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« L'Université n'entend ni approuver, ni désapprouver les opinions particulières du candidat ».

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Résumé

Cette thèse étudie l'impact de la composition du conseil d'administration sur la performance financière d'une entreprise. Elle est composée de trois chapitres.

Dans le premier chapitre, nous effectuons une revue de la littérature sur les conseils d'administration. Nous pointons l'évolution de la gouvernance des entreprises au cours des dernières décennies, et montrons en quoi l'efficacité des conseils d'administration est devenue un sujet majeur de ce champ de recherche et une préoccupation importante des actionnaires et des régulateurs. En particulier, après avoir présenté le cadre théorique de la gouvernance, nous présentons les résultats des articles académiques étudiant l'impact de la composition du conseil d'administration sur la performance de l'entreprise.

Dans les deuxième et troisième chapitres, nous étudions l'impact de la présence de différents types d'administrateurs au sein du conseil.

Dans le deuxième chapitre, nous proposons un modèle théorique pour tenter de comprendre et de déterminer l'impact de la représentation salariale au conseil d'administration sur la valeur actionnariale de l'entreprise et sur l'horizon de ses investissements. Nos résultats suggèrent que la représentation salariale peut s'envisager comme un choix, pour les actionnaires, entre liquidité et information. Nous montrons que lorsque des représentants des salariés siègent au conseil d'administration d'une entreprise, celle-ci a une plus grande probabilité d'investir dans des projets à long-terme qu'une entreprise sans représentation salariale. Nous montrons également

que les salariés ayant accès à une information interne précieuse, leur présence au conseil d'administration peut permettre d'augmenter la valeur actionnariale de l'entreprise. Ainsi, nous proposons un modèle de la représentation salariale cohérent avec certaines études empiriques.

Dans le troisième chapitre, nous étudions empiriquement l'impact des connexions politiques sur le taux d'intérêt d'emprunts bancaires en utilisant un échantillon de prêts concernant des entreprises de plusieurs pays. Si ce sujet a déjà été largement traité, nous proposons une nouvelle définition de la connexion politique que nous subdivisons en deux catégories, selon l'exposition médiatique, forte ou faible, des politiciens. Les politiciens les plus en vue sont aussi ceux pour lesquels le risque d'être soupçonné de conflit d'intérêt ou de manquement à l'éthique est le plus important, et pour qui le coût d'un scandale est le plus élevé. Aussi discriminons-nous les connexions politiques selon qu'elles impliquent des politiciens très en vue ou des politiciens à un niveau inférieur. Cette division se fonde sur l'hypothèse que les politiciens les plus exposés sont, ayant le plus à perdre d'un scandale, disposent de la marge de manœuvre la plus réduite en tant que dirigeants d'entreprise et sont donc les moins à même d'impacter la performance de l'entreprise. Nos résultats confortent la pertinence d'une telle redéfinition de la connexion politique en fonction de la visibilité des politiciens concernés. Nous montrons en particulier que les entreprises politiquement connectées qui empruntent auprès de banques politiquement connectées le font à des taux significativement inférieurs à celles non connectées, et que cet effet est plus important lorsque la connexion de l'emprunteur passe par un politicien moins exposé. Nos résultats suggèrent que l'effet est encore plus fort si la banque est elle aussi connectée par l'intermédiaire d'un politicien moins exposé. Par ailleurs, nous montrons que les entreprises connectées politiquement empruntent significativement moins auprès de banques connectées par l'intermédiaire d'un politicien très exposé médiatiquement. Nos résultats suggèrent enfin que cet

effet est plus fort à l'approche d'élections, un moment il est particulièrement coûteux pour un politicien d'être soupçonné de manquement à la déontologie.

Abstract

This thesis studies the impact of the composition of the board of directors on the firm financial performance. It consists of three chapters.

In the first chapter, we review the literature on boards of directors. We show the evolution of corporate governance over the past decades, and how the efficiency of boards of directors has became a key issue for shareholders and regulators. After describing the theoretical and historical framework, we present and discuss the academic papers studying the impact of board composition on the firm performance.

In the second and third chapters, we examine the impact of the presence of different directors on the board.

In the second chapter, we provide a theoretical model that aims at understanding and determining the impact of employee representation on the board of directors on the shareholder value of the firm and on its investment horizon. Our results suggest that with employee representation, shareholders face a tradeoff between liquidity and information. We show that a firm with employee representation is more likely to invest in long-term rather than in short-term projects and that, because employees have access to valuable inside information, their presence on the board may increase the shareholder value. Consistent with some empirical studies, we offer some theoretical support for employee representation on the board.

In the third chapter, we study the impact of political connections on the rate of interest of bank loans. We conduct a cross-country study of the impact of political connections on bank loans interest rates. While this topic has already been widely investigated, we offer a new definition of political connection. We subcategorize political connections into two categories: politicians with a high media exposure, and lower level politicians. Politicians with business ties bear the risk of being suspected of ethics breaching or of having conflicting interests, which can be costly for their reputation. We discriminate the political connections of firms based on the idea that with greater exposure comes greater risk of suspicion, and thus smaller ability to impact the firm performance. We study the impact of political connection of the borrower as well as of the lender on interest rates. Our results give support to our definition, as we find significant differences depending on the level of visibility of the political connections of the borrower and of the lender. Our results show that politically connected firms which borrow from politically connected banks enjoy a significantly lower rate if they are connected with lower level politicians. Our results suggest that the rate is even lower if the bank also is connected with lower level politicians. Furthermore, our results suggest that politically connected firms tend to avoid borrowing money from banks that are connected with top politicians. Our results also suggest that this effect is stronger in pre-election periods, when the potential cost for politicians of being suspected of collusion is higher.

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General Introduction

1. **What is wrong with corporate governance?**

Over the past decades, corporate governance has been a core issue in multiple scandals involving large companies. Large multinational companies typically have complex organizational structures and a number of bodies supposed to act as safeguards against managerial misconducts. Yet, this has failed to prevent top executives to misbehave, leading to the fall of the likes of Enron.

Managerial mischief is far from harmless: 4,000 of Enron employees were laid-off as the firm went bankrupt following the unveiling of frauds and insider trading by top managers. 15,000 lost their saving plans. Shareholders losses amounted to over $7billions. The subsequent shockwave was a devastating one, which wrecked Arthur Andersen, the accounting company responsible for Enron's auditing and which was then seen as one of the "Big Five" accounting firms. While only a small team from the accounting giant was convicted of obstruction of justice, no less than 85,000 lost their jobs when Arthur Andersen in turn collapsed.

Enron's fall, amongst very similar cases, such as Worldcom, Vivendi, or Barings Bank raised many questions. How could Enron's CEO, admired by all, lead a company worth over $60billions in assets to bankruptcy? Was he nothing but a crook[1]? And if so, how could he fool shareholders, stakeholders and directors alike? How could they not see it coming? And then, how was it possible that some directors of large corporations be found lacking some basic managing and finance skills, as were some members of the board of Barings Bank, only after the second oldest commercial bank went bankrupt?

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[1] Facts strongly suggest so, but his conviction in Enron's case was vacated, as he died prior to exhausting his appeals.

With these questions, interest in the academic research on the topic grew, and emulated an already dynamic field of research. In an effort to prevent such catastrophes to happen again, the 2000's also saw an increase in rules and regulations, with some countries putting strong, mandatory requirements in place – the United States of America passed the Sarbanes-Oxley Act – and others enforcing a "comply or explain" informal rule, leaving a substantial part of the regulation to the activism of investors – mainly in Europe.

2. Thesis Organization

The purpose of this three-essay thesis is to investigate a particular facet of corporate governance that plays a key role in the conduct of corporations: boards of directors. This thesis is organized as follows.

In the first chapter, we draw a survey of the literature on corporate governance and board of directors. We first present the general corporate governance framework, and the cornerstone theories this thesis is built on. We then focus on boards of directors. We review the evolution of legal rules and of good practice codes over the past decades and show how it has led to an increase in the board independence. Afterwards, we examine the link between some of board characteristics and firm performance. In particular, we investigate the effects of size, independence and of the presence of different types of directors – such as outsiders, bankers, women, employees or politicians – on firm performance and on shareholder value.

In the second chapter, we propose a theoretical model of boards of directors, featuring employee representation. We try to provide the developing field of research on codetermination with a theory to explain how the presence of employee representatives on the board of directors can impact the strategic decisions made by the board, as well as to determine the effect of such a representation on various stakeholders.

In the third chapter, we conduct a cross-country study on the implications of political connections on bank loans. We propose a new, innovative definition of political connections so as to account

for the fact that politicians with business ties bear the risk of being publicly suspected of ethics breaching – to say the least. Our results provide support to the necessity of distinguishing political connections depending on the level and media exposure of related politicians.

3. Contribution

The different chapters of this thesis differently contribute to the academic research on corporate boards.

Far be it from us to claim that our literature review could be deemed nearing the pedagogical or demonstrative power of the ones written by Hermalin and Weisbach (2003), or by Adams et al. (2010). Nonetheless, we provide a review with a slightly different focus, emphasizing the link between the presence of a particular director − or a particular type of directors − and firm performance. We also propose a rarely, if ever, offered historical perspective of employee representation, which we believe underline the highly political nature of the reason for the very existence of employee representation.

In the second chapter, we develop a simple model of corporate boards including employee representatives. We extract and discuss some stylized facts from it. This model gives an explanation as to why even a limited employee representation on the board of directors may lead a company to invest more in long-term projects. We also show that, although not necessarily, this might be done while increasing one or both of shareholder value and of managers wealth. Consistent with empirical findings by Fauver and Fuerst (2006), we provide a theoretical model with the intent to help understand how employee representation can increase firm value. Thus, our results give some credit to the idea that limited employee representation on corporate boards can be beneficial to shareholders as well as other stakeholders.

In the third chapter, we investigate the effect of political connections on bank loan. The large number of politicians forced to resigned, or who saw their polls drop, on the sole suspicion that they may be connected to misbehaving managers lead us to assume that there is a risk for politicians to be tied to a company, and that the larger the media exposure of a politician, the greater the risk of his ties making it to the news. Hence, in lieu of the traditional definition such as given by Faccio (2006), we propose a definition which accounts for the different levels of exposure a politician may enjoy – or suffer from. We find evidence showing the accuracy of making such a distinction, as our results show that companies that are tied to a lower level politician borrow at significantly lower rates from politically connected banks. The effect appears to be even stronger when the lender himself is connected to a second rank politician. We also show that connected companies borrow much less frequently from banks connected with a high profile politician, in particular in the months before an election. We interpret this as the sign that politically connected companies take into account the risk borne by politicians they are linked with, and try to minimize it by refraining from dealing with banks tied to top politicians.

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Chapter 1: Literature Review on Corporate Governance and Board Composition

1.1. Introduction

Following various corporate scandals over the last three decades – Enron and Worldcom being two of the most famous cases amongst dozens of others - and the 2008 financial crisis, light was shed on corporate governance issues, and in particular on the role of boards of directors.

The bankruptcy of Worldcom in 2002 is an emblematic case of supervision failure. Following the revelation of years of accounting fraud led by the CEO of Worldcom himself, the company went bankrupt. The firm eventually survived before being taken over in 2006, but the fall of Worldcom hurt various stakeholders – shareholders and employees most notably. The US attorney general who investigated Worldcom bankruptcy blamed the CEO for the fall of Worldcom, as well as some top executive officers, who were later to be found guilty of accounting fraud – Worldcom CEO received a 25-year jail sentence. As reported by The New-York Times on June 10th 2003, the attorney general also blamed the "passive directors" who were approving every proposition the CEO made without even looking into it. Directors did not raise an eyebrow when the company announced the board made decisions they actually never had heard of.

In another famous example, it was only when the Singapore margin exchange issued a mega-margin call – shortly after the 1995 Kobe earthquake caused Asian markets to collapse – that the directors of the Barings Bank realized their star trader was actually a "rogue trader" who, instead of arbitraging as he was supposed to, took risky positions that resulted in losses so big they provoked the fall of the whole bank. 233 years old Barings Bank was afterwards bought by ING for a measly pound… Three of the bank's directors where then suspended by the British Securities and Futures authority for lack of skill, care and diligence. More recently, a similar case

happened in France where Société Générale bank incurred a trading loss of almost €5billions, as one of their traders could, seemingly with ease, hide the fact that he was taken excessively risky positions.

How could some boards remain unaware of the misconduct of some of their top managers – or, in the cases of the Barings or the Société Générale banks, of the lack of control of some of their top managers over misbehaving employees – to the point it actually led their company to bankruptcy? How could they be passive, or lack the necessary skills, when they were appointed by shareholders to supervise the management of their wealth?

This raises the following questions that this review of literature addresses:

1/ Why are there boards of directors in the first place?

2/ What do the directors do?

3/ How certain characteristics of the board of directors may impact the value of the company? That is, how can shareholders design a board that maximizes their wealth - instead of ruining them as well as other stakeholders?

This chapter is organized as follows. Section 2 describes the general theoretical framework of corporate governance while section 3 describes the role of the board of directors. Section 4 presents and discusses the literature on board composition and its impact on firm financial performance.

1.2. The Agency Theory

1.2.1. Conflict of interest

Amongst the many definitions[2] of corporate governance that have been given, one that is often referred to in finance was given by Shleifer and Vishny (1997) who define corporate governance as *"the ways in which supplier of finance to corporations assure themselves of getting a return on their investment"*. That is, how investors such as shareholders and debtholders assure themselves that the company they invest their money in is well managed, and that the managers work in the best interests of shareholders instead of in their own. This raises a first concern about the conflict of interest that may exist between shareholders and debtholders. Both are fund providers and both expect a return on their investment but debtholders are prior claimants while shareholders are residual claimants. In other words, shareholders should not receive anything before the debt as been re-paid. Their investment is therefore more risky than this of debtholders and, under the assumption that risk and return are positively correlated[3], shareholders should want the company to take more risk than debtholders would want. This particular conflict of interest between fund providers is not central to this thesis – a brief overview can be found in section 1.2.5. More central is the conflict of interest between the shareholders and the managers of the firm.

While shareholders are the owners of the company, they most often do not run it themselves. Two simple reasons can be advanced to explain this fact: 1/ shareholders may be unwilling to do so – either because they do not think they are qualified to do it, or because it was not their

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[2] See Monks and Minow (2001) or Clarke for a discussion on different views on what corporate governance is.
[3] An assumption widely accepted in finance as most models are based upon the risk-return trade-off, such as the well known Capital Asset Pricing Model. However, this assumption is challenged by what is known as the eponymous Bowman paradox (1980).

intention to run a company in the first place, just as a landlord may not intend to live in the house(s) he owns – and 2/ when there are a large number of multiple shareholders, such as is the case of most large companies today, the coordination costs between the shareholders to run the firm on a daily basis would be extremely high. Thus, shareholders appoint a manager or a management team with the mandate to run the company in order to maximize the shareholder value[4].

Between the management – the head of the company – and the shareholders – the owners of the company – lies the board of directors, whose members are elected or appointed by the shareholders – at least, formally. Section 1.1 of this thesis raised the question of the reason for the existence of boards of directors. Knowing that boards can fail and that they are costly – directors usually do not work for free, at least not in large companies – this question becomes: since shareholders already appoint managers to run the company, why do they need to appoint another costly body?

Shareholders are legally required to appoint a board of directors. For instance, the US Model Business Corporation Act states that *"all corporate powers shall be exercised by or under the authority of, and the business and affairs of the corporation managed by or under the direction of, its board of directors"*. However, while having a board of directors is a legal requirement for companies in most countries, Hermalin and Weisbach (2003) notice that they usually exceed legal requirements. For instance, boards of directors are usually larger than required. If the only reason why shareholders appointed a board of directors was to comply with the law, it should be expected that they would not go further since there are costs associated with having a board of

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[4] At least in the traditional perspective of the shareholder value. Section 1.2.6. of this thesis presents the discussion over the shareholder value perspective.

directors and that these costs – such as the directors' compensation – grow with the size of the board. Hence, the board of directors should be beneficial to shareholders, or in other words they should help increase the shareholder value. In particular, can they help mitigate costly conflicts of interest between the shareholders and the management?

1.2.2. The principal-agent problem

Sir Adrian Cadbury, author of the famous eponymous report on corporate governance (1992), stated *"I have always regarded Bob Tricker as the father of corporate governance"*. While we acknowledge the major contributions of Bob Tricker and, in particular, of his 1984 book – that might have been the first one titled "Corporate Governance – to this field of research, it is our opinion that the cornerstone of corporate governance had in fact been laid long before. When Adam Smith wrote in his seminal Inquiry into the Nature and Causes of the Wealth of Nations (1776) "*the directors of such companies, however, being the managers rather of other people's money than of their own, it cannot well be expected, that they should watch over it with the same anxious vigilance with which the partners in a private [firm] frequently watch over their own"* he was building the foundations upon which would later be developed the agency theory, central to the corporate governance topic.

1.2.3. A simple illustration of the agency problem

A simple example[5] illustrates well the agency theory and the principal-agent problem. Whenever a water leak occurs in a house, the owner, or the occupant, of the house – assuming he does not have any plumbing skills and does not want to live in a flooded house – will usually call for the services of a plumber. The plumber does not work for free and will require to be paid in exchange for fixing the leak. Thus, the owner or occupant of the house hires an agent – the plumber – to perform a task – fixing the leak – he will benefit from – living in a non-flooded house in exchange for a salary. In the agency relation, who hires an agent- here, the owner or occupant of the house – is labeled as the principal of the agent.

The agency problem arises when the agent has some latitude in performing the task he is paid for. In this example, the plumber can choose the level of effort he will exert and/or the amount of time he will spend performing the said task. We can also assume he can choose amongst materials of different quality to replace the defective ones. Different levels of effort and quality of materials should result in different outcomes. If the plumber is hasty and uses materials of poor quality, the leak will likely be fixed only for a short period of time before it starts flooding again. On the contrary, if the plumber is meticulous and uses high quality materials, chances are the owner or occupant of the house will not have to hire a plumber again for years. This situation, in which the agent can choose whether to dutifully perform the task he signed for or not to perform it – or to perform it lazily – is known as one of moral hazard.

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[5] The author of this thesis must confess that this example is not his, as he was told of a close version of it, by one of his professors, when a master student.

Can the principal know whether or not the agent did a good job? Since we assume that the reason for which he decided to hire a plumber in the first place was his inability to fix the leak himself because he lacks the required skills, we can furthermore assume that he will not be able to tell the difference between a slapdash job and a work of art of plumbing. He therefore will not be able to bargain over the plumber's wage based on his assessment of the plumber's performance, nor will he be able to ask the plumber to do overtime in order to properly finish the job. Formally, there is an asymmetry of information between an informed agent – informed in that he knows the quality of the work he provides – and an uninformed principal. The only way for him to determine the quality of the plumbing work he ordered and of the material used will be to wait and see if the water starts leaking again in some months. As plumbers are usually unwilling to wait for months before being paid, the principal will therefore need to pay the plumber's salary without knowing what exactly he pays for.

The plumber can take advantage of the inability – or limited ability – of the principal to determine the quality of his work. Since he will be equally paid whether or not he uses expensive fine materials or cheap mediocre ones, whether or not he works hard or do a lazy job, a rational self-interested plumber should choose to maximize his utility by exerting a low level of effort and buying the cheapest available materials. In other words, due to the asymmetry of information between the principal and the agent, the latter can seize the opportunity to maximize his utility at the principal's expense[6].

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[6] This example only aims at illustrating the principal-agent problem, and as such only constitutes a simplification of reality. One would be right to argue that a number of other variables may affect the plumber's behavior: he may well seek to maximize his utility, but this is not necessarily the same thing as maximizing his wealth. Moreover, he might consider the reputational effect of doing a good (bad) job when choosing his level of effort.

In corporate governance, the agency theory is applied to shareholders, directors, managers and workers rather than to householders and plumbers.

1.2.4. Corporate ownership and corporate control

As underlined by Bearle and Means (1932), a corporation is legally owned by its shareholders but formally controlled by its management who do not need to be shareholders themselves. Managers therefore manage the wealth of others and, as stated by Smith (1776), have nothing to gain or lose from it, unless given an incentive to perform well. This conflict of interest is inevitable in large companies with multiple shareholders, when it would be inefficient, if not impossible, for shareholders to run the business themselves. Two important reasons for this inefficiency/impossibility are: 1/ the high coordination costs between a large number of shareholders and 2/ the fact that shareholders are not necessary competent enough to run the company – or at least, the fact that they could hire people with higher skills. In this perspective, a board of directors is a second best solution: since the owners of the company cannot manage the firm, they delegate this right to an elected board of directors, who they entitle to make important strategic decisions in their name. There are also responsible for hiring a management team who will run the company on a daily basis. In the traditional shareholder-value perspective, this team is assigned to maximize the shareholder value of the company, that is, to maximize the shareholders wealth.

Since there is a conflict of interest between the management team and the shareholders, the board of directors is tasked with reducing this conflict of interest by inducing the top officers to act in

the shareholders best interest. To do so, they have two main tools at their disposal, usually referred to as "the carrot and the stick": 1/ designing an *ex ante* financial incentive scheme that will make a high company performance worth the managers' effort and 2/ monitoring the top management team to try to determine *ex post* if they behaved, with the possibility of penalizing them – by firing them, for instance – if they did not. Figure 1 is an illustration of the typical timeline of a principal-agent contract with *ex ante* incentive and *ex post* monitoring. *Ex ante* monitoring is also possible and often tied to *ex post* monitoring, because analyzing the company's past decisions and outcomes may help alter further ones – under the assumption that they still can be.

It is also worth noticing that monitoring can be and is often conducted by "complete" outsiders – who do not seat on the board. The most known of these outside monitors are probably the rating agencies and the analysts, whose job is to provide information about the prospects of the firms. Unlike shareholders, they do not have the direct power to punish misbehaving or incompetent management by removing them as directors or managers, but they do have an indirect power to constraint the management decisions by their impact on the stock price and on the rating of the corporate debt. However, the asymmetry of information is even more severe than with outside directors and this can lead more easily to incorrect statements. Companies are prone to contest outsider analyses content when they are unfavorable to them. For instance, LVMH – successfully – sued Morgan Stanley, accusing one of their analysts for issuing negative assessments they deemed untruthful.

Figure 1: Ex ante incentives ex post monitoring
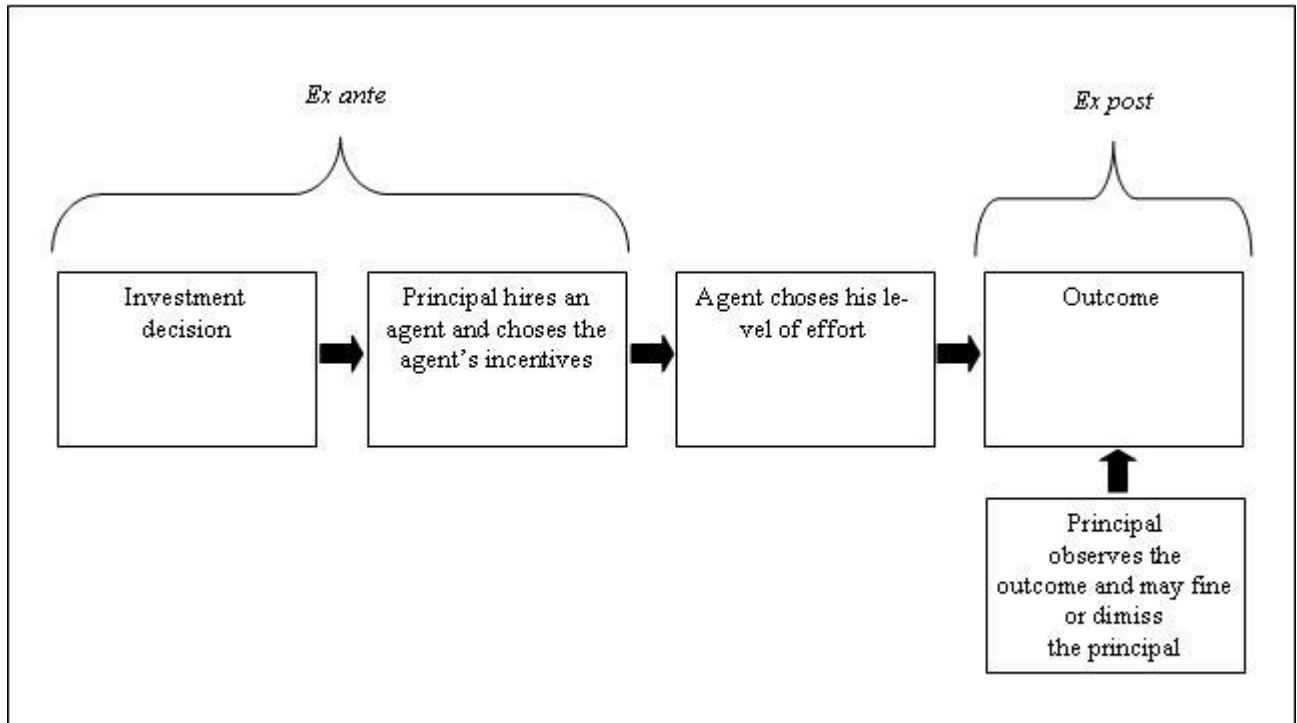
1.2.5. Managerial incentive

To mitigate the conflict of interest between shareholders and managers, managers can be given incentive in order to align their interest with this of the shareholders. The more wealth they create for the shareholders, the more managers are paid. A basic yet enlightening model of such tools can be found in Tirole (2006). It can be sum up as follows:

A company invests in a project whose success depends on the level of effort exerted by the CEO. The project will succeed with a high probability $p_H > 0$ if the CEO exerts an effort. If the CEO chooses to do so, he incurs a cost $c > 0$. If he does not, he does not incur any cost, and the probability of success of the project is reduced to a low probability $p_L > 0$ with $p_H > p_L$.

Regardless of the CEO's chosen level of effort, the project requires the company to invest an amount $I > 0$ and, in case of success, brings a revenue equal to $R > 0$. In case of failure, the project's revenue equals 0. Moreover, it is assumed that $p_H \times R \geq I$ so that the project would be funded if the CEO exerted an effort but that $p_L \times R < I$ so that shareholders will incur a loss if he does not.

In order to induce the CEO to behave, that is to exert an effort, shareholders can decide to give him an incentive, which take the form of a fraction α of the profit – or, equivalently in this model, a fraction of the company's shares. Thus, the CEO, who wants to maximize his wealth, will exert an effort if the reward in case of success equals or exceeds the cost of effort, that is, if and only if:

$$\alpha \times p_H \times (R - I) - c \geq \alpha \times p_L \times (R - I)$$

which simplifies into:

$$\alpha \geq \alpha' = \frac{c}{(p_H - p_L) \times (R - I)}$$

where α' is the minimum incentive to induce the CEO to exert an effort. Since the shareholders do not have any reason for granting the CEO more than he needs to behave, the CEO will be given a stake α' in the company, should the shareholders decide to incentivize him.

This model gives a simple overview of the theoretical foundation that lies behind incentive schemes, which can feature a wide variety of tools – bonuses, stocks, stock options, golden parachutes. While this is not the subject of this thesis, it is interesting to notice that incentive have a dark side. For instance, stock options are a powerful tool to induce managers to behave and act

in the shareholders' best interest as they reward the holder only if the stock value reaches a pre-determined value. Unlike simple stocks, stock-options do not reward the owner for nothing. However, they have an adverse effect: when the stock value is far enough of the option exercise price that the manager do not believe it can be reached by normal means, he may be inclined to take an excessive level of risk to boost return in a "gamble for resurrection". In this perspective, highly unpopular golden parachutes can be seen as a tool to mitigate the adverse effect of stock-options. Indeed, a golden parachute guarantees the CEO a reward even in the case where he is removed for failing to achieve his objectives, reducing the attraction of a risky gambling strategy. On the other hand, as shown by Johnson et al. (2009), simple stocks are more likely to give the management an incentive to fraud or produce misleading accounting reports, trying to artificially push the stock price to higher levels.

Interestingly, what is true for the CEO and the management team can also be applied to other agents of the company, in particular directors, and employees – other than the members of the top management team. Indeed, the interests of the directors and shareholders are usually not aligned, establishing what Bebchuk and Weisbach (2011) qualify as a *"complex three-way relationship"* between shareholders, board members and managers. Directors thus need to be incentivized as well if they are to perform their duty in the shareholders' best interest. While insiders, who work with and for the CEO have career concerns that may alter their incentives – see Raheja (2005) for instance – by making them more prone to side with the CEO, outsiders are generally seen as having their interests more aligned with these of shareholders, since, according to Fama and Jensen (1993) their career concern should give them an incentive to build a good reputation as monitors. But, as stated by Holmstrom (1999) one does not necessary need to be a good director to be perceived as one. And, as observed by Hermalin and Weisbach (2002) some outsiders may

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also have an incentive to build a reputation of being "yes men" since they would be more likely to be offered positions in companies with weak governance. Furthermore, Patton and Baker (1987) argue that when directors are "creatures of the CEO", they are in no position to fulfill efficiently their duties.

If not properly incentivized, directors might find it more profitable to collude with the management and not exert any –costly – monitoring effort. Bourjade and Germain (2013) provide a theoretical model of optimal contracts in such a situation. Consistent with this theory is Perry (2000) who finds that when independent directors are given incentives, the sensitivity of the CEO turnover to the firm performance increases.

While the impact of debtholders on a company's governance is not the object of this thesis, it is worth noticing that they too have a stake in the management actions, and that they too have conflicting interests with the shareholders. Because debtholders have a prior claim on the firm cash-flows – compared to shareholders, who are residual claimants – they are usually better-off when the firm invests in projects with low risk and return, provided the return is still large enough for the company to pay off its debt. As outsiders – except in particular cases such as when a debtholder is also a shareholder – debtholders are not involved in the firm's decision process; however, to prevent shareholders opportunism, they can introduce covenants in a debt contract that will limit the choices available to the company – typically, by setting a limit to some of the firm's financial ratios. Thus, debtholders do have a direct impact on a company's corporate governance. Figure 2 illustrates visually the corporate governance structure and the multiple conflicts of interest.

Figure 2: Corporate Governance Structure

Fund providers expect a return on their investment

Shareholders
own the company

Debtholders
have a prior claim on the cash-flows

Elect the board and decide of their compensation package

Own residual cash-flows

Receive interests and debt repayment

Can limit the company's actions through covenants

Company

Board of directors
should aim at maximize the shareholder value by making decisions, advising and monitoring the management

Hire and Dismiss Decide of compensation package

Management team
should aim at maximizing the shareholder value by running the company

Hire and Dismiss Decide of compensation package

Employees

1.2.6. Other stakeholders

Shareholders and debtholders are neither the only agents who have a stake in a company's decisions nor are they the only ones involved in its governance process. Indeed, while the shareholder value, the traditional theory in finance, states that the only goal of a company should be to maximize the wealth of its owner, the tenants of the stakeholder society, notably Freeman et al. (2007), claim that corporations have duties and responsibilities to a number of stakeholders, including shareholders but also employees, communities, customers, creditors, etc. Therefore, proponents of the stakeholder society claim that firms should put more focus than they do on avoiding layoffs – or even on creating more jobs, on reducing negative externalities on the environment, etc. Tirole (2006) gives a good overview of the debate, which we briefly sum-up thereafter.

While the stakeholder society is seen favorably by public opinions, in particular in Europe, it has been rejected by most scholars for various reasons, mainly:

- Empowering non shareholders with a right to make decisions for the firm would dilute shareholders power and deter investment

- While maximizing shareholder value is a clear objective and management can be incentivized relatively easily, maximizing stakeholder welfare is a lot more complex to defined and it would be extremely difficult to hold managers accountable for barely valuable externalities– leading to impossible contracts.

As Milton Friedman, a fierce tenant of the shareholder value, puts it: *"There is one and only one social responsibility of business — to use its resources and engage in activities designed to*

increase its profits so long as it ... engages in open and free competition, without deception or

fraud[7]."

However, if shareholder value remains the main analysis tool, an increasing number of studies seem to suggest that social responsibility may actually positively impact the shareholder value. Margolis et al. (2007) run a meta-analysis and find that more socially responsible companies enjoy slightly better performance. Magill et al. (2013) offer a theoretical framework of stakeholder equilibrium. While the purpose of this thesis is not to enter this debate, we interestingly show in chapter 2 that employee representation on the board of directors may, when certain conditions are met, be beneficial to shareholders, managers and employees alike.

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[7] In The New-York Times, September 13, 1970.

1.3. What do boards of directors do?

According to Mace (1971) the role of directors is to provide advices to the management as well as overseeing their actions. Baysinger and Hoskisson (1990) also argue that they act as a "safeguard" to shareholders and managers. However, Demb and Neubauer (1992) show that directors themselves somewhere differ with this idea of their roles. Indeed, while most of them agree that their tasks include an involvement in the firm strategic choices, only a minority consider monitoring as a part of their duties. Only a quarter of them believe they should be responsible for dismissing or hiring the CEO or the members of the management. Removal being one of the main tools a board of directors can use to punish a misbehaving or dismiss an incompetent CEO, if directors do not use this tool, the monitoring they may well exert is somewhat useless, since it is not tied to any credible threat to the management. Lapdog boards of directors could be an explanation to the number of corporate scandals that the pas decades saw happened.

However, MacAvoy and Millstein (1999) believe that the real role of the boards of directors has been evolving since these early studies. Increased shareholder activism – the California Public Employees' Retirement System (CalPERS) for instance has build a reputation of being a particularly demanding investor – and stronger regulations – such as the 2002 Sarbanes-Oxley Act in the United States – have made boards tougher in their overseeing of the management, and more independent of the CEO. As shown by figure 3, recent governance codes and reports have emphasized the independence of the board of directors. In some countries such as the United States, requirements regarding the independence of the boards have been made a legal obligation (*hardlaw)* through the Sarbanes-Oxley Act (2002), while in some others, notably in Europe, the

unofficial "comply or explain" rule (*softlaw*) have been preferred. Under this rule, companies are asked by the market to meet some requirements regarding governance but have the possibility to deviate from these common rules if they can provide investors with a convincing explanation that the company specific situation makes compliance impossible or too costly.

Figure 3: Rules of different code of corporate governance

Source: Tirole J., *The Theory of Corporate Finance (2006), p.35*

	Independent directors?	Separation of chairman-CEO roles?	Rotation of external auditor?	Frequency of financial reporting?	'Comply or explain' requirement?	Selected country-specific governance issues
Brazil CVM Code (2002)	As many as possible	Clear preference for split	Not covered	Quarterly	No	Adoption of IAS/U.S. GAAP[1] Fiscal boards[1] Tag-along rights[1]
France Bouton Report (2002)	At least one-half of board	No recom- mendation	Regularly, for lead auditors	No recom- mendation given	No	Dual statutory auditors
Russia CG Code (2002)	At least one-quarter of board	Split required by law	Not covered	Quarterly	No	Managerial boards
Singapore CG Committee (2001)	At least one-third of board	Recommended	Not covered	Quarterly	Yes	Disclosure of pay for family members of directors/CEOs
United Kingdom Cadbury Code (1992)	Majority of nonexecutive directors	Recommended	Periodically, for lead auditors	Semiannually	Yes	
Combined Code (2003)	At least one-half of board	Clear preference for split	Not covered[2]	Semiannually, per listing rules	Yes	
United States Conference Board (2003)	Substantial majority of board	Separation is one of three acceptable options	Recommended for audit firm[3]	Quarterly, as required by law	No	

A number of studies show that boards do indeed play a role in corporate governance and it seems established that since the 1980's board of directors have became more willing to defend shareholders interest rather than siding with the management.

Indeed, Hermalin (1988) shows that the sensitivity of the CEO turnover to the firm performance is higher in boards that are dominated by outsiders, suggesting that more independent directors are more prone to take sanctions against the management. Similarly, Kaplan (1994) shows that management turnover in Germany in the 1980's is sensitive to the stock performance of the firm and that removal of the incumbent management is more likely following bad stock performance. It is worth noticing that there exist differences across countries, with Germany being one where the sensitivity appears to be the strongest (see figure 4).

Figure 4 Top executive turnover and stock return chart

Source: Tirole J., The Theory of Corporate Finance (2006), p.26. Built on data in Kaplan (1994)
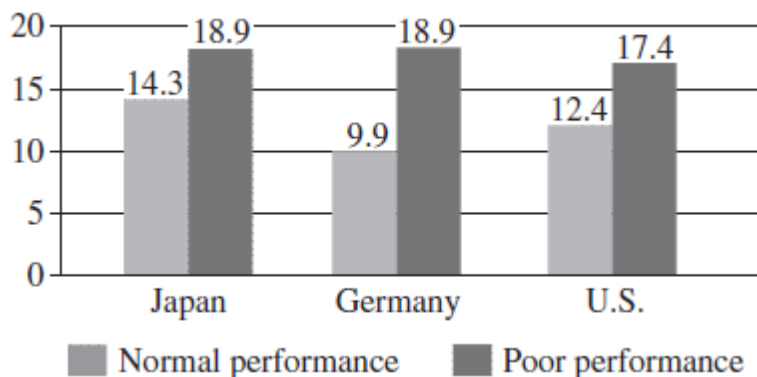
Unsurprisingly, Morck et al. (1989) find this to be less true in small firms that are run by the founder. Indeed, this type of firms generally has a weaker governance system, provided that the historical CEO has more control over the board of directors, not only because of his tenure but also because he has often remained an important shareholder.

However, if there is overwhelming evidence establishing a sensitivity of CEO turnover to firm performance, this does not necessary implies that boards effectively monitor the CEO. They could for instance remove CEOs following bad performance under shareholder pressure or only by looking at the stock price – what shareholders can do by themselves at a lesser cost.

One may ask if the shareholders really need to hire and pay directors to monitor the managers, or if they could do it themselves by analyzing the firm accounting statements and stock performance and decide, based on this analysis, to keep or dismiss the management – or to buy or sell shares. Cornelli et al. (2013) give a positive answer to this question. Using an exogenous change in the law of former communist countries from Eastern Europe, they show that directors go beyond the firms' statements to try and detect if the performance is due to luck – or bad luck – to avoid firing managers who make "honest mistakes". However, Jenter and Kanaan (2015) find that CEOs remain more likely to be dismissed following bad industry and bad market performance.

Tosi et al. (2000) provide a meta-analysis of the empirical studies on the determinants of the CEO pay. They find that the firm performance accounts for around 5% of the CEO pay when the size of the firm accounts for approximately 40%. While the sensitivity of the CEO pay to the firm performance is seen as a sign of good governance, the large role played by the size of the firm is less enthusing. The compensation of a properly incentivized CEO should mainly depend on the shareholder value he creates, that is on the firm financial performance. The fact that it actually depends more on the size of the company he runs can be perceived as a sign of weak governance.

Hermalin (2005) predicts that more independent boards should be more diligent in monitoring the CEO to try and determine his ability and should also be more prone to replace a CEO when they have uncertainty about the CEO's competence. This should lead to a shorter CEO tenure and more CEO's efforts, to try to avoid removal. Hence, in turn, higher level of independence of the board of directors could lead to an increase in the CEO remuneration to reward the greater effort and compensate the lesser secure position.

Figure 5: Summary of Hermalin 2005 model

Source: Adams R. et al., The Role of Boards of Directors in Corporate Governance: A Conceptual Framework and Survey (2010), p. 70
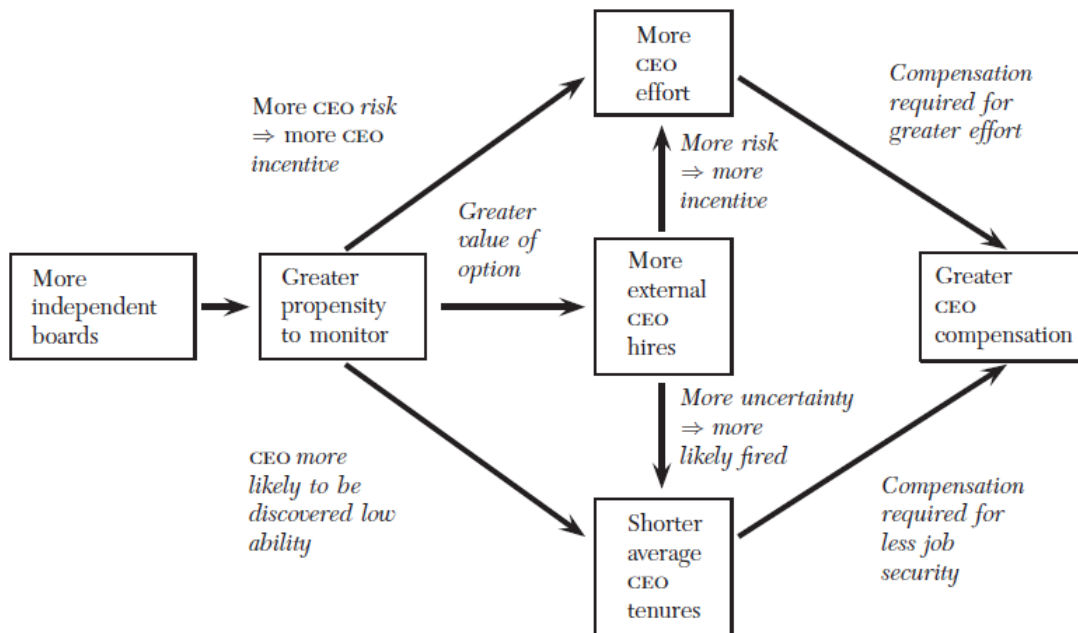
1.4. Optimal Board Composition

1.4.1. Board size

Most studies suggest that smaller boards of directors are more efficient and that firms with smaller boards have higher value. Yermack (1996) finds that smaller boards are associated with a higher firm value for large US companies between 1984 and 1991. He also finds that the link between poor performance and CEO turnover is stronger in firms where the board is of smaller size, which suggests that smaller boards are more efficient monitors. Guest (2009) finds similar results with a sample of listed UK firms between 1981 and 2002 with smaller boards associated with a higher market value, higher profitability and higher stock returns. Higher coordination costs and poor communication leading to bad decisions are often advanced as one of the main reasons for the inefficiency of large boards. In an innovative set up Bennedsen et al. (2008), use a sample of small and medium-sized firms, and establish a positive link between the size of the board of directors and the number of the CEO's children, suggesting that the CEO has enough power to put his relatives on the board of directors. Consistent with other studies, they find a negative link between the size of the board (number of the CEO's children) and the firm performance.

Gertner and Kaplan (1996) innovate by studying the size of the boards of firms in the case of reverse leverage buyouts. The most usual objective of a leverage buyout is to buy a firm, delist it, and restructure it to maximize its shareholder value before re-listing it. Hence, LBO specialists are supposed to lead the firm to its optimal structure. Gertner and Kaplan (1996) find that in

reverse leverage buyouts, firms have a smaller board size, suggesting small board indeed increases the shareholder value.

While this negative link is robust across most studies, Bermig and Frick (2010), using a sample from the particular case of codetermination in Germany find no link between board size and company performance or value.

Other studies investigate the determinants of board size. Amongst many others, O'Sullivan (2000), Lehn et al. (2009), or Coles et al. (2008) find that more complex firms have larger, more independent boards. They find the relation between the size of the board and the firm value to be U-shaped: not only small boards but also large boards are associated with a high Tobin's Q. Denis and Sarin (1999) also find changes in the board structure, as well as in the firm ownership, to be exogenously determined by economic shocks.

1.4.2. Insiders, outsiders and independent directors

As explained previously, the existence of asymmetry of information is an important reason for the possibility for the agent to misbehave. In the "plumber example", the principal could not assess the quality of the agent's work, at least not before paying him. The situation in a corporation is similar with the CEO as the agent and the board of directors as the principal – or with other configurations such as the board of directors as the agent and the shareholders as the principal. Indeed, while the CEO perfectly knows what he does, these who are tasked to monitor him – the directors – cannot know his every move. However, all directors do not have equal access to information on the CEO's behavior and on the firm's activities. Insiders, who are

members of the top management team who also sit on the board of directors, have a privileged access to private information about the company and the CEO's actions. On the contrary, outsiders who sit on the board but do not work for the company on a daily basis have limited access to inside information.

Thus, insiders are in a better position than outsiders to assume efficiently the two main roles of the board of directors: to advice and monitor or, as Mace (1971) puts it *"to serve as a source of advice and counsel, serve as some sort of discipline, and act in crisis situation"*.

The downside is that insiders, as members of the top management team have a hierarchal link with the CEO. That is, their position and career advancement depends on the very person they are supposed to monitor. Thus, insiders may be induced to refrain in monitoring the CEO or the top management team… they are a part of.

In this perspective, selecting board members can be seen as a trade-off between having a lapdog board and a watchdog board, that is, between a well-informed board unwilling to monitor the CEO and a board with a high intensity of monitoring but lacking information to efficiently fulfill their task. This theoretical dilemma is backed by Weisbach (1988) who establishes that the link between CEO turnover and firm performance is stronger when the board is dominated by outsiders.

It is worth noting, as explained by Charreaux and Wirtz (2006) that the notion of "outsider" is progressively replaced by this of "independent director" or "independent outsider". The reason

for this is that outsiders may well not be hierarchically linked to the CEO but they could still have a dependence relationship. Amongst the most obvious examples is cross directorship, when the CEO of company A sits on the board of directors of company B, whose CEO in turn sits on the board of directors of company A, or this of a family link – particularly in family owned companies. Kramarz and Thesmar (2013) also show that CEOs and directors can be linked trough social networks, and that this is associated with weak governance and worse firm performance. Another, and more tenuous, possibility, related to the third chapter of this thesis is the possible link between a director and a CEO through politics. A company may indeed, when legally allowed, as is the case some countries such as the United States, contribute to the campaign of a candidate for an office through financial donations. When this very candidate also happens to sit on the board of the company which contributes to his campaign, he may be unwilling to be a thorough monitor as the CEO could retaliate by deciding to switch horses. Thus, independent directors are considered to be more concerned with the maximization of shareholder value than insiders as their interests are more aligned – or less unaligned – than these of insiders.

The number of independent directors on the board of directors has dramatically increased over the past decades and has became a requirement in most developed countries under various forms – having a majority of independent directors is for instance a requirement for a company listed on the New-York Stock Exchange. Gordon (2007) shows that the proportion of independent directors on the boards of large public companies in the United States has risen from around 20% in 1950 to 75% in 2005. This rise has been particularly strong between 1985 and 2005, as can be seen on figure 6. Chhaochharia and Grinstein (2009) find similar results when studying the impact of the 2002 Sarbanes-Oxley Act.

Figure 6 Board Composition in the US

Source: Gordon J.N., *The Rise of Independent Directors in the United States, 1950-2005: Of Shareholder Value and Stock Market Prices (2007)*, p. 1474
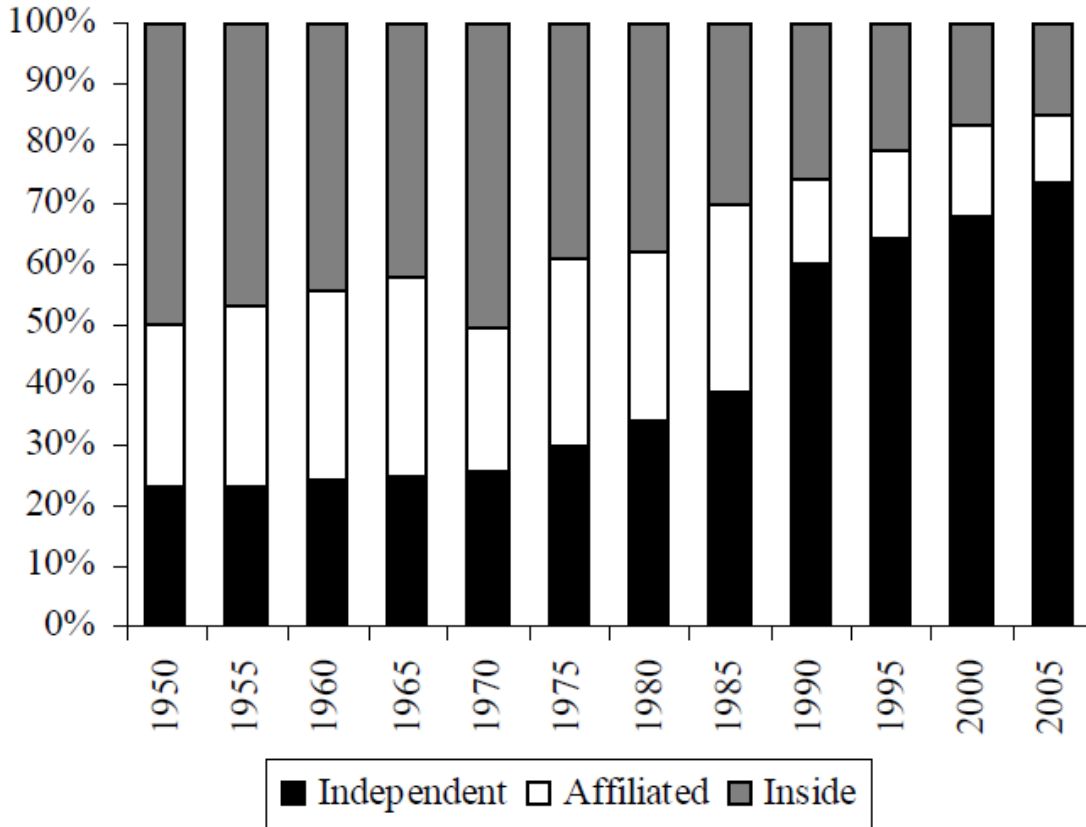
1.4.3. CEO and chairmanship titles

The CEO's bargaining power and/or directors lack of activism may lead to the paradoxical situation where the CEO effectively controls both the company and the board of directors. In 1932, Berle and Means noticed that *"Control will tend to be in the hands of those who select the proxy committee and by whom, the election of directors for ensuing period will be made. Since*

the proxy committee is appointed by the existing management, the latter can virtually impose his own successors". Things have changed, and today most boards of large companies have a nomination committee whose task is to find and select new directors. But this evolution toward more independent boards of directors has been and still is relatively slow. Thus, there are still a number of CEOs who also assume chairmanship of the board of directors – the very body in charge of overseeing them, in particular in smaller firms, as figure 7 exhibits.

Figure 7: Evolution of the Separation of CEO and Chairman Titles

Source: Tribbett C., *Splitting The CEO and Chairman Roles – Yes or No? (2012)*, p. 5

A Growing Divide
Percent Of Companies That Split Chair And CEO Roles

Year	S&P 500	NASDAQ 100	FTSE 100
2001	21%	41%	92%
2005	29%	45%	93%
2012	44%	62%	93%

Source: Russell Reynolds Associates
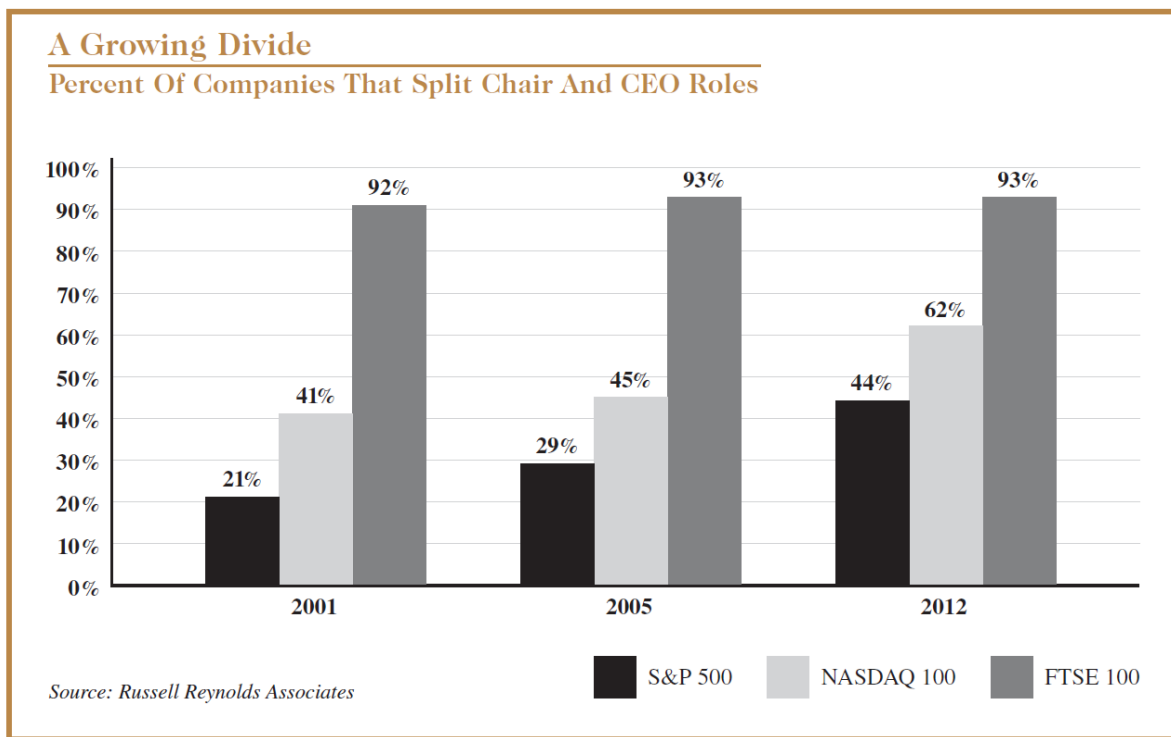
Brickley et al. (1997) find that firms in which the two titles are separated outperform firms where they are combined. Goyal and Park (2002) study the CEO turnover relative to firm performance in the light of this separation of titles. They find that when the CEO assumes both roles, he is less likely to be removed following bad performance that when the two titles are separated. This suggests that boards of directors are more efficient when not headed by the CEO. Indeed, when the titles are combined, the CEO is more able to influence the decisions taken by the board as shown in Adams et al. (2005) resulting in a less independent board, regardless of the proportion of independent directors.

Interestingly, Anderson et al. (2005) establish a positive link between the separation of titles and more informative earning statements.

1.4.4. Independence of the board and shareholder value

If more emphasis has been put on the importance of independent directors and if their numbers have consistently grown under the pressure of shareholder activists, the most important question – from a shareholder value perspective – remains: to determine whether or not they have a positive impact on the firm financial performance and on the shareholder value. A significant number of empirical studies have been led to try and answer this question, with mitigated results.

In a seminal paper on the topic, Bhagat and Black (1999) conduct a large sample study investigating the relation between the independence of the board of directors of large American public companies and the long-term performance of said companies. Their results show no such correlation. They however find that low profitability firms tends to increase the independence of their board of directors but do not find any evidence that this increased independence is beneficial

to shareholders. This is consistent with Hermalin and Weisbach (1998) who do not find any correlation between board independence and firm performance but show that poor performance tends to modify the board structure. Indeed, following poor performance, they show that insiders are more likely to leave the board while outsiders are more likely to join it.

These studies, along with others, shed light on two issues: 1/ the link between board independence and firm performance might not be as clear as commonly acknowledged and 2/ the causal relation works both way. This means that while board composition may impact performance or at least some of the actions taken by the firm, the firm performance impacts the board structure with an increase in the degree of independence following poor performance. This endogeneity problem is quite common in corporate governance, and more particularly in the case of board of directors' composition.

Indeed, when trying to determine the impact on performance of the presence of directors with some characteristics – independence, gender,... – the main issue is that boards' composition may change following bad performance or, as shown by Hermalin and Weisbach (1998), that the CEO may interfere in the selection of new directors if he has enough bargaining power. They suggest that his bargaining power is associated with the firm performance. Hence, the degree of independence of the board of directors is likely to increase following bad performance, which could lead to counter-intuitive empirical results with higher independence levels of the board of directors associated with lower firm performance. The attempts that have been made to circumvent this problem by taking into account past performance using simultaneous equations

by Hermalin and Weisbach (1991) or Bhagat and Black (2002) have not been successful in finding a positive impact of independence on performance.

Since the absence of proof is not the proof of absence, a number of reasons have been advanced to explain why the link might be difficult to establish. MacAvoy and Millstein (1999) argue that, at least until the 2000's, boards of directors have not been fulfilling there role: in particular, they have been monitoring the management teams they were supposed to oversee, which would explain the multiplication of corporate scandals during the past decades.

While the literature offers contrasted results on the direct link between board independence and shareholder value, some studies suggest that a greater independence might still benefit shareholders.

Anderson et al. (2005) thus find a positive link between the board independence and the informativeness of earnings. Rosenstein and Watt (1990) find a positive limited stock reaction to the announcement of the appointment of an outsider director, suggesting that investors value outside more than inside directors. So do Block (1999), who also finds that the positive effect on stock price of the announcement of the appointment of an outsider diminishes with the number of outsiders already in place, suggesting that a moderate level of independence might be deemed optimal by the market.

Amongst the reasons why an increased presence of non-executive directors on the board may adversely affect firm performance, Goodstein et al. (2006) argue that diversity may hamper strategic decision making.

1.4.5. Independence and information

The trade-off between information and independence has been one of the main reasons advanced for explaining why empirical studies might have failed to establish a positive link between the degree of independence of the board and the financial performance of the firm.

Adams and Ferreira (2007) provide a theoretical model in which the optimal board repartition between insiders and independent directors is sensitive to the asymmetry of information. In their model, the shareholders hire a CEO and a board of directors tasked to advise and monitor him. They select the level of independence of the board by choosing the distribution of insiders and independent directors inside the board. While insiders have better access to private information about the firm's prospective projects, they are dependent on the CEO for their career advancement. On the other hand, independent directors can either obtain information if the CEO decides to reveal it to them or if they incur a monitoring cost. Since the CEO can receive private benefits from the company investing in a suboptimal project, he is unwilling to share information with a board that have a high intensity of monitoring. Thus, under some conditions, a high level of board independence not only deter the CEO to share information but also prevent the independent directors to provide accurate advices – since the lack of information affect their ability to efficiently council. If the independence level is sufficiently low that the CEO is confident the board will not monitor him, he will reveal his private information which helps directors give better advices.

Hence, when choosing the degree of independence of the board, shareholders face a trade-off between the intensity of monitoring and the quality of the advices provided by the board. As a consequence, Adams and Ferreira show that depending on the importance of private information

for the company's project, shareholders might be better off with boards with low degree of independence, what the authors label as *"friendly boards"*.

Interestingly, this theory gives some support in favor of a division of the board into a dual structure, with a board in charge of the monitoring part and another tasked with advising. If both boards are independent from one another – or that the exchange of information between the two is sufficiently low, the CEO and top management team may find it easier to share their information with the advising board, since they know this information will not be used against them. Such a two-tier structure with a supervisory board and a management board is most common in some European countries such as Germany. The increased number of committees inside traditional board of directors can be seen as a form of copy of this dual structure. Belot et al. (2013) show that in France – where firms can choose to have either a one- or a two-tier board – unitary boards are associated with high asymmetry of information.

Coles et al. (2008) give some backing to Adams and Ferreira friendly boards theory by showing that for R&D-intensive firms, where private information held by insiders is more important, the firm value increases with the fraction of insiders on the board of directors.

Raheja (2005) provides another theoretical model to try and show how independent directors can extract information from insiders. Her model also provides support to Hermalin and Weisbach (1998) who find that companies tend to select more insider directors when the CEO is expected to retire soon, which they interpret as a manner of vetting possible successors for the CEO.

In this model, she assumes that the CEO must propose to the board of directors to invest in one of two possible projects. The board of directors is composed of insiders and outsiders. Only one of the two projects is beneficial for the shareholders. The CEO and insiders receive a private benefit if the board decides to invest in the project that does not increase shareholder value but none in the other case. The outsiders want to maximize the shareholder value. To account for the asymmetry of information between insiders and outsiders, she assumes that all insiders knows which is the good project and which is the bad one while outsiders can learn it either by incurring a verification cost or by obtaining the information from an insider. If they do not acquire information, the company invests in the project chosen by the CEO, who will retire afterward, but not before he has chosen one of the insiders to succeed him. If the independent directors find out which project is the better, and assuming either that they hold a majority of the seats or that they and the "cooperative" insiders hold a majority of the seats, they overrule the CEO in the choice of the project, and they choose his successor amongst the cooperative insiders, if any, or they bring an outsider to take the CEO's succession if no insider chose to reveal his information.

Thus, insiders face a dilemma between "betraying" the CEO and staying loyal to him. The more insiders there are in the board, the smaller the probability for an insider that the CEO will designate him as his successor. If insiders hold most of the seats on the board, betraying the CEO can only be beneficial if enough insiders choose to do so, so that outsiders and cooperative insiders can form a majority to overrule the CEO's choice. Hence, when the cost the outsiders must incur in order to obtain information – that is, if no insider cooperates – shareholders might be better off with a large number of insiders in the board since it exacerbates competition between them and gives greater incentives to cooperate with outsiders. Raheja argues that this

implies that boards with a high number of insiders are more likely to be optimal in sectors or in firms where acquiring information is more costly.

Both models, along with others – such as Laux (2008) or Harris and Raviv (2008) – emphasize the key role of information transmission in the board decision process and on the ability of the CEO to impact this transmission to avoid monitoring and/or to remain effectively in charge of the firm's investment decisions.

1.4.6. Women on the board of directors

While boards of directors have long been hegemonically masculine, a trend towards equal gender representation has developed in the 1990's and women representation has reached levels closer to equality, at least in the boards of large companies and in most developed countries, as shown by figure 8. This has been often achieved through legal requirements. Countries such as France, Norway or Spain have indeed made it mandatory for large companies to have an equal gender representation on the board of directors[8]. However, there are still significant discrepancies, as the proportion of women on the board of directors of S&P500-listed companies was only 22% in 2014 while it was close to 40% in large Norway companies.

While the link between women representation on the board of directors and firm performance is unclear, some studies establish interesting effects of women presence.

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[8] Gender equality on corporate boards is for instance legally required by the law Loi n° 2011-103, January 27th 2011 in France for companies with a turnover greater than €50millions or with more than 500 employees.

Adams and Ferreira (2009) find that gender adversity has an average negative impact on the firm performance, this impact being mainly driven by the companies with the strongest governance – they use the takeover defenses to proxy for the quality of governance, fewer defenses being the sign of a better governance. They interpret this as the fact that mandatory gender diversity adversely affects the firms which are already well-governed. They also find that female directors have a better attendance record to board meetings than their male counterparts, and that male attendance increases with gender-diversity. They also find that women are more likely to join monitoring committees.

Farrell and Hersch (2005) find that women tend to serve on the board of directors of better performing firms but do not find any significant stock abnormal return on the announcement of the nomination of a woman on the board of directors. They interpret their results as the gender-neutrality of firm performance.

This is consistent with Burgess and Tharenou (2002) who find no relation between women nomination on the board and their perceived competence.

Contrary to Adams and Ferreira, Campbell and Vera (2007) find a positive link between board gender-diversity and firm performance in Spain.

Figure 8: Proportion of Women on Boards of Directors

Source: Ethics & Boards Governance Analytics (2014)
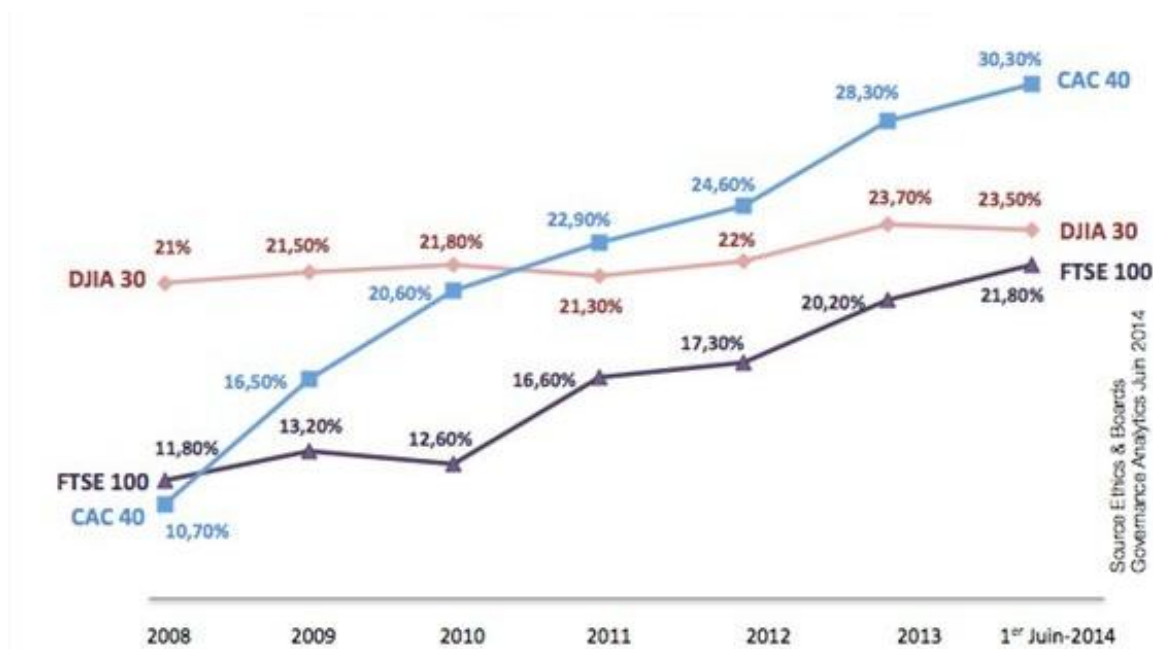
1.4.7. Employee representatives on the board

Another type of directors has enjoyed greater attention from scholars: employee representatives. Employee representatives are elected by their peers with the task to defend their interests and provide the board with the opinion and advice of the employees of the firm.

What strikes with employee representation is the wide diversity of situations and the strong differences that exist across countries. While some countries – such as Germany – are known for their high level of employee representation, in some others – such as the US – it is virtually non-existent.

While most countries tend to develop similar rules and close principles in most corporate governance aspects, employee representation appears not to follow this worldwide trend.

We believe the reason for this is that until very recently, the economic and financial considerations were excluded from the debate over employee representation. The German case illustrates this well.

Germany has developed a very strong codetermination – or *Mitbestimmung* – system. German companies employing more than 500 workers are legally required to allocate a third of the seats on the supervisory board to employee representatives. For firms with more than 2,000 employees, this proportion rises to half of the seats. The current mandatory codetermination in Germany ensues from the 1976 Codetermination Act – *Mitbestimmungsgesetz*. But Germany has a very long history of codetermination and the very beginning of employee representation can be found as early as 1848 in Frankfurt[9]. During that year the Parliament of Frankfurt – the first freely elected parliament on German territory – passed a law requiring that work councils be created. Of course, codetermination was only in embryo, but the time when it happened matters, as the Frankfurt Parliament was elected following the March Revolution, while workers militancy was particularly high. Later on, at the beginning of the 20th century, work councils were to be formed in the mining industry as an answer to miners' strikes. Disbanded in 1941 under the Nazi regime, the work councils were introduced again after the World War 2 by the British military occupation forces, concerned about the involvement in the German war machine of steel industry CEOs, and anxious to prevent them to gain too much power.

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[9] Pernickety historians will notice that what we describe as the laying of the very first brick of codetermination did not occur in actual Germany but rather in the free city of Frankfurt, within the German Confederation.

The French case is also enlightening, as the first significant step towards employee representation was taken in 1983 as the first left-wing government[10] France had known since 1957 had the parliament pass an act introducing employee representation on the board of directors of state-owned companies. This act was slightly reinforced in 1986, under a right-wing government as a way to sweeten the pill of the so-called "privatization wave". The current law ruling employee representation in France is a 2013 act – also voted by a left-wing parliament – which has extended the scope of the law, by requiring a minimal level of employee representation on the board of the largest firms – with more than 5,000 employees domestically or more than 10,000 worldwide.

With the examples given in this section, we intend to point out the fact that the determinants for employee representation are – or at least have been – of a highly political nature.

However, the French 2013 act was interestingly based on economical arguments. It was indeed passed following the release of the Gallois report (2012) arguing that limited employee representation should help improve the competitiveness of French industry and to mitigate the supposedly negative impact of the supposed shareholders short-termism. Chapter 2 of this thesis proposes a theoretical model of employee representation accounting for shareholders investment horizon.

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[10] This was actually the third of three governments headed by the same prime minister between 1981 and 1984.

As can be seen from German and French cases, not only the existence of employee

representation varies from one country to another, but the level of representation also differs.

While under the German law, large firms are required to have at least a third of the seats on the

supervisory board allocated to employee representatives, under the French law employee

representatives are entitled to only one or two seats on the board. The reason for this difference is

likely to be found in the board structure. While German boards are two-tier boards with a

supervisory and a management boards, French boards can be either one- or two-tier. This means

that if German codetermination gives employees an important role in monitoring the

management, it does not give them any right in strategic decision making and thus does not dilute

the shareholders property rights. This might very well explain why the Bullock report (1977)

proposing that codetermination was introduced in the United Kingdom, where boards are one-

tier, went unheeded.

Importantly, employee representation on the board of directors can take at least two forms:

employee-directors who are elected by their peers as employee representatives, or employee-

directors who are elected by employee shareholders as representatives of this particular category

of shareholders. With this enlarged version of employee representation, as much as 36% of

employees were represented in the board of their company in Europe in 2013 according to the

European Federation of Employee Share Ownership. The impact on the firm shareholder value is

unclear as of yet but stock performance of companies with different levels of employee

participation suggests it could differ with said level (see Figure 9).

Figure 9: Employee Ownership and Stock Performance in the UK

Source: UK Employee Ownership Index (2015),

http://www.employeeownershipindex.co.uk/wiki/images/0/0c/Home-page-chart-20150714.png

UK Employee Ownership Index
2 Jan 2003 - 30 June 2015

—3% Index —10% Index —FTSE All Share
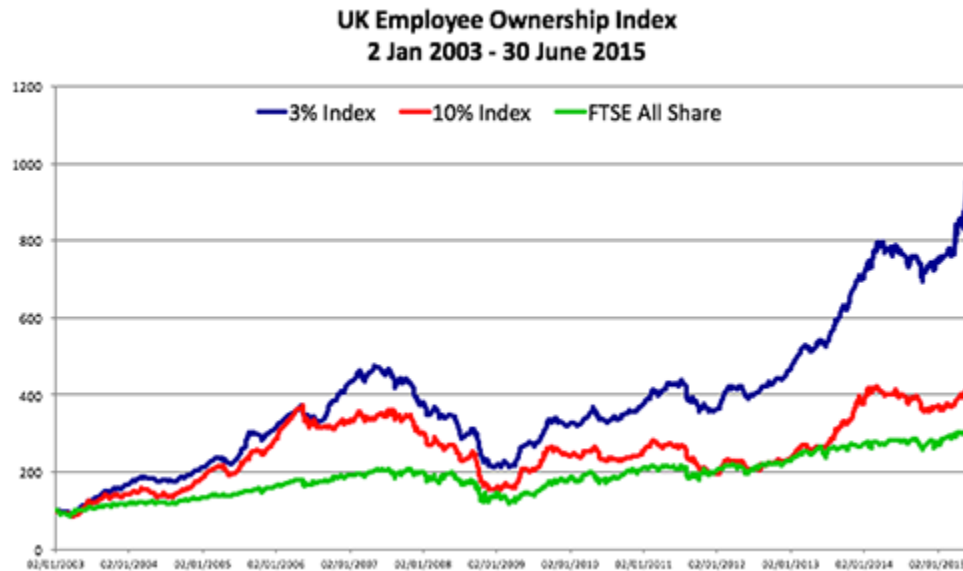
The impact of employee representation on the boards of directors on firm performance and on shareholder value is unclear as there are controversial theoretical arguments as well as contrasted empirical findings. Jensen and Meckling (1979) argue that since employee representation can only be found in countries where it is a legal requirement, it is detrimental to shareholders – assuming that companies naturally evolve towards their most efficient form. However, Fauver and Fuerst (2006) oppose an interesting argument based on the prisoner's dilemma principle. They say that employee representation might indeed act as a CEO repellent, and that companies with no such representation would thus find it easier to attract the best managers while firms granting employees some board seats would be left with second choice managers. However, if all comparable companies are required to have employee representation this dilemma disappears, or

is at least mitigated. Consistently, but unlike Gorton and Schmid (2004), they find evidence of a positive impact of some degree of employee representation on German firms Tobin's Q.

1.4.8. Bankers on the board of directors

The presence of a banker on the board of directors is quite common. Byrd and Mizruchi (2005) show that when a banker representing a company' lender seats on the board of directors, the firm exhibits a lower leverage. Non-lending bankers sitting on the board can either provide monitoring when the firm is in a situation of financial distress or advice when it is not.

Krozner and Strahan (2001) find that having a seat on the board of directors is a manner for banks to reduce insolvability risk. They show that bankers tend to sit on large stable firms with high levels of tangible assets, which can be collateralized. They state that the different levels of banker's protection across countries are a determinant of the presence of bankers on the board of directors.

Charumilind, et al. (2006) find that Thai companies connected to a bank or to politician have greater access to credit availability and are required less collateral.

If bankers can be helpful directors for a company, they might be tempted to help themselves first. Indeed, Ferreira and Matos (2012) find that when a lending bank has a seat on the board of directors of a company, it serves more often as a lead arranger and charge higher rate. Ferreira and Matos argue that this is some form of looting.

Güner et al. (2008) also suggest that bankers who seat on the board of directors of companies have conflicting interests, as they find evidence of increased inefficiency in such situations. For

instance, they find that firms with a banker on the board issue a larger amount of bonds, but realize worse acquisitions.

1.4.9. Politically connected directors and firms

A number of firms have politically connected directors, or politicians, on their board, with many famous cases such as the well known ties between some Texan oil companies and the Bush family in the United States, or former French minister Montebourg now serving on the supervisory board of Habitat after his appointment in March 2015. A politically connected director can be defined using Faccio (2006) definition of a politically connected firm as a current or former head of state, or a current of former member of the government or of the parliament, or closely related – family tied or close friend – to someone fitting one of the listed categories. In Faccio's cross-country sample, almost 3% of the firms are politically connected – also not always through a member of the board since Faccio's definition extends to the company top management team members and large shareholders. There are some strong discrepancies across countries, as almost 20% of Malaysia firms are found to be connected while only 0.002% of the US firms are. We however find in chapter 3 a more important proportion of connected firms, of at least 10%, a result partially driven by the new definition we introduce.

Empirical findings of most studies suggest that firms derive benefit from political connections. Faccio (2006) Khwaja and Myan (2005), Charumilind et al. (2006) find that politically connected firms are able to raise more debt, either that they exhibit a higher leverage, or that they enjoy greater access to credit than non-politically connected companies.

The results are contrasted as regards the financial performance of politically connected firms, but overall results seem to suggest that they enjoy an increased performance and shareholder value. If Faccio (2006) find that politically connected firms have a worse accounting performance, Boubakri et al. (2008) find otherwise.

A reason to explain these inconsistent results could lie in the political color of the link. Goldman, Rocholl and So (2009) find that the value of US firms connected to the Republican party increased following the election of the Republican candidate in the 2000 presidential election while the value of US firms connected to the Democrat party decreased. In other words, it pays to bet on the right horse. Similarly, Ferguson and Voth (2008) find that firms who financially supported the German Nazi party before 1933 outperformed their competitors after Hitler seized power.

Therefore, politically connected firms seem to benefit from being connected to the incumbent power. However, this may not be a free lunch. Boubakri et al. (2013) find that politically connected firms hold more cash than others and argue that this cash reserve could be a sign that politically connected firms are used as "cash cows" by politicians. Similarly, Bertrand et al. (2007) show that politically connected French firms create more jobs and destroy less plants around election years in the more politically contested departments, suggesting that there is a price to pay either for being connected or to try to maintain an incumbent connected leader in power.

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Chapter 2: Do We Need Employee Representation on the Board of Directors?

Abstract

We develop a model of corporate board including employee representatives in addition to shareholders and top executives. In line with the empirical literature, our model shows that low levels of employee representation may increase the shareholder value, even in the presence of a conflict of interest between employee representatives and other directors because employees hold specific valuable private information. We also show that a minority employee representation may cause the board to switch from a short-term to a long-term strategy. Such a strategy switch is always in the employees' interest and can be beneficial or detrimental to shareholders as well as top executives. Thus, employee representation can be beneficial to shareholders as well as other stakeholders. However, employee representation may be harmful for firms whose shareholder base has a short time horizon such as venture capitalists.

Keywords: *corporate governance, board composition, employee representation, employee directors, codetermination.*

1.1. Introduction

Over the last few years one of the very central ideas in finance, that the main objective of a firm's management should be to maximize the shareholder value, has come under increased criticism. Not only has this view been questioned by the public opinion, as newspapers articles show[11], but academics have also challenged the shareholder theory, mainly arguing that focusing on shareholder value has important negative externalities on stakeholders, and could even result in shareholders being worse-off. The possible negative impact of shareholder value maximization has been studied in particular by Stout (2012) and Magill *et al.* (2013).

This raises the timely question of the impact of employee representation on the board of directors. While corporate boards have been thoroughly studied over the past decades, the role of employee-elected directors has not enjoyed as much attention as other aspects of governance. This is all the more surprising that, if employee representation is negligible in some countries – such as the US or the UK – it is well developed – and developing – in others, mainly European, with the German codetermination system being the most famous example. Yet, employees are stakeholders whose interests may diverge from shareholders' and employee representation may cause the board to deviate from shareholder value maximization.

We develop what is to our knowledge the first model of corporate board including employee representation. In line with most empirical studies on the subject, we show that, because employees can share valuable private information with the board, employee representation can

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[11] Two recent examples from the Washington Post and from the Guardian:
http://www.washingtonpost.com/blogs/wonkblog/wp/2013/09/09/how-the-cult-of-shareholder-value-wrecked-american-business/ and http://www.theguardian.com/sustainable-business/blog/maximising-shareholder-value-irony

increase the revenue of the firm, even if the interests of the workers are conflicting with these of the shareholders.

Importantly, we show that a minority employee representation can have an impact on the choice of the projects by the board and that a board that would have invested in a short-term project without employee representation may invest in a long-term project when employees hold some seats on the board. One empirical prediction is therefore that firms with employee representatives on their board should invest more in long-term assets, which is consistent with what the Gallois report predicts. This result is due to the fact that employee representatives have an incentive in investing in a long-term project that may reduce the risk for employees of being laid-off while they have little interest in maximizing the shareholder value if they do not hold shares themselves.

Such a change in the firm strategy always benefit the employees and may also be beneficial to shareholders as well as to top executives even if their interests are conflicting with these of the workers, particularly if employees can add valuable information to long-term investment projects. However, it can also be detrimental to shareholders and top executives, if the cost of employee representation exceeds its benefits, or if the value of the short-term strategy for shareholders or top executives is much larger than the value of the long-term strategy. Thus, employee representation should be more beneficial to shareholders in sectors with long-term time horizon, such as the aeronautical, defense or pharmaceutical industries.

Finally, the model predicts that employee representation can lower the agency costs because it may in some cases help align the interests of the top-executives with these of the shareholders.

While the concept of a "stakeholder society" appears somewhat utopian because its materialization would likely pose many new problems, as synthesized by Tirole (2006), the idea has spread in the public opinion and in the political debate that stakeholders other than shareholders should have their say in a firm decision-making process since they are impacted by its externalities. The French law on employee representation on the board of directors offers a good illustration of this increasing concern within the political sphere. First introduced in 1986, under a right-wing government with a view to "sweeten the pill" following a so-called privatization wave, employee representation has been largely strengthen in 2013 by a left wing-government with the declared objective of improving the competitiveness of French firms by limiting the impact of investors' and managers' myopia[12]. This argument can be found in the 2012 "Gallois report" named after renowned French businessman and former CEO of Airbus Louis Gallois, which, amongst various policy propositions to improve the competitiveness of France economy, suggests that employee representation be mandatory on the board of directors of large firms. The rationale behind this proposition is that employee representation would "counterbalance the weight of shareholders by favoring long-term players and giving voice to other stakeholders". The fact that a large fraction of shareholders focus more on short-term returns is a commonly held view in Europe and is supported by empirical findings. Beyer *et al.* (2014) find that *"Nearly all companies describe their ideal shareholder as having a long-term investment horizon but about half of companies' shareholder base has a short-or medium-term horizon"*. The authors distinguish different types of shareholders, as their time horizon may

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[12] The *Ordonnance n°86-1135 du 21 octobre 1986* required firms that had been privatized after 1986 have at least two employee representatives on their boards and allowed other firms to have employee representatives. In both case the number of employee representatives was limited to a third of the total number of seats. This upper limit was not changed by the *loi n° 2013-504 du 14 juin 2013 relative à la sécurisation de l'emploi* which made employee representation mandatory in firms with more than 5,000 employees domestic or 10,000 worldwide.

drastically differ. Typically, passive funds are viewed as long-term players while venture capitalists have very short-term time horizon, at least following an IPO, as shown by Cadman and Sunder (2014). In our model, we assume that shareholders, as well as the top management team, can either have a short- or a long-term time horizon while employees prefer long-term investment projects over short-term ones. While this last assumption may appear controversial, OECD[13] survey suggests that the job tenure of the majority of workers is greater than five years. Yet, as shown by Mannix and Loewenstein (1993), workers have a long-term time horizon, unless the turnover is high. The agreement signed on February 18th 2010 in the German metalworking and electrical industries is good illustration: workers union accepted a temporary a wage-freeze in exchange for jobs safeguard and a focus on training.

To date, there are relatively few papers that relates directly to employee representation on the board of directors. However, the question to know whether it increases or decreases firm value is not a new one. As soon as 1979, Jensen and Meckling argued that the very absence of employee-elected directors when they are not mandatory is the best evidence that employee representation is not in the interest of shareholders.

Using a sample of the 250 largest publicly held German corporations, Gorton and Schmid (2004) show that firms with equal representation of shareholders and employees on the supervisory board have a market value by one third lower than firms where only one third of the seats of the supervisory board are occupied by employees. They argue that this may come from the fact that labor utility function is different from shareholders utility function. Using a larger sample, Fauver

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and Fuerst (2006) find that prudent levels of employee representation improve firm value. They show that the optimal level of representation is under one half.

An important argument in favor of employee representation, that can be found in Fauver and Fuerst, along with a very comprehensive literature review, is that there may be a prisoner's dilemma: employee representation increases firm value if and only if it is mandatory for all firms, so that the best CEOs do not flee from firms that allow employees to elect directors. They also argue that employee representation may enhance exchange of information between employees and insiders and thus reduce coordination costs (Freeman and Lazear, 1995). As suggested by Fauver and Fuerst, we will assume that shareholders are reluctant to have employee representation and that the number of employee-elected directors is an exogenous parameter, determined by law requirements.

Another argument, given by Prigge (1998), is that employee representatives may hold specific private information, be tougher monitors and therefore help reduce agency cost. Moreover, the fact that some large firms, such as Google, have set up internal predictive markets to gather information held by employees shows that managers value workers' "wisdom". Megginson et al. (2011) using a sample of large publicly traded French firms from the SBF 120 give consistence to this argument, since they find that employee representation increases the amount of dividend paid to shareholders, which they interpret as a mitigation of agency costs.

Faleye et al. (2006) show that labor-controlled firms invest less in long-term assets. Also our model suggests otherwise, they study labor equity ownership while the employee directors in our model are elected by their peers as employee representatives. They also find that labor-controlled firms take lower risk, a point with which our model is consistent.

The paper is organized as follows. In section 2 we describe the model and then we study the impact of employee representation in two cases: in section 3 we assume that there is no conflict of interest between board members and in section 4 we assume that there is a conflict of interest between employees and either or both of shareholders and top executives. We detail the empirical predictions and policy implications of the model in section 5 before concluding in section 6.

1.2. The Model

We study a board composed of three types of directors – outsiders, insiders and employee representatives – who face an investment decision.

1.2.1. The investment decision

The board must choose to invest in one of two possible projects:

A *long-term risk-free project P1* which brings a revenue R_1 at the end of the period with a probability of success equal to 1,

A *short-term risky project P2* which brings a revenue R_2 at the beginning of the period with a probability p or nothing with probability $(1-p)$ [14].

We assume that both projects require the same initial investment at the beginning at the period. We therefore normalized this investment to 0.

As seen in Beyer *et al.* (2014), a focus on the short-term is often accused of endangering the future of the firm by preventing the decision-makers to make long-term strategic choices of investment. This, referred to as "investor myopia", seems to indicate that investments in order to yield a short-term return are riskier than long-term investments, as is the case for stock holding[15]. Thus, we assume the short-term project to be riskier than the long-term one – which, for simplicity, is risk-free.

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[14] This implies that the value of P1 must be discounted in order to be compared to the expected value of P2.
[15] http://pages.stern.nyu.edu/~adamodar/New_Home_Page/invmgmt/ch3/timerisk.htm

We assume that the revenue of either of the projects depends exclusively on the board composition[16]. Formally, the revenue of the project P1 is such as:

$$R_1 = \alpha_{ins} \times \frac{N_{ins}}{1+N_{ins}} + \alpha_{out} \times \frac{N_{out}}{1+N_{out}} + \alpha_{er} \times \frac{N_{er}}{1+N_{er}} - (N_{ins} + N_{out} + N_{er}) \times \psi$$

And the revenue of the project P2 is such as:

$$R_2 = \alpha_{ins} \times \frac{N_{ins}}{1+N_{ins}} + \alpha_{out} \times \frac{N_{out}}{1+N_{out}} - (N_{ins} + N_{out} + N_{er}) \times \psi = R_1 - \alpha_{er} \times \frac{N_{er}}{1+N_{er}}$$

where $\alpha_{ins} \geq 0$ is the private information of insiders, $\alpha_{out} \geq 0$ is the private information of outsiders and $\alpha_{er} \geq 0$ is the private information of employee representatives $\psi \geq 0$ is the coordination cost between the directors[17]. We assume that insiders, because of their position, have access to the most valuable information. Then,

$$Max[\alpha_{ins}; \alpha_{out}; \alpha_{er}] = \alpha_{ins}$$

We do not make any assumption on the value of α_{out} relative to the value of α_{er}. The fact that employees may hold valuable information for the board is not only present in the literature, as in Prigge (1998), but was also pointed out in discussions with directors[18], and is the main reason why some large firms, including Google, use internal prediction markets. Precisely, employees hold specific information on the business situation and should be able to efficiently drive investment or reduce costs. We assume that amongst each type of players there is some shared information – that is information that is held by all or some players of a type – and individual

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[16] Or, put it another way, we only study the fraction of the revenue that depends on the board composition.
[17] This is similar to the feature used by Raheja (2006). Alternatively, this cost can be interpreted as the directors' fees.
[18] In particular with people from the Institut Français des Administrateurs – the French Institute of Directors – including Alain Martel.

information – specific to one player. This is why the revenue function is designed such as adding a director of a type is becoming less and less interesting as the number of directors of this type grows.

The revenues from P1 and P2 differ because we assume that employee representatives refuse to cooperate when the board choose to invest in the short-term project that is detrimental to them, as we see in the section 1.4. While we assume that only employee representatives can withhold information, insiders may still misbehave by supporting the project that does not maximize the shareholder value. In a sense we assume that employee have a greater "misbehavior margin" than insiders. This assumption comes from the fact that employee representatives generally enjoy a better job protection than insiders. Under the French law for instance, it is virtually impossible to lay-off an employee representative – so as to prevent employees' rights violations, while removing a top executive is much easier. Therefore, we assume that insiders can only partially misbehave and cannot frontally oppose the board by withholding their information. Another possible justification would consist in arguing that employees can extract and share more valuable information for their preferred project.

For simplicity, we assume the coordination costs to be linear – since we model the value added by each type of directors as a concave function, the effect of having a convex cost would be very limited. The reason why there is an employee coordination cost even when they do not cooperate can be explained by the fact that they may oppose the other board members, reducing the efficiency of the board meetings.

In the absence of employee representation both projects bring the same revenue R with

$$R = \alpha_{ins} \times \frac{N_{ins}}{1+N_{ins}} + \alpha_{out} \times \frac{N_{out}}{1+N_{out}} - (N_{ins}+N_{out}) \times \psi = R_2 + N_{er} \times \psi = R_1 - \alpha_{er} \times \frac{N_{er}}{1+N_{er}} + N_{er} \times \psi$$

1.2.2. The board composition

We assume that the interests of *outsiders* are perfectly aligned with these of the shareholders who elect them, and therefore act accordingly to maximize the shareholder value. The number of outsiders on the board is N_{out} and they discount the future at a factor $\delta_{out} \in [0;1]$ [19] per period. The Gallois report states that shareholders and top-executive try to obtain short-term returns at the expense of the long-term interest of the firm and its employees. This suggests that different types of agents may discount future cash-flows at different rates, and in particular that the discount rate used by shareholders and top executives is higher than this used by employees. We differ from the Gallois report in that we do not believe that shareholders and insiders necessarily use a high discount rate but agree that they may have different time horizon and therefore assume different discount factors between the different agents.

Insiders are members of the top management team. They have an interest in term of reputational capital to maximize the value of the board decision, but since their discount factor may be different from this of outsiders, they may misbehave – that is vote for a project that does not maximize the shareholder value – if not properly incentivized. We assume for simplicity that incentives can only be given to all insiders. The number of insiders on the board is N_{ins} and their discount factor is $\delta_{ins} \in [0;1]$.

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[19] Note that all parameters δ are of the form $\frac{1}{1+r}$ where r is the discount rate for the period. We use the discount factor δ for simplicity.

Employee representatives are elected by their peers accordingly to the law to represent them and defend their interests. We assume that employees, unlike insiders, have no interest in maximizing the firm value because they are not shareholders and the reputational capital would be negligible for them. Importantly, we assume that employee representatives always act in the employees' best interest, even if having a seat on the board may alter their utility function[20]. This implies that employee representatives cannot be "bought" by shareholders or by the management; they cannot be incentivized to act against the employees' interests. The number of employee-representatives on the board is N_{er} and their discount factor is $\delta_{er} \in [0;1]$.[21]

We do not make any assumptions on the values of the different discount factors but study what happens in different cases – formally we distinguish in section 3 and 4 the cases where δ_{out} and δ_{ins} are larger or lower than the probability of success p of the project P2. Note that we do not need to make an assumption on the value of δ_{er} for the employees to always prefer the long-term project, because we assume in the next section that the cost they incur when P2 fails is high enough that they always prefer P1. However, as stated in the introduction, the fact that employee job tenure seems to be superior to five years for most of them, combined to the time horizon experimental study by Mannix and Loewenstein (1993) would suggest that employees have a preference for long-term, safer investments. Beyer *et al.* (2014) show that management believe they have a shorter time horizon than their shareholder base. In terms of discount factor, this

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[20] For instance, under the French law, employee representatives benefit from exclusive employment-protection rights.

[21] The main results of the paper would hold with $\delta_{out} = \delta_{ins} = \delta_{er}$. The only result that would not is the fact that employee representation may alter — mitigate or aggravate — the conflict of interest between shