constraints (Li, 2009). Our paper contributes to this strand of literature by using political longevity as an institutional variable.

Studies have also looked at the effect of corruption on FDI. While some authors find a negative impact of corruption on FDI (Wei, 1997, 2000; Caetano and Caleiro, 2007; Schudel, 2010), others find an insignificant relationship (Abed and Davoodi, 2002). Wei (2000) argues that an increase in the tax rate on multinational firms has the same negative effect on FDI as an increase in the level of corruption. Focusing on Africa, Asiedu (2005) analyzes the role of corruption, political instability, institutions, and government policy in FDI inflows. She finds that good government policy attracts FDI, whereas political instability and corruption tend to discourage foreign investors.

Li and Resnick (2003) and Nieman and Thies (2014) study the effect of durability of regime types (democracy versus autocracy) on FDI. They find that regime durability is positively correlated with FDI. We instead study the effect of leaders' longevity in power, which is different from the longevity of a regime, as several consecutive leaders might exist under the same regime. Importantly, we also take into account the joint endogeneity of FDI and longevity of host country leaders.

To the best our knowledge, our paper is the first study of the impact of leader longevity on FDI inflows. We find that longer-term leaders tend to attract FDI, but this effect is more pronounced under democratic regimes. Our findings suggest that foreign investors value both political stability and democracy when making

investment decisions. Indeed, our analysis of the mechanism shows that long-term leaders promote the rule of law, in addition to communication infrastructure, both of which are attractive to investors.

3.3 Conceptual framework: How does a longevity of a political leader matter for foreign investors?

Dunning (1988) suggests that foreign investors are motivated by three important factors: 1) a firm's ownership-specific advantage; 2) internalization advantage; and 3) location advantage. Ownership-specific advantage is defined as a firm's intangible and intellectual assets as well as government productivity activities across national boundaries. Internalization advantage refers to the ability of firms to exercise monopoly or oligopoly power. Finally, location-specific advantage includes country-specific political, social, and institutional environments that underpin ownership and internalization advantages of the firm. We argue that these advantages are more likely to be guaranteed when there are both political stability and policy consistency. To the extent that political longevity of leaders translates into political and policy stability, longer-term leaders are more likely to attract foreign investment.

Longevity of host leaders not only might reduce the ability of leaders to adopt sweeping policy changes that could affect multinational companies, it could also enable them to commit to the protection of these companies. Host leaders that expect to spend a long time in power are indeed less likely to nationalize multinational firms because the long-term expected gain of protecting multinational firms is higher. If so, long-term leaders are more likely to inspire the confidence of investors over time. This view is consistent with the argument by O'Donnell (1978) and Oneal (1994) that leaders in autocratic countries are more likely to encourage investors' confidence because they are not subject to competitive elections and possess strong ability to discourage any revolutionary activities in favor of market activities. Due to the stability of economic policy regarding foreign investors, there is more reason for investors to invest in host countries because they can take advantages of policy

stability for their ownership, internalization, and location advantage.

Investors may also view the longevity of a ruling leader as a factor that facilitates political connections between them. Political connections increase connected firms' performance and help these firms to gain favors such as regulatory advantages (lower tax rate and so on), property rights protection, and sometimes monopolistic or quasi-monopolistic advantages (Faccio, 2006; Li, 2009). In this sense, leaders who stay longer in power are more likely to attract foreign investors.

However, investors can also perceive the political longevity of host country leaders as increasing the risk of expropriation of multinational properties. In countries where leaders nationalize private properties to satisfy populist demand, multinational investors are less likely to invest due to the fear that their property will be expropriated (see, e.g., Biglaiser and Staats (2010)). For example, recently in Argentina President Kirchner nationalized one of the biggest multinational oil companies, provoking fear in many foreign investors. Richard Basas wrote on foreign policy blogs that "*Argentinean President Kirchner returned investors to their worst dreams when she nationalized YPF last week, Argentina's largest oil firm that was supported by Spanish giant Repsol.*"[1] Also, in 1999 in Zimbabwe, the expropriation of foreign firms owning land by long-term President Robert Mugabe might have discouraged many foreign investors from investing in the country, leading to the country's biggest economic crisis. It follows from this latter example that, if long-term leaders are so strong that they can expropriate foreign properties, they will be less able to attract foreign investors.

It follows that the longevity of a host country leader potentially has both positive and negative impacts on FDI. In the sections that follow, we empirically assess this relationship as well as its mechanism.

[1] Repsol's Argentine Expropriation: Two Awfully Complicated Views http://opeal.net/index.php?option=comk2&view=item&id=10923:repsol%25E2%2580%2599s-argentine-expropriation-two-awfully-complicated-views

3.4 Data and model

We combine individual-level information on African leaders with data collected from various sources including the World Development Indicators of the World Bank, Polity IV, and others (see Appendix C). The dataset consist of 206 leaders from 46 African countries over the period of 1960-2011. A leader is defined as someone who reached power with the ambition to stay, regardless of the length of time of actual tenure. Based on this definition we exclude Interim heads of state.[2] However, we include all leaders regardless of whether their tenure was less than one year if their ambition was to remain in power for a long period of time – although we exclude leaders who spent less than 6 months in a given year. We treat leaders that reappeared after losing power as new leaders. We collect information on the personal characteristics of each leader including political longevity (the number of years spent in power for each year that the leader is in power), age, affiliation to a majority ethnic group, whether the leader gained power right after the independence, and whether he/she came to power through a competitive election. We also collect yearly information on the characteristics of each country including population size, GDP growth rate, inflation rate, democracy, and the presence of natural resources.

3.4.1 Dependent variable

Our dependent variable is FDI net inflows, measured, as defined by the World Bank, as the value of inward investment to a host country made to acquire a lasting interest by a foreign firm principally operating outside of the host country economy. FDI net inflows are measured as the level of FDI net inflows each year in each African country. FDI net inflorws are expressed in real 2011 dollars.[3]

[2]For example, we do not include Abass Bonfoh as leader for the government of Togo because he came into power as the result of Gnassingbe Eyadema's death in 2005, and the constitution did not allow him to stay or compete in the subsequent election to replace Eyadema.

