



Corporate lobbying in Brussels: Impact of direct and indirect lobbying strategies on firm profitability

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Abstract

Lobbying is today a multimillion-dollar global industry, responsible for sharing of information, expertise, and network of relations. The returns on corporate lobbying is one topic of concern for managers and academics alike. Nonetheless, international literature is divided in whether lobbying brings more benefits than costs, and European research has insufficient literature on the corporate financial implications of lobbying in Brussels. This study aims to understand whether lobbying improves firm profitability, as measured by ROA and ROE, for a 300-company sample via OLS cross-sectional and First Effects and First Differenced estimators panel analysis. By including the most relevant direct and indirect lobbying strategies from qualitative literature such as establishment of a Brussels office or hiring a professional intermediary, the goal is to understand how different routes contribute to financial benefit. This study does not find solid evidence to support the claim that lobbying firms perform better. However, hiring a ‘revolving door’ lobbyist (as measured by an access proxy) reports a significant positive effect on ROA. Separate reporting for results including and excluding sample outliers provides some robustness to the findings. This report contributes to literature by testing the profitability impact of several lobbying strategies at EU level for a sample of public and private firms, and for providing an initial insight into lobbying effort returns for different time lags.

Keywords: corporate lobbying, Corporate Political Activity, lobbying strategies, firm profitability, EU lobbying

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Resumo

Lobbying é hoje uma indústria global avaliada em vários milhões de dólares, responsável por partilha de informação, experiência e redes de relações. O retorno do lobbying empresarial é um tema que interessa a empresários e académicos. No entanto, a literatura internacional está dividida em relação custo-benefício do lobbying e a literatura europeia não tem estudos suficientes para as implicações financeiras do lobbying em Bruxelas. Este estudo procura compreender se o lobbying melhora a rentabilidade das empresas, medida por ROA e ROE, para uma amostra de 300 empresas com dados transversais e de painel, estudadas através de OLS e estimadores Efeitos Fixos e Primeiras Diferenças. A inclusão de estratégias relevantes de lobbying direto e indireto provenientes da literatura qualitativa, como por exemplo estabelecimento de um escritório em Bruxelas ou contratação de intermediários profissionais, permite compreender como estas alternativas contribuem para o benefício financeiro. Este estudo não encontra evidência robusta de que as empresas que fazem lobbying tem melhor performance financeira. No entanto, contratar um lobista ‘porta giratória’ (medido através de uma métrica de acesso) apresenta um impacto positivo significativo no ROA. A análise com e sem valores extremos traz alguma robustez às conclusões do estudo. Este relatório contribui para a literatura através do teste à rentabilidade de várias estratégias de lobbying na UE para uma amostra de empresas públicas e privadas, e por providenciar um olhar inicial ao retorno dos esforços de lobbying através de vários desfasamentos temporais.

Palavras-chave: lobbying corporativo, Atividade Política Corporativa, estratégias de lobbying, rentabilidade da empresa, lobbying na EU

Título: Lobbying empresarial em Bruxelas: impacto de estratégias diretas e indiretas de lobbying na rentabilidade das empresas

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List of Abbreviations

CEU	Council of European Union
CPA	Corporate Political Activity
EC	European Commission
EP	European Parliament
ETR	European Transparency Register
FD	First Differenced
FDI RI	OECD FDI Restrictiveness Index
FE	Fixed Effects
MEP	Member of European Parliament
p.p.	percentage points
ROA	Return on Asset
ROE	Return on Equity

1. Introduction

After being elected as President of the United States in 1868 with only 46 years, Ulysses Simpson Grant, the former general and commander of the Union army in the last years of the American Civil War was often found at the Willard Hotel, close to the White House, when he wanted to get away from the turmoil and pressure of the office. Part of that turmoil was caused by the number of pursuers that continuously tried to shift his agenda according to their own interests. It is said that while the 18th US President was staying at the Willard, in anticipation of enjoying a nice brandy and a cigar, he was cornered in the hotel lobby by his pursuers and so uttered: “those damn lobbyists”¹. Ulysses Grant was not, however, the first person to use the term “lobbyist” or to name the professional activity, as it is sometimes suggested. The Oxford English Dictionary recorded the noun “lobby” back in 1640 as a place in the House of Commons where public officials and members of public would discuss their concerns², but the origins of the lexicon could feasibly be traced back even further. More recently, lobbying can be described as, for example, the “advocacy of a point of view, either by groups or individuals”³ or “a pressure tactic that allows firms to manage outcomes in their non-market environment” (Brown, 2016:276), depending on the source examined.

Nonetheless, lobbying is nowadays a multimillion-dollar industry that significantly impacts legislators’ output throughout the globe. Fortune 100 companies spend \$2 billion per year to advance, hinder, or eliminate legislative proposals according to their interests while partnering with, or clashing against, NGOs, labour, or environmental groups, think tanks, public authorities, or other firms. This means that, on average, each of the 535 members of the US Congress is faced with \$3.7 million worth of pressure from these firms alone. For the top 10 firms of Fortune 100, the ROI on lobbying is 1,000 to 1, meaning that \$1 spent in lobbying by these companies can generate \$1,000 in government contracts and grants⁴. In comparison, the numbers for the EU are not as striking. Nevertheless, Brussels’ population of between 15,000 to 30,000 lobbyists is only outnumbered in size by Washington DC (Chambers, 2016).

¹ Sources: <https://thehill.com/homenews/news/332908-the-hills-history-cast-those-damn-lobbyists>
<https://www.merriam-webster.com/words-at-play/the-origins-of-lobbyist>
<https://www.biography.com/us-president/ulysses-s-grant>, accessed in 29th August 2020.

² Source: <https://www.lexico.com/definition/lobby>, accessed in 29th August 2020.

³ Source: <http://grprofessionals.org/about-lobbying/what-is-lobbying>, accessed in 29th August 2020.

⁴ Source: <https://www.forbes.com/sites/adamandrzejewski/2019/05/14/how-the-fortune-100-turned-2-billion-in-lobbying-spend-into-400-billion-of-taxpayer-cash/>, accessed in 15th July 2020.

According to the non-profit Sunlight Foundation, by 2016 only 22 countries worldwide were regulating lobbying, such as France, Germany, UK, and US⁵. This means that lobbying information disclosure is still limited to a few countries and regions, restricting research on the financial impacts of lobbying to firm performance to these regions. US empirical literature on this relation is quite extensive when compared to other geographies, which is likely to be partially explained by comprehensive legislating federal-level efforts that started in 1876 and culminated in the Lobbying Disclosure Act of 1995 (with the process being described by, for example, Holman, 2006). There is a variety of empirical studies regarding financial impacts for individual economic agents in the US, measured by financial statement metrics like net income (see, for example, Chen, et al., 2012) or by evaluating stock price fluctuations given an exogenous shock (Borisov, et al., 2016). In comparison, EU studies are mostly based on policy-centred research for interest groups and associations regarding issues like influence, framing, mobilization, and conflict (see, for example, Klüver, 2013; Klüver, et al., 2015; Wonka, et al., 2018). The scarcity of empirical studies might be related to the only recent availability of public databases like the European Transparency Register (ETR) that allow for more widespread information and scrutiny of politicians and corporations alike. Nonetheless, Dellis & Sondermann (2017) statistically connects lobbying intensity to company size with the emphasis on how lobbying can be “welfare decreasing” for the society if incumbents of sheltered industries restrict regulation, drawing from Stigler (1975). Bernhagen & Mitchell (2009) studies a sample from “The Forbes Global 2000” to conclude that firm size and regulatory exposure influence lobbying intensity.

This project’s objective is twofold. I aim to, first, evaluate how lobbying firms perform against their non-lobbying counterparts, by comparing two samples (treatment and control groups) separated by whether there is record of an ETR registration. Secondly, I aim to understand the impact in firm profitability of different literature-backed direct and indirect lobbying strategies at the EU level (such as lobbying expenses; establishment of a Brussels office or hiring a law/consulting firm), for a sample of both publicly traded and privately-owned firms, as part of grasping the essence of the lobbying-performance relationship. In this regard, I aim to also investigate what is the behaviour of short and medium-term lobbying returns, by analysing how lobbying affects financial performance over the years.

⁵ Source: <https://sunlightfoundation.com/2016/11/30/influence-abroad-the-state-of-global-lobbying-disclosure/>, accessed in 29th August 2020.

Based on a 300-company sample extracted from the ETR and by analyzing at both the cross-sectional and using FE and FD estimators at the panel data level, I find little evidence to support the claim that lobbying firms present higher profitability levels. Nonetheless, hiring a ‘revolving door’ lobbyist, as measured by the access proxy of number of meetings with EC officials, shows a significant positive impact on performance when measured by ROA when tested for the immediate effect. There is also evidence that EU-based companies perform worse than their counterparts. The establishment of Brussels office or hiring a professional intermediary do not show meaningful impact on profitability and neither do lobbying expenses, which have negligible effect in the short and medium term.

This document is divided into 5 chapters. Next chapter (Chapter 2) summarizes the current state of CPA and lobbying literature, looking into both the qualitative and quantitative literatures with focus on US and EU studies and includes the hypotheses formulation. Chapter 3 presents the data collection and methodology processes. Chapter 4 details the results and Chapter 5 concludes with the discussion of the findings, identifying study limitations and recommending future research topics.

2. Literature Review

2.1. Overview on lobbying concept, stakeholders, and impacting factors

Lobbying is represented in literature as, not only a means of providing specialized technical expertise to seriously understaffed entities, when dealing with extremely complex issues (Klüver, et al., 2015b) but also as a calculated investment by stakeholders with the ambition of influencing policymaking to adopt a more positive (or less negative) stance in on-development pieces of legislation (Chen, et al., 2012). Although lobbying might entail potential benefits to the stakeholders involved, it is further described to bring exaggerated costs to concerned, but not directly engaged parties, such as shareholders (Hadani & Schuler, 2013) or competitors (Dellis & Sondermann, 2017) through unethical practice of influence (Borisov, et al., 2016). Mahoney & Baumgartner (2008) consider lobbying as an exchange built mostly on trust, with one party providing resources in information or financial support, and the other party “paying” an undefined and not contractually established price somewhere in the future.

In simple terms, the lobbying arena can be divided into two sides. On the one side, we have public representatives, which include politicians and political parties or civil servants (Beyers, 2002). In the US, literature highlights primary motive for these individuals to engage in lobbying resides in their resource constraints, be it funding or information, and their main goal is (re-)election (see for example, Mahoney & Baumgartner, 2008). EU representatives, on the other hand, are more detached from popular vote due to the way the supranational system is built (Sqapi, 2015).

On the other side of the table, we have a vast variety of interests, represented through public and private interest groups that aim to gain access to protected markets, financial support in the form of subsidies or lower taxes and government contracts (Stigler, 1975). According to Klüver, et al. (2015a), these groups can be categorized by organizational form and nature of interest. Regarding organizational form, we can distinguish associations (groups of individuals, firms, public institutions, or even other associations) from firms. As for the nature of interests, we can identify specific-interest groups, in general economically motivated (which include firms, trade and employer unions or sectorial associations) and diffuse-interest groups (represented by NGOs, environmental and consumer groups) (Beyers, 2002). Nature of interest separates associations into “sectional groups” (representing specific economic interests) from “cause groups” (occupied with diffuse and societal concerns) (Klüver, et al., 2015a). The costs and benefits associated with political activity are more easily allotted to participants from specific-

interest than diffuse-interest groups, so the prior are generally more prepared and motivated to provide adequate know-how to policymakers (Beyers, 2002; Klüver, et al., 2015a). Nonetheless, one should not regard diffuse interests as being of little relevance or, on the opposite side, concentrated interest has the most influential, since literature provides mixed results on their potential to influence policymaking (Dür, 2008). Furthermore, policymakers are not unaware of the ulterior motives associated with the information sharing coming from economic interest groups and tend to diversify their supply of knowledge (Beyers, 2004).

However, the argument presented by Beyers (2002); Klüver, et al. (2015a) of more efficient specific-interest groups is substantiated by political participation research. Companies are the most active players in lobbying with public officials, as measured by number of meetings with the European Commission (EC), followed by professional lobbying firms (Egerod, et al., 2019). By June 6th, 2020, lobbying transparency website *IntegrityWatch.eu* records 17,369 lobby meetings with Cabinet Members, Commissioners and Directors-General as being held to represent corporate interests. This represents about 71% of all meetings held for Juncker (2014-2019) and Von der Leyen Commissions (2019-ongoing). Wonka, et al. (2018), in a mobilization study of 116 EU legislative proposals, found that business groups mobilized in 63 of the cases, against 33 for non-business groups. Higher degree of mobilization justifies the reasoning that corporate lobbying goes beyond being a reactive measure for countering potentially harmful regulation, to be a much more proactive and opportunity-seeking initiative. Drutman (2011), for example, in a case study of 4 US industries (telecommunications, pharmaceutical, high-tech, and financial services) shows that only the financial services industry still adopted a more reactive behaviour in 2005, with all industries presenting lobbying levels that seem somewhat independent from government agenda. This represented an evolution from a past general feeling of corporate uninterest towards the government, which is evidently translated in an exponential growth in direct lobbying expenses, that grew sevenfold from 1983 to 2009 (after controlling for inflation) (Drutman, 2011).

Even though there is a variety of stakeholders involved in political activity, contextual and institutional factors (significantly explored by interest group literature) meaningfully influence the interaction between lobbyists and public officials. Klüver, et al. (2015a) explains that issue framing depends on interest group type (for example, oil companies will avoid environmental arguments) as well as the target of lobbying, following a rationale by Schmitter & Streeck (1999) described as logic of membership and logic of influence. Klüver, et al. (2015b) aggregate interest group behaviour predictors into policy-related factors (including previously mentioned

characteristics) and institutional-related factors, associated with the structure of EU political venues. Greater alignment between the public officials and interest groups would lead to less lobbying by interest groups (de Figueiredo & Silverman, 2006). The compatibility between framing strategies from lobbyists and politicians depends on the scope of the conflict, which according to Wonka, et al. (2018), is generally low in the EU, with limited interest group lobbying mobilization and contestation, and it also depends on the degree of media coverage (Boräng & Naurin, 2015).

Finally, it is relevant to note a theoretical difference between access and influence, which can be hard to distinguish in a quantitative study. As Dür & De Bièvre (2007) study on NGOs demonstrates, it would be erroneous to consider access (a developed capability by itself, following Beyers, 2002) as a proxy of influence. However, access is logically relevant (although not sufficient), when pursuing influence (Schuler, et al., 2002; Eising, 2007b). According to Klüver (2013) when analyzing Commission's initial position on pieces of legislation at the early stage of creating the policy proposal, success in policymaking influence is dependent upon the EC's need for information; EC's requirement of citizen support and its' need of support from interest group with high economic power. Dür (2008), following several scholars, highlights that higher resource endowment levels are likely to positively impact influencing success. Consequently, and despite conceptual and practical distinctions, access is a first critical step to the final goal of influencing European public officials and policymaking process.

2.2. EU lobbying landscape – main differences and similarities with US lobbying

The EU as an institution allows for a multitude of political access points (Dür, 2008). Naturally, the different institutions are approached with different intentions and based on different strategies. At the supranational level, interest groups can target the EC, which is “the gate-keeper to the policy-making process” (Klüver, et al., 2015a:486) if the goal is to influence early in the process. Along with the directly elected European Parliament (EP) representatives, responsible for amendments to EC's proposal (Corporate Europe Observatory, 2017), EC and EP constitute accessible political venues to lobbyists. Lastly, the Council of EU (CEU) assembles the national governments, being the ideal venue for big corporations or EU business associations to play a relevant role while keeping a low profile, due to lower transparency associated to this institution (Corporate Europe Observatory, 2017). Keeping in mind that there are constraints to assembling interests at the EU level (Mahoney & Baumgartner, 2008),

lobbyists can also require support and directly lobby their national governments (Dür, 2008) which can also be posed to reach the CEU (Klüver, et al., 2015b). Beyers (2002); Eising (2007b), studying European associations, conclude that higher access in the national decision-making environment boosts the EU level lobbying strategy, especially for specific-interest stakeholders, whilst Bernhagen & Mitchell (2009) believes that weak EU national associations and the lack of government representation for interests from outside the European block create the need for interest groups to target Brussels directly.

EU population was 513 million against 327 million people in US in 2018⁶. However, the block's budget only amounted to about 2% of the 28 national budgets in 2019, corresponding to about €148 billion, a smaller amount than the national budget for Austria or Belgium⁷. Even though there is a material difference in the quantity of money at stake for the taking for successful lobbyists in these two regions, when studying lobbying in the EU, it is relevant to draw insights from the American literature, even more so since related literature in these two regions followed distinct paths until the 1990s but started to converge afterwards (Mahoney & Baumgartner, 2008). Despite cultural acceptance of lobbying, method for selection of representatives, and variety of political venues present significant differences (Sqapi, 2015), US literature can bring relevant insights and allow comparisons. The US sees a deeper connection between politicians and lobbyists, explained by the absence of an assumption of public consultation and the flow of money being primarily reversed (from companies to politicians through contributions), as mentioned by Sqapi (2015). The aggressive American lobbying strategy creates winners and losers, whilst EU politics works on the lines of compromise (Bernhagen & Mitchell, 2009). These differences can partially explain the existing literature gap between a less financially focused, more qualitative and more policy-based European literature and a more quantitative and tactics-based American line of research (Mahoney & Baumgartner, 2008; Dellis & Sondermann, 2017; Bernhagen & Mitchell, 2009). Still, Mahoney & Baumgartner (2008) identify three converging points between blocks. First, government structures demand interest groups need for adaptation. Second, there is positive relationship between state activity and group mobilization. And third, there is possibility for 'venue-shopping' in corporate political strategy for both regions.

⁶ Source: <https://data.worldbank.org/indicator/SP.POP.TOTL?locations=EU-US-CN>, accessed in 15 May 2020

⁷ Source: https://ec.europa.eu/info/strategy/eu-budget/how-it-works/fact-check_en, accessed in 15 May 2020

2.3. Empirical relation between corporate political activity and financial performance

There is a variety of empirical studies regarding financial impacts of lobbying for individual economic agents in the US, using market level metrics as, for example, share price or abnormal stock returns (Borisov, et al., 2016; Cooper, et al., 2010) or accounting measures like net income or operating cash flows (see, for example, Chen, et al., 2012). Bonardi, et al. (2006), while studying returns for electric utilities companies, identifies four main factors that impact a firm's nonmarket strategy success, as measured by the regulatorily-defined maximum rate of return: rivalry between lobbyists; rivalry amongst politicians; resources of local authority and lobbying capabilities of the firm. As for EU firm-level lobbying literature, there are some exceptions to the rather policy-centered research for interest groups and associations which include the studies of Dellis & Sondermann (2017) and Bernhagen & Mitchell (2009) that identify relevant predictors for direct corporate lobbying at the supranational level. However, quantitative literature is not consensual on the direction of the relation between lobbying and firm performance, with studies claiming it to be positive, negative, and residual (Hadani & Schuler, 2013).

First, the positive relationship between lobbying and firm performance is claimed by Chen, et al. (2012), which show that only the highest lobbying spenders present excess returns (5.5% over a 3-year period). Hill, et al. (2013) concludes that shareholders' value is positively related with lobbying, with politically active firms showing 1.4% excess return (-2.6% for non-lobbying), increasing with lobbying expenses and campaign contributions. Given this result, the authors ask why we do not see much bigger expense levels and argue that lobbying efforts are limited to a certain degree by time constraints of politicians (which limit interaction with individual lobbyists). This view that constraints limit higher interaction levels, was already supported by Drutman (2011) that also identifies the constraining factors on the firm side, like managers' requirement of education on the benefits of lobbying and the time-consuming process of developing corporate lobbying capabilities, which are unevenly distributed, as in Bonardi, et al. (2006); Georgiou & Roberts (2004). Other study defending positive relationship between CPA and performance includes Unsal, et al. (2016). When studying how CEO political affiliation in US affects lobbying behavior and firm performance, the authors report positive excess returns from being politically active for companies without excessive PAC spending and lobbying expenses. Borisov, et al. (2016) shows that active lobbying companies suffer market value loss after the sentence for the Jack Abramoff's government bribery case in 2006,

supporting the argument that, even though lobbying might bring value, it is also to be associated with less favorable activities and might suffer backlash.

Following an opposite stream, studies that demonstrate a negative relation between lobbying and financial performance argue that, although big and fast growing, companies that lobby tend to be less profitable, supporting the belief that lobbying might be related to increased sales but not with shareholder value creation (Skaife, et al., 2013). The general argument to explain the negative relation is based on the agency problem (Hadani & Schuler, 2013) by which managers' personal interests clash with shareholders' interests. This is made possible by weaker governance systems that allow managers to earn more money through excessive lobbying (Skaife, et al., 2013; Unsal, et al., 2016) or misuse company funds for private benefit (Coates IV, 2012), driving up costs of political activity and surpassing its' potential benefits. Skaife, et al. (2013) find that CEOs from lobbying firms earn, on average, 10 percent more than their counterparts and Coates IV (2012) concludes a positive relation between CPA and post-CEO employment in politics for 11 percent of S&P 500 firms.

Finally, Hadani & Schuler (2013) suggests two main theoretical approaches to explain neutral (or not relevant) relationship between CPA and firm performance argued in some studies. The first is the political marketplace theory, following the economic market view of supply and demand for policy. In this case, competition follows the game theory dynamics from Colman (1982); Kleindl (1999). The second approach is behavioral theory, following the reasoning of Allison (1971); Cyert & March (1963); March (1994) of organizational limitations and biases. Other explanations derived from US literature include the little bargaining power companies have with politicians, with the latter collect a big share of the campaign funds needed from individual donors (Ansolabehere, et al., 2003), making corporate interests much less relevant for politicians. Furthermore, some authors argue that contributions should be treated as a consumption good comparable to charitable donations (Hersch, et al., 2008) given in consonance to "ideological motivations" (Ansolabehere, et al., 2003), and not as an investment. Empirically supporting this neutral or irrelevant relationship between CPA and financial benefit, for example, Hersch, et al. (2008) finds no statistically relevant relation between campaign contributions or lobbying expenses and firm assets, when hypothesizing that CPA generates political capital (as an intangible asset) and concludes that winning against the opponents in political arena is simply a matter of presently outspending them in the (short-term) influence efforts, with no regard for past political activity. Also, Ansolabehere, et al. (2004) fails to find a meaningful relation between soft money and stock returns, when analyzing the

impact of the Bipartisan Campaign Reform Act (2003) and Ansolabehere, et al. (2003) shows that corporate contributions result in a modest change in voting behavior when comparing to effect of changing district's representative political party or the impact of labor union contributions.

On a separate note, Hadani & Schuler (2013); Coates IV (2012), for example, show that, from the companies not included in highly regulated or government dependent industries, those that engage in political activity tend to be worse off than those that do not. On the opposite side, highly regulated firms see considerable (Hadani & Schuler, 2013) or no benefits (Coates IV, 2012) in CPA. Dellis & Sondermann (2017), amongst other authors, show that these firms tend to be politically more active at the EU level as well. It follows that highly regulated or government dependent firms have a motivation of their own, clearly emphasized by a deeper incentive to lobby to secure government contracts or loosen up legislation to increase profits.

2.4. Direct and indirect lobbying

To achieve success, firms can engage in political activity via an direct or indirect route, and most commonly, they engage in both types simultaneously (Bennet, 2007; Beyers, 2002). Boies (1989); Grier et al. (1994), referenced by Bernhagen & Mitchell (2009), argue that larger companies are more likely to lobby directly due to greater resource availability, the selective attention they create on regulators and the greater impact specific pieces of legislation might have on their activity. The authors define three measures of direct firm lobbying – whether the company has established a Brussels office; whether it has a European Affairs representative; and whether it has entry access to EP. Bennet (2007), in a UK business association study, identifies the establishment of a Brussels office as a costly but increasingly relevant strategy to improve lobbying efficiency.

Indirect lobbying strategies can include using the 'voice channel', hiring of lobbying consultancies and membership of trade associations, besides reaching to national political representatives. The less frequently employed, and seen to generate the worse cost-benefit ratio, is the 'voice channel', which aims to impact policymaking by (directly) influencing citizen groups, through means of "manifestations, rallies, petitions, statements in the media, and participation in public debates" (Dür, 2008:1222). Beyers (2004) distinguishes between two types of public voicing: "information politics", normally with primary goal of passing specific

insights to policymakers, and “protests politics”, which is focused on gathering “attention and expand conflict” (Beyers, 2004:214). On the other hand, hiring lobbying consultancies or law firms is mentioned by Gregor (2011) and can be seen as a more cost efficient alternative driven by specialization of knowledge and network development. Intermediaries can also boost legitimacy (El Nayal & Van Oosterhout, 2019 referenced by Egerod, et al., 2019) and improve reputation (Brown, 2016) for the interest groups when dealing the public authorities. As for trade associations, even though they tend to represent a rather large number of very specific interests, access and information transmission to public officials clearly leaves an opportunity for rent seeking (Bennet, 2007). Companies from the European block have an additional means to voice their concerns in reaching to their national governments, since the latter are active participants of EU decision making. Bernhagen & Mitchell (2009) point that firms from outside the EU are likely to strengthen their own lobbying capacity to counterbalance the lack of national representation.

2.5. Value of political connections and CPA as a relationship building endeavour

The topic of political connections, which is related with both direct and indirect lobbying, is quite relevant to evaluate firm’s strategy and progress in gaining access and, eventually, realize influence. Politically connected firms are more likely to be awarded federal funds, even though firm investments are likely to underperform when comparing to unconnected firms (Duchin & Sosyura, 2012). Bertrand, et al. (2014) argue that lobbying intermediaries bring value both from connections and expertise. However, the authors highlight the prior to be more valued due to its’ scarcity and that is demonstrated with lobbyists’ trend of following particular policymakers they personally know when these change committees. This idea is supported by the higher positive premium on well-connected lobbying reports (8 to 10 percent) against reports from expert lobbyists (3 to 5 percent).

The decision to hire former public officials, directly to firm boards or through specialized lobbying consultancies, also known as ‘revolving doors’ (Coen & Vannoni, 2016), is a demonstration of interest in acquiring political access (Boucher, 2018). 59% of former members of the 115th US Congress (2017-2019) later worked for lobbying and consulting companies or trade/business groups with high degree of potential influence at federal level⁸. Even though

⁸ Source: <https://www.citizen.org/article/revolving-congress/>, accessed in 10 May 2020

Coen & Vannoni (2016) consider this practice to be quite uncommon in EU, some news report that up to 50% of top lobbying firm staff has prior EU level experience⁹. Also, 6 out of 13 Commissioners that left office after 2010 are now working on the private sector. Recent mediatic EU cases include José Durão Barroso (EC President 2004-2014) move to Goldman Sachs in 2016 (Corporate Europe Observatory, 2017). According to Egerod, et al. (2019), lobbying consultancies (companies) get a 40 percent (15 percent) increase in probability of getting meetings with EC after hiring an ex-EU staff member. Firms from the study show 19 percentage points (p.p.) increase in the probability of getting a procurement contract and 336 percent increase in value of the contract when a ‘revolving door’ lobbyist is hired. The benefits, however, seem to be concentrated on the short term, indicating that connections’ value has a faster decay rate than knowledge value (Egerod, et al., 2019).

Connections do provide one valuable way of gaining access (Bertrand, et al., 2014), being a precedent (Binderkrantz et al., 2015; Bouwen, 2004; Eising, 2007a referenced by Egerod, et al., 2019) to lobbying buying influence (Hersch, et al., 2008) but the benefits are unlikely to be felt with intensity right after initiating contact. Despite that, most of the empirical studies focus on the short-run benefits/costs of lobbying. However, there is value in building a relationship with politicians, according to class unity theory (Hadani & Schuler, 2013). As Snyder (1992:17) puts it, when studying long-term relationship between PAC contributions and votes from House and Senate Representatives:

“A contributor cannot simply buy a congressman’s vote on an important bill with a \$5,000 campaign donation. Large donations over several elections, however, together with intelligent, informative discussions [...] may eventually yield considerable benefits.”

In a similar line of reasoning comes that, from continuous political activity the organization gains experience, using prior learnings to build political capabilities that improve corporate political strategy results in later interactions (Bonardi, et al., 2006; Brown, 2016).

⁹ Source: <https://www.alter-eu.org/the-revolving-door-in-detail>, accessed in 9 May 2020

2.6. Hypotheses formulation

Studying lobbying in the EU poses both an opportunity and a challenge. First, since regional lobbying literature has a greater focus on qualitative rather than firm-level qualitative impact of lobbying efforts there is room for building from theoretical foundations into quantitative research. And second, contrary to US reality, which is abundant in studies of this nature and where data is more accessible due to the legally binding disclosure system, for the EU the lobbying registration system is only optional. Nonetheless, US CPA literature represents a good source for insights to the EU environment, even more so since the two blocks' recent literature is reducing the original gap in knowledge, as previously referred. The lack of agreement regarding whether lobbying brings more benefits or costs to companies involved, whether lobbying represents an investment or an expense and how impactful different political strategies are represent questions in the CPA and lobbying literature that are of clear interest not only to academics but also to managers and public entities.

Going into the research formulation stage of the study, the main question of whether benefits recurring from being politically active outweigh its' costs is probably the most relevant. Hadani & Schuler (2013), for example, summarize different lines of research that reach opposite conclusions to this question, already detailed in this chapter. Despite that, literature defending a positive relation between lobbying/CPA and firm performance has strong empirical support and managers continue to pour millions of euros and dollars into lobbyists departments that fight for their interests in public (or not so public) debates that influence them and many others. I believe that those who are active in the EU political landscape, by providing information and expertise to policymakers, might be able to influence them in a way that increases their firm profitability, and these returns should be meaningful enough to provide an incentive for continuing to lobby.

Hypothesis 1.1: Firms that lobby at EU level report better financial performance than those that do not.

Even though I expect that lobbying firms will be better off than their peers, the sector/industry in which the firm has its' main operations is likely to significantly influence the importance of being in contact with public authorities. Highly regulated industries, such as financial services or pharmaceutical industries, will typically have an increased interest in fending off restrictive legislation and shaping interest-friendly regulation as an opportunity to maintain (and improve) capacity to generate profits. Hadani & Schuler (2013) argue that there is a positive relation

between CPA and market performance for companies in regulated industries. Bernhagen & Mitchell (2009); Dellis & Sondermann (2017) show that regulatory exposure is an important determinant of lobbying activity in the EU, which brings evidence to the rationale that companies in more regulated industries have increased incentives to be politically active.

Hypothesis 1.2: The higher the degree of regulation in the industry, the bigger are the expected returns of lobbying at the EU level for firm financial performance.

Even though using one's financial resources is likely to be more common approach amongst larger firms (Boies, 1989; Grier et al., 1994, referenced by Bernhagen & Mitchell, 2009), lobbying expenses fuel company's political strategy. It is expected that the more money spent, the greater the efforts in gaining access to policymakers are and the greater the commitment from the firm to a comprehensive lobbying strategy, and the more likely that company staff are better prepared to present relevant information to EU officials, leading to increased chances of successful influence, which translate into financial performance benefits.

Hypothesis 2: Lobbying spending is positively related with firm financial performance.

Direct firm lobbying includes other (potentially complementary) measures with various cost degrees. Bernhagen & Mitchell, 2009, as previously mentioned, identify three main direct measures. The authors also highlight the increasing resource necessity going from registering EP lobbyist access (which is inexpensive); the institution of a European Affairs post; to, finally, establishing and maintaining a Brussels office (significantly resource-demanding). Whilst lower-cost measures like EP access are likely to show greater fluctuation on the short term (Berkhout & Lowery, 2008), the establishment of an office for company's representatives near EU headquarters clearly indicates a long-run commitment to an active corporate political strategy. Having physical presence near the EU institutions allows companies to increase the number of encounters with EU officials of their interest (increasing access) which, in turn, allied with firm's capacity to supply politicians with the resources they require, boosts their chances of successful lobbying, which, again, is expected to translate into meaningful returns.

Hypothesis 3: The establishment of a Brussels office is positively related with firm financial performance.

Indirect lobbying strategies are, likewise, important determinants for the overall success of corporate political strategy. Hiring a professional intermediary, like a lobbying consultancy or law firm, brings specialist knowledge and a network of connections that allied with the increased legitimacy and improved reputation benefits (as in El Nayal & Van Oosterhout, 2019 referenced by Egerod, et al., 2019) improves access and likelihood of successfully influencing, opening the chance to meaningful financial performance gains.

Hypothesis 4: Hiring a professional intermediary is positively related with higher firm financial performance.

These intermediaries, however, are likely to represent a broader set of interests (which include, but not exclusively, the specific firm objectives) when comparing to a situation where the firm lobbies directly. Trade associations, and to a greater extent, national governments suffer from the same problem. However, according to Eising (2007b), business associations that are well located in the EU multi-level system; that have sufficient financial resources; that are able to provide meaningful insights to policymakers and that represent significant economic weight (i.e. in job and output terms) have increased chances of participating in EU politics. Even though trade associations must defend a broader spectrum of individual interests (but also due to that fact) they are relevant lobbyists with the potential to tilt legislation in favor of their members' interests. Likewise, being part of a trade association brings an additional opportunity to increase access to policymakers and, once more, increase influence potential.

Hypothesis 5: Membership of a trade association is positively related with higher firm financial performance.

Contrary to trade associations, it is fair to assume that national government support is mainly available for EU companies. It is expected that EU companies utilize their national governments to press their interests. I assume that companies within the EU geographical boundaries are aware and actively seek to lay out their concerns to their government representatives, which in turn will press these concerns at the EU policymaking level. This means that European companies have an additional strategy for lobbying, which can be converted into meaningful economic returns.

Hypothesis 6: Having headquarters within EU geography is positively related with higher firm financial performance.

Hiring former public officials ('revolving door' lobbyists) to the firm board is a strategy by itself that seems quite effective in boosting access, since these professionals have relevant connections with sitting EU officials. However, and following Egerod, et al. (2019), I expect that a strong positive effect of hiring these professionals in the short term, since their networks of connections is likely to lose value more quickly than their expertise. Nonetheless, connections lead to increased access, and specialist knowledge allows interest groups to lobby more successfully, which I expect to be linked with improved financial performance.

Hypothesis 7: Hiring 'revolving door' lobbyists is positively related with higher firm performance.

US theoretical literature presents political activity (and lobbying) as both a relationship-building (Snyder, 1992) and capability-creating (Brown, 2016) corporate strategy, indicating likely benefits over the longer run. EU policymaking process, which can take from 5 to 10 years to full completion (Corporate Europe Observatory, 2017), tends to support such the rationale of lobbying as a longer-term investment. It is reasonable to assume that lobbying is a longer-term strategy that evolves with firm's market strategy and goals, one that is built on mutual exchange of resources by the two parts but also on a foundation of human relations. Hence, it is plausible to assume that lobbying benefits arise from building this longer-term political strategy, and consequently, the overall positive effect should be larger in the medium and long term, when comparing to its' short-term benefits.

Hypothesis 8: The returns for lobbying are greater in the medium and long term than in the short term.

3. Data collection and methodology

3.1. Data collection

The main source for company-specific lobbying information at the EU level is the European Transparency Register (ETR). The ETR is a public online database launched in 2011 to allow for “greater scrutiny of lobbying” happening at the EU institutional level by European citizens¹⁰. It is currently managed by the Joint Transparency Register Secretariat, which was established by the EP and EC, and stores information on registrants’ characteristics, representatives, interests and goals and lobbying spending (among others). Although registering is not mandatory, doing so provides lobbyists with possibility of participation in sessions with EU public officials (MEPs, Commissioners, Director Generals, etc), grants access to data and opportunities to collaborate on public consultations (Dellis & Sondermann, 2017; Greenwood & Dreger, 2013). Currently, the ETR only covers political activity from EP and EC (CEU is not included)¹⁰.

In 31st May 2020, the ETR had 11,663 entries, classified into 6 categories: I- Professional consultancies/law firms/self-employed consultants (837); II- In-house lobbyists and trade/business/professional associations (6,198); III- Non-governmental organisations (3,104); IV- Think tanks, research and academic institutions (884); V- Organisations representing churches and religious communities (58) and VI- Organisations representing local, regional, and municipal authorities, other public or mixed entities, etc (582). Companies & groups (2,445) is included in II, along with trade and business associations (2,473), trade unions and professional associations (952) and others (328). Both I and II represent producer interests and are compelled to fill in lobbying spending fields (Greenwood & Dreger, 2013).

Since the focus of this project is to study the returns of lobbying, giving several different strategies, I focus on the 2,445 companies and groups from category II. ETR only provides information for the last period entered by the registrants. Therefore, I select entries with 2018 as last period reported (1st January to 1st December 2018) since at the time of data collection the database holds significantly more instances for 2018 than 2019. Afterwards, Greenwood & Dreger (2013) suggests the identification of “European interest” and the establishment of Brussels office as restricting measures to reduce the number of outliers. Since ETR only stores

¹⁰ Source: https://multimedia.europarl.europa.eu/en/european-transparency-register_V007-0043_ev, accessed in 2 June 2020

information on company Belgium office, I defined Brussels office to be within the 1000-1299 Belgian postcode interval and compare it against the reported Belgian office postcode. For entries with missing postcode or mismatch between postcode and office city, I manually verified via online research whether Belgium office address was included in the postcode interval. I remove those that simultaneously do not present “European interest” and without information in Brussels office fields. Entry selection limited to 2018 and removal of peculiar outliers reduces working sample from 2,445 to 606 companies. Afterwards, I match these entries with firm characteristics and financial data from Bureau Van Dijk’s global database ORBIS, which covers more than 365 million companies. After extensive data cleaning, including elimination of entries with missing information for relevant variables, the final sample consists of 300 companies. After this process, each observation includes lobbying and financial information for the 2011-2018 period (with some variables only showing values for 2018). Details on variables collected are explored on the next section.

For the first two hypotheses (*Hypotheses 1.1-1.2*) I collected information on 300 additional companies, not registered in the ETR. These firms are the non-lobbying or control group for 2018 cross-sectional analysis¹¹. Collecting the control group was done by matching individual observations of treatment group with companies from ORBIS database through a 3-step procedure: 1-) same NACE 2-digit sector; 2-) total assets in 2018 with a maximum 20% variation; 3-) closest profit margin in 2018. Exceptionally these criteria needed to be relaxed to allow for matching to be possible. Companies selected were additionally obliged to report non-missing data for net income, profit margin (2018), total assets and shareholders’ funds (2017 and 2018). The 3-step procedure ensures some similarity between treatment and control matching observations in respect to most of the controlling characteristics included in the analysis (sector effects, company size and market concentration, respectively). More details on these characteristics are reported in the next section.

Comparing how lobbying in different years affects firm profitability can be done by creating a panel data model with several lagged lobbying expenses, which will retain the effect of spending given different intervals (details on the model will come later). For that, I drew a subsample from the unbalanced panel 300-sized treatment group which included companies with lobbying expenses information for a non-interrupted period (e.g. from 2015-2018, information on 2015, 2016, 2017, 2018). The subsample selection process was defined by

¹¹ Control group was collected from 10 to 12 July 2020.

considering the trade-off between data quantity and pertinence of the potential conclusions – the longer the time series, the less cross-sectional data available but the more relevant potential conclusions might be. Given this constraint, I extracted information for 59 companies for 2013-2018. Transforming the panel data to incorporate four time lags means that the panel subset of 354 observations (59 companies for 6 years) is converted into a 118-observations panel subset (and information for ROA, ROE, profit margin and total assets is lost for 2013-2016). This one disadvantage of creating several lags, but it is necessary to test lagged effect of expenses for up to 5 years, as required for *Hypothesis 8*.

3.2. Methodology

3.2.1. Econometric models and dependent variables

Most lobbying studies focus on the financial impact of political activity on samples composed of only publicly listed companies (e.g. Chen, et al., 2012; Borisov, et al., 2016; Cooper, et al., 2010; Hadani & Schuler, 2013). When studying this type of corporate structure, the main concern is to understand how the market reacts to political activity and whether it generates value from the shareholder market perspective through market-based measures (like Tobin's q or abnormal stock returns). In my study I am limited to accounting-based measures, due to inclusion of both public and private companies in the studied sample. To measure the financial impact of lobbying efforts, I calculate the accounting-based profitability ratio of Return on Assets (ROA) and Return on Equity (ROE)¹² as dependent variables (*ProfitRatio* below). ROA (ROE) is a recognized comparable ratio that measures the effectiveness of profit creation through asset value (shareholders' equity). These ratios are generally considered by banks, investors, and managers when evaluating firm performance¹³ and utilizing both the ratios can provide additional robustness to the conclusions.

¹² Net income from year x is divided by the average total assets (average shareholders' funds) of years x and x-1. Sources: <https://www.investopedia.com/ask/answers/031215/what-formula-calculating-return-assets-roa.asp>, and <https://www.investopedia.com/terms/r/returnonequity.asp>, accessed in 29 June 2020

¹³ Sources: <https://www.investopedia.com/investing/roa-and-roe-give-clear-picture-corporate-health/>, accessed in 21 June 2020; <https://hbr.org/2016/04/a-refresher-on-return-on-assets-and-return-on-equity>, accessed in 26 July 2020

Below I present three econometric models (A-C) developed to test different hypotheses. Independent and control variable explanation and collection process are reported after the models.

Model A – Hypotheses 1.1 and 1.2:

The following model (Model A) details the variables used to test lobbying importance on company profitability when comparing to non-lobbying entities for 2018 (*Hypotheses 1.1 and 1.2*):

$$\begin{aligned} ProfitRatio_i = & \beta_0 + \beta_1 lobby_dummy_i + \beta_2 lobby_dummy * fdi_index_i \\ & + \beta_3 fdi_index_i + \beta_4 \log(total_assets)_i + \beta_5 profit_margin_i \\ & + \text{sector dummies} + \varepsilon_i \end{aligned}$$

Where *lobby_dummy* is a dummy variable to separate lobbying from non-lobbying firms and *lobby_dummy * fdi_index* represents an interaction term between the lobby dummy and the OECD Foreign Direct Investment Restrictiveness Index (FDI RI) for the sector and head office country of the firm (value from 0 to 1, a greater value representing greater restrictions to foreign investment). Included in the model as controlling variables is the FDI RI value (*fdi_index*), the logarithmic form of company's total assets ($\log(total_assets)$), profit margin (*profit_margin*) and primary NACE sector in which it operates as sector dummy. ε represents the error term.

Model B – Hypotheses 2 to 7:

The second model (Model B) evaluates the relevance of different lobbying strategies on firm profitability for the treatment group only in 2018 (*Hypotheses 2 to 7*):

$$\begin{aligned} ProfitRatio_i = & \beta_0 + \beta_1 \log(lobby_spend)_i + \beta_2 brussels_office_i + \beta_3 intermediary_i \\ & + \beta_4 association_i + \beta_5 eu_headoffice_i + \beta_6 meetings_ec_i + \beta_7 fdi_index_i \\ & + \beta_8 \log(total_assets)_i + \beta_9 profit_margin_i + \text{sector dummies} + \varepsilon_i \end{aligned}$$

In addition to the control predictors from Model A, in Model B I include several independent variables. The logarithm of reported lobbying spending ($\log(lobby_spend)$) and the number of recorded meetings with EC officials for 2018 (*meetings_ec*) are both continuous variables.

As dummy variables, I added the following: whether the firm established an office in Brussels (*brussels_office*); whether it hired a law or lobbying consulting firm (*intermediary*); if the company is part of a trade association (*association*) and if the company has registered head office in a EU country (*eu_headoffice*).

Model C – Hypothesis 8:

The last model (Model C) involves panel data analysis of overall lobbying effort on profitability (*Hypothesis 8*) as a distributed lag model:

$$\begin{aligned} ProfitRatio_{it} = & \beta_1 \log(lobby_spend)_{it} + \beta_2 \log(lobby_spend)_{it-1} \\ & + \beta_3 \log(lobby_spend)_{it-2} + \beta_4 \log(lobby_spend)_{it-3} \\ & + \beta_5 \log(lobby_spend)_{it-4} + \beta_6 \log(total_assets)_{it} + \beta_7 profit_margin_{it} \\ & + \text{year dummies} + \varepsilon_{it} \end{aligned}$$

In this model, four lagged lobbying expenses (plus contemporary expenses) are included and time-invariant variables (including those with information exclusively for 2018) are removed, when compared to Model B. Year dummies are also included to control for changes derived from time (Wooldridge, 2012).

3.2.2. Independent variables

For the first hypothesis (*Hypothesis 1.1*), I create a dummy variable for whether the company is registered in the ETR (1, otherwise 0), proxying politically active firms that lobby at EU level vs non-active companies. This classification separates between treatment and control group.

For *Hypothesis 1.2*, I collected information on the OECD FDI Restrictiveness Index (FDI RI), a proxy for regulatory pressure, as in Dellis & Sondermann (2017). The FDI RI is a continuous variable calculated based on 4 types of restrictiveness to foreign direct investment¹⁴ (FDI) for 22 economic activity sectors from various countries, taking values between 0 (no regulatory deterrents of FDI) and 1 (full restriction of FDI in the sector) (Kalinova, et al., 2010). I matched the 21 NACE Rev.2 sectors with sectors/industries from the OECD database (Appendix 1) based on similarity between reported descriptions, excluding companies without FDI RI

¹⁴ Source: <https://stats.oecd.org/Index.aspx?datasetcode=FDIINDEX>, accessed in 16 June 2020.

information. The FDI index is included in the *Hypothesis 1.2* as interaction term with the lobby dummy (independent predictor) but it is also included in several other models as stand-alone variable, controlling for government regulation.

Lobbying spending information for 2018 (*Hypothesis 2*) is taken from the ETR. The Register holds 50 lobbying spending intervals, starting from 0-9,999 up to higher than €10 million (intervals with increasing width, reaching 250,000). Lobbying expenses should be “only covering the efforts to influence political decisions at EU not at national level” and should include direct and indirect costs for lobbying activities (Dellis & Sondermann, 2017:7). I convert all spending data into numeric format, by considering the midpoint of the disclosed interval, leaving entries that originally report an exact number unchanged, as in Dellis & Sondermann (2017). This transformation spares the need to include 49 more predictors in the model for every year of lobbying data. Historical lobbying expenses will be further used for *Hypothesis 8* as representative all lobbying efforts, since, as illustrated above, in theory these should represent direct and indirect efforts of influencing at the EU level. Past lobbying expenses data for the companies in the sample is found in *LobbyFacts.eu*, a joint initiative launched in 2017 by the Corporate Europe Observatory and the German society LobbyControl which stores information extracted from the ETR and contains historical expenses for the 2011-2019 period. The same transformation is applied to these expenses. Lobbying spending is included in the regressions in logarithmic format.

Brussels office (*Hypothesis 3*) is extracted from the Belgian office fields in ETR, as described previously in Data Collection section, and admitted as a dummy variable (1 if the company has an office in Brussels). Other variables extracted from ETR and included as dummy are whether the company hired a law/lobbying firm or independent consultant (*Hypothesis 4*); association’s membership (*Hypothesis 5*) and whether the head office country is a EU member state (*Hypothesis 6*). All these predictors relate exclusively to 2018.

Information regarding direct employment of ‘revolving door’ lobbyists (*Hypothesis 7*) is found in *RevolvingDoorWatch*, from Corporate Europe Observatory. The database entails information of 100 moves of Commissioners, MEP, and officials from EU positions to the private sector and vice-versa, dating from 2007. Unfortunately, I get only 4 matches for the companies in my sample of 300 companies, with the most recent being from 2013. Therefore I exclude this variable and rely on a proxy of access positively related with employment of a ‘revolving door’, namely number of meetings with EC officials (Egerod, et al., 2019). Meetings with EC officials

from January 2018 to December 2018 are collected through *IntegrityWatch* online database, maintained by Transparency International EU. *IntegrityWatch* holds records of lobbying meetings with EC from November 2014.

3.2.3. Control variables

More concentrated industries with less players and higher market share are more likely to pursue and secure their interests when comparing to industries with a greater number of competitors because concentrated industries reduce the free riding effect (Hill, et al., 2013; Lux, et al., 2011). Furthermore, industry groups tend to be better organized, specialized, and efficient, which increases chances of greater involvement with policymakers (Schuler, et al., 2002). One highly used proxy to control for market concentration resides in calculating the market share seized by top players (Lux, et al., 2011). However, due to higher difficulty of accessing to geographical revenue splits for international companies, I adopt a different approach which considers that concentrated markets bear abnormal rents and extract information for two indicators: a dummy variable for non-tradable sectors (categorized in Piton (2019)) and company profit margin (Dellis & Sondermann, 2017). The non-tradability dummy is later excluded due to high collinearity with sector dummies.

Likewise, at the institutional level, government regulation is likely to negatively impact the profitability level of the firm, by either increasing costs or reducing revenues, and is expected to be a significant positive antecedent to CPA (Lux, et al., 2011). Regulatory pressure is controlled by including FDI RI, collected as described in the “Independent variables” section of this chapter.

To control for other sector fixed effects, I include information on the NACE main sector section as dummy variable (1 when the company’s main activities are incorporated in the sector). The NACE code (Rev.2) for “statistical classification of economic activities in the European Community” (Commission, 2008:5) classifies activities into four category levels (from broader to specific): 1-) sections (identified by a letter); 2-) divisions (two digits); 3-) groups (three digits) and 4-) classes (four digits) (Commission, 2008). The section level holds information on 21 different sectors.

Lastly, firm size is one of the most relevant predictors of CPA, according to the meta-analysis done by (Lux, et al., 2011), given the increased public exposure and available resources that

come with size (Boies (1989); Grier et al. (1994), referenced by Bernhagen & Mitchell (2009); Miles, 1987 referenced by Lux, et al., 2011). Firm size will be included as a controlling variable through total assets (as in Chen, et al., 2012).

Main NACE section sector, profit margin and total assets are extracted from ORBIS database for the studied period.

3.2.4. Model reporting and regression diagnosis

Hypotheses 1 to 7 are evaluated based on cross-sectional OLS analysis, corrected on heteroskedasticity by robust standard errors when necessary, and always including the control variables. For *Hypotheses 1.1* and *1.2* (Model A) the relevant independent variables are regressed cumulatively (first the lobbying dummy is included for *Hypothesis 1.1* and for *1.2* the other relevant predictors are added). Then, for Model B, the relevant predictors are swapped for every test (again, always keeping the controlling variables). One final model includes all variables from *Hypotheses 2 to 7*. Models are tested for misspecification (Ramsey test), heteroskedasticity (Breusch-Pagan test) and multicollinearity (VIF test) and results are compared to the 5% level and VIF=10 benchmarks.

Hypothesis 8 is tested based on a subset of the collected panel data for 2013-2018. Panel data uses a larger set of data when compared to cross-section or time series, allowing for more sophisticated models, and better detecting dynamic behaviour phenomena (Baltagi & Song, 2006; Wooldridge, 2012). Wooldridge (2012) suggests looking at panel data by dividing factors that affect the dependent variable as time constant and time-variant. Unobserved effects should, therefore, also be separated accordingly, with time-varying effects captured in the idiosyncratic error (ε_{it} in Model C) and time constant effects included in α_i component (which corresponds to firm heterogeneity in this study). According to the author, using panel data has the main benefit of allowing α_i to be correlated with the independent variables. Two well known estimators allow for the correlation by eliminating the α_i component from the equation: Fixed Effects estimator (FE), or within-estimator, is based on time-demeaned variables and First Differenced estimator (FD), achieved when variables are differenced over time. Amongst other assumptions, these estimators are unbiased in presence of strict exogeneity ($\Delta\varepsilon_{it}$ uncorrelated with Δx_{it}). When using these estimators, no time-invariant variables are included (such as the case of sector dummies), since these are included in the α_i component. When the error term is

serially uncorrelated, FE is theoretically more efficient than FD (Wooldridge, 2012). These two estimator types are generally reported together, and so Model C is regressed using FE and FD estimators corrected on heteroskedasticity by robust standard errors when applicable.

I report four models per hypothesis, two per dependent variable (ROA and ROE). One of the two models per dependent variable has been cleaned from detected outliers¹⁵ to assess whether there is a significant impact on results, as suggested by Wooldridge (2012), since the observations categorized as outliers might contain relevant information.

The models reported do not exclude statistically insignificant variables due to three main reasons. First, it is the norm in lobbying and CPA literature to report the full model, without excluding variables that do not meet an author-defined significance level criteria (see, for example, Bernhagen & Mitchell, 2009; Dellis & Sondermann, 2017; Unsal, et al., 2016; Bonardi, et al., 2006). Second, dropping insignificant variables would mean eliminating literature-backed controlling variables as well as some of the predictors being tested. Keeping the variables makes for a more solid theoretical foundation of the models and allows to study both the magnitude and direction of the (insignificant) coefficients, which is likely to hide some relevant insights. Third, studying the full model allows for comparison between several models studying the same hypothesis, as well as different models for distinct hypotheses. This is particularly pertinent when discussing the quality of the models as measured by R-squared or Adjusted R-squared or when comparing coefficient magnitude changes when variables are included. Even though reduced models will not be reported, these for every hypothesis and none of the conclusions is significantly affected.

¹⁵ I utilize z-score of 4 standard deviations (above and below) the mean to detect and eliminate outliers.

4. Results

In this chapter, I will start by analysing the cross-sectional subset by looking into the descriptive statistics for the control and treatment groups sample (*Hypotheses 1.1* and *1.2*) and treatment group only sample (*Hypotheses 2-7*), later followed by the associated results. Afterwards, the same structure is followed for panel data analysis (descriptive statistics and results analysis for the last hypothesis).

The descriptive analysis described below for cross-sectional and panel data is performed for the original samples (without excluding outliers). The results subsection reports for subsamples with and without outliers, as suggested by Wooldridge (2012).

4.1. Cross-sectional analysis – Descriptive statistics

Table 1 (below) summarizes the descriptive analysis for treatment, control groups, and overall 2018 cross-sectional samples. The 600 companies (composed of 300 control and 300 treatment group entities) average ROA and ROE at 4.144% and 13.702% (10.798 and 43.112 standard deviation), respectively. ROE clearly shows a much wider interval of values, with minimum of -309.078% and maximum of 445.364% (overall sample). ROA, on the other hand, ranges between -55.111% and 148.745%. Treatment (control) group ROA and ROE means are 4.992% (3.297%) and 12.822% (14.582%), with 12.757 (8.330) and 40.325 (45.780) standard deviation, respectively. Both ROA and ROE present a somewhat normal distribution for overall sample (Appendix 2) and subsamples.

Average profit margin for overall sample stands at 10.411% (18.825 standard deviation), mean for treatment group is at 10.554% (18.651 standard deviation) and control group at 10.269% (19.028 standard deviation). Overall total assets average around €42 billion (€157 billion standard deviation). For treatment group, the total assets average is valued at about €44.5 billion and close to €163 billion standard deviation. Control groups shows a somewhat similar mean size, with almost €40 billion in average total assets and close to €153 billion standard deviation.

Shifting the focus exclusively to the 2018 treatment group and to relevant predictors for *Hypotheses 2-7*, some insights can be highlighted on lobbying behavior of politically active firms. On average, a (politically active) firm spent €284,658.30 in lobbying during 2018 (€579,327.90 standard deviation), with maximum spending reaching €8,125,000. 35.7% of the

companies had registered a Brussels office, 88.7% are represented by associations and 9.7% hired professional intermediaries. Mean number of meetings with EC officials in 2018 is 1.050, with minimum meetings equal to 0 and maximum 37 (3.111 standard deviation). Lobbying spending and EC meetings show right skewed distributions, with a great concentration of observations on the lower end of the scale (Appendix 3 and 4, respectively).

Sector distribution (Appendix 5) shows sample sector distribution: Sector C (Manufacturing) is the most represented (29.0%) followed by Sector K (Financial and insurance activities) (21.3%). The least represented sectors included in the studied group are Sector A (Agriculture, forestry, and fishing) and Sector F (Construction) (0.3%). Sector distribution between control and treatment group is identical (due to the control group extraction methodology) however, there is a considerable difference when considering head office country (Appendix 6) – treatment group has substantially more European-registered companies, with Germany (12.3%); France (11%); Italy (10.7%) and Belgium and UK (7.3% each) as most represented regions. As for the control group, China (18.7%); US (14.7%) and Japan (8.3%) show the most entities in the sample. 80.3% of the companies are based in the EU for treatment group against 28.0% for control group (Table 1, below).

Table 1 - Descriptive statistics summary table for 2018 samples

	Treatment group			Control group			Overall				
	<i>N</i>	<i>Mean</i>	<i>SD</i>	<i>N</i>	<i>Mean</i>	<i>SD</i>	<i>N</i>	<i>Mean</i>	<i>SD</i>	<i>Min.</i>	<i>Max.</i>
ROA (%)	300	4.992	12.757	300	3.297	8,330	600	4.144	10.798	-55.111	148.745
ROE (%)	300	12.822	40.325	300	14.582	45.780	600	13.702	43.112	-309.078	445.364
Total assets ('000s)	300	44,466,335	162,602,328	300	39,825,522	152,560,438	600	42,145,929	157,546,811	3,350.88	1,674,566,842
Profit margin (%)	300	10.554	18.651	300	10.269	19.028	600	10.411	18.825	-96.226	82.276
FDI RI	300	0.045	0.100	300	0.112	0.152	600	0.078	0.133	0	1
EU head office	300	0.803	0.398	300	0.280	0.450	600	0.542	0.499	0	1
Lobbying spending	300	284,658.30	579,327.90				300	284,658.30	579,327.90	5,000	8,125,000
Meetings with EC officials	300	1.050	3.111				300	1.050	3.111	0	37
Brussels office	300	0.357	0.480				300	0.357	0.480	0	1
Association membership	300	0.887	0.318				300	0.887	0.318	0	1
Hiring intermediary	300	0.097	0.296				300	0.097	0.296	0	1

Note: The table above shows the descriptive summary for the two sub-samples of 300 companies (treatment and control groups) and the overall 2018 sample.

Potentially high collinearity issues are analysed prior to model regression through correlation matrixes for overall and treatment samples including all independent and control variables. Overall sample shows no problematically high correlations (Appendix 7). As for treatment group sample (Appendix 8), there is an expectedly high correlation between number of meetings and lobbying spending (0.75) – the more money spent on lobbying, the greater the access to politicians (as concluded by Eising, 2007b). However, since there is no evidence of multicollinearity and sample size is large enough to estimate the parameters, there is no need to eliminate any of these variables from the regressions (Wooldridge, 2012).

4.2. Cross-sectional analysis – Results

I first run the model regression in control variables only (profit margin; total assets; FDI RI; and sector dummies) by OLS to be used as benchmark for model quality for overall sample (*Hypotheses 1.1-1.2*) and treatment sample regressions (*Hypotheses 2-7*). The results for these models can be inspected in Appendix 9 and 10, respectively.

Overall sample benchmark (Appendix 9) shows ROA model with (without) outliers has an adjusted R-squared of 0.341 (0.366), whilst ROE with (without) outliers shows 0.071 (0.146). Treatment sample benchmark (Appendix 10) for explanatory power shows ROA model with (without) outliers with adjusted R-squared of 0.400 (0.408) and ROE model with (without outliers) at 0.202 (0.222).

Hypothesis 1.1:

The lobbying dummy is included in Models 1.1-1.4 (Table 2 below) along with the controlling variables. On average, lobbying increases ROA model with outliers (Model 1.1) by 1.52 p. p. ($\beta=1.518465$, $p<0.05$), ceteris paribus. Without outliers (Model 1.2), the positive effect is less pronounced ($\beta=0.840553$, $p<0.05$) but Ramsey test reports misspecification in the regression ($p=7.966e-07$). Therefore, we have suspicion that estimators for Model 1.2 are biased (Wooldridge, 2012). A two-tail t-test for difference between treatment and control group ROA means does not find evidence of significant differences at a 5% level, however it fails by only a very small margin ($p=0.05453$). On the other hand, ROE regressions show lobby coefficient with no significant impact on profitability (with outliers: $\beta=-3.72701$, $p>0.10$; without outliers:

$\beta=1.15568$, $p>0.10$). The two-tail test for group average differences in ROE does not identify evidence for statistically significant difference between control and treatment groups ($p=0.6175$).

The introduction of the lobby dummy in the regression does not reasonable change the explanatory power of the regression. Adjusted R-squared for ROA regression with (without) outliers at 0.345 (0.369) and for ROE with (without) outliers at 0.071 (0.145). There is a (marginal) positive effect on model quality for ROA models. The results find little evidence to corroborate *Hypothesis 1.1*. Even though lobbying coefficient has a positive and significant effect for ROA model with and without outliers (Models 1.1 and 1.2), Model 1.2 shows evidence of misspecification.

Table 2 - Regression Models 1.1-1.4: Regressions including lobbying dummy variable (overall group sample)

	ROA		ROE	
	Model 1.1 Outliers ¹	Model 1.2 No outliers ^{1, 2}	Model 1.3 Outliers	Model 1.4 No outliers ¹
	<i>Estimate</i> (<i>Std. error</i>)	<i>Estimate</i> (<i>Std. error</i>)	<i>Estimate</i> (<i>Std. error</i>)	<i>Estimate</i> (<i>Std. error</i>)
Lobbying dummy	1.518465** [0.747156] (0.74703)	0.840553* [0.472338] (0.47928)	-3.72701 (3.55152)	1.15568 [2.10475] (2.20379)
FDI RI	-2.000913 [2.437536] (3.24259)	-2.160623 [2.068364] (2.06891)	-28.32119* (15.41590)	-8.78576 [10.78978] (9.58432)
Log(total assets)	-0.963242*** [0.228615] (0.14161)	-0.573366*** [0.115242] (0.09212)	-2.11494*** (0.67323)	-1.62333*** [0.49906] (0.41716)
Profit margin	0.359027*** [0.054962] (0.02097)	0.248534*** [0.024633] (0.01401)	0.65235*** (0.09968)	0.64617*** [0.10188] (0.06438)
(Intercept)	13.308866*** [2.587191] (2.09062)	9.481995*** [1.586407] (1.34752)	43.41894*** (9.93923)	27.81018*** [8.41972] (6.17000)
Sector dummies	Yes	Yes	Yes	Yes
N	600	593	600	591
R-squared	0.359	0.383	0.091	0.164
Adj. R-squared	0.345	0.369	0.071	0.145
ΔAdj. R-squared (against benchmark)	+0.004	+0.003	-0.000	-0.001
Residual Std. Error	8.740 (df = 586)	5.572 (df = 579)	41.554 (df = 586)	25.506 (df = 577)
F statistic	25.243 *** (df = 13, 586)	27.595 *** (df = 13, 579)	4.520 *** (df = 13, 586)	8.712 *** (df = 13, 577)

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

¹ regressions corrected of heteroskedasticity by robust standard errors in brackets [], with original standard errors in parenthesis (). R-squared, Adjusted R-squared, Residual Std. Error and F statistic are extracted from the original (not heteroskedasticity-corrected) regressions.

² Ramsey RESET test for misspecification detected the regression to be incorrectly specified (p=7.966e-07).

Note: The table above details the results for regressions including the lobbying dummy variable for dependent variables ROA and ROE, without excluding outliers (models 1.1 and 1.3) and excluding outliers (models 1.2 and 1.4) from the data. ΔAdj. R-squared is calculated by comparing Adj.R-squared with correspondent model 0.1-0.4. Adapted from R software output.

Hypothesis 1.2:

Models 1.5-1.8 (Table 3 below) include the lobbying dummy, FDI RI and the interaction term between the two variables. The results show no statistical significance on FDI RI coefficients, either in ROA (with outliers: $\beta=-2.044758$, $p>0.10$; without outliers: $\beta=-3.511465$, $p>0.10$) or ROE models (with outliers: $\beta=-16.55101$, $p>0.10$; without outliers: $\beta=-12.16837$, $p>0.10$). Regarding the interaction term, no significance is found on coefficient for ROA with ($\beta=0.16765$, $p>0.10$) and without outliers ($\beta=4.863765$, $p>0.10$); and ROE with ($\beta=-42.28461$, $p>0.10$) and without outliers ($\beta=12.98525$, $p>0.10$). Despite lack of statistical significance, the coefficients for both variables show (with exception to Model 1.3) the expected orientation, with a negative impact of regulation on profitability (measured by the controlling FDI RI) being partially or fully offset for politically active firms (positive orientation on the interaction term).

Model explanatory power shows no relevant improvement against the benchmark nor against *Hypothesis 1.1* (including lobbying dummy variable). Adjusted R-squared reports 0.344 and 0.369 for ROA with and without outliers; 0.073 and 0.144 for ROE with and without outliers, respectively. It seems that the hypothesis that firms that lobby in highly regulated industries are financially better off than their non-politically active counterparts is rejected, with the interaction term coefficients showing no statistical significance.

Table 3 -- Regression Models 1.5-1.8: Regressions including lobbying dummy, FDI RI and interaction term (overall group sample)

	ROA		ROE	
	Model 1.5 Outliers ¹	Model 1.6 No outliers ^{1, 2}	Model 1.7 Outliers	Model 1.8 No outliers ¹
	<i>Estimate</i> (<i>Std. error</i>)	<i>Estimate</i> (<i>Std. error</i>)	<i>Estimate</i> (<i>Std. error</i>)	<i>Estimate</i> (<i>Std. error</i>)
Lobbying dummy	1.50781* [0.85547] (0.84280)	0.530367 [0.486009] (0.54022)	-1.04100 (3.99962)	0.36463 [2.23932] (2.47622)
Lobby dummy : FDI RI	0.16765 [4.86524] (6.12362)	4.863765 [3.772335] (3.91493)	-42.28461 (29.06040)	12.98525 [17.90436] (18.50418)
FDI RI	-2.044758 [2.91242] (3.66576)	-3.511465 [2.354826] (2.33637)	-16.55101 (17.39632)	-12.16837 [12.43904] (10.73196)
Log(total assets)	-0.96312*** [0.22937] (0.14179)	-0.569720*** [0.115044] (0.09212)	-2.14467*** (0.67290)	-1.61093*** [0.49821] (0.41772)
Profit margin	0.35903*** [0.05496] (0.02099)	0.248409*** [0.024577] (0.01400)	0.65064*** (0.09959)	0.64659*** [0.10195] (0.06441)
(Intercept)	13.31251*** [2.58560] (2.09664)	9.587194*** [1.586778] (1.34955)	42.49939*** (9.94986)	28.01412*** [8.40968] (6.17955)
Sector dummies	Yes	Yes	Yes	Yes
N	600	593	600	591
R-squared	0.359	0.384	0.094	0.165
Adj. R-squared	0.344	0.369	0.073	0.144
ΔAdj. R-squared (against benchmark)	+0.003	+0.003	+0.002	-0.002
Residual Std. Error	8.748 (df = 585)	5.569 (df = 578)	41.514 (df = 585)	25.517 (df = 576)
F statistic	23.400*** (df = 14, 585)	25.759*** (df = 14, 578)	4.356*** (df = 14, 585)	8.117*** (df = 14, 576)

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

¹ regressions corrected of heteroskedasticity by robust standard errors in brackets [], with original standard errors in parenthesis (). R-squared, Adjusted R-squared, Residual Std. Error and F statistic are extracted from the original (not heteroskedasticity-corrected) regressions.

² Ramsey RESET test for misspecification detected the regression to be incorrectly specified (p=8.789e-07).

Note: The table above details the results for regressions including lobbying dummy, FDI RI and the interaction term for dependent variables ROA and ROE, without excluding outliers (models 1.5 and 1.7) and excluding outliers (models 1.6 and 1.8) from the analysis. ΔAdj. R-squared is calculated by comparing Adj.R-squared with correspondent model 0.1-0.4. Adapted from R software output.

Hypothesis 2:

Models 2.1-2.4 (Table 4 below) include the logarithm of lobbying expenses as the relevant independent variable. The lack of coefficient significance has its exception on the ROA regression without outliers, which shows that an increase in 1% of lobbying spending increases ROA, on average, by 6.01888×10^{-3} p.p. ($\beta=0.601888$, $p<0.05$), ceteris paribus. No significance for lobbying expenses coefficients for Models 2.1 ($\beta=0.054198$, $p>0.10$), 2.3 ($\beta=-0.80165$, $p>0.10$) and 2.4 ($\beta=1.12439$, $p>0.10$). However, Ramsey test for misspecification identifies this regression as being incorrectly specified ($p=0.01911$). Insignificant lobbying spending coefficients are reported for ROA with ($\beta=0.054198$, $p<0.10$); ROE with outliers ($\beta=-0.80165$, $p<0.10$) and without outliers ($\beta=1.12439$, $p<0.10$).

Including the log of lobbying spending in the regression somewhat improved the model quality for Model 2.2 (ROA without outliers, 0.413) in comparison to treatment sample benchmark, not showing significant improvement in the case of ROE (0.200 and 0.222 for with and without outliers) models or Model 2.1 (0.398). We reject *Hypothesis 2* on the argument that the results do not provide evidence that lobbying spending increases firm profitability given lack of coefficient statistical significance, despite positive orientation of the coefficient in 3 of the 4 models. We cannot reject the null effect of lobbying expenses on company profitability.

Table 4 - Regression Models 2.1-2.4: Regressions including lobbying expenses (treatment group sample)

	ROA		ROE	
	Model 2.1 Outliers ¹	Model 2.2 No outliers ^{1, 2}	Model 2.3 Outliers ¹	Model 2.4 No outliers
	<i>Estimate</i> (<i>Std. error</i>)	<i>Estimate</i> (<i>Std. error</i>)	<i>Estimate</i> (<i>Std. error</i>)	<i>Estimate</i> (<i>Std. error</i>)
Log(lobbying expenses)	0.054198 [0.632628] (0.44033)	0.601888** [0.302690] (0.31376)	-0.80165 [1.86438] (1.6051)	1.12439 (1.13717)
FDI RI	0.536460 [4.703388] (6.68764)	0.042687 [4.453555] (4.73235)	-37.56655 [56.66599] (24.3772)	7.88063 (17.70931)
Log(total assets)	-1.400561*** [0.276359] (0.26275)	-1.146176*** [0.247685] (0.18793)	-2.00613** [0.99730] (0.9577)	-1.80004*** (0.67426)
Profit margin	0.464215*** [0.098549] (0.03434)	0.350452*** [0.045618] (0.02535)	1.09904*** [0.18735] (0.1252)	0.84785*** (0.09026)
(Intercept)	18.205872** [8.034529] (4.63251)	9.529133*** [3.398839] (3.31829)	39.89222* [22.19080] (16.8860)	15.34878 (11.97035)
Sector dummies	Yes	Yes	Yes	Yes
N	300	298	300	296
R-squared	0.424	0.439	0.234	0.256
Adj. R-squared	0.398	0.413	0.200	0.222
ΔAdj. R-squared (against benchmark)	-0.002	+0.005	-0.002	+0.000
Residual Std. Error	9.898 (df = 286)	7.004 (df = 284)	36.078 (df = 286)	25.235 (df = 282)
F statistic	16.208*** (df = 13, 286)	17.107*** (df = 13, 284)	6.733*** (df = 13, 286)	7.470*** (df = 13, 282)

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

¹ regressions corrected of heteroskedasticity by robust standard errors in brackets [], with original standard errors in parenthesis (). R-squared, Adjusted R-squared, Residual Std. Error and F statistic are extracted from the original (not heteroskedasticity-corrected) regressions.

² Ramsey RESET test for misspecification detected the regression to be incorrectly specified (p=0.01911).

Note: The table above details the results for regressions including lobbying expenses for dependent variables ROA and ROE, without excluding outliers (models 2.1 and 2.3) and excluding outliers (models 2.2 and 2.4) from the analysis. ΔAdj. R-squared is calculated by comparing Adj.R-squared with correspondent model 0.5-0.8. Adapted from R software output.

Hypothesis 3:

Models 3.1-3.4 (Table 5 below) incorporate the Brussels office dummy variable, along with the controlling variables. The dummy variable does not show statistical significance for any of the ROA ($\beta=0.928781$, $p>0.10$ and $\beta=0.952809$, $p>0.10$ for with and without outliers) or ROE ($\beta=-3.25992$, $p>0.10$ and $\beta=-0.85032$, $p>0.10$ for with and without outliers, respectively) models.

Including Brussels office dummy does not improve model quality. Adjusted R-squared for ROA and ROE models is almost identical to treatment sample benchmark (0.399 and 0.408; 0.200 and 0.219 for ROA and ROE models, respectively). The hypothesis that establishing a Brussels office is likely to positively influence firm performance is not corroborated by the model results. We do not reject that the establishment of a Brussels office has zero impact on firm profitability for the sample being studied.

Table 5 - Regression Models 3.1-3.4: Regressions including Brussels office dummy variable (treatment group sample)

	ROA		ROE	
	Model 3.1 Outliers ¹	Model 3.2 No outliers ¹	Model 3.3 Outliers ¹	Model 3.4 No outliers
	<i>Estimate</i> (<i>Std. error</i>)	<i>Estimate</i> (<i>Std. error</i>)	<i>Estimate</i> (<i>Std. error</i>)	<i>Estimate</i> (<i>Std. error</i>)
Brussels office	0.928781 [0.912828] (1.33049)	0.952809 [0.819797] (0.94666)	-3.25992 [4.29391] (4.8521)	-0.85032 (3.41948)
FDI RI	1.057315 [4.673355] (6.72490)	0.371275 [4.438748] (4.78494)	-39.15813 [56.23533] (24.5246)	7.18636 (17.82506)
Log(total assets)	-1.445526*** [0.370320] (0.24020)	-1.023812*** [0.224207] (0.17366)	-2.04044** [1.03449] (0.8760)	-1.39530** (0.62118)
Profit margin	0.464781*** [0.093920] (0.03405)	0.357244*** [0.045962] (0.02523)	1.09118*** [0.18059] (0.1242)	0.86151*** (0.08936)
(Intercept)	19.049311*** [4.327789] (3.35017)	14.470930*** [2.968027] (2.40756)	32.40676** [14.67428] (12.2175)	23.30677*** (8.63660)
Sector dummies	Yes	Yes	Yes	Yes
N	300	298	300	296
R-squared	0.425	0.434	0.235	0.254
Adj. R-squared	0.399	0.408	0.200	0.219
ΔAdj. R-squared (against benchmark)	-0.001	+0.000	-0.002	-0.003
Residual Std. Error	9.890 (df = 286)	7.036 (df = 284)	36.065 (df = 286)	25.276 (df = 282)
F statistic	16.271*** (df = 13, 286)	16.746*** (df = 13, 284)	6.754*** (df = 13, 286)	7.376*** (df = 13, 282)

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

¹ regressions corrected of heteroskedasticity by robust standard errors in brackets [], with original standard errors in parenthesis (). R-squared, Adjusted R-squared, Residual Std. Error and F statistic are extracted from the original (not heteroskedasticity-corrected) regressions.

Note: The table above details the results for controlling regressions including Brussels office dummy for dependent variables ROA and ROE, without excluding outliers (models 3.1 and 3.3) and excluding outliers (models 3.2 and 3.4) from the analysis. ΔAdj. R-squared is calculated by comparing Adj.R-squared with correspondent model 0.5-0.8. Adapted from R software output.

Hypothesis 4:

Models 4.1-4.4 (Table 6 below) include the hiring of intermediaries as dummy variable. Intermediary dummy shows no statistical significance for either ROA ($\beta=2.260427$, $p>0.10$ and $\beta=0.781650$, $p>0.10$) or ROE ($\beta=3.85689$, $p>0.10$ and $\beta=3.92787$, $p>0.10$) models.

Model quality for models with intermediary dummy shows no relevant improvements when compared to the benchmark. Adjusted R-squared is at 0.401 and 0.407; 0.200 and 0.221 for ROA and ROE models, respectively. No statistical significance for intermediary coefficient is indicative that the data rejects the hypothesis that hiring a consulting or law firm reasonably improves financial performance, despite all models presenting coefficient with positive orientation. Therefore, we cannot reject that hiring an intermediary has no effect on firm profitability.

Table 6 - Regression Models 4.1-4.4: Regressions including intermediary dummy variable (treatment group sample)

	ROA		ROE	
	Model 4.1 Outliers ¹	Model 4.2 No outliers ¹	Model 4.3 Outliers ¹	Model 4.4 No outliers
	<i>Estimate</i> (<i>Std. error</i>)	<i>Estimate</i> (<i>Std. error</i>)	<i>Estimate</i> (<i>Std. error</i>)	<i>Estimate</i> (<i>Std. error</i>)
Intermediary	2.260427 [1.445046] (1.97224)	0.781650 [0.912005] (1.43990)	3.85689 [3.02054] (7.2049)	3.92787 (5.04485)
FDI RI	1.254016 [4.721351] (6.70140)	0.074994 [4.455768] (4.78294)	-35.99627 [56.68814] (24.4812)	8.89816 (17.79400)
Log(total assets)	-1.418895*** [0.369370] (0.22498)	-0.975199*** [0.217275] (0.16429)	-2.31838** [0.94100] (0.8219)	-1.51442*** (0.58138)
Profit margin	0.466372*** [0.093796] (0.03403)	0.358302*** [0.046067] (0.02534)	1.09413*** [0.18079] (0.1243)	0.86428*** (0.08935)
(Intercept)	18.763526*** [4.320363] (3.28780)	14.102079*** [2.935151] (2.37304)	34.22634** [14.12669] (12.0108)	23.99784*** (8.47168)
Sector dummies	Yes	Yes	Yes	Yes
N	300	298	300	296
R-squared	0.427	0.432	0.234	0.255
Adj. R-squared	0.401	0.407	0.200	0.221
ΔAdj. R-squared (against benchmark)	+0.001	-0.001	-0.002	-0.001
Residual Std. Error	9.875 (df = 286)	7.045 (df = 284)	36.076 (df = 286)	25.252 (df = 282)
F statistic	16.382*** (df = 13, 286)	16.648*** (df = 13, 284)	6.737*** (df = 13, 286)	7.432*** (df = 13, 282)

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

¹ regressions corrected of heteroskedasticity by robust standard errors in brackets [], with original standard errors in parenthesis (). R-squared, Adjusted R-squared, Residual Std. Error and F statistic are extracted from the original (not heteroskedasticity-corrected) regressions.

Note: The table above details the results for regressions including hiring intermediary dummy for dependent variables ROA and ROE, without excluding outliers (models 4.1 and 4.3) and excluding outliers (models 4.2 and 4.4) from the analysis. ΔAdj. R-squared is calculated by comparing Adj.R-squared with correspondent model 0.5-0.8. Adapted from R software output.

Hypothesis 5:

Association membership dummy variable is included in Models 5.1-5.4 (Table 7 below). No statistical significance is reported in both ROA ($\beta=0.428971$, $p>0.10$ and $\beta=-0.031918$, $p>0.10$) and ROE ($\beta=3.55977$, $p>0.10$ and $\beta=4.3909$, $p>0.10$) models.

Model quality shows a very slight decrease for all models. Adjusted R-squared is at 0.398 and 0.406; 0.196 and 0.224 for ROA and ROE models, respectively. Although 3 of the 4 models show an intermediary variable coefficient with the expected (positive) orientation, the lack of significance leads to rejecting *Hypothesis 5*. We cannot reject that being member of a trade association has no meaningful impact on firm profitability.

Table 7 - Regression Models 5.1-5.4: Regressions including association membership dummy variable (treatment group sample)

	ROA		ROE	
	Model 5.1 Outliers ¹	Model 5.2 No outliers ¹	Model 5.3 Outliers ¹	Model 5.4 No outliers
	<i>Estimate</i> (<i>Std. error</i>)	<i>Estimate</i> (<i>Std. error</i>)	<i>Estimate</i> (<i>Std. error</i>)	<i>Estimate</i> (<i>Std. error</i>)
Association membership	0.428971 [1.551026] (1.88468)	-0.031918 [1.627671] (2.44218)	3.55977 [5.81657] (6.8701)	4.34909 (4.80924)
FDI RI	0.475561 [4.687610] (6.68734)	-0.181768 [4.439883] (4.76302)	-37.58775 [56.60379] (24.3769)	7.29679 (17.71627)
Log(total assets)	-1.393668*** [0.374236] (0.22775)	-0.959335*** [0.219891] (0.16526)	-2.34217** [0.92733] (0.8302)	-1.55613*** (0.58698)
Profit margin	0.464115*** [0.093705] (0.03419)	0.357226*** [0.046549] (0.02533)	1.08619*** [0.18092] (0.1246)	0.85536*** (0.08949)
(Intercept)	18.414346*** [4.2777978] (3.39926)	14.030095*** [3.048172] (2.44218)	32.36061** [14.55208] (12.3911)	21.77324** (8.73167)
Sector dummies	Yes	Yes	Yes	Yes
N	300	298	300	296
R-squared	0.424	0.432	0.234	0.256
Adj. R-squared	0.398	0.406	0.200	0.221
ΔAdj. R-squared (against benchmark)	-0.002	-0.002	-0.002	-0.001
Residual Std. Error	9.897 (df = 286)	7.049 (df = 284)	36.077 (df = 286)	25.242 (df = 282)
F statistic	16.213*** (df = 13, 286)	16.609*** (df = 13, 284)	6.735*** (df = 13, 286)	7.454*** (df = 13, 282)

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

¹ regressions corrected of heteroskedasticity by robust standard errors in brackets [], with original standard errors in parenthesis (). R-squared, Adjusted R-squared, Residual Std. Error and F statistic are extracted from the original (not heteroskedasticity-corrected) regressions.

Note: The table above details the results for regressions including association membership dummy for dependent variables ROA and ROE, without excluding outliers (models 5.1 and 5.3) and excluding outliers (models 5.2 and 5.4) from the analysis. ΔAdj. R-squared is calculated by comparing Adj.R-squared with correspondent model 0.5-0.8. Adapted from R software output.

Hypothesis 6:

Models 6.1-6.4 (Table 8 below) include EU head office dummy variable to test Hypothesis 6. The relevant coefficients for the 4 models show statistical significance at, at least, 5% level. For the ROA (ROE) model with outliers (Models 6.1 and 6.3), having head office in an EU country reduces ROA (ROE) by, on average, 5.46 (16.28) p.p. ($\beta=-5.459051$, $p<0.01$ and $\beta=-16.27796$, $p<0.05$ for ROA and ROE, respectively), *ceteris paribus*. The magnitude of the effect is lower when outliers are excluded in ROA ($\beta=-3.195978$, $p<0.01$) and ROE ($\beta=-13.57763$, $p<0.01$) models, but the coefficients are still negative and significant. Nonetheless, Ramsey test signals misspecification in Model 6.2 (ROA without outliers), $p=0.04901$.

Model quality improves for all models when EU head office dummy variable is included. Adjusted R-squared for ROA and ROE models is 0.426 and 0.424; 0.223 and 0.253, respectively. Contrary to what was hypothesized, the results illustrate that having EU headquarters deteriorates company financial performance. All models show a significant and negative coefficient, despite the (marginal) evidence of misspecification for Model 6.2.

Table 8 - Regression Models 6.1-6.4: Regressions including EU head office dummy variable (treatment group sample)

	ROA		ROE	
	Model 6.1 Outliers ¹	Model 6.2 No outliers ^{1, 2}	Model 6.3 Outliers ¹	Model 6.4 No outliers
	<i>Estimate</i> (<i>Std. error</i>)	<i>Estimate</i> (<i>Std. error</i>)	<i>Estimate</i> (<i>Std. error</i>)	<i>Estimate</i> (<i>Std. error</i>)
EU head office	-5.459051*** [2.054880] (1.4697)	-3.195978*** [1.194663] (1.06799)	-16.27796** [6.88252] (5.4023)	-13.57763*** (3.81882)
FDI RI	-3.346079 [4.959500] (6.6123)	-2.422924 [4.576349] (4.74737)	-48.77093 [57.60846] (24.3042)	-0.11071 (17.48944)
Log(total assets)	-1.476704*** [0.377686] (0.2196)	-1.028823*** [0.217648] (0.16116)	-2.53586*** [0.90548] (0.8072)	-1.69130*** (0.56806)
Profit margin	0.450685*** [0.087274] (0.0335)	0.352172*** [0.045657] (0.02494)	1.04944*** [0.17128] (0.1231)	0.83475*** (0.08775)
(Intercept)	25.031345*** [5.963930] (3.6515)	17.932782*** [3.425065] (2.67461)	53.11558*** [14.38513] (13.4215)	39.67423*** (9.42579)
Sector dummies	Yes	Yes	Yes	Yes
N	300	298	300	296
R-squared	0.451	0.449	0.257	0.286
Adj. R-squared	0.426	0.424	0.223	0.253
ΔAdj. R-squared (against benchmark)	+0.026	+0.016	+0.021	+0.031
Residual Std. Error	9.668 (df = 286)	6.940 (df = 284)	35.534 (df = 286)	24.731 (df = 282)
F statistic	18.049*** (df = 13, 286)	17.821*** (df = 13, 284)	7.620*** (df = 13, 286)	8.672*** (df = 13, 282)

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

¹ regressions corrected of heteroskedasticity by robust standard errors in brackets [], with original standard errors in parenthesis (). R-squared, Adjusted R-squared, Residual Std. Error and F statistic are extracted from the original (not heteroskedasticity-corrected) regressions.

² Ramsey RESET test for misspecification detected the regression to be incorrectly specified (p=0.04901).

Note: The table above details the results for regressions including EU head office dummy for dependent variables ROA and ROE, without excluding outliers (models 6.1 and 6.3) and excluding outliers (models 6.2 and 6.4) from the analysis. ΔAdj. R-squared is calculated by comparing Adj.R-squared with correspondent model 0.5-0.8. Adapted from R software output.

Hypothesis 7:

Models 7.1-7.4 (Table 9 below) include number of meetings with EC officials as the relevant predictor. For ROA model with (without) outliers, on average, an increase of 1 meeting with block's officials improves ROA by 0.33 (0.34) p.p. ($\beta=0.329472$, $p<0.01$ and $\beta=0.338857$, $p<0.01$), ceteris paribus, and these effects are significant at a 1% level. This means that at the sample mean level of 4.992%, one additional meeting represents around 6.67% increase in ROA $((4.992+0.3329472)/4.992)$. ROE model with outliers (Model 7.3) also finds a positive significant effect of EC meetings, at the 10% level ($\beta=0.47085$, $p<0.10$). Model 7.4, on the other hand, shows no significance for the relevant coefficient ($\beta=0.48028$, $p>0.10$).

Model quality shows improves for ROA but not for ROE models. Adjusted R-squared is 0.404 and 0.418; 0.200 and 0.222 (for ROA and ROE models, respectively). Number of meetings with EC officials is positive and statistically significant for 3 out of the 4 models. There is enough evidence for ROA models that increase in number of meetings has a positive impact on firm profitability.

Final model:

Models 7.5-7.8 (Appendix 11) include all independent variables from *Hypotheses 2-7*. Adjusted R-squared for ROA (0.423 and 0.428) and ROE (0.215 and 0.246) models do not show significant improvement against the best models for single-independent variable studied for *Hypotheses 2-7*. There are no major changes in statistical significance level for relevant independent variables nor there are considerable changes in magnitude for the statistically significant independent predictors. Therefore, previous conclusions are not severely affected.

Table 9 - Regression Models 7.1-7.4: Regressions including number of meetings with EU officials (treatment group sample)

	ROA		ROE	
	Model 7.1 Outliers ¹	Model 7.2 No outliers ¹	Model 7.3 Outliers ¹	Model 7.4 No outliers
	<i>Estimate</i> (<i>Std. error</i>)	<i>Estimate</i> (<i>Std. error</i>)	<i>Estimate</i> (<i>Std. error</i>)	<i>Estimate</i> (<i>Std. error</i>)
Meetings with EC officials	0.329472*** [0.103965] (0.19703)	0.338857*** [0.090486] (0.13956)	0.47085* [0.28457] (0.7215)	0.48028 (0.50505)
FDI RI	1.600915 [4.628002] (6.68479)	0.931470 [4.363599] (4.73512)	-35.70520 [56.44041] (24.4775)	9.15454 (17.78233)
Log(total assets)	-1.500235*** [0.368502] (0.23298)	-1.080059*** [0.225609] (0.16779)	-2.42482** [0.96797] (0.8531)	-1.62291*** (0.60281)
Profit margin	0.466024*** [0.093759] (0.03392)	0.358474*** [0.045680] (0.02502)	1.09318*** [0.18061] (0.1242)	0.86316*** (0.08924)
(Intercept)	19.922245*** [4.344462] (3.36961)	15.367930*** [3.024434] (2.40996)	35.83890** [14.45291] (12.3384)	25.64328*** (8.69743)
Sector dummies	Yes	Yes	Yes	Yes
N	300	298	300	296
R-squared	0.430	0.443	0.235	0.256
Adj. R-squared	0.404	0.418	0.200	0.222
ΔAdj. R-squared (against benchmark)	+0.004	+0.010	-0.002	+0.000
Residual Std. Error	9.850 (df = 286)	6.977 (df = 284)	36.067 (df = 286)	25.238 (df = 282)
F statistic	16.580*** (df = 13, 286)	17.407*** (df = 13, 284)	6.751*** (df = 13, 286)	7.463*** (df = 13, 282)

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

¹ regressions corrected of heteroskedasticity by robust standard errors in brackets [], with original standard errors in parenthesis (). R-squared, Adjusted R-squared, Residual Std. Error and F statistic are extracted from the original (not heteroskedasticity-corrected) regressions.

Note: The table above details the results for regressions including meetings with EC officials for dependent variables ROA and ROE, without excluding outliers (models 7.1 and 7.3) and excluding outliers (models 7.2 and 7.4) from the analysis. ΔAdj. R-squared is calculated by comparing Adj.R-squared with correspondent model 0.5-0.8. Adapted from R software output.

4.3. Panel analysis – Descriptive statistics

The balanced panel data subset selected holds 354 observations for 59 companies during 2013-2018. While most of the relevant independent variables studied at the cross-sectional level are constricted to 2018, predictors included in Model C (Chapter 2) require additional descriptive analysis. Table 10, below, summarizes the most relevant insights for these variables. Year-on-year averages for all variables can be inspected in Appendix 12.

Overall total assets average stands at €129 billion (€301 billion standard deviation) and mean profit margin at 12.046% (13.917 standard deviation). Profit margin year average varies between 11.11% (2016) to 13.70% (2017), with no clear trend for the period being studied. As for average total assets, there is an increasing trend from 2013 (€116 billion) to 2018 (€136 billion).

ROA (ROE) sample average stands at 3.093% (8.313%), with 4.808 (12.453) standard deviation. No significant trend is discernible in the year-on-year analysis. Yearly average for ROA (ROE) varies from 2.23% (6.98%) in 2015 (2013) to 3.85% (11.12%) in 2017 (2017).

Lobbying spending sample average is at €519,442.10 (€795,909.10 standard deviation). Yearly average spending for the companies in the sample shows a considerable growing trend from €322,542.40 (2013) to €615,381.40 (2018).

Table 10 - Descriptive statistics summary table for balanced panel data subset (2013-2018)

	Overall				
	<i>N</i>	<i>Mean</i>	<i>SD</i>	<i>Min.</i>	<i>Max.</i>
ROA (%)	354	3.093	4.808	-24.843	18.446
ROE (%)	354	8.313	12.453	-74.722	72.796
Total assets ('000s)	354	129,276,984.00	301,236,580.00	19,632.32	1,700,105,064.00
Profit margin (%)	354	12.046	13.917	-30.749	73.487
Lobbying spending	354	519,442.10	795,909.10	5,000	8,1250,000

Note: The table above shows the descriptive summary for the variables in the balanced panel dataset (2013-2018).

4.4. Panel analysis – Results

As referred in Chapter 3 (Methodology), prior to running the panel data regressions, I compute four lagged lobbying expenses variables which convert the subset data size from 354 to 118, keeping the same 59 companies in the data.

In agreement with the rationale presented for cross-sectional analysis, I firstly report benchmark regression results, for FE and FD estimators. No outliers were detected and removed for ROA regressions. Adjusted R-squared for ROA regressions is 0.266 (FE estimator) and 0.624 (FD estimator) and for ROE regressions is 0.315 and -0.396 (FE estimator with and without outliers) and 0.656 and 0.305 (FD estimator with and without outliers). Multicollinearity is detected for these models (consequences are discussed below). The results can be inspected in Appendix 13 (ROA models) and 14 (ROE models). Wooldridge's test for serial correlation in FE panels (adapted for short panels) does not detect serial correlation in any of the benchmark or *Hypothesis 8* FE models.

Hypothesis 8:

Models 8.7-8.8 and 8.9-8.12 (Tables 11 and 12, respectively, below) report the results for the distributed lag models for ROA and ROE regressions, respectively. The coefficients for lobbying expenses are statistically insignificant, with exception to the short-run elasticity

(contemporaneous effect) on FE ROA regression – Model 8.7 ($\beta=3.597025$, $p<0.05$). Contemporaneous effects present much larger magnitude than lagged effects for all models. However, extremely high correlation between the lagged lobbying expenses (Appendix 15) raises serious concerns regarding multicollinearity, leading to imprecise estimation of individual lag coefficients and large standard errors, according to Wooldridge (2012). The author mentions that in presence of multicollinearity, it is still possible to calculate the long-run propensity (or long-run elasticity) by summing up all coefficient values for the relevant variable. However, the F-test record for joint significance of the lagged and contemporaneous lobbying expenses reports joint statistical insignificance in all models (8.7-8.12), providing no evidence against a null effect of the long-run propensity of lobbying expenses on profitability.

Multicollinearity is considered to cause overfitting, which is perceptible in differences in the quality of the ROE models with and without outliers (Table 12), and R-squared inflation¹⁶. Adjusted R-squared for ROA models is 0.260 and 0.609 (FE and FD estimator, respectively) and for ROE models is 0.285 and -0.510 (FE estimator with and without outliers) and 0.636 and 0.235 (FD estimator with and without outliers).

In summary, high suspicion of multicollinearity allied with the general lack of statistical significance for relevant predictors leads to failure to reject the null effect of lagged lobbying expenses on firm profitability.

Table 13 below summarizes the conclusions reported in this chapter.

¹⁶ Source: http://web.vu.lt/mif/a.buteikis/wp-content/uploads/PE_Book/4-5-Multiple-collinearity.html, accessed in 2nd September 2020.

Table 11 - Regression Models 8.7-8.8: Panel data with lagged lobbying expenses for dependent variable ROA

	ROA	
	Model 8.7 - FE ¹	Model 8.8 - FD ¹
	<i>Estimate</i> (<i>Std. error</i>)	<i>Estimate</i> (<i>Std. error</i>)
Log(lobbying expenses)	3.597025** [1.665831] (2.184372)	3.162831 [2.196368] (2.248054)
Log(lobbying expenses) <i>lag 1</i>	0.059673 [0.263044] (0.621245)	-0.218961 [1.178609] (0.627816)
Log(lobbying expenses) <i>lag 2</i>	0.240868 [0.218506] (0.531492)	-0.067996 [0.219163] (0.528629)
Log(lobbying expenses) <i>lag 3</i>	0.500456 [0.340452] (0.493954)	0.288371 [0.410866] (0.500140)
Log(lobbying expenses) <i>lag 4</i>	0.253684 [0.163031] (0.245168)	-0.032380 [0.170781] (0.212219)
Log(total assets)	1.197993 [2.137604] (2.999081)	0.463000 [2.523398] (3.079487)
Profit margin	0.333449*** [0.104489] (0.034580)	0.342350** [0.155894] (0.035483)
Year 2018 dummy	-0.805243* [0.439281] (0.377181)	
Sector dummies	No	No
N	118	59
R-squared	0.677	0.649
Adj. R-squared	0.260	0.609
ΔAdj. R-squared (against benchmark)	-0.006	-0.015
F statistic	13.376*** (df = 8, 51)	12.753*** (df = 7, 52)

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

¹ regressions corrected of heteroskedasticity by robust standard errors in brackets [], with original standard errors in parenthesis (). R-squared, Adjusted R-squared and F statistic extracted from the original (not heteroskedasticity-corrected) regressions.

Note: The table above details the results for lagged lobbying expenses for dependent variable ROA, using Fixed Effects (model 8.7) and First Differenced estimator (model 8.8), no outliers were detected and removed. ΔAdj. R-squared is calculated by comparing Adj.R-squared with correspondent model 8.1-8.2. Adapted from R software output.

Table 12 - Regression Models 8.9-8.12: Panel data with lagged lobbying expenses for dependent variable ROE

	ROE			
	Model 8.9 - FE	Model 8.10 - FE	Model 8.11 - FD	Model 8.12 - FD
	Outliers	No outliers	Outliers	No outliers
	<i>Estimate</i> (<i>Std. error</i>)	<i>Estimate</i> (<i>Std. error</i>)	<i>Estimate</i> (<i>Std. error</i>)	<i>Estimate</i> (<i>Std. error</i>)
Log(lobbying expenses)	12.20591 (10.59042)	1.473454 (5.196437)	10.815792 (10.644073)	0.570864 (5.248133)
Log(lobbying expenses) <i>lag 1</i>	0.50028 (3.01196)	-0.013175 (1.459476)	-0.391799 (2.972578)	-0.513652 (1.448949)
Log(lobbying expenses) <i>lag 2</i>	1.05023 (2.57682)	0.039260 (1.250603)	0.061368 (2.502948)	-0.520973 (1.220836)
Log(lobbying expenses) <i>lag 3</i>	2.51795 (2.39482)	0.008556 (1.176109)	1.838934 (2.368059)	-0.398560 (1.167107)
Log(lobbying expenses) <i>lag 4</i>	0.78532 (1.18864)	0.490834 (0.576204)	-0.130544 (1.004813)	-0.020114 (0.489849)
Log(total assets)	1.38738 (14.54035)	11.932665* (7.090069)	-0.965781 (14.580740)	10.759493 (7.164452)
Profit margin	1.70197*** (0.16765)	0.527360*** (0.121813)	1.730468*** (0.168004)	0.528635*** (0.123735)
Year 2018 dummy	-2.57808 (1.82867)	-1.442062 (0.890116)		
Sector dummies	No	No	No	No
N	118	116	59	58
R-squared	0.688	0.343	0.674	0.315
Adj. R-squared	0.285	-0.510	0.636	0.235
ΔAdj. R-squared (against benchmark)	-0.030	-0.114	-0.020	-0.070
F statistic	14.090*** (df = 8, 51)	3.267*** (df = 8, 50)	14.871*** (df = 7, 52)	3.049*** (df = 7, 51)

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

Note: The table above details the results for lagged lobbying expenses for dependent variable ROE, using Fixed Effects (models 8.9 and 8.10) and First Differenced estimator (models 8.11 and 8.12), , without excluding outliers (models 8.9 and 8.11) and excluding outliers (models 8.10 and 8.12) from the analysis. ΔAdj. R-squared is calculated by comparing Adj.R-squared with correspondent model 8.3-8.6. Adapted from R software output.

Table 13 - Conclusion summary

	Hypothesis	Conclusion
H1.1	Firms that lobby at the EU level report better financial performance than those that do not.	Rejected
H1.2	The higher the degree of regulation in the industry, the bigger are the expected returns of lobbying at the EU level for firm financial performance.	Rejected
H2	Lobbying spending is positively related with firm financial performance.	Rejected
H3	The establishment of a Brussels office is positively related with firm financial performance.	Rejected
H4	Hiring a professional intermediary is positively related with higher firm financial performance.	Rejected
H5	Membership of a trade association is positively related with higher firm financial performance.	Rejected
H6	Having headquarters within EU geography is positively related with higher firm financial performance.	Rejected (negative relation)
H7	Hiring 'revolving door' lobbyists is positively related with higher firm performance.	Partially accepted
H8	The returns for lobbying are greater in the medium and long term than in the short term.	Rejected

5. Discussion

As identified in the Chapter 2 (Literature Review), CPA and lobbying literature is divided in terms of what is the expected impact orientation of lobbying on financial performance. This document finds little evidence that there is positive premium in ROA for firms that are politically active at the EU level. Firms that lobby, defined by whether they are registered in the ETR, show a 1.52 p.p. ($p < 0.05$) premium on ROA against their non-lobbying counterparts, however the model excluding outliers runs against misspecification issues. Adding up several other relevant independent predictors reduces the statistical significance of this coefficient.

Some studies point out to the non-negative impact of lobbying for companies faced with high degree of industry/market regulation (for example Hadani & Schuler, 2013; Coates IV, 2012), i.e. the firms are either better off or not particularly affected when politically active in a highly regulated environment. The impact of regulation for lobbying vs non-lobbying firms is found to not to be a significant, meaning that firms in highly regulated industries do not financially benefit from lobbying in Brussels.

No evidence is found to assume that either hiring of a professional intermediary or membership of a trade association as a significant impact on profitability. The increase in cost efficiency (Gregor, 2011); legitimacy boost (Egerod, et al., 2019) and reputation improvement (Brown, 2016) identified to be benefits of hiring professional intermediaries do not convert in substantial gains as measured by ROA and ROE in the sample studied, nor does the additional opportunity to voice group concerns allowed by trade associations due to their very important role of information providers (Bennet, 2007). It might also be that trade associations are lacking the requirements to provide significant police impact (identified by Eising, 2007b).

Also, the assumption that a Brussels office increases lobbying efficiency (Bennet, 2007) is not corroborated by the data to the extent of a substantial improvement on profitability. It might be that the of the recency of the establishment differentiates poorer from better lobbying performers due to other related characteristics, such as established connections and capabilities, that end up being much more relevant than a close physical presence. This might mean that a firm with an older Brussels' office had more time to develop its' network of connections, as well as establish rapport and develop a good reputation with EU officials when comparing to a firm which establishes an office later.

Against the expectations, firms with headquarters in a EU country are found to have lower levels of profitability (as measured by both ROA and ROE), which leads to believe that either firms from the block are not taking advantage of national representation involvement in policymaking or European governments and national MEPs are not converting their influence at the EU level in meaningful benefits for firm's profitability as a whole (given the multitude of both diffuse and specific interests they might represent and support). Other explanations might arise from the market strategy side, with companies from outside the block being more internationalized, capturing competitive advantages that translate into higher profitability levels.

By using number of meetings with EC officials as a proxy for hiring 'revolving door' lobbyists, as expected, evidence is found in the data that there are financial benefits associated with appointing former EU professionals (as in Egerod, et al., 2019; Duchin & Sosyura, 2012). Much like in the case of lobbying vs non-lobbying firms discussed above, the metric used to assess variable effect is not without flaw.

Finally, no evidence was found that reported lobbying expenses have a positive impact on profitability, either in the immediate or short-medium term interval. This means that it was not possible to transpose the results of, for example, Chen, et al. (2012), which finds a positive and significant relation between prior year lobbying expenses and firm performance, as measured by accounting metrics like net income, or Hill, et al. (2013) by market-based shareholder value metrics, for the EU arena. General lack of statistical significance for the coefficients, allied with misspecification and multicollinearity concerns summarize the extent to which the analysis is constricted when regressing lobbying expenses. Nonetheless, the high degree of correlation between past lobbying expenses, however, has one practical explanation on Drutman (2011), which relates to the "stickiness" of lobbying efforts. Once a firm engages in lobbying at a consistent level, its' lobbying intensity (which is here measured by lobbying expenses) does not change much in the shorter term. This does not mean, however, that the firm is not learning, building capabilities and increasing the lobbying strategy efficiency (Drutman, 2011). Indeed, the data shows a much larger variation between companies than within one company throughout the time being studied.

5.1. Limitations

Like any other research document, this report presents several limitations. First, the data sources utilized might suffer from incorrect entries due to mistyping, missing data and/or incorrect categorisation. The ETR, for example, is especially prone to these issues because of the lack routine verification of entries and insufficient quality checking (Greenwood & Dreger, 2013). In particular, underreporting lobbying expenses by firms is a common problem (Corporate Europe Observatory, 2017). Measurement error for this independent variable is likely to be related with the actual and reported lobbying expenses, which means that OLS can be inconsistent (Wooldridge, 2012). Also, since control and treatment groups were selected according to a non-missing data criteria, there is some concern that this might cause sample selection bias, more concerning in the control group case, in which the rules were directed to find the best possible match to the treatment group.

Second, for some variables there was either no information or proxies were considered. Firm specific characteristics and competencies, such as the network of political and government connections, firm's reputation or developed lobbying capabilities, which are expected to increase access likelihood and potentially successful influence, were not included in the study due to general lack of information for these characteristics, which are fairly hard to measure. Number of meetings with EC officials was used as a proxy for hiring 'revolving door' lobbyists. However, the referred proxy is a measure of access, which is likely to include the effect of other direct lobbying strategies. In addition, control and treatment group observations were separated through whether the firm registered in the ETR, and this is likely to provoke some distortion, since ETR is a non-mandatory regime that only provides benefits to the institutions directly registered, meaning that one firm might either benefit from indirect lobbying efforts (such as professional intermediaries or trade associations) or still directly lobby without being registered and considered in the treatment group.

Agency cost of lobbying was not taken into account in my study, since studying the topic generally requires not only financial metrics associated with the level of transparency/opacity from management practices such as debt level (seen as a promoter of agency cost reduction) or free cash flow (which, in excessive amount, is seen as indicator of serious mismatch between managers and shareholders interests) (Jensen, 1986). It would also require, for example, measures for management remuneration plan and compensation systems (Unsal, et al., 2016; Skaife, et al., 2013) or shareholder strength and managerial excess (Coates IV, 2012) which are

not easily available in public sources. Nonetheless, incorporating such concerns in the analysis could have brought to light a more holistic perspective.

Third, there are limitations in the underlying study assumptions and methodology. This report makes no distinction between lobbying for proactive reasons, i.e. companies actively engage with public officials in order to create opportunities that create benefit (such as seeking government contracts and grants) and for reactive reasons, i.e. pushing against legislative proposals by other interest groups that would undermine their profitability, effectively defending the status quo. Not separating these two distinct motives for political engagement undermines the strength of the relationship between lobbying and financial performance (as argued by Chen, et al., 2012), since, in theory, whilst successful proactive lobbying is materialized in financial benefits, successful reactive lobbying only avoids a penalization in firm performance.

Additionally, the reinforcing effect that different lobbying strategies have on overall corporate political strategy was not considered in this study. OLS assumes a “*ceteris paribus*” coefficient interpretation, meaning changes in one independent variable when everything else stays constant. Although the method represents a good starting point in terms of studying the impact of the different lobbying strategies, companies are very likely to engage in several strategies at the same time (Bennet, 2007; Beyers, 2002), and these are likely to reinforce each other.

Finally, small-sized sample studies do not provide sound source for complete generalization, and so the results of this study should be judged with caution (this argument is even more relevant for the panel data analysis section).

5.2. Scientific and Managerial implications

Despite the numerous limitations listed above, this project presents some important insights for both the scientific and managerial communities.

Drawing from the qualitatively-focused European literature, as well as from some articles that quantitatively study the determinants for corporate lobbying, this report is, to the best of my knowledge, the first to empirically test the financial benefit of several direct and indirect lobbying routes available at the EU level. Furthermore, the study sample includes both publicly traded and privately-owned companies, making for a much better representation of corporate

environment when studying the returns of political activity, when comparing to studies that derive samples from large-firm lists like “The Forbes Global 2000” or market indexes like the S&P 500 (see, for example, Bernhagen & Mitchell, 2009; Borisov, et al., 2016). Likewise, a broader study sample which includes smaller firms reduces the bias introduced when dealing with large-firm only samples (Drope & Hansen, 2006). Finally, this study gives a step further in analyzing the financial returns of lobbying at the EU level on future firm profitability, by considering different time lags, from contemporaneous effect up to 5-years difference and testing those same effects with panel data..

Based on the findings of this report, managers should be careful with exceedingly high expectations for returns on lobbying, since lobbying firms do not present a very significant difference in financial performance against their non-politically active peers and several of the strategies studied did not present meaningful financial returns. Nonetheless, securing a seat at the table with Eu officials, whether that is by hiring ex-politicians to the board, professional intermediaries, or directly engage with members of EU institutions seems to be strategy to reap benefits. This does not mean that other strategies will not bring financial return to the company. What can be argued is that other lobbying strategies do not impact profitability measures (such as ROA or ROE) in a material way. Furthermore, including both smaller and larger firms in the sample study allows for these conclusions to be useful for a greater number of managers in their resource allocation decisions, since the results have higher degree of generalization (even though these should still be considered with care, for reasons highlighted previously).

5.3. Future research

Upcoming research projects in corporate lobbying at European level can build from the results reported in this study. One future route for development is in extending the analysis developed in this study to include the controlling effect of the agency problem when studying the corporate financial returns for lobbying. Methodology could be adapted to incorporate the reinforcing effects of the several strategies companies use to influence policymaking.

Also, lobbying returns for reactive and proactive motivation could be analysed separately. Engaging in such endeavor could, for example, be based on analyzing the positions of several companies during the EU public consultation stage and projecting potential gains/losses from specific pieces of legislation.

These and other analyses would very much benefit from a panel data approach, with data for several lobbying strategies that could be available in the future as the ETR, *LobbyFacts.eu* and other public European databases build on a more significant historical record for several variables of interest. At this stage, with historical information being limited mainly to past lobbying expenses, there is a significant part of the relationship not being explored.

References

- Ansolabehere, S., de Figueiredo, J. M. & Snyder Jr., J. M., 2003. Why Is There so Little Money in U.S. Politics?. *The Journal of Economic Perspectives*, 17(1), pp. 105-130.
- Ansolabehere, S., Snyder Jr., J. M. & Ueda, M., 2004. *Did Firms Profit from Soft Money?*. Cambridge, Massachusetts Institute of Technology.
- Baltagi, B. H. & Song, S. H., 2006. Unbalanced panel data: A survey. *Statistical Papers*, Volume 47, pp. 493-523.
- Bennet, R. J., 2007. The impact of European economic integration on business associations: The UK case. *West European Politics*, 20(3), pp. 61-90.
- Berkhout, J. & Lowery, D., 2008. Counting organized interests in the European Union: a comparison of data sources. *Journal of European Public Policy*, 15(4), pp. 489-513.
- Bernhagen, P. & Mitchell, N. J., 2009. The Determinants of Direct Corporate Lobbying in the European Union. *European Union Politics*, 10(2), p. 155–176.
- Bertrand, M., Bombardini, M. & Trebbi, F., 2014. Is It Whom You Know or What You Know? An Empirical Assessment of the Lobbying Process. *American Economic Review*, 104(12), p. 3885–3920.
- Beyers, J., 2002. Gaining and seeking access: The European adaptation of domestic interest associations. *European Journal of Political Research*, 41(5), pp. 585-612.
- Beyers, J., 2004. Voice and Access: Political Practices of European Interest Associations. *European Union Politics*, 5(2), p. 211–240.
- Binderkrantz, A. S., Christiansen, P. M. & Pedersen, H. H., 2015. Interest Group Access to the Bureaucracy, Parliament, and the Media. *Governance*, Volume 28, pp. 95-112.
- Bonardi, J.-P., Holburn, G. L. F. & Vanden Bergh, R. G., 2006. Nonmarket Strategy Performance: Evidence from U.S. Electric Utilities. *Academy of Management Journal*, 49(6), pp. 1209-1228.
- Boräng, F. & Naurin, D., 2015. ‘Try to see it my way!’ Frame congruence between lobbyists and European Commission officials. *Journal of European Public Policy*, 22(4), pp. 499-515.
- Borisov, A., Goldman, E. & Gupta, N., 2016. The Corporate Value of (Corrupt) Lobbying. *The Review of Financial Studies*, 29(4), p. 1039–1071.
- Boucher, M., 2018. Who you know in the PMO: Lobbying the Prime Minister’s Office in Canada. *Canadian Public Administration*, 61(3), p. 317–340.
- Brown, R. S., 2016. How do firms compete in the non-market? The process of political capability building. *Business and Politics*, 18(3), pp. 263-295.

- Chambers, A., 2016. *The Lobbying of the EU: How to achieve greater transparency*, London: Civitas: Institute for the Study of Civil Society.
- Chen, H., Parsley, D. & Y, Y., 2012. Corporate Lobbying and Financial Performance. *SSRN Electronic Journal*, Issue 10.2139/ssrn.1014264.
- Coates IV, J. C., 2012. Corporate Politics, Governance, and Value Before and After Citizens United. *Journal of Empirical Legal Studies*, 9(4), p. 657–696.
- Coen, D. & Vannoni, M., 2016. Sliding doors in Brussels: A career path analysis of EU affairs managers. *European Journal of Political Research*, 55(4), pp. 811-826.
- Commission, E., 2008. *NACE Rev. 2 - Statistical classification of economic activities in the European Community*. Luxembourg, Eurostat Methodologies and Working Papers.
- Cooper, M. J., Gulen, H. & Ovtchinnikov, A. V., 2010. Corporate Political Contributions and Stock Returns. *The Journal of Finance*, 65(2), pp. 687-724.
- Corporate Europe Observatory, 2017. *Lobby Planet Brussels: The Corporate Europe Observatory guide to the murky world of EU lobbying*, Brussels: Corporate Europe Observatory.
- de Figueiredo, J. M. & Silverman, B. S., 2006. Academic Earmarks and the Returns to Lobbying. *The Journal of Law & Economics*, 49(2), pp. 597-625.
- Dellis, K. & Sondermann, D., 2017. *Lobbying in Europe: new firm-level evidence*, s.l.: European Central Bank.
- Drope, J. M. & Hansen, W. L., 2006. Does Firm Size Matter? Analyzing Business Lobbying in the United States. *Business & Politics*, 8(2), pp. 1-17.
- Drutman, L., 2011. *The Business Of America is Lobbying: Explaining the Growth of Corporate Political Activity in Washington, DC*, California: University of California, PhD.
- Duchin, R. & Sosyura, D., 2012. The politics of government investment. *Journal of Financial Economics*, 106(1), pp. 24-48.
- Dür, A., 2008. Interest Groups in the European Union: How Powerful Are They?. *West European Politics*, 31(6), pp. 1212-1230.
- Dür, A. & De Biève, D., 2007. Inclusion without Influence? NGOs in European Trade Policy. *Journal of Public Policy*, 27(1), pp. 79-101.
- Egerod, B., Ploeg, J. v. d. & Rasmussen, A., 2019. *Organized Interests & the Revolving Door: The political and economic effects of hiring revolvers in the European Union*. Denver, European Union Studies Association.

- Eising, R., 2007b. Institutional Context, Organizational Resources and Strategic Choices: Explaining Interest Group Access in the European Union. *European Union Politics*, 8(3), pp. 329-362.
- Eising, R., 2007a. The access of business interests to EU institutions: towards élite pluralism?. *Journal of European Public Policy*, 14(3), pp. 384-403.
- Georgiou, G. & Roberts, C. B., 2004. Corporate lobbying in the UK: an analysis of attitudes towards the ASB's 1995 deferred taxation proposals. *The British Accounting Review*, 36(4), pp. 441-453.
- Greenwood, J. & Dreger, J., 2013. The Transparency Register: A European vanguard of strong lobby regulation?. *Interest Groups & Advocacy*, 2(2), pp. 139-162.
- Gregor, M., 2011. *Corporate lobbying: A review of the recent literature*. Prague, IES Working Paper, No. 32/2011.
- Hadani, M. & Schuler, D. A., 2013. In Search of El Dorado: The Elusive Financial Returns on Corporate Political Investments. *Strategic Management Journal*, 34(2), pp. 165-181.
- Hersch, P., Netter, J. M. & Pope, C., 2008. Do Campaign Contributions and Lobbying by Firms Create "Political" Capital?. *Atlantic Economic Journal*, Volume 36, p. 395-405.
- Hill, M. D., Kelly, G. W., Lockhart, G. B. & Van Ness, R. A., 2013. Determinants and Effects of Corporate Lobbying. *Financial Management*, 42(4), pp. 931 - 957.
- Holman, C., 2006. *Origins, Evolution and Structure of the Lobbying Disclosure Act*, Washington, DC: Public Ciziten.
- Jensen, M. C., 1986. Agency Cost of Free Cash Flow, Corporate Finance, and Takeovers. *American Economic Review*, 76(2), pp. 323-329.
- Kalinova, B., Palerm, A. & Thomsen, S., 2010. *OECD's FDI Restrictiveness Index: 2010 Update*. OECD Working Papers on International Investment, OECD Publishing.
- Klüver, H., 2013. Lobbying as a collective enterprise: winners and losers of policy formulation in the European Union. *Journal of European Public Policy*, 20(1), pp. 59-76.
- Klüver, H., Braun, C. & Beyers, J., 2015b. Legislative lobbying in context: towards a conceptual framework of interest group lobbying in the European Union. *Journal of European Public Policy*, 22(4), pp. 447-461.
- Klüver, H., Mahoney, C. & M, O., 2015a. Framing in context: how interest groups employ framing to lobby the European Commission. *Journal of European Public Policy*, 22(4), pp. 481-498.
- Lux, S., Crook, T. R. & Woehr, D. J., 2011. Mixing Business With Politics: A Meta-Analysis of the Antecedents and Outcomes of Corporate Political Activity. *Journal of Management*, 37(1), pp. 223-247.

- Mahoney, C. & Baumgartner, F., 2008. Converging Perspectives on Interest Group Research in Europe and America. *West European Politics*, 31(6), pp. 1253-1273.
- P, B., 2004. Exchanging access goods for access: A comparative study of business lobbying in the European Union institutions. *European Journal of Political Research*, 43(3), pp. 337-369.
- Piton, S., 2019. *Do unit labour costs matter? A decomposition exercise on European data*. s.l., Staff Working Paper no. 799, Bank of England.
- Schmitter, P. C. & Streeck, W., 1999. *The organization of business interests: Studying the associative action of business in advanced industrial societies*. Köln, MPIfG discussion paper, No. 99/1.
- Schuler, D. A., Rehbein, K. & Cramer, R. D., 2002. Pursuing Strategic Advantage through Political Means: A Multivariate Approach. *The Academy of Management Journal*, 45(4), pp. 659-672.
- Skaife, H. A., Veenman, D. & Werner, T., 2013. *Corporate Lobbying and CEO Pay*, s.l.: SSRN.
- Snyder, J. M., 1992. Long-Term Investing in Politicians; Or, Give Early, Give Often. *The Journal of Law & Economics*, 35(1), pp. 15-43.
- Sqapi, G., 2015. Lobbying in the United States of America and European Union: A Comparative Approach. *Mediterranean Journal of Social Sciences*, Issue DOI: 10.5901/mjss.2015.v6n2s2p103.
- Stigler, G. J., 1975. *The Citizen and the State: Essays on Regulation*, Chicago: University of Chicago.
- Unsal, O., Hassan, M. K. & Zirek, D., 2016. Corporate lobbying, CEO political ideology and firm performance. *Journal of Corporate Finance*, Volume 38, pp. 126-149.
- Wonka, A. et al., 2018. Patterns of Conflict and Mobilization: Mapping Interest Group Activity in EU Legislative Policymaking. *Politics and Governance*, 6(3), p. 136–146.
- Wooldridge, J. M., 2012. *Introductory Econometrics: A Modern Approach*. Fifth Edition ed. South-Western: Cengage Learning.

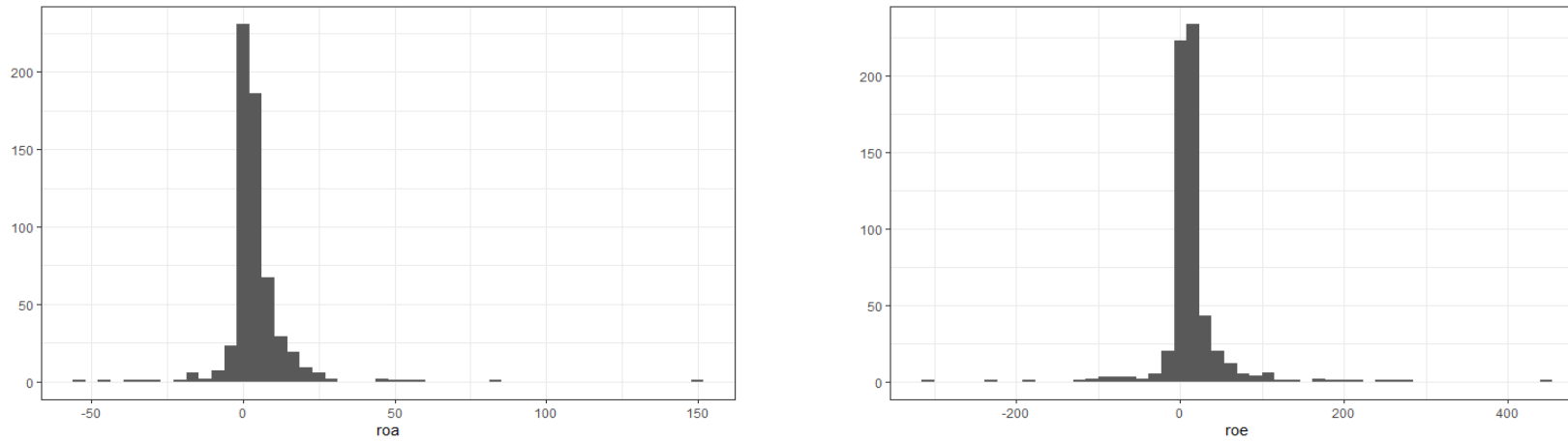
Appendix

Appendix 1 - Correspondence between OECD FDI Restrictiveness Index economic sectors and NACE Rev.2 activity sectors

NACE Rev.2 sectors	OECD FDI Restrictiveness Index sectors
A. Agriculture, forestry, and fishing	1. Agriculture 2. Forestry 3. Fishing
B. Mining and quarrying	4. Mining and quarrying
C. Manufacturing	5. Food and other manuf. 6. Oil refining & chemicals 7. Metals, mach. & other min. 8. Electronic, elec. & other inst. 9. Transport equipment
D. Electricity, gas, steam, and air conditioning supply	10. Electricity
E. Water supply; sewerage, waste management and remediation activities	
F. Construction	11. Construction
G. Wholesale and retail trade; repair of motor vehicles and motorcycles	12. Wholesale trade 13. Retail trade
H. Transportation and storage	14. Transport
I. Accommodation and food service activities	15. Hotels and restaurants
J. Information and communication	16. Media 17. Telecommunications
K. Financial and insurance activities	18. Banking 19. Insurance 20. Other finance
L. Real estate activities	22. Real estate
M. Professional, scientific and technical activities	21. Business services
N. Administrative and support service activities	
O. Public administration and defence; compulsory social security	
P. Education	
Q. Human health and social work activities	
R. Arts, entertainment, and recreation	
S. Other service activities	
T. Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use	
U. Activities of extraterritorial organisations and bodies	

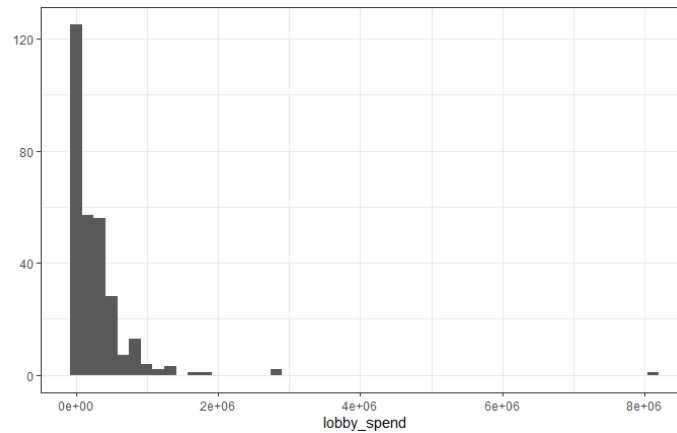
Note: NACE sector classification was taken from Eurostat website (2020) and OECD FDI Restrictiveness Index sector classification from Kalinova, et al. (2010).

Appendix 2 - Histograms for ROA and ROE for the overall 2018 sample



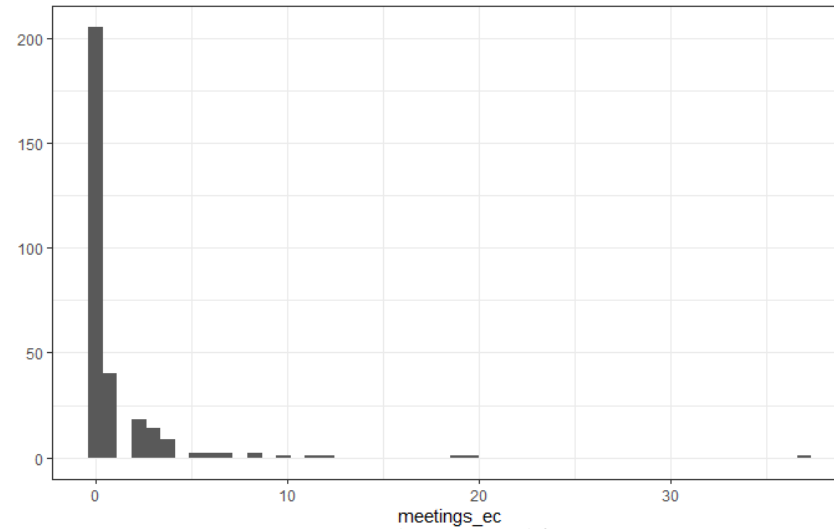
Note: Histograms for ROA and ROE for the overall (600 company) 2018 sample. Extracted from R output.

Appendix 3 - Histogram for lobbying spending for the treatment 2018 sample



Note: Histogram for lobbying spending for the treatment (300 company) 2018 sample. Extracted from R output.

Appendix 4 - Histogram for EC meetings for the treatment 2018 sample



Note: Histograms for EC meetings for the treatment (300 company) 2018 sample. Extracted from R output.

Appendix 5 - Economic sector distribution for 2018 samples

	Treatment group	Control group	Overall	
<i>NACE Rev.2 sectors</i>	<i>N</i>	<i>N</i>	<i>N</i>	<i>%</i>
A. Agriculture, forestry, and fishing	1	1	2	0.3
B. Mining and quarrying	7	7	14	2.3
C. Manufacturing	87	87	174	29.0
D. Electricity, gas, steam, and air conditioning supply	25	25	50	8.3
F. Construction	1	1	2	0.3
G. Wholesale and retail trade; repair of motor vehicles and motorcycles	17	17	34	5.7
H. Transportation and storage	38	38	76	12.7
J. Information and communication	32	32	64	10.7
K. Financial and insurance activities	64	64	128	21.3
M. Professional, scientific and technical activities	28	28	56	9.3
Total	300	300	600	100

Note: The table above quantifies the distribution of companies in the samples by NACE Rev.2 activity sector as registered in ORBIS.

Appendix 6 - Head office country distribution for 2018 treatment control samples

Country	Treatment group		Control group	
	N	%	N	%
Austria	7	2.3	2	0.7
Australia		0.0	10	3.3
Belgium	22	7.3	4	1.3
Brazil	1	0.3	9	3.0
Canada	1	0.3	8	2.7
Switzerland	6	2.0	2	0.7
Chile		0.0	3	1.0
China	1	0.3	56	18.7
Czech Republic	4	1.3	1	0.3
Germany	37	12.3	11	3.7
Denmark	6	2.0	3	1.0
Estonia	1	0.3		0.0
Spain	16	5.3	6	2.0
Finland	7	2.3	2	0.7
France	33	11.0	21	7.0
Greece	7	2.3	2	0.7
Hungary		0.0	2	0.7
Indonesia		0.0	2	0.7
Ireland	7	2.3	4	1.3
India		0.0	7	2.3
Italy	32	10.7	10	3.3
Japan		0.0	25	8.3
Kyrgyzstan		0.0	1	0.3
Korea (Republic of)	1	0.3	9	3.0
Lithuania	1	0.3	1	0.3
Luxembourg	2	0.7	1	0.3
Latvia	1	0.3		0.0
Mexico		0.0	1	0.3
Malaysia		0.0	1	0.3
Netherlands	18	6.0	4	1.3
Norway	6	2.0	2	0.7
Philippines		0.0	1	0.3
Poland	11	3.7	4	1.3
Portugal	7	2.3	2	0.7
Romania	1	0.3		0.0
Serbia		0.0	1	0.3
Russia	2	0.7	9	3.0
Sweden	12	4.0	3	1.0
Slovenia	5	1.7		0.0
Slovakia	1	0.3	1	0.3
Turkey		0.0	1	0.3
United Kingdom	22	7.3	20	6.7
United States of America	21	7.0	44	14.7
Vietnam		0.0	3	1.0
South Africa	1	0.3	1	0.3
Total	300	100	300	100

Note: The table above quantifies the distribution of companies in the samples by country head office as registered in ORBIS.

Appendix 7 - Correlation matrix for overall 2018 sample variables

	roa	roe	profit_margin	tot_assets	fdi_ri	lobby_dummy	sector_a	sector_b	sector_c	sector_d	sector_f
roa	1										
roe	0.4989	1									
profit_margin	0.514	0.2312	1								
tot_assets	-0.0689	-0.0269	0.1669	1							
fdi_ri	-0.0714	-0.0575	-0.007	0.0071	1						
lobby_dummy	0.0786	-0.0204	0.0076	0.0147	-0.2546	1					
sector_a	0.0149	-0.0008	-0.007	-0.0154	0.0917	0	1				
sector_b	-0.0077	-0.0181	-0.0381	-0.0232	-0.0042	0	-0.0089	1			
sector_c	-0.0128	-0.038	-0.1816	-0.0958	-0.2835	0	-0.037	-0.0988	1		
sector_d	-0.0399	-0.0481	-0.0324	-0.0534	0.0876	0	-0.0174	-0.0466	-0.1927	1	
sector_f	-0.0012	-0.003	-0.0012	-0.0151	0.0028	0	-0.0033	-0.0089	-0.037	-0.0174	1
sector_g	-0.0008	0.0021	-0.0722	-0.0611	-0.0851	0	-0.0142	-0.0379	-0.1566	-0.0739	-0.0142
sector_h	0.0412	0.05	0.0516	-0.0663	0.3459	0	-0.022	-0.0589	-0.2434	-0.1148	-0.022
sector_j	-0.0324	0.0154	-0.1131	-0.0723	0.1972	0	-0.02	-0.0534	-0.2208	-0.1042	-0.02
sector_k	0.0343	0.0083	0.3821	0.3569	-0.1059	0	-0.0301	-0.0805	-0.3328	-0.157	-0.0301
sector_m	-0.0012	0.0284	-0.0842	-0.0833	-0.0456	0	-0.0186	-0.0496	-0.2051	-0.0967	-0.0186

	sector_g	sector_h	sector_j	sector_k	sector_m
sector_g	1				
sector_h	-0.0933	1			
sector_j	-0.0847	-0.1316	1		
sector_k	-0.1276	-0.1983	-0.1799	1	
sector_m	-0.0786	-0.1222	-0.1109	-0.1671	1

Note: The table above details correlation values between pairs of variables for the (300 company) treatment group 2018 sample. Adapted from R and STATA software outputs.

Appendix 8 - Correlation matrix for treatment 2018 sample variables

	roa	roe	profit_margin	tot_assets	fdi_ri	lobby_spend	sector_a	sector_b	sector_c	sector_d	sector_f
roa	1										
roe	0.6329	1									
profit_margin	0.5696	0.4247	1								
tot_assets	-0.0723	-0.0217	0.1686	1							
fdi_ri	-0.0295	-0.1145	-0.026	-0.0389	1						
lobby_spend	0.024	0.0188	0.0122	0.2095	-0.0424	1					
sector_a	0.0045	0.0035	-0.0075	-0.0158	0.0704	-0.0135	1				
sector_b	-0.0198	-0.0215	-0.06	-0.0235	0.0105	-0.0127	-0.0089	1			
sector_c	-0.0284	-0.0235	-0.1639	-0.0846	-0.2583	0.0753	-0.037	-0.0988	1		
sector_d	-0.0405	-0.0218	-0.0374	-0.056	0.1192	-0.0324	-0.0174	-0.0466	-0.1927	1	
sector_f	-0.0186	-0.0152	-0.0031	-0.0155	-0.0258	-0.0135	-0.0033	-0.0089	-0.037	-0.0174	1
sector_g	-0.0074	0.0042	-0.0741	-0.0627	-0.0992	-0.0389	-0.0142	-0.0379	-0.1566	-0.0739	-0.0142
sector_h	0.0394	-0.0564	0.0588	-0.065	0.4317	-0.0611	-0.022	-0.0589	-0.2434	-0.1148	-0.022
sector_j	-0.0492	0.0344	-0.1263	-0.0749	0.1039	0.0874	-0.02	-0.0534	-0.2208	-0.1042	-0.02
sector_k	0.0924	0.0793	0.3831	0.3498	-0.1564	-0.0073	-0.0301	-0.0805	-0.3328	-0.157	-0.0301
sector_m	-0.0212	-0.0161	-0.0894	-0.0855	-0.0292	-0.0566	-0.0186	-0.0496	-0.2051	-0.0967	-0.0186
meetings_ec	0.0088	0.0251	0.0579	0.3565	-0.0988	0.751	-0.0009	-0.038	0.0134	-0.0243	-0.0009
brussels_office	-0.052	-0.0507	0.0028	0.1741	-0.1196	0.3088	0.0777	-0.069	0.1682	0.0776	-0.0431
association_member	0.0217	0.0508	0.1204	0.0686	-0.024	0.0862	0.0207	-0.0144	0.0894	-0.0063	0.0207
intermediary	-0.0061	0.0065	-0.0355	0.0034	-0.0702	0.2894	-0.0189	0.0242	-0.0102	0.1054	-0.0189
eu_headoffice	-0.2038	-0.1754	-0.1571	-0.0963	-0.1112	-0.1846	0.0286	-0.0346	-0.0534	-0.0025	0.0286

	sector_g	sector_h	sector_j	sector_k	sector_m	meetings_ec	brussels_office	association_member	intermediary	eu_headoffice
sector_g	1									
sector_h	-0.0933	1								
sector_j	-0.0847	-0.1316	1							
sector_k	-0.1276	-0.1983	-0.1799	1						
sector_m	-0.0786	-0.1222	-0.1109	-0.1671	1					
meetings_ec	-0.0782	-0.1029	0.1057	0.1252	-0.0863	1				
brussels_office	-0.032	-0.1371	0.0132	-0.082	-0.0236	0.3017	1			
association_member	-0.0033	-0.0852	-0.0127	0.0835	-0.1383	0.1005	0.0686	1		
intermediary	-0.0314	-0.0568	0.0331	-0.0327	0.0114	0.2381	0.1803	-0.0254	1	
eu_headoffice	0.085	0.0119	0.0623	-0.1108	0.1011	-0.0757	-0.0868	-0.124	-0.0084	1

Note: The table above details correlation values between pairs of variables for the (300 company) treatment group 2018 sample. Correlation values greater than 0.7 or lower than -0.7 were underlined. Adapted from R and STATA software outputs.

Appendix 9 - Regression Models 0.1-0.4: Controlling variable regression results (overall group sample)

	ROA		ROE	
	Model 0.1 Outliers ¹	Model 0.2 No outliers ^{1, 2}	Model 0.3 Outliers	Model 0.4 No outliers ¹
	<i>Estimate</i> (<i>Std. error</i>)	<i>Estimate</i> (<i>Std. error</i>)	<i>Estimate</i> (<i>Std. error</i>)	<i>Estimate</i> (<i>Std. error</i>)
FDI RI	-3.946945 [2.436397] (3.10628)	-3.235481 [2.086180] (1.97958)	-23.54474 (14.72993)	-10.32041 [10.65726] (9.12089)
Log(total assets)	-0.946059*** [0.226426] (0.14173)	-0.562277*** [0.114572] (0.09206)	-2.15711*** (0.67208)	-1.61154*** [0.49800] (0.41629)
Profit margin	0.358831*** [0.054997] (0.02102)	0.248241*** [0.024606] (0.01403)	0.65283*** (0.09969)	0.64568*** [0.10188] (0.06433)
(Intercept)	13.974406*** [2.700520] (2.07032)	9.831944*** [1.632878] (1.33505)	41.78540*** (9.81743)	28.34416*** [8.32745] (6.08158)
Sector dummies	Yes	Yes	Yes	Yes
N	600	593	600	591
R-squared	0.353	0.379	0.089	0.164
Adj. R-squared	0.341	0.366	0.071	0.146
Residual Std. Error	8.764 (df = 587)	5.582 (df = 580)	41.557 (df = 587)	25.490 (df = 578)
F statistic	26.859*** (df = 12, 587)	29.533*** (df = 12, 580)	4.804*** (df = 12, 587)	9.426*** (df = 12, 578)

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

¹ regressions corrected of heteroskedasticity by robust standard errors in brackets [], with original standard errors in parenthesis (). R-squared, Adjusted R-squared, Residual Std. Error and F statistic are extracted from the original (not heteroskedasticity-corrected) regressions.

² Ramsey RESET test for misspecification detected the regression to be incorrectly specified (p=1.872e-07).

Note: The table above details the results for controlling variable-only regressions for dependent variables ROA and ROE, without excluding outliers (models 0.1 and 0.3) and excluding outliers (models 0.2 and 0.4) from the data. Adapted from R software output.

Appendix 10 - Regression Models 0.5-0.8: Controlling variable regression results (treatment group sample)

	ROA		ROE	
	Model 0.5 Outliers ¹	Model 0.6 No outliers ¹	Model 0.7 Outliers ¹	Model 0.8 No outliers
	<i>Estimate</i> (<i>Std. error</i>)	<i>Estimate</i> (<i>Std. error</i>)	<i>Estimate</i> (<i>Std. error</i>)	<i>Estimate</i> (<i>Std. error</i>)
FDI RI	0.515491 [4.705981] (6.67399)	-0.18471 [4.46187] (4.75306)	-37.25639 [56.59775] (24.3374)	7.62841 (17.70678)
Log(total assets)	-1.383530*** [0.365899] (0.22298)	-0.96011*** [0.21691] (0.16172)	-2.25804** [0.93841] (0.8131)	-1.45281** (0.57557)
Profit margin	0.464736*** [0.093769] (0.03402)	0.35718*** [0.04603] (0.02523)	1.09134*** [0.18047] (0.1241)	0.86144*** (0.08921)
(Intercept)	18.606991*** [4.306059] (3.28676)	14.01599*** [2.93340] (2.36480)	33.95925** [14.11944] (11.9855)	23.72343*** (8.45845)
Sector dummies	Yes	Yes	Yes	Yes
N	300	298	300	296
R-squared	0.424	0.432	0.234	0.254
Adj. R-squared	0.400	0.408	0.202	0.222
Residual Std. Error	9.881 (df = 287)	7.036 (df = 285)	36.031 (df = 287)	25.234 (df = 283)
F statistic	17.618*** (df = 12, 287)	18.056*** (df = 12, 285)	7.293*** (df = 12, 287)	8.012*** (df = 12, 283)

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

¹ regressions corrected of heteroskedasticity by robust standard errors in brackets [], with original standard errors in parenthesis (). R-squared, Adjusted R-squared, Residual Std. Error and F statistic are extracted from the original (not heteroskedasticity-corrected) regressions.

Note: The table above details the results for controlling variable-only regressions for dependent variables ROA and ROE, without excluding outliers (models 0.5 and 0.7) and excluding outliers (models 0.6 and 0.8) from the data. Adapted from R software output.

Appendix 11 - Regression Models 7.5-7.8: Regressions including relevant independent variables from Hypothesis 2-7 (treatment group sample)

	ROA		ROE	
	Model 7.5 Outliers ¹	Model 7.6 No outliers ¹	Model 7.7 Outliers ¹	Model 7.8 No outliers
	<i>Estimate</i> (<i>Std. error</i>)	<i>Estimate</i> (<i>Std. error</i>)	<i>Estimate</i> (<i>Std. error</i>)	<i>Estimate</i> (<i>Std. error</i>)
Log(lobbying expenses)	-0.268690 [0.729484] (0.47242)	0.4045620 [0.3338124] (0.339773)	-1.01510 [1.93851] (1.7410)	0.87686 (1.22629)
Brussels office	0.359855 [1.105503] (1.40852)	-0.0383582 [0.8891500] (1.005426)	-4.18930 [4.36846] (5.1907)	-3.33450 (3.62746)
Intermediary	1.655400 [1.411804] (1.99189)	0.0048775 [0.8821974] (1.456393)	3.90032 [3.25627] (7.3405)	3.33697 (5.10504)
Association membership	0.124650 [1.638743] (1.86405)	-0.4841979 [1.6700337] (1.330502)	2.52818 [5.96514] (6.8694)	2.90334 (4.77913)
EU head office	-5.373174*** [2.062573] (1.48024)	-3.0736255*** [1.1358067] (1.069090)	-16.38863** [7.06332] (5.4549)	-13.36517*** (3.85742)
Meetings with EC officials	0.289731*** [0.091132] (0.20634)	0.2780491*** [0.0760772] (0.147371)	0.56165 [0.41727] (0.7604)	0.33761 (0.52898)
FDI RI	-1.695611 [4.764734] (6.71964)	-1.2446938 [4.3787950] (4.793495)	-48.79656 [57.46622] (24.7632)	0.40372 (17.76408)
Log(total assets)	-1.546300*** [0.292697] (0.26517)	-1.2354588*** [0.2435150] (0.191823)	-2.25886** [0.98258] (0.9772)	-1.97374*** (0.68416)
Profit margin	0.455655*** [0.092478] (0.03401)	0.3495344*** [0.0454277] (0.025262)	1.06006*** [0.17872] (0.1253)	0.82440*** (0.08957)
(Intercept)	28.305483*** [10.782233] (5.42026)	16.0725518*** [4.0091397] (3.940561)	60.14023** [26.15515] (19.9747)	31.54046** (14.14905)
Sector dummies	Yes	Yes	Yes	Yes

N	300	298	300	296
R-squared	0.457	0.463	0.262	0.292
Adj. R-squared	0.423	0.428	0.215	0.246
ΔAdj. R-squared (against benchmark)	+0.023	+0.020	+0.013	+0.024
Residual Std. Error	9.694 (df = 281)	6.915 (df = 279)	35.723 (df = 281)	24.837 (df = 277)
F statistic	13.157*** (df = 18, 281)	13.359*** (df = 18, 279)	5.555*** (df = 18, 281)	6.354*** (df = 18, 277)
*p<0.1; **p<0.05; ***p<0.01				

¹ regressions corrected of heteroskedasticity by robust standard errors in brackets [], with original standard errors in parenthesis (). R-squared, Adjusted R-squared, Residual Std. Error and F statistic are extracted from the original (not heteroskedasticity-corrected) regressions.

Note: The table above details the results for regressions including all relevant predictors for dependent variables ROA and ROE, without excluding outliers (models 7.5 and 7.7) and excluding outliers (models 7.6 and 7.8) from the analysis. ΔAdj. R-squared is calculated by comparing Adj.R-squared with correspondent model 0.5-0.8. Adapted from R software output.

Appendix 12 - Year-on-year averages table for balanced panel data subset (2013-2018)

	<i>2013</i>	<i>2014</i>	<i>2015</i>	<i>2016</i>	<i>2017</i>	<i>2018</i>
ROA (%)	2.9159	3.6241	2.2281	2.8369	3.8545	3.0966
ROE (%)	6.9848	9.6134	7.0386	6.9909	11.1158	8.1318
Profit margin (%)	11.2695	11.7795	11.7586	11.1096	13.7001	12.6592
Total assets ('000s)	116,135,710	125,313,115	130,523,588	134,815,074	132,451,840	136,368,577
Lobbying spending	322,542.40	538,347.50	520,550.90	544,915.30	574,915.30	615,381.40

Note: The table above shows the year averages for the variables in the balanced panel dataset (2013-2018).

Appendix 13 - Regression Models 8.1-8.2: Panel data with lagged controlling variables for dependent variable ROA

	ROA	
	Model 8.1 - FE	Model 8.2 - FD
	<i>Estimate</i> (<i>Std. error</i>)	<i>Estimate</i> (<i>Std. error</i>)
Log(total assets)	2.933269 (2.828839)	1.656727 (2.765641)
Profit margin	0.331775*** (0.034035)	0.338674*** (0.034307)
Year 2018 dummy	-0.495521 (0.297036)	
Sector dummies	No	No
N	118	59
R-squared	0.649	0.631
Adj. R-squared	0.266	0.624
F statistic	34.468*** (df = 3, 56)	45.327*** (df = 2, 57)
		*p<0.1; **p<0.05; ***p<0.01

Note: The table above details the results for controlling variable-only regressions for dependent variable ROA, using Fixed Effects (model 8.1) and First Differenced estimator (models 8.2), no outliers were detected and removed. Adapted from R software output.

Appendix 14 - Regression Models 8.3-8.6: Panel data with lagged controlling variables for dependent variable ROE

	ROE			
	Model 8.3 - FE	Model 8.4 - FE	Model 8.5 - FD	Model 8.6 - FD
	Outliers	No outliers	Outliers	No outliers
	<i>Estimate</i> (<i>Std. error</i>)	<i>Estimate</i> (<i>Std. error</i>)	<i>Estimate</i> (<i>Std. error</i>)	<i>Estimate</i> (<i>Std. error</i>)
Log(total assets)	8.14977 (13.48616)	12.59463* (6.42184)	4.42114 (12.98846)	9.90384 (6.26667)
Profit margin	1.69773*** (0.16226)	0.52583*** (0.11439)	1.71788*** (0.16112)	0.53494*** (0.11571)
Year 2018 dummy	-1.44736 (1.41609)	-1.05452 (0.67407)		
Sector dummies	No	No	No	No
N	118	116	59	58
R-squared	0.672	0.333	0.662	0.317
Adj. R-squared	0.315	-0.396	0.656	0.305
F statistic	38.273*** (df = 3, 56)	9.135*** (df = 3, 55)	54.412*** (df = 2, 57)	11.375*** (df = 2, 56)

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

Note: The table above details the results for controlling variable-only regressions for dependent variable ROE, using Fixed Effects (models 8.3 and 8.4) and First Differenced estimator (models 8.5 and 8.6), , without excluding outliers (models 8.3 and 8.5) and excluding outliers (models 8.4 and 8.6) from the analysis. Adapted from R software output.

Appendix 15 - Correlation matrix for panel subset variables

	roa	roe	profit_margin	tot_assets	year18	lobby_spend	lag1_lobby_spend	lag2_lobby_spend	lag3_lobby_spend	lag4_lobby_spend
roa	1									
roe	0.7204	1								
profit_margin	0.0776	0.2678	1							
tot_assets	-0.2299	-0.0488	0.3107	1						
year18	-0.0899	-0.1246	-0.0373	0.0062	1					
lobby_spend	0.3254	0.1628	-0.089	0.1075	0.0204	1				
lag1_lobby_spend	0.3001	0.1385	-0.0953	0.152	0.0181	0.9893	1			
lag2_lobby_spend	0.2776	0.1204	-0.0912	0.2016	0.0164	0.9734	0.9906	1		
lag3_lobby_spend	0.2831	0.1662	-0.0815	0.2465	-0.0125	0.9201	0.9514	0.9753	1	
lag4_lobby_spend	0.2277	0.0824	-0.1132	0.1709	0.1836	0.7895	0.8108	0.8303	0.8507	1

Note: The table above details correlation values between pairs of variables for the 59-company panel data subset after computing the lagged lobbying expenses. Adapted from R and STATA software outputs.