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Endogenous Political Connections

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Endogenous Political Connections

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Abstract

Industry-level regulation plays a crucial role for firms. Generally, companies oppose restrictive regulation, mostly perceived as costly and an obstacle for business activities. Therefore, highly regulated firms should be more interested to be connected with regulators, i.e. politicians, to attempt to make better the regulation impact for themselves. In this paper, we ask if a significant increase in regulation lead affected companies to establish connections with former politicians. We find that after the Dodd-Frank Wall Street Reform and Consumer Protection Act's passage, companies affected by the new regulation become more likely to hire former politicians as corporate executives and/or to appoint them as directors, providing evidence of a causal link between industry-level regulation and political connections.

JEL classification: G30, G34, G38

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Industry-level regulation represents a concern for firms. Normally, companies criticize restrictive rules, as they are perceived as expensive to comply with and an impediment for business activities. A relatively recent example of strict regulation is the Sarbanes-Oxley Act (SOX), came into force in 2002 and aimed at toughening corporate accountability. It is commonly known that many in the business world spoke out against SOX. Compliance with its rules has been considered not only expensive, but also damaging for business: “The real cost isn’t the incremental dollars, it is having people that should be focused on the business focused instead on complying with the details of the rules” said Peter Bible, chief accounting officer at General Motors Corp¹. Another frequent target of certain businesses in the United States is the regulation imposed by Environmental Protection Agency (EPA). Companies to which these rules apply often complain that the restrictions are too much burdensome and may dishearten investments. A very recent suitable example is the release by EPA, on May 2016, of the first-ever federal standards aimed to cut methane emissions from the oil and natural gas industry. EPA Administrator Gina McCarthy claimed that: “Together these new actions will protect public health and reduce pollution linked to cancer and other serious health effects while allowing industry to continue to grow and provide a vital source of energy for Americans across the country”². However, Kyle Isakower, vice president of regulatory and economic policy for the American Petroleum Institute (the national trade association that represents all aspects of America’s oil and natural gas industry), complained that: “Imposing a one-size-fits-all scheme on the industry could actually stifle innovation and discourage investments in new technologies that could serve to further reduce emissions.”³ As pervasive regulation generally undermines productivity (Caves, Christensen and Swanson, 1981), highly regulated firms should be more interested to establish connections with regulators, i.e. politicians, in order to attempt to make better the regulation impact for themselves and further avoid possible negative effects.

Political connections have often been established by appointing politicians in boards or when directors and businessmen enter politics (Faccio, 2006; Khwaja and Mian, 2005; Bunkanwanicha and Wiwattanakantang, 2009); however, less explicit definitions of political

¹ The Wall Street Journal, “Companies Complain About Cost Of Corporate-Governance Rules”, February 10, 2004, at <http://online.wsj.com/ad/article/ironmountain/SB107636732884524922.html>

² EPA release, “EPA Releases First-Ever Standards to Cut Methane Emissions from the Oil and Gas Sector”, May 12, 2016, at <https://www.epa.gov/newsreleases/epa-releases-first-ever-standards-cut-methane-emissions-oil-and-gas-sector>

³ The Wall Street Journal, “EPA Issues Final Rules Cutting Oil, Natural Gas Methane Emissions”, May 12, 2016, at <http://www.wsj.com/articles/epa-issues-final-rules-cutting-oil-natural-gas-methane-emissions-1463067378>

connections, as firms' campaign contributions, have been employed, too (Claessens, Feijen and Laeven, 2008; Cooper, Gulen, and Ovtchinnikov, 2010). There is now a substantial literature analyzing the benefits for firms of being politically connected (Fisman, 2001; Khwaja and Mian, 2005; Faccio, 2006; Faccio, Masulis and McConnell, 2006; Claessens, Feijen and Laeven, 2008; Ferguson and Voth, 2008; Goldman, Rocholl and So, 2009; Bunkanwanicha and Wiwattanakantang, 2009; Cooper, Gulen and Ovtchinnikov, 2010; Kim, Pantzalis and Park, 2012; Ovtchinnikov and Pantaleoni, 2012; Duchin and Sosyura, 2012; Goldman, Rocholl and So, 2013; Amore and Bennedsen, 2013; Tahoun, 2014), for example by reporting stock return increases around the announcement that either a former politician joins a board (Goldman, Rocholl and So, 2009) or a businessman enters politics (Faccio, 2006). Furthermore, a handful of papers found that features of countries are important in assessing political links, showing that political connections are relevant in countries with high level of corruption (Fisman, 2001; Faccio, 2006). However, more recent papers show that political connections also matter in countries characterized by strong legal contexts and low-corruption environments, as the United States (Goldman, Rocholl and So, 2009) and Denmark (Amore and Bennedsen, 2013), where the preferential treatment of firms should not exist. In assessing the effects of political connections, a few papers also account for the degree of regulation in the industry and document a positive association (Bunkanwanicha and Wiwattanakantang, 2009; Cooper, Gulen, and Ovtchinnikov, 2010). It is not surprising that political connections increase for firms in highly regulated industries: in such markets, companies are indeed more interested to be connected with regulators, and they try to do that in several ways, for example by participating more in the political contribution process (Cooper, Gulen, and Ovtchinnikov, 2010). Despite the importance of the link between regulation and political connections, at our best knowledge there is no formal evidence of a causal relationship.

Our paper aims to answer this unexplored question: does an increase of regulation lead companies to hire former politicians as corporate executives and/or to appoint them as directors?