[3]It is impossible for us to determine whether our FDI net inflows is stationary variable because of the gaps in our data and some panels have less than ten observations

3.4.2 Independent variables

Longevity of host country leaders

The longevity of a leader is our main independent variable. It is measured as his/her length of time (or number of years) in power since the leader was first in power. The first year in which a new leader comes into power is coded as the baseline year and longevity takes a value of zero; for the next year, longevity increases by one unit, and so on. If a leader spends more than six months in the baseline year, longevity takes a value of one for this specific leader. Longevity of a host country's leader is a hand-collected variable for each leader in each country through various sources from the internet and the organization of African Union members' states. We do not take this variable from polity IV because polity IV considers only regime change. However the leader of a country can be changed without a change in the regime (democratic or autocratic regime).

Other control variables

Based on the literature on the main determinants of FDI, we control for countries' characteristic variables such as population size, economic growth, inflation, and natural resources. These variables are collected from the World Bank Indicators. We control for host leaders' characteristic variables such as whether a leader belongs to the majority ethnic group, whether a leader has been elected to office through a competitive electoral contest, age, and whether a leader is the first president of the country. We also control for the average level of conflict in the neighboring countries of a country. The reason is that conflict in neighboring countries may cause foreign investors in those countries to switch their investment into the host country if the latter is peaceful. The definition of the different variables we use in the analysis can be found in the appendix.

3.4.3 Identification strategies

We use several identification strategies to estimate the causal effect of political longevity on FDI net inflows. Our baseline model is ordinary least-squares regressions (see Section 5.1 below). However, as discussed in the Introduction (see also Section 5.2 below), OLS regressions might suffer from potential endogeneity issues. In order to address this limitation, we use an instrumental variables approach (see Section 5.2). For robustness checks, we also use the Generalized Moments Methods (Section 5.3) and the 3SLS estimation technique (Section 5.4), fully accounting for any potential endogeneity between political longevity and FDI net inflows. Each of these estimation strategies and its resulting findings are presented in the following sections.

3.5 Methods and findings

3.5.1 OLS regressions

We estimate the linear regression model described below using panel data from the period 1960-2011:

$$FDI_{ilt} = \alpha DA_{ilt} + \beta C_{ilt} + \gamma L_{ilt} + \pi_i + \mu_t + \theta_l + \varepsilon_{ilt} \tag{3.1}$$

whereFDI_{ilt} denotes FDI net inflows in country i, under leader l, in year t; DA_{ilt} is the longevity of a host country leader l in year t, which measures the number of years the leader has spent in power at time t. Our main parameter of interest is the coefficient α, which measures the amount of FDI inflows into country i caused by leader l spending an additional year in power. C_{ilt} denotes the country characteristic variables that explain FDI inflows. L_{ilt} measures leader l's personal characteristics that may affect the decision of investors to invest in host countries. π_i Indicates a full set of country fixed effects, which takes into account all other unobserved national-level time-invariant variables. μ_t represents a set of year fixed effects, which capture any common shocks to FDI inflows of all countries. θ_l captures

unobserved leader-level variables that may affect FDI, such as a leader's ability to attract foreign investors into his country. Finally, ε_{ilt} is an error term that represents all other omitted variables.

We estimate equation 3.1 using ordinary least-squares regressions and report the results in Table 3.3. We present the results of three model specifications. Model 1 includes our core independent variable, which is political longevity. We also control for country population size. Model 2 includes all the control variables including country and leader characteristic variables, as well as leader fixed effects. This model therefore drops time-invariant variables such as whether a leader belongs to a majority ethnic group or not. Model 3 includes all the controls except for leader fixed effects. As a result, time-invariant variables are included in the controls. In all the models we control for year and country fixed effects.

We find that in all the models, the longevity of a host country leader is positively related to FDI inflows and its effect is statistically significant. For example, according to Model 1, leaders that last one more year in power increase FDI inflows by 0.182 billion dollars. This estimate is 0.224 billion dollars in Model 2 and 0.199 billion dollars in Model 3. So the estimated effect of political longevity is quite stable across the models, although Model 2 that includes all the controls including leaders' unobserved heterogeneities yields a better estimate.

This result is consistent with the fact that political longevity is considered by foreign investors to signal political stability (defined as a lower probability of political turnover), the commitment of a leader to secure multinational firms property rights, and as facilitating networking with members of the regime. This finding is also consistent with other studies showing that regime durability is positively correlated with FDI inflows (Resnick and Li 2003; Nieman and Thies 2014). It is also consistent with the argument that leaders that expect a long time horizon in power are less likely to expropriate foreign firms because the long-term benefit of having those foreign firms is higher than the short-term benefit of expropriation, and may encourage investors in host countries (Li, 2006). Finally, as we show later, longevity of leaders promotes a high level of institutional quality, property rights protection,

good infrastructure, and the rule of law, which have been shown empirically to positively affect FDI.

The effects of other control variables are interesting in their own rights. Population size has positive and significant impact on FDI. This is consistent with Resmini (2000) and Bevan and Estrin (2000) who find that countries with large populations have higher FDI. We also find that natural resources have positive and significant impact on FDI, which suggests that multinational firms are more likely to invest into a host country with large natural resources. However, we do not find that leaders' characteristics, one-year lag of growth, or one-year lag of inflation have any effect.

3.5.2 Instrumental variables approach

The ordinary least-squares estimations presented above may have several endogeneity problems. One possible issue is that of omitted variable bias. Such a bias may result from the unobserved ability of a leader to increase simultaneously both FDI inflows and his longevity in office. A higher-ability leader may be more likely to manipulate the people to stay in power. He may also use his ability to attract foreign investors. Not controlling for this unobserved variable (aptitude at persuasion) may lead to a downward bias in the OLS estimates. If we assume that ability is time-invariant, then it is controlled through leader fixed effects (as done in Column (I and II) of Table 3.3). But if ability is time-variant, then leader fixed effects do not help.

Another potential endogeneity issue that our OLS regressions do not deal with is the reverse causality problem. A leader might grant specials rights such as import licenses to foreign investors and exempt them from high taxes and entry barriers into the host market. In turn, foreign investors might have an incentive to this leader during elections by financially contributing to his campaign. Even in dictatorial regimes, leaders might receive money from foreign investors to stabilize power. King (2000) cites Suharto, the second president of Indonesia, as an example of a leader who received political contributions from two companies to finance political stability. Choi and Thum (2009) also argue that firms are often forced to support leaders in

office. Another way FDI might affect political longevity is by promoting economic growth and reducing unemployment and poverty.[4] This improvement in economic conditions during a leader's time in office will increase his/her popularity and hence his/her probability of remaining in power.

We address these endogeneity issues by using plausible instrumental variables described below. We construct these variables based on the theory of institutional contagion and of the imitation of peers (see, e.g., Leeson and Dean, 2009; Acemoglu et al., 2014). We argue that a leader, upon observing the longevity of leaders in the neighboring countries, may have an incentive to imitate them. One instrument is therefore the average political longevity of neighboring countries' leaders. The second instrument is a variable measuring the extent to which a leader is close in age to the neighboring countries' leaders. And the third instrument is a variable measuring the extent to which a leader is close in age to the leader of the former colonial power.

A) First instrument: The average longevity of neighboring countries' leaders (ALNL)

We construct the variable measuring the average longevity of neighboring countries' leaders as follows[5]. Assume that a country i has n neighbors. Then the leader l of that country has n neighboring leaders at time t during his term. Thus ALNL at time t is measured as follows:

$ALNL_{lt} = \frac{1}{n}\sum_{i=1}^{n} LNL_{it}$

whereLNL_{it} is the longevity of neighboring leader i at time t.

We assume that the average longevity of neighboring leaders affects a leader's longevity but does not directly impact the decision of investors in his country. That is, the longevity of Equatorial Guinea's President Teodoro Obiang Nguema Mbasogo will not affect the decision of foreign investors to invest in Gabon, although it might affect Gabon's President Ali Bongo's decision to prolong his stay in power. A

[4]Some macroeconomic studies that have found positive impacts of FDI on economic on growth include Blomstrom, lipsey and Zejan (1996), Balasubramanyam, Salisu and Sapsford (1996), Borenstein, De gregorio and Lee (1998).

[5]Note that neighboring countries are the countries which share the same common border with the country

change of a country's constitution that allows its leader to stay in power might have a spillover effect, as it may give an incentive to the leaders of neighboring countries to do the same.[6] Similarly, a revolutionary activity that brings down a leader may inspire the populations of neighboring countries to start a revolution as well, as evidenced by the 2011 Arab Spring. Leeson and Dean (2009) study empirically the democratic domino theory and find that an increase in democracy in one country spreads to the neighboring countries. As democracy or autocracy is correlated with the longevity of leaders, an increase in the longevity of leaders in one country can also spread and infect the longevity of leaders in the neighboring countries. Our approach to using the average longevity of neighboring leaders as an instrument for the longevity of a leader is inspired by Acemoglu et al. (2014). In order to estimate the causal effect of democracy on economic growth, they use the average level of democracy of a country's regional neighbors as an instrument for democracy.

B) Second instrument: Age-proximity with neighboring leaders

Our second instrument is a variable measuring how a leader is close in age to the neighboring leaders. The assumption behind this instrument is that age-peers (or age-mates) are likely to copy from one another and therefore to have correlated behaviors. If closeness in age leads to more cooperation among neighboring leaders, then this could lead to these leaders increasing their longevity in power. However, closeness in age can also lead to more competition. Liu and Lafreniere (2014) find that individuals in the same age group are more likely to compete against one another for scarce resources. Therefore, to the extent that regional leadership qualifies as a scarce resource, age proximity among neighboring leaders can lead to more

[6]Pierre Nkurunziza, the president of Burundi in a conference with RFI journalists was asked a question about his succession for the next presidential election. He answered that he may probably be a candidate even if the constitution does not allow him to stay for another term by referring to the Cameroun president Paul Biya. This is what he said by responding to the question: "You remember that I had announced that I would not represent myself in 2020. That's right I had announced it in accordance with a court decision. But the courts are not above the people or above the Constitution. If the people allow someone to represent themselves, if the people ask, then I will not betray their confidence ... In Cameroon, Paul Biya is in 50 years of presidency, and in neighboring Rwanda, the mandates are changed as desired. The question of the mandate is not the main problem of the Burundians. You, the people, can decide to change the Constitution, to blow up the lock of the two mandates. But if you decide that I do not have to start doing that, then I will not impose myself. "

competition, which might negatively affects their longevity in power. We construct age-proximity as follows:

$$Z_{ilt} = 1 - \frac{|age_t \ - \ Average\ age\ neighbor_t|}{age_t \ + \ Average\ age\ neighbor_t}$$

where age_t is the age of country i's leader at time t and $Average\ age\ neighbor_t$ is the average age of neighboring leaders leaving out the leader of country i at this time. Notice that this construction takes into account the fact two individuals become socially closer as they age, regardless of their respective ages. That is, if the age difference between two individuals is ten years, these individuals may not be friends (or competitors) when one is 1 year old and the other is 11 years old, but the likelihood of them becoming friends (or enemies) will increase as they reach 50 and 60, respectively. Similarly, two neighboring leaders might not have any relationship at all when they newly come to power, but the likelihood of them developing a friendly or an adversarial relationship might become higher as they spend more years in power. While we argue that proximity in age of a leader to neighboring leaders can positively or negatively affect the leader's longevity, our identifying assumption is that it does not affect FDI inflows into his country.

C) Third instrument: Age-proximity with the president of the former colonial power

Our third instrument is the extent to which a leader is close in age to the leader of the former colonial power. It is constructed as follows:

$$P_{ilt} = 1 - \frac{|age_t \ - \ Colonizer\ age_t|}{age_t \ + \ Colonizer\ age_t}$$

where age_t is the age of country i's leader at time t and $Colonizer\ age_t$ is the age of the leader of the formal colonial power at time t. We assume that African presidents that are closer in age to the leader of their formal colonial power are more likely to develop friendship with him, and this might help their longevity in power. Here, we do not expect age proximity between an African leader and the leader of the former colonial power to lead to an adversarial relationship as the two leaders

cannot compete for regional leadership, given that they are not neighbors.

We estimate the two-stage least squares (2SLS) model, given by the following equations:

$$FDI_{ilt} = \alpha DA_{ilt} + \beta C_{ilt} + \gamma L_{ilt} + \pi_i + \mu_t + \theta_l + \varepsilon_{ilt} \tag{3.2}$$

$$DA_{ilt} = \vartheta ALNL_{ilt} + \rho Z_{ilt} + \sigma P_{ilt} + \nu C_{ilt} + \phi L_{ilt} + \omega_t + \varphi_i + \psi_l + \nu_{ilt} \tag{3.3}$$

The first equation is exactly the same as our OLS model above, except that we treat political longevity at time t as an endogenous variable. We instrument longevity using $ALNL_{ilt}$, the average longevity of neighboring leaders, Z_{ilt}, the extent to which a leader is close in age to neighboring leaders, and P_{ilt}, the extent to which a leader is close in age to the leader of the former colonial power. The second equation estimates the first-stage regression, and the first equation estimates the second-stage regression.

The two key underlying assumptions of the 2SLS model are:

Condition 1 (exclusion restriction):

$$E(\varepsilon_{ilt}|C_{ilt}, L_{ilt}, ALNL_{ilt}, Z_{ilt}, P_{ilt}, \pi_i, \mu_t, \theta_l) = 0$$

for all $C_{ilt}, L_{ilt}, ALNL_{ilt}, Z_{ilt}, P_{ilt}, \pi_i, \mu_t$,and θ_l and for all i, l,and t

Our exclusion restriction is that, controlling for leaders' characteristics, country characteristics, and year, country and leader fixed effects, the instruments $ALNL_{ilt}, Z_{ilt}$ and P_{ilt} have no direct impact on FDI inflows except through longevity of host country leader.

Condition 2 (Correlation): $E(DA_{ilt} \times ALNL_{ilt}) \neq 0$, $E(DA_{ilt} \times Z_{ilt}) \neq 0$, and $E(DA_{ilt} \times P_{ilt}) \neq 0$

This second assumption implies that the longevity of leaders is correlated with the instrumental variables.

Table 3.4 displays the result of the IV estimation for all three specifications. We report an over-identification test for the exogeneity of our instruments. According to Table 3.4, the sargan p-value for the over-identification test is greater than 10 percent in all models, indicating that our instruments are uncorrelated with the error term (meaning that we cannot reject the null hypothesis that the instruments are exogenous). We also report the F-statistics, which shows that our instruments are not weak.

The first stage shows that the average longevity of neighboring leaders is positively associated with the longevity of a leader, which is consistent with the domino effect (Leeson and Dean, 2009; Acemoglu et al., 2014). We also find that age proximity with the leader of the former colonial power has a positive effect on longevity. However, age proximity with neighboring leaders has a negative effect on longevity.

The second stage regressions indicate a positive and highly significant impact of political longevity on FDI. Furthermore, the magnitudes of the IV estimates are larger than OLS estimates when controlling for leader fixed effect. We conduct the Durvin-Wu-Hausman test that rejects the null hypothesis of the consistency of OLS estimates at the 5 percent level. The fact that the 2SLS estimates are three to six times larger than the OLS estimates might be indicating that the reverse causality issue is not entirely addressed by the model, an issue we further investigates in the following sections.

3.5.3 Dynamic models

This section describes the results of our robustness analyses. In order to investigate the sensitivity of our results in Table 3.3, we apply two different estimators: the generalized methods of moment (GMM) estimators proposed by Arellano and Bond (1991) and by Blundell and Bond (1998).

In this subsection we employ the GMM estimators to check the robustness of the results. There are two explanations of the use of the GMM models. First,

GMM models use the full information accessible in the data to estimate the link between longevity of leaders and FDI by capturing the influence of lagged FDI inflows on current FDI inflows, which the IV regression might not be capturing. Finally, this method corrects for potential endogeneity and the reverse causality problem mentioned earlier, together with omitted variables issues. It corrects for correlation between unobserved heterogeneity (country fixed effects and leader fixed effects) and current FDI. In our robustness analysis we apply two estimators of the aforementioned GMM methods. Both consist of using the lags of the endogenous variables as instrumental variables; Arellano-Bond also uses external instrumental variables, which, in our analysis are those used in the IV regressions as additional instruments. While the IV model does not seize the impact of lagged FDI inflows on current FDI inflows, the GMM estimator suggested by Arellano and Bond (1991) remedies this issue by taking first differences and employing the lags of endogenous variables as instrumental variables in addition to our other instruments. However, for first differences it has been shown by Arellano and Bover (1995) that lag of endogenous variables are poor instruments. The Blundell-Bond method, called system GMM estimators, solves the issue of poor instruments by adding more set of moment conditions compared to the Arellano-Bond method. This method produces more efficient estimators, even if it exhibits too many instruments. In checking the robustness of the link between the longevity of leaders and FDI, we estimate the following dynamic equation:

$$FDI_{ilt} = \alpha DA_{ilt} + \beta C_{ilt} + \gamma L_{ilt} + \sum_{j=1}^{q} \lambda_j FDI_{il,t-j} + \pi_i + \mu_t + \theta_l + \varepsilon_{ilt} \qquad (3.4)$$

The standard assumption of this dynamic model is:

Condition 3:

$$E(\varepsilon_{ilt}|C_{ilt}, L_{ilt}, ALNL_{ilt}, Z_{ilt}, FDI_{il,t-q}, ..., FDI_{il,t-1}, P_{ilt}, \pi_i, \mu_t, \theta_l) = 0$$

This standard condition suggests that longevity of leaders and past FDI are uncorrelated with future FDI, and the error term ε_{ilt} is not serially correlated. The control of the lags of FDI in the dynamic model allows us to remove the residual serial correlation in the error term of equation (3.1).

We report the results of the GMM methods in Tables 3.5 and 3.6. Specifically, Table 3.5 reports the results for the Arellano-Bond method (difference GMM) while Table 3.6 reports the results for the Blundell-Bond method (system GMM). In the two tables, we use all the three specifications of Table 3.3. The GMM estimates are closer to the OLS estimates in magnitude. We also report the test of over-identification and serial correlation, indicating respectively that there is absence of each.

3.5.4 A simultaneous equations approach (3SLS)

We use the simultaneous equation approach to directly address the possibility of FDI inflows affecting the longevity of a host leader in power. We estimate equations 3.5 and 3.6 below:

$$FDI_{ilt} = \alpha DA_{ilt} + \beta C_{ilt} + \gamma L_{ilt} + \pi_i + \mu_t + \theta_l + \varepsilon_{ilt} \tag{3.5}$$

$$DA_{ilt} = \theta FDI_{ilt} + \nu C_{ilt} + \phi L_{ilt} + \vartheta ALNL_{ilt} + \rho Z_{ilt} + \sigma P_{ilt} + \varrho_i + \varkappa_t + \varsigma_l + \xi_{ilt} \tag{3.6}$$

Estimating these equations separately can cause inconsistency in our estimates due to potential cross-correlation in the residuals. We therefore estimate them simultaneously using the 3SLS method.

In these two equations all variables are the same except for the addition of the average longevity of neighboring leaders (LNL_{ilt}) and the variables measuring age proximity (Z_{ilt}, and P_{ilt}) in equation 3.6. The coefficients α and θ account for any contemporaneous feedback between the longevity of leaders and FDI.

The 3SLS results are presented in Table 3.7. In Columns (I) and (II) we control only for population while in Columns (III) and (IV) we include all control variables, year fixed effect and leader fixed effect. In columns (V) and (VI), we remove leader fixed effect and add country fixed effect. The results remain close to those found using OLS. Additionally, we find that FDI inflows positively affect political longevity.

3.6 The interaction between longevity and democracy

Does our finding that political longevity increases FDI inflows in African countries imply that a leader should remain in power forever? In this section, we identify one condition under which political longevity positively affects FDI inflows. In particular, we examine whether the effect of longevity varies according to the nature (democratic/autocratic) of the political regime. Democratic institutions vary widely across countries. Some countries have a well-functioning democratic system, whereas others are autocratic. We estimate the effect of the interaction term between longevity and democracy, which captures the additional effect that political longevity has on FDI inflows in democratic countries. We estimate this effect using most of the identification strategies we have used so far. The results are reported in Table 3.8. For each estimation method, Column (I) only controls for longevity, democracy, and all the other controls, and Column (II) controls in addition for the interaction term between longevity and democracy. Because we treat democracy and longevity as endogenous variables, their interaction term should also be endogenous. We use the IV and GMM methods to deal with these endogeneity issues. Inspired by Leeson and Dean (2009) and Acemoglu et al. (2014), we instrument democracy using the average level of democracy reached by neighbor countries.

We find a positive and statistically significant effect of the interaction term between longevity and democracy on FDI. Longevity in power has no effect in non-democratic regimes, except in the IV estimation. A natural conclusion from these findings is that foreign investors are more likely to value political longevity in a country if the country is more democratic.

3.7 The mechanism

We show that the political longevity of leaders increases FDI inflows, especially in democratic regimes. The question that arises is why investors should care about leaders' longevity when making investment decisions. Possible answers to this question have been discussed in our conceptual framework (Section 3). We argue that lower rates of turnover of leaders indicate not only political stability but also policy consistency. We also argue that a long-term leader might be more likely to commit to the protection of foreign assets. Such a leader might be more credible in the eyes of foreign investors. It is also possible that political longevity positively affects FDI because it gives leaders the necessary time to improve physical infrastructure, institution quality, and political stability. These factors have been shown to positively affect FDI inflows (Biglaiser and Staats, 2010; Asiedu, 2005).

We test these possible channels in this section. We estimate the effect of political longevity on institutional variables as well as on physical infrastructure. The institutional variables we analyze are the following: rule of law, corruption, property rights, and the level of bureaucracy. To measure physical infrastructure development, we use the number of fixed telephone lines per 100 people to measure physical infrastructure development. We estimate the effect of political longevity on these variables using OLS regressions. The results are reported in Table 3.9. Country and year fixed effects and leader fixed effect are controlled in even number columns but we exclude leader fixed effect in odd number columns. We find that the longevity improves the rule of law, the level of bureaucracy, reduces corruption, and promotes property rights when a leader's unobserved characteristics (such as ability) are not controlled. But when these characteristics are controlled using leader fixed effect, longevity improves only the rule of law and physical infrastructure.

These results are consistent with Korschgen et al (2011)[7] who argue that significant changes in institutions do not happen in one or two years. They find that the average required duration of leaders (not necessarily political leaders) to make a sig-

[7]You can find Korschgen et al article here: http://www.aahea.org/articles/migration.htm

nificant change in institutions is 13 years, which is roughly equal to the duration of two mandates in certain countries (till the year 2000, the duration of a presidential term was 7 years in France). Our data however shows that the average duration of leaders in Africa is 18 years, which is larger than 13 years. They also argue that long term leaders are adept at facing institutional problems and making better decisions. They also have time to build a powerful leadership team and to expand strong relationships with legislators in order to see policies through. Our findings are also consistent with Li (2009) who finds that leaders' tenure is negatively associated with risk of expropriation.

3.8 Conclusion

This paper analyzes the impact of political longevity on FDI inflows using a novel panel dataset on African leaders. Using a variety of estimation techniques, we show that one additional year in power of a country's leader increases FDI inflows. This positive effect is higher in more democratic regimes. Examining the mechanism, we find that political longevity gives leaders the opportunity to improve both the rule of law and the quality of physical infrastructure.

3.9 Appendix C

Table 3.1: Definitions of the variables and sources

Variables	definitions and sources
Countries Variables	
FDI net inflow	Foreign direct investment net inflows provide by World Bank Indicator
Growth	GDP growth rate provided by World Bank Indicator
Inflation rate	Consumer prices provided by the World Bank Indicator
Democracy	Democratic accountability measured as not just fair and free election but how responsive government is to its people. The measure is on scale 6-points provided by PRS/ICRG. We converted this variable into dummy variable which means that democracy is one if the country is democratic and zero otherwise.
Corruption	Corruption accountability provided by World Bank Indicator population the population of the host country, provided by World Bank Indicator
Population	The population of the host country, provided by World Bank Indicator
Natural resource	Natural resources of the host country, provided by World Bank Indicator
Average neighboring conflict	The average of conflict in host country neighbors.
Leader Characteristics	
Longevity of leaders	The number of years the leaders has spent in power hand collected data from various websites and African unity members states
Majority ethnic group	Takes the value one if the leaders is from majority ethnic group otherwise zero. Hand collected from various websites and African unity members states
Age	The age of leaders in power collected from various sources and African unity members of states
Elected leader	Takes value one if leaders came in power with election and zero otherwise.
Independence President	Takes the value one if leader is the first president of host country
ALNL	The average longevity of host country neighboring leaders
Age-proximity to neighboring leaders	Measure of how closed is the host country to his neighboring leaders
Age-proximity to former colonial leader	Measure how closed is the host country to former colonial leaders

Table 3.2: Descriptive statistics

Variables	N	Mean	Std.deviation
FDI(US$ billion)	1,157	2.535	9.693
Longevity	2,106	8.991	7.992
Population(million)	2,251	17.6	18.19
Average neighboring conflict	2,392	0.0476	0.138
Age	2,106	55.54	12.78
Independence president	2,106	0.302	0.459
Majority ethnic group	2,037	0.577	0.494
Elected leader	2,392	0.994	0.0763
Democracy	2,392	0.204	0.403
Lag of growth	1,941	3.875	7.138
Lag of inflation	1,537	28.31	623.4
Natural resources	1,651	8.583	12.27
ALNL	2,190	8.345	5.803
Age-proximity to neighboring leaders	2,093	0.900	0.0900
Age-proximity to former colonial leader	2,101	0.128	0.0901

The data on countries: FDI is net inflows in current US$, population is the total number of population measured in billion, inflation is based on annual CPI, growth is annual GDP growth, Natural resources is total natural resources per GDP Average and Democracy indicate if the country is democrat or not.

The data on leaders: Longevity is the number of year the leader has spent in office, Average neighboring conflict is the average conflict in the host neighboring countries (the conflict include civil war, international conflict, religious conflict and ethnic conflict), Age is the age of leader, Majority ethnic group indicate if the leader is from majority ethnic group, independence president indicates if the president is the first president of the country after Independence,ALNL is the average longevity of neighboring country leaders, Age-proximity to neighboring leader measured how closed is the host country from his neighbors, Age-proximity to former colonial leaders measured how closed is the host country leader from his former colonial leader.

Table 3.3: The effect of political longevity on FDI

VARIABLES	(I) Model 1	(II) Model 2	(III) Model 3
Longevity	0.182**	0.224**	0.199***
	(0.0800)	(0.100)	(0.0549)
Population	0.725***	0.706***	0.778***
	(0.0751)	(0.0885)	(0.0587)
Conflict in neighboring country		1.252	1.954
		(2.508)	(2.461)
Majority ethnic group			0.247
			(0.903)
Elected leader			-1.744
			(5.152)
Age		-1.603	-0.0854*
		(4.811)	(0.0438)
Independence president			-2.620
			(1.762)
Lag of growth		0.0256	0.0183
		(0.0608)	(0.0593)
Lag of inflation		-0.0113	-0.0181
		(0.0261)	(0.0234)
Natural resources		0.218***	0.187***
		(0.0726)	(0.0651)
Observations	1,138	906	897
R-squared	0.194	0.403	0.317
Country FE	YES	YES	YES
Year FE	YES	YES	YES
Leaders FE	YES	YES	NO

Notes: The table reports the estimates of the effect of longevity of leaders on FDI. Only population is included in model 1. Model 2 includes population, neighboring conflict and all country characteristic variables such as neighboring country, lag of growth, lag of inflation and natural resources and leader characteristic variables. Model 3 includes all country characteristic variables and all leader characteristic variables such as majority ethnic group, elected leader, independence president and age of the leaders. Leader fixed effect is controlled in model 1 and 2 except in model 3. A full set of country and year fixed effect is controlled in all specifications. The population is scaled by 10 million. The standard errors are in parentheses. *** significant at 1 percent; ** significant at 5 percent; * significant at 10 percent.

Table 3.4: IV estimation of the effect of longevity on FDI

VARIABLES	(I) Model 1	(II) Model 2	(III) Model 3
Second stage: Dependent variable is FDI			
Longevity	1.386***	1.433***	0.763**
	(0.435)	(0.395)	(0.330)
R-squared	0.005	0.287	0.229
Endogenous test (p-value)	0.00	0.00	0.00
Cragg-Donald statistic	13.47	17.79	8.25
Sargan test (p-value)	0.473	0.976	0.112
Hausman test (p-value)	0.0150	0.023	0.0108
First stage: dependent variable is longevity of leader			
ALNL	0.0971***	0.131***	0.137***
	(0.0160)	(0.0208)	(0.0346)
Age-proximity to neighboring leader	-2.916**	-3.069	-3.268
	(1.355)	(2.024)	(2.518)
Age-proximity to former colonial leader	3.930***	3.647**	0.887
	(1.079)	(1.458)	(2.492)
Observations	1,121	906	897
R-squared	0.888	0.823	0.453
Country FE	YES	YES	YES
Year FE	YES	YES	YES
Leaders FE	YES	YES	NO

Note: ALNL is the average longevity of neighboring countries leaders. Age-proximity to neighboring leader measure how closed is the leader from his neighbors. Age-proximity to former colonial leader measure how close is the leader from his former colonial leader. The table presents the estimates of the effect of longevity of leaders on FDI. Only population is included in model 1. Model 2 includes population, neighboring conflict and all country characteristic variables such as neighboring country, lag of growth, lag of inflation and natural resources and leader characteristic variables. Model 3 includes all country characteristic variables and all leader characteristic variables such as majority ethnic group, elected leader, independence president and age of the leaders. Leader fixed effect is controlled in model 1 and 2 except in model 3. A full set of country and year fixed effect is controlled in all specifications. The population is scaled by 10 million. The standard errors are in parentheses. *** significant at 1 percent; ** significant at 5 percent; * significant at 10 percent.

Table 3.5: The Arellano-Bond estimation of the effect of longevity on FDI

VARIABLES	(I) Model 1	(II) Model 2	(III) Model 3
Longevity	0.146	0.186	0.220***
	(0.0930)	(0.118)	(0.0650)
Population	0.600***	0.617***	0.556***
	(0.0902)	(0.109)	(0.0667)
Conflict in neighboring countries		0.924	1.885
		(2.763)	(2.566)
Majority ethnic group			0.617
			(1.018)
Elected leader			-1.427
			(5.015)
Age		2.767	-0.127**
		(6.635)	(0.0583)
Independence president			-2.505
			(2.049)
Lag of growth		0.0216	0.0321
		(0.0715)	(0.0654)
Lag of inflation		0.00102	-0.00486
		(0.0307)	(0.0263)
Natural resources		0.182**	0.123*
		(0.0800)	(0.0708)
Sargan test(p-value)	0.381	0.445	0.107
Serial Correlation test(p-value)	0.250	0.245	0.243
Observations	1,005	801	795
Country FE	YES	YES	YES
Year FE	YES	YES	YES
Leaders FE	YES	YES	NO

Notes: The table presents estimates of the effect of longevity of leaders on FDI using Arellano-Bond‘s GMM estimator. Only population is included in model 1. Model 2 includes population, neighboring conflict and all country characteristic variables such as neighboring country, lag of growth, lag of inflation and natural resources and leader characteristic variables. Model 3 includes all country characteristic variables and all leader characteristic variables such as majority ethnic group, elected leader, independence president and age of the leaders. Leader fixed effect is controlled in model 1 and 2 except in model 3. A full set of country and year fixed effect is controlled in all specifications. The population is scaled by 10 million. The standard errors are in parentheses. *** significant at 1 percent; ** significant at 5 percent; * significant at 10 percent.

Table 3.6: The Blundell-Bond estimation of the effect of longevity on FDI

VARIABLES	(I) Model 1	(II) Model 2	(III) Model 3
Longevity	0.156*	0.177	0.211***
	(0.0928)	(0.116)	(0.0577)
Population	0.599***	0.579***	0.243***
	(0.0885)	(0.103)	(0.0296)
Conflict in neighboring countries		0.941	1.317
		(2.704)	(2.488)
Majority ethnic group			1.523
			(0.942)
Elected leader			-0.886
			(5.016)
Age		2.403	-0.143***
		(6.539)	(0.0506)
Independence president			-1.111
			(1.866)
Lag of growth		0.0201	0.0781
		(0.0701)	(0.0628)
Lag of inflation		-0.00522	-0.0194
		(0.0300)	(0.0245)
Natural resources		0.180**	-0.107*
		(0.0777)	(0.0558)
Sargan test (p-value)	0.460	0.560	0.367
Serial correlation test (p-value)	0.239	0.240	0.243
Observations	1,070	859	851
Country FE	YES	YES	YES
Year FE	YES	YES	YES
Leaders FE	YES	YES	NO

Notes: The table presents estimates of the effect of longevity of leaders on FDI using Blundell-Bond's GMM estimator. Only population is included in model 1. Model 2 includes population, neighboring conflict and all country characteristic variables such as neighboring country, lag of growth, lag of inflation and natural resources and leader characteristic variables. Model 3 includes all country characteristic variables and all leader characteristic variables such as majority ethnic group, elected leader, independence president and age of the leaders. Leader fixed effect is controlled in model 1 and 2 except in model 3. A full set of country and year fixed effect is controlled in all specifications. The population is scaled by 10 million. The standard errors are in parentheses. *** significant at 1 percent; ** significant at 5 percent; * significant at 10 percent.

Table 3.7: 3SLS estimation of longevity of host leaders on FDI

VARIABLES	(I) FDI	(II) Longevity	(III) FDI	(IV) longevity	(V) FDI	(VI) Longevity
Longevity	0.355***		0.431***		0.387***	
	(0.0735)		(0.0907)		(0.0518)	
FDI		0.0487***		0.0448***		0.148***
		(0.0117)		(0.0117)		(0.0207)
Population	0.763***	-0.270***	0.755***	-0.275***	0.795***	-0.185***
	(0.0691)	(0.0281)	(0.0805)	(0.0289)	(0.0558)	(0.0385)
CNC			1.461	-1.115	1.744	0.801
			(2.280)	(0.803)	(2.342)	(1.474)
Age			-0.556	-3.850**	-0.131***	0.220***
			(4.375)	(1.545)	(0.0417)	(0.0269)
Lag growth			0.0314	-0.0197	0.0248	-0.0416
			(0.0552)	(0.0195)	(0.0564)	(0.0353)
Lag inflation			-0.00972	-0.00214	-0.0191	0.0153
			(0.0237)	(0.00841)	(0.0222)	(0.0140)
Natural resources			0.223***	-0.0528**	0.199***	-0.106***
			(0.0660)	(0.0237)	(0.0619)	(0.0390)
Majority ethnic group					0.353	-0.115
					(0.859)	(0.548)
Elected leader					-3.134	7.775**
					(4.901)	(3.060)
Independence president					-4.787***	11.81***
					(1.674)	(0.999)
ALNL		0.118***		0.171***		0.151***
		(0.0219)		(0.0257)		(0.0406)
APNL		-1.691		-5.988**		-4.986*
		(2.231)		(2.602)		(2.773)
APFCL		5.396***		3.770**		-9.807***
		(1.627)		(1.815)		(2.843)
Observations	1,138	1,138	906	906	897	897
R-squared	0.536	0.909	0.523	0.917	0.449	0.694
Country FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Leaders FE	YES	YES	YES	YES	NO	NO

Notes:The table reports the estimates of longevity of leaders on FDI using 3SLS estimator. 3SLS estimator estimates simultaneously the two equations. The first equation is the effect of longevity on FDI and the second equation is the effect of FDI on longevity. Only population is included in column 1-2. Column (3-4) includes population,conflict neighboring countries (CNC) and all country characteristic variables such as neighboring country, lag of growth, lag of inflation and natural resources and leader characteristic variables. Column (5-6) includes all country characteristic variables and all leader characteristic variables such as majority ethnic group, elected leader, independence president and age of the leaders. Leader fixed effect is controlled in columns (1-4) except in column (5-6). A full set of year fixed effect is controlled in all specifications. We also include the average longevity of neighboring leaders(ALNL), age-proximity to neighboring leaders (APNL) and age-proximity to former colonial leader (APFCL) in even columns. The population is scaled by 10 million. The standard errors are in parentheses. *** significant at 1 percent; ** significant at 5 percent; * significant at 10 percent. ** significant at 5 percent; * significant at 10 percent.

Table 3.8: The interaction effect of democracy and longevity on FDI

VARIABLES	(1) OLS	(2) OLS	(3) IV	(4) IV	(5) Arellano-Bond	(6) Arellano-Bond	(7) Blundell-Bond	(8) Blundell-Bond
Longevity	0.198**	0.0984	1.505***	0.956**	0.171	0.104	0.155	0.0744
	(0.101)	(0.107)	(0.467)	(0.385)	(0.119)	(0.124)	(0.118)	(0.120)
Democracy	2.157**	-1.390	-2.755	-14.45	1.730	-1.042	1.845	-0.278
	(1.069)	(1.703)	(5.509)	(12.58)	(1.208)	(1.898)	(1.151)	(1.755)
Longevity X Democracy		**0.254*** **		**1.361***		**0.202***		**0.183***
		(0.0954)		(0.715)		(0.107)		(0.102)
Observations	906	906	883	883	794	794	859	859
R-squared	0.210	0.218	0.023	0.111				
Sargan test (p-value)			0.312	0.987	0.498	0.730	0.300	180
Serial correlation (p-value)					0.245	120	0.250	210
Observations	906	906	883	883	794	794	859	859
R-squared	0.210	0.218	0.023	0.111				
Leader characteristics control	YES	YES	YES	YES	YES	YES	YES	YES
Country Characteristics Control	YES	YES	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Leaders FE	YES	YES	YES	YES	YES	YES	YES	YES

Note: The table presents the estimates of the interaction effect of democracy and longevity on FDI. Column (1-2) presents the results using OLS estimator. Column (3-4) reports the results using IV estimator. Column (5-8) presents results using respectively Arellano-Bond and Blundell-Bond GMM estimator. All leader characteristic variables include majority ethnic group, age, elected leader and independence president and country characteristic variables include population, lag of growth, lag of inflation, and natural resources. We treat democracy as endogenous variable and we use average democracy in the neighboring country as an instrument for democracy. In odd columns, we exclude the interaction of democracy and longevity. Population is scaled by 10 million. A full set of leader fixed effect, country fixed effect and year fixed effect is controlled. The standard errors are in parentheses. *** significant at 1 percent; ** significant at 5 percent; * significant at 10 percent.

Table 3.9: The impact of longevity on institution and infrastructure variables

VARIABLES	(1) Rule of law	(2) Rule of law	(3) Corruption	(4) Corruption	(5) Property rights	(6) Property rights	(7) Bureaucracy	(8) Bureaucracy	(9) Log telephone	(10) Log telephone
Longevity	0.0210***	0.0206***	-0.00607*	-0.00805	0.0220***	0.00349	0.00392**	0.00341	0.00783***	0.0104***
	(0.00717)	(0.00699)	(0.00320)	(0.00525)	(0.00454)	(0.00806)	(0.00191)	(0.00350)	(0.00156)	(0.00256)
Ethnic group			-0.375***		-0.422***		-0.100**		-0.131***	
			(0.0650)		(0.0922)		(0.0388)		(0.0297)	
elected leader	0.0853		0.337		0.363		-0.170		0.0715	
	(0.578)		(0.247)		(0.351)		(0.148)		(0.102)	
Independence			0.0193		-0.726***		-0.135**		-0.0287	
			(0.107)		(0.152)		(0.0640)		(0.0432)	
Constant	2.059***	2.151***	2.404***	2.469***	4.597***	4.567***	0.518***	0.261***	8.081***	8.223***
	(0.590)	(0.153)	(0.288)	(0.115)	(0.408)	(0.176)	(0.172)	(0.0765)	(0.152)	(0.119)
Observations	902	949	902	949	899	944	902	1,542	1,597	
R-squared	0.331	0.327	0.399	0.395	0.180	0.131	0.049	0.043	0.876	0.818
Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Leaders FE	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES

Notes: The table reports the results of the impact of longevity on institution and infrastructure variables. All columns include majority ethnic group, elected leader, and age and independence president. Columns 1-8 use dependent variables such as rule of law, corruption, property rights and bureaucracy as institutional variables. Column 9-10 uses dependent variable such as log of telephone as infrastructure variable. We controlled leader fixed effect in even columns. All full set of country and year fixed effect is controlled. The standard errors are in parentheses. *** significant at 1 percent; ** significant at 5 percent; * significant at 10 percent.

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