To empirically address this question, we develop a unique database for the period 1999-2014 for the United States. As preliminary inspection, we analyze if listed firms in highly regulated industries are more likely to be politically connected. Then we investigate whether a variation in industry regulation lead firms in the affected industries (labeled as "treated") to hire and/or appoint former politicians. The year of treatment is the 2010, when The Dodd-Frank Wall

Street Reform and Consumer Protection Act (from here onward simply DFA) was approved. We first find that firms in highly regulated industries are more likely to be politically connected, thereby providing evidence of correlation. We further find that, after the DFA's passage, companies affected by the new regulation become more likely to hire former politicians as corporate executives and/or to appoint them as directors, thereby providing evidence of a causal link.

We identify the affected firms by the DFA by selecting the 19 largest U.S.-owned bank holding companies (BHCs) which participated in the 2009 Supervisory Capital Assessment Program (SCAP)⁴, popularly known as the bank stress tests. As such, we run a diff-in-diff model by considering as treated the 19 BHCs in the interval 2011-2012 and untreated all companies in 2008 and 2009. We repeat the analysis first by excluding Mining, Quarrying, and Oil and Gas Extraction industry and then by limiting the sample at Finance and Insurance industry.

We contribute to the existing literature on political connections by providing empirical evidence that a causal link between regulation and political connections exists. Specifically, as industry-level regulation increases, political connections are more likely to be established. Furthermore, our results have important policy implications, since they contribute to nourish the discussion of regulating political connections. As recently noted by President Obama⁵, big oil, Wall Street banks and health insurance companies, which are indeed highly regulated firms, “marshal their power every day in Washington to drown out the voices of everyday Americans”, suggesting not only that industry-level regulation and politics are widely interconnected, but also that a rationale for regulation exists.

The rest of the paper is organized as follow. First, we review past papers and develop our research hypotheses (section I). Second, we explain our definition of political connectedness and the dataset building (section II). Third, we describe data, variables and methodologies (section III). Then we run a preliminary inspection (section IV) and we discuss our main results (V). Conclusions are drawn in section VII.

⁴ “The Supervisory Capital Assessment Program: Overview of Results”, available at <https://www.federalreserve.gov/newsevents/press/bcreg/bcreg20090507a1.pdf>

⁵ President Obama's statement is related to the Supreme Court Decision on January 21, 2010, which allowed corporations and unions to spend unlimited expenses for political activities (as long as they were done independently of a party or candidate). The statement is publicly available at <https://www.whitehouse.gov/the-press-office/statement-president-todays-supreme-court-decision-0>

I. Literature Review and Hypotheses

A first crucial issue for a paper assessing the determinants of political connection is defining the concept of “political connections”. There are different possible measures of political connections. An explicit measure normally requires that either politicians work in a firm, or businessmen and directors enter politics (Faccio, 2006; Khwaja and Mian, 2005; Bunkanwanicha and Wiwattanakantang, 2009). However, several less explicit measures of political connections have been employed in the literature. For example, various papers consider firms’ campaign contributions (Claessens, Feijen and Laeven, 2008; Cooper, Gulen, and Ovtchinnikov, 2010); other papers employ family relationships with politicians (Amore and Bennedsen, 2013); alternately, others use the firms’ proximity to political party (Pantzalis and Park, 2012). Moreover, firms try to affect government decisions also through the lobbying activity (Blanes i Vidal, Draca and Fons-Rosen, 2012; Borisov, Goldman and Gupta, 2015). A further way to identify political connections takes into account the political background of directors (Goldman, Rocholl and So, 2009). Our approach loosely follows this last measure of political connection. In particular, we use a definition that considers both sides of a “revolving door”, specifically the movement from business to politics and from politics to business. According to that, we identify a political connection when: (i) former directors, corporate executives and/or founders of listed firms enter politics; (ii) former politicians join firms either as directors or as corporate executives. For the sake of simplicity, from here onward we refer to former directors, corporate executives and/or founders entering politics as former businessmen.

Past papers provide evidence that political connections are valuable in various ways. For example, Goldman, Rocholl and So, (2013) find that political connections are related to a higher value of firms’ procurement contracts. Furthermore, politically connected firms are more likely both to receive government funds in case of distress (Faccio, Masulis and McConnell, 2006) and to have access to federal investment funds (Duchin and Sosyura, 2012). Political connections are also positively associated to firms’ value and performance (Faccio, 2006; Claessens, Feijen and Laeven, 2008; Ferguson and Voth, 2008; Bunkanwanicha and Wiwattanakantang, 2009; Goldman, Rocholl and So, 2009; Cooper, Gulen, and Ovtchinnikov, 2010; Kim, Pantzalis and Park, 2012; Ovtchinnikov and Pantaleoni, 2012; Amore and Bennedsen, 2013), even if a smaller group of papers documents a negative link (Fan, Wong and Zhang, 2007; Duchin and Sosyura, 2012; Faccio, Masulis and McConnell, 2006). In addition, political connections are associated to

preferential access to finance and larger loans (Claessens, Feijen and Laeven, 2008; Khwaja and Mian, 2005), although surprisingly Bunkanwanicha and Wiwattanakitang (2009) show that politically connected firms do not borrow more.

A group of papers points out that political connections are relevant in countries with high levels of corruption (Fisman, 2001; Faccio, 2006). More recently, other studies provide evidence that political connections are also important in countries characterized by strong legal contexts and low-corruption environments (Goldman, Rocholl and So, 2009; Amore and Bennedsen, 2013). Specifically, in the United States firms adopt a variety of political strategies to establish political connections, such as adding former politicians to their board of directors (Goldman, Rocholl and So, 2009) and making campaign contributions (Cooper, Gulen and Ovtchinnikov, 2010).

A further stream of research shows a positive link between political connections and industry level-regulation (Bunkanwanicha and Wiwattanakitang, 2009; Cooper, Gulen, and Ovtchinnikov, 2010). However, those papers focus on very few heavily regulated industries, as financial services and utilities industries. Our paper is related to this group, but it has a different perspective as we investigate if a causal link between regulation and political connections exists. Specifically, we expect that firms in the most regulated industries attempt to establish political connection to better off their economic conditions.

Based on past papers findings, our first research hypothesis is that there is a positive association between political connection and industry-level regulation, as stated below:

H₁: Firms in strongly regulated industries are more likely to be politically connected (i.e. either whether a former politician joins a firm or whether a former businessman enters politics) than companies in less regulated industries.

Second, we posit that a causal link between regulation and political connection exists. For this purpose, we use the DFA (signed into federal law by President Barack Obama on July 21, 2010) as exogenous shock, since this altered the industry-level regulation in the financial industry. Specifically, we posit that companies influenced by the DFA increased their political connections. Our hypothesis is the following:

H₂: Companies affected by the DFA (i.e. the 19 BHCs that participated in the 2009 SCAP) are more likely to hire former politicians as corporate executives and/or to appoint them as directors, following the passage of the Act, than other companies.

In addition, we also posit two further hypotheses. First, we exclude from the sample Mining, Quarrying, and Oil and Gas Extraction industry:

H_{2a}: Companies affected by the DFA (i.e. the 19 BHCs that participated in the 2009 SCAP) are more likely to hire former politicians as corporate executives and/or to appoint them as directors, following the passage of the Act, than other companies, with the exclusion of Mining, Quarrying, and Oil and Gas Extraction industry.

Section 1504 of the DFA requires oil and mining companies listed on the U.S. Securities and Exchange Commission (SEC) to expand disclosure of payments to foreign governments. However, since the impact of regulation on these companies is much lower (the first mention of these requirements is on page 846 of an 848 page bill), we never include them within the group of treated companies. We exclude oil and mining companies from the sample to investigate if they drive our results.

Second, we focus only on Finance and Insurance industry:

H_{2b}: Companies affected by the DFA (i.e. the 19 BHCs that participated in the 2009 SCAP) are more likely to hire former politicians as corporate executives and/or to appoint them as directors, following the passage of the Act, than other companies in Finance and Insurance industry.

By limiting the analysis to the Finance and Insurance industry, we specifically focus on the industry affected by the new regulation.

II. Political connections in the U.S.

We use a definition of political connectedness that takes into account both sides of a revolving door, namely from politics to business and from business to politics. Specifically, we identify a political connection when: (i) former businessmen enter politics, over the period 2000-2014; (ii) former United States politicians at the federal level, selected because in charge on the period 2000-2014, join firms either as directors or as corporate executives⁶. We clarify that if the selected politicians had a further role in politics (at the federal level) in the time period antecedent the interval 2000-2014, we identify additional political connections, in case they joined firms, since 1999.

Politicians at the federal level are related to both United States Legislative (Senate and House of Representatives) and Executive Branches (The President, The Vice President, the principal executives of the Executive Office of the President, The Cabinet⁷), and are in charge on the period January 2000-September 2014. To collect names of politicians, we used websites such as Congressional Biographical Directory, Official White House website, U.S. Department of State Office of the Historian and OpenCongress.

The total number of individuals was 1,235, but since they often covered more than a single position in politics, this number increases to 1,507 (that is the number of person-position combinations). By using public data (available on websites as Bloomberg, Reuters, Forbes, The Center for Responsive Politics and University websites), we identified politicians with a “business career” as directors, corporate executives and/or founders, before or after entering politics. We identified firms as being “politically connected” if linked with a politician. Because of our definition of political connectedness, the type of connections we identify is entirely legal.

We used SEC’s EDGAR database to associate the Central Index Key (CIK) to every firm. By analyzing definite proxy statements-submission type Def 14a (containing information on board members’ career), and by using corporate websites, we were able to check and further

⁶ Notice that our definition of revolving door is lightly different from the commonly known one, since we consider on the one hand politicians, and on the other hand directors, corporate executives and possibly founders. For the sake of clarity, we report the definition given by the Center for Responsive Politics: “Although the influence powerhouses that line Washington’s K Street are just a few miles from the U.S. Capitol building, the most direct path between the two doesn’t necessarily involve public transportation. Instead, it’s through a door—a revolving door that shuffles former federal employees into jobs as lobbyists, consultants and strategists just as the door pulls former hired guns into government careers.” The definition is available at <https://www.opensecrets.org/revolving/> (last access: May, 2016).

⁷ Data are subject to availability. Notice that we have considered also positions which are frequently accorded cabinet-level rank.

identify the identity of both former politicians that joined boards and directors that left the board in order to enter politics.

We consider a firm being politically connected either starting from the date of announcement of corporate and political hiring/appointments on news/press releases or, if it is not available, from the first obtainable date on SEC filings⁸. Political connections end at the date of announcement of resignations, which are collected by following the same criterium (on news/press releases and/or SEC filings).

To collect dates of announcement of corporate and political appointments and resignations, we performed an extensive keyword search on LexisNexis. For example, to find the date of announcement related to a corporate appointment, we performed: *Name of the individual + join + name of the firm, Name of the firm + appoint + name of the individual, Name of the firm + elect + name of the individual.*

To build our final dataset, we followed four main steps. First, we used Compustat to identify S&P 500 components over the period 1999-2014. Basically, we selected all the companies which have been constituents of the Index at least one time over that specific time period. Second, we collected data on financial statements of these companies, by using again Compustat. Third, for every year, we identified politically connected firms on the dataset. Fourth, we only kept firms located in the United States, since regulation impacts for sure on them. Finally, we left with 814 companies; specifically, 135 out of 814 are politically connected firms. Table 1 describes in detail our final sample.

INSERT TABLE 1

III. Data, variables and methodologies

We first run a cross-sectional linear probability model to investigate if firms in heavily regulated industries are more likely to be politically connected, and therefore test the first hypothesis. The dependent variable is one of the following variables: 1) *Once*: this is a dummy variable taking value 1 if a firm has been politically connected at least one time over the interval 1999-2014 (both sides of the revolving door), and 0 otherwise; 2) *Once_Infirm*: this is a dummy variable taking value 1 if a former politician, selected because in charge over the time period January

⁸ It could be the date of announcement to stand for election to boards of directors.

2000-September 2014, has joined a listed firm at least one time over the interval 1999-2014, and 0 otherwise; 3) *Once_Inpolitics*: this is a dummy variable taking value 1 if a former businessman, that worked for at least one listed firm during his/her career, has entered politics at least one time over the time period January 2000-September 2014, and 0 otherwise. The independent variable (*Top_Regulated*) is a dummy variable taking value 1 if the industry is heavily regulated, and 0 otherwise. Specifically, by using RegData (Al-Ubaydli and McLaughlin, 2015)⁹, we have selected the 15 most regulated industries by 3 digit-naics for every year, going from 1999 to 2014. Over that time period, the top regulated industries are: Chemical Manufacturing (325), Professional, Scientific, and Technical Services (541), Utilities (221), Transportation Equipment Manufacturing (336), Food Manufacturing (311), Support Activities for Transportation (488), Securities, Commodity Contracts, and Other Financial Investments and Related Activities (523), Petroleum and Coal Products Manufacturing (324), Credit Intermediation and Related Activities (522), Air Transportation (481), Animal Production (112), Oil and Gas Extraction (211), Water Transportation (483), Ambulatory Health Care Services (621), Telecommunications (517), Fishing, Hunting and Trapping (114). Table 2 shows how firms are divided by their belonging to the top regulated industries over the years.

INSERT TABLE 2

We use a differences-in-differences estimation framework to investigate if treated companies (affected by the DFA) become more likely to hire former politicians as corporate executives and/or to appoint them as directors than untreated firms after the passage of the new regulation, and hence test the second set of hypotheses.

The key assumption for any differences-in-differences strategy is that the outcome in treatment and control group would follow the same trend in the absence of treatment. Since the common trend assumption is difficult to verify, it is possible to use pre-treatment data to show that the trend was the same. We provide evidence of this assumption in section V. Hence, we can identify the causal effect of the DFA on the likelihood of a company to hire former politicians as corporate executives and/or to appoint them as directors, by estimating the following model:

⁹ RegData counts the number of words and phrases in the Code of Federal Regulations that indicate a specific mandated or prohibited activity and then classifies those regulatory “restrictions” according to which industry or industries they likely target.

$$Y_{i,t} = \alpha + \beta Did_{i,t} + \gamma X_{i,t-1} + A_i + B_j * C_t + \varepsilon_{i,t} \quad (1)$$

where the dependent variable (*Infirm*) is a dummy variable taking value 1 during the years in which a former politician, selected because in charge over the period January 2000-September 2014, is working for a listed firm, and 0 otherwise.

Our coefficient of interest is β for the dummy variable $Did_{i,t}$, which is equal to one for companies affected by the DFA (the 19 BHCs that participated in the 2009 SCAP) following the new regulation (i.e., for years 2011-2012), and zero otherwise (i.e., for years 2008-2009). As such, the pre-treatment and post-treatment periods are respectively the intervals 2008-2009 and 2011-2012.

The vector X consists of industry-year adjusted variables, lagged by one year. In particular, the variables are ROA, Size and Leverage. ROA is the ratio between pre-tax income (Compustat item π_i) and total assets (Compustat item at). Leverage is the ratio of long term debt and debt in current liabilities (Compustat items $dltt$ and dlc) to stockholders' equity (Compustat item seq), long term debt and debt in current liabilities. For both variables, we used the winsorization at 1 and 99 percentile levels. Finally, Size is the natural log of total assets (Compustat item at).

The 19 companies subject to the SCAP, with year-end 2008 assets exceeding \$100 billion, collectively hold two-thirds of the assets and more than one-half of the loans in the U.S. banking system. Later on, the SCAP has been followed by the Comprehensive Capital Assessment Review (CAAR), which reported the first round of results in 2011. CAAR 2011 covered the same institutions that participated in the SCAP¹⁰. The DFA has tightened regulation, by empowering the Federal Reserve to conduct annual stress test of large BHCs and all nonbank financial companies designed by the Financial Stability Oversight Council (FSOC) for Federal Reserve supervision. In addition, the DFA has also required BHCs and other financial companies supervised by the Federal Reserve to conduct their own stress tests. However, still in 2013, when DFA stress test (DFAST) and CCAR have begun to run in parallel, the requirement to be subject to the Federal Reserve's supervisory stress test and, in addition, to conduct company-run stress

¹⁰ "Federal Reserve completes Comprehensive Capital Analysis and Review", available at <http://www.federalreserve.gov/newsevents/press/bcreg/20110318a.htm>

tests applied to the 18 BHCs¹¹ that previously participated in the SCAP. It was only on 2014 that DFAST (and CCAR) covered all BHCs with \$50 billion or more in total consolidated assets, for a total of 30 BHCs¹². These BHCs were also required to conduct company-run stress tests under the supervisory scenarios. Such explanation was due to motivate our choice of including within the group of affected firms by the DFA only the initial number of BHCs covered by the SCAP, affected for sure by the new regulation, and not also the other BHCs, which have been involved only since 2014. In particular, the 19 BHCs we consider are: Bank of America Corporation, JPMorgan Chase & Co., Citigroup, Inc., Wells Fargo & Company Bank Holding Company, The Goldman Sachs Group, Inc., Morgan Stanley, MetLife, Inc., PNC Financial Services Group, Inc., U.S. Bancorp, The Bank of New York Mellon Corporation, GMAC LLC (which is not in our sample), SunTrust Banks, Inc., Capital One Financial Corporation, BB&T Corporation, Regions Financial Corporation, State Street Corporation, American Express Company, Fifth Third Bancorp, KeyCorp.

We run the model four times, by adding variables to each specification. All the specifications include firm fixed effects (A_i). The third and the fourth time, we also include state by year fixed effects ($B_j * C_t$). In addition, we repeat the analysis two more times. The second time, we exclude Mining, Quarrying, and Oil and Gas Extraction industry (two-digit naics code 21). The third time, we limit our analysis to the Finance and Insurance industry (two-digit naics code 52). Table 3 defines all the variables used in our paper.

INSERT TABLE 3

IV. Preliminary inspection

Table 4 presents the results of the cross-sectional linear probability regressions relating the probability of a firm to be politically connected to its belonging to a highly regulated industry. In Panel A, the coefficient of *Top_Regulated* is positive and significant at 10 percent level, suggesting that the likelihood of firms to be politically connected is associated with belonging to

¹¹ As explained in “Dodd-Frank Act Stress Test 2013: Supervisory Stress Test Methodology and Results”, although MetLife, Inc. had participated in the 2009 SCAP and previous CCAR exercises, it did not participate in the 2013 DFAST because it was in the process of deregistering as a bank holding company when the exercise began. The document is available at <http://www.federalreserve.gov/bankinfo/dfa-stress-tests.htm>

¹² “Dodd-Frank Act Stress Test 2014: Supervisory Stress Test Methodology and Results”, available at <http://www.federalreserve.gov/newsevents/press/bcreg/bcreg20140320a1.pdf>

a top regulated industry. When we consider separately the two sides of the revolving door, the coefficient of *Top_Regulated* remains positive and significant at 10 percent level both if the dependent variable is *Once_Infirm* (Panel B) and *Once_Inpolitics* (Panel C), suggesting that: (i) the likelihood of firms to hire former politicians as corporate executives and/or to appoint them as directors is associated with belonging to a top regulated industry; (ii) the likelihood that a former businessmen enter politics is associated with firms in heavily regulated industry. Overall, results confirm the first hypothesis: firms in top regulated industries are more likely to be politically connected. In all the Tables showing the results, the standard errors (in brackets) are robust to heteroskedasticity.

INSERT TABLE 4

V. Main results

To document that the existence of the link between industry-level regulation and political connections is consistent with causation, we investigate whether, after the DFA's passage, companies affected by the new regulation become more likely to hire former politicians as corporate executives and/or to appoint them as directors. First, we provide evidence that the common trend assumption holds. Graphs from 1A to 1C show the mean of the dependent variable *Infirm* for each year of the pre-treatment period (years 2008-2009) and beyond it, specifically from 2007 to 2013. With respect to Graph 1A, which considers the full sample, Graph 1B excludes Mining, Quarrying, and Oil and Gas Extraction industry, while Graph 1C shows the trend by limiting the analysis to Finance and Insurance industry. In Graph 1B, we do not document any relevant difference with respect to the trend reported in Graph 1A, as the number of excluded companies is quite small. All the Graphs report a parallel trend from 2007; however, in 2009 (i.e. in the post-crisis period), we observe a decline in the mean of *Infirm* for the treated firms, possibly because politicians preferred to stay far from BHCs at that time.

INSERT GRAPHS FROM 1A TO 1C

Table 5 shows the results for our differences-in-differences model (1). The coefficient of interest is estimated for the treatment variable *Did*, which is equal to 1 for companies affected by

the DFA (the 19 BHCs that participated in the SCAP) following the new regulation (i.e., for years 2011-2012), and zero otherwise (i.e., for the years 2008-2009). The coefficient of interest provides information about the causal effect of the new regulation. We report the results in Table 5 Panel A. We run the model two more times. The second time, we exclude companies in Mining, Quarrying, and Oil and Gas Extraction industry (two-digit naics code 21). We report the results in Table 5 Panel B. The third time, we only keep companies in Finance and Insurance industry (two-digit naics code 52). Results are shown in Table 5 Panel C.

INSERT TABLE 5

For all Panels, the coefficient estimate for the treatment variable (*Did*) is positive and statistically significant in all the columns, where the dependent variable is *Infirm*. Since we find that the treated companies are more likely to hire former politicians as corporate executives and/or to appoint them as directors following the DFA's passage, our second set of hypotheses is confirmed.

VI. Conclusions

In this paper, we focused on the link between regulation and political connections in the United States. Our motivation lays on the belief that industry-level regulation is crucial across firms, as generally companies oppose restrictive regulation, mostly perceived as costly and an obstacle for business activities. This is the reason why heavily regulated firms should be more prone to look for political connections, as they try to better off their economic conditions. In particular, after having given a definition of connectedness, based on the movement between politics and business (revolving door), and by exploiting a unique dataset for the time period 1999-2014, we first asked whether firms in heavily regulated industries are more likely to be politically connected. The existence of a correlation, showed in our preliminar inspection, both confirms and strengthens the findings of previous studies. Further, in order to investigate if our results are consistent with causation, we used a shock in regulation within a differences-in-differences estimation framework. Specifically, we investigated if firms in industries affected by the DFA become more likely to hire former politicians as corporate executives and/or to appoint them as

directors after the passage of the new regulation. Results confirm our hypotheses, providing evidence for causation.

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Table 1: Sample

This table defines our sample. The total number of firms, which have been at least one time S&P 500 components over the period 1999-2014, is 814. Politically connected firms are 135 out of 814. Among the politically connected firms, 104 are joined by former politicians, and 60 are linked to former businessmen enter politics. The number of firms that is not politically connected is 679.

Total N. of firms	Politically Connected Firms	Politically Connected Firms (from politics to firm)	Politically Connected Firms (from business to politics)	Nonpolitically connected firms
814	135	104	60	679

Table 2: Political connections in the U.S. over the period 1999-2014

This table reports the number of firms in the sample either in the top regulated industries or not, by year. We distinguish between firms either hiring former politicians as corporate executives and/or appointing them as directors (column 1) and firms linked with former businessmen entering politics (columns 2). Both of them are politically connected. The top regulated industries for each year, going from 1999 to 2014, have been identified by 3 digit-naics, by using RegData.

Year	(1) N. of firms hiring and/or appointing former politicians: from politics to firm			(2) N. of firms linked with former businessmen entering politics: from business to politics		
	N. of firms in top regulated industries	N. of firms not in top regulated industries	Total number of firms	N. of firms in top regulated industries	N. of firms not in top regulated industries	Total number of firms
	1999	7	4	11	1	0
2000	5	4	9	12	8	20
2001	11	14	25	14	11	25
2002	10	13	23	20	15	35
2003	11	19	30	18	13	31
2004	13	21	34	20	15	35
2005	16	24	40	18	12	30
2006	20	28	48	19	15	34
2007	24	28	52	12	10	22
2008	24	24	48	12	10	22
2009	29	29	58	8	4	12
2010	30	30	60	7	3	10
2011	34	31	65	9	4	13
2012	31	33	64	8	5	13
2013	29	33	62	4	4	8
2014	23	28	51	3	5	8
Total	317	363	680	185	134	319

Table 3: Variable definition

This table defines the variables and the symbols used in the paper.

Variable	Symbol	Variable definition
Politically connected firm, at least once between 1999-2014	<i>Once</i>	Dummy variable taking value 1 if a firm has been politically connected at least one time over the interval 1999-2014 (both sides of the revolving door), and 0 otherwise.
A firm either hiring former politicians as corporate executives or appointing them as directors, at least once between 1999-2014	<i>Once_Infirm</i>	Dummy variable taking value 1 if a former politician, selected because in charge over the time period January 2000-September 2014, has joined a listed firm at least one time over the interval 1999-2014, and 0 otherwise.
A firm connected at least once with a former businessman entering politics between Jan. 2000 and Sept. 2014	<i>Once_Inpolitics</i>	Dummy variable taking value 1 if a former businessman, who worked for at least one listed firm during his/her career, has entered politics at least one time over the time period January 2000-September 2014, and 0 otherwise.
Top regulated industries in the United States over the time period 1999-2014	<i>Top_Regulated</i>	Dummy variable taking value 1 for the top regulated industries, and 0 otherwise. By using RegData, we select the 15 most regulated industries for every year from 1999 to 2014. By 3 digit-naics, the most regulated industries are: Chemical Manufacturing (325), Professional, Scientific, and Technical Services (541), Utilities (221), Transportation Equipment Manufacturing (336), Food Manufacturing (311), Support Activities for Transportation (488), Securities, Commodity Contracts, and Other Financial Investments and Related Activities (523), Petroleum and Coal Products Manufacturing (324), Credit Intermediation and Related Activities (522), Air Transportation (481), Animal Production (112), Oil and Gas Extraction (211), Water Transportation (483), Ambulatory Health Care Services (621), Telecommunications (517), Fishing, Hunting and Trapping (114).
Treatment effect	<i>Did</i>	Dummy variable taking value 1 for companies affected by the DFA (the 19 BHCs that participated in the SCAP) following the new regulation (i.e., for years 2011-2012), and zero otherwise (i.e., for years 2008-2009).
A firm connected with a former politician in a specific year	<i>Infirm</i>	Dummy variable taking value 1 during the years in which a former politician, selected because in charge over the period January 2000-September 2014, is working for a listed firm, and 0 otherwise.
Return on assets	<i>ROA</i>	ROA is the ratio between pre-tax income (Compustat item pi) and total assets (Compustat item at). This is industry-year adjusted and winsorized at 1 and 99 percentile levels.
Size	<i>Size</i>	Size is the natural log of total assets (Compustat item at). It is an industry-year adjusted variable.
Leverage	<i>Lev</i>	Leverage is the ratio of long term debt and debt in current liabilities (Compustat items dlta and dlc) to stockholders' equity (Compustat item seq), long term debt and debt in current liabilities. This is industry-year adjusted and winsorized at 1 and 99 percentile levels.

Table 4: Cross-sectional Linear Probability Model

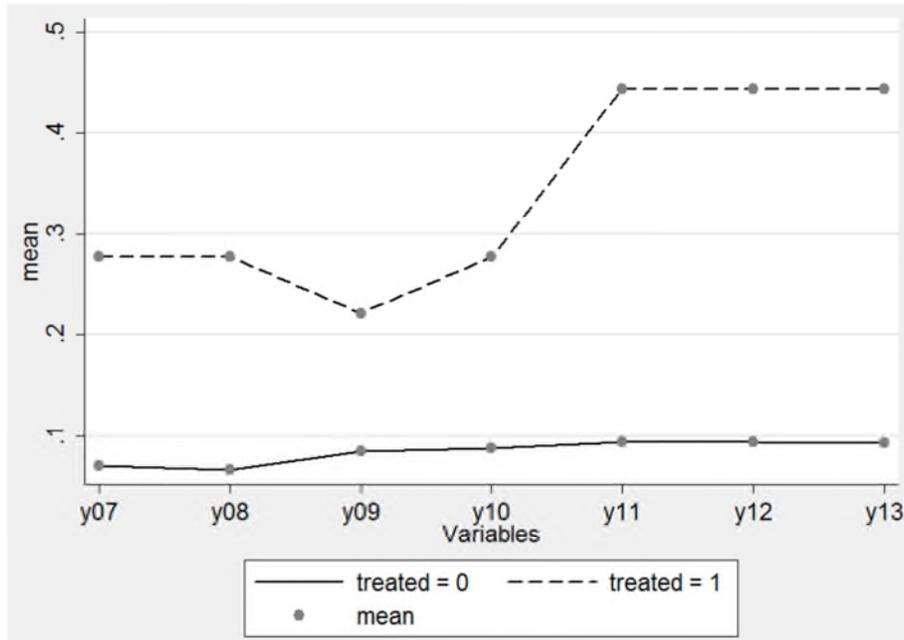
This table shows the results for the cross-sectional linear probability model. The dependent variable is, respectively, *Once* (Panel A), *Once_Infirm* (Panel B), and *Once_Inpolitics* (Panel C).

	Panel A	Panel B	Panel C
	<i>y= Once</i>	<i>y= Once_Infirm</i>	<i>y = Once_Inpolitics</i>
	Coef.	Coef.	Coef.
Top_Regulated	0.049* (0.027)	0.043* (0.024)	0.035* (0.019)
Constant	0.146*** (0.016)	0.110*** (0.014)	0.059*** (0.011)
R ²	0.00	0.00	0.00
N	814	814	814

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$
Robust standard errors in brackets

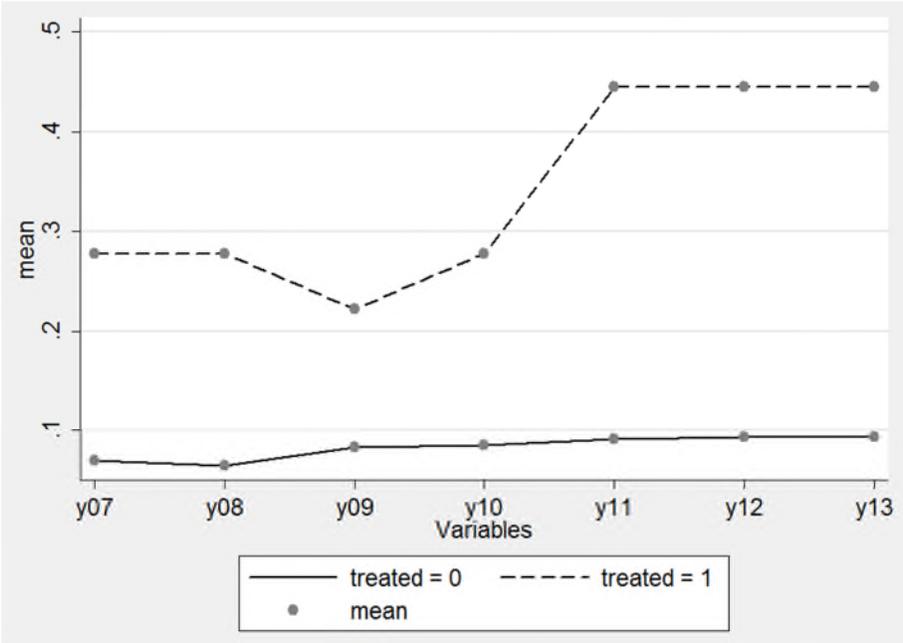
Graph 1A: Former politicians in firm over the time period 2007-2013

This table shows the mean of the dependent variable *Infirm* (on the vertical axis) from 2007 to 2013. The years are plotted along the horizontal axis. The treated companies are the 19 BHCs that participated in the SCAP. The trend of both treated (dashed lined) and untreated companies (continuous line) is parallel in the pre-treatment period. However, in 2009 (i.e. in the post-crisis period), we report a decline in the mean of *Infirm* for the treated companies, possibly because politicians preferred to stay far from the largest BHCs at that time.



Graph 1B: Former politicians in firm over the time period 2007-2013

This table shows the mean of the dependent variable *Infirm* (on the vertical axis) from 2007 to 2013. The years are plotted along the horizontal axis. The treated companies are the 19 BHCs that participated in the SCAP. We exclude from the sample companies in Mining, Quarrying, and Oil and Gas Extraction industry. The trend of both treated (dashed lined) and untreated companies (continuous line) is parallel in the pre-treatment period. However, in 2009 (i.e. in the post-crisis period), we report a decline in the mean of *Infirm* for the treated companies, possibly because politicians preferred to stay far from the largest BHCs at that time. In this Graph, we do not document difference with respect to the trend reported in Graph 1A, as the number of excluded companies is quite small.



Graph 1C: Former politicians in firm over the time period 2007-2013

This table shows the mean of the dependent variable *Infirm* (on the vertical axis) from 2007 to 2013. The years are plotted along the horizontal axis. The sample consists of all the companies in Finance and Insurance industry. The treated companies are the 19 BHCs that participated in the SCAP. The trend of both treated (dashed lined) and untreated companies (continuous line) is parallel in the pre-treatment period. However, in 2009 (i.e. in the post-crisis period), we report a decline in the mean of *Infirm* for the treated companies, possibly because politicians preferred to stay far from the largest BHCs at that time.

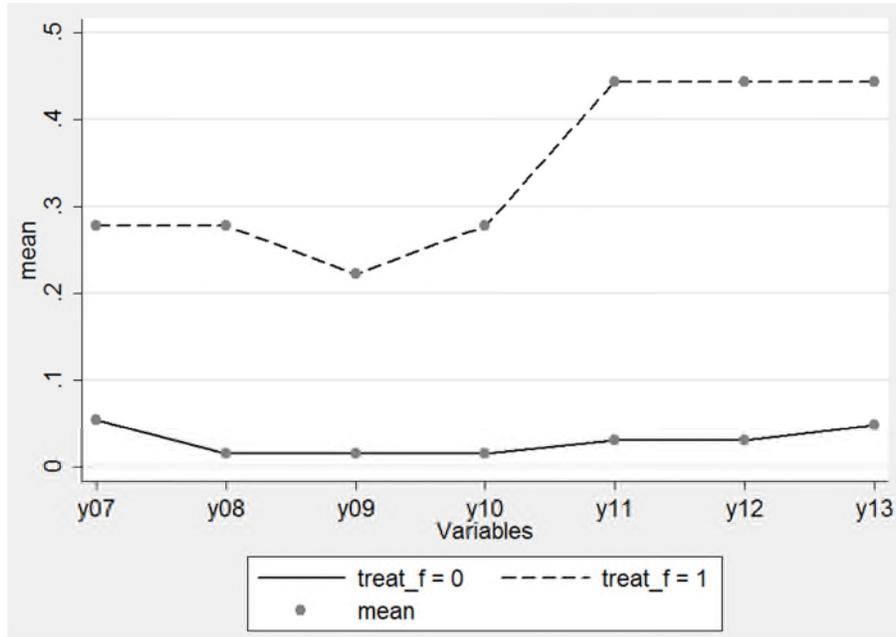


Table 5: DFA's Reaction: Former Politicians in Firms

This table reports the results for a set of linear probability regressions in which the dependent variable is *Infirm* (a dummy variable that identifies politically connected firms either hiring and/or appointing a former politician). The treatment variable (*Did*) is equal to one for companies affected by the DFA (the 19 BHCs that participated in the SCAP) following the new regulation (i.e., for years 2011-2012), and zero otherwise (i.e., for years 2008-2009). In Panel B, the analysis excludes companies in Mining, Quarrying, and Oil and Gas Extraction industry (two-digit naics code 21). In Panel C, we only keep companies in Finance and Insurance industry (two-digit naics code 52). In column 2 and 4 of all Panels we control for ROA, Leverage and Size (which are industry-year adjusted and winsorized at 1 and 99 percentile levels, except Size). In column 3 and 4 of all Panels we control for the state-by-year fixed effects. All the specifications include firm fixed effects. Standard errors (in brackets) are clustered at firm level. The asterisks *, ** or *** denote significance at the 10%, 5% and 1% levels, respectively.

Panel A				
Dependent variable:	(1)	(2)	(3)	(4)
<i>Infirm</i>				
Did	0.194** (0.089)	0.195** (0.089)	0.194** (0.097)	0.198** (0.098)
ROA		0.001 (0.050)		-0.000 (0.055)
Lev		0.011 (0.012)		0.012 (0.011)
Size		0.023 (0.020)		0.014 (0.021)
Constant	0.089*** (0.001)	0.091*** (0.001)	0.099*** (0.006)	0.098*** (0.006)
Firm FE	Yes	Yes	Yes	Yes
State*Year	No	No	Yes	Yes
R ²	0.02	0.02	0.07	0.08
No. Obs.	2,550	2,487	2,526	2,463

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Standard errors clustered at firm level in brackets

Panel B				
Dependent variable:	(1)	(2)	(3)	(4)
<i>Infirm</i>				
Did	0.194** (0.089)	0.195** (0.089)	0.197** (0.098)	0.204** (0.099)
ROA		-0.000 (0.054)		0.006 (0.059)
Lev		0.011 (0.012)		0.011 (0.011)
Size		0.020 (0.021)		0.010 (0.023)
Constant	0.087*** (0.001)	0.089*** (0.001)	0.097*** (0.005)	0.095*** (0.006)
Firm FE	Yes	Yes	Yes	Yes
State*Year	No	No	Yes	Yes
R ²	0.02	0.02	0.08	0.08
No. Obs.	2,410	2,347	2,390	2,327

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$
Standard errors clustered at firm level in brackets

Panel C				
Dependent variable:	(1)	(2)	(3)	(4)
<i>Infirm</i>				
Did	0.194** (0.090)	0.182** (0.088)	0.237** (0.114)	0.239** (0.117)
ROA		-0.340 (0.236)		-0.425 (0.329)
Lev		-0.220 (0.138)		-0.331 (0.213)
Size		0.090 (0.063)		0.106 (0.076)
Constant	0.072*** (0.010)	0.074*** (0.010)	0.075*** (0.022)	0.046** (0.022)
Firm FE	Yes	Yes	Yes	Yes
State*Year	No	No	Yes	Yes
R ²	0.10	0.13	0.23	0.26
No. Obs.	334	316	330	312

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$
Standard errors clustered at firm level in brackets



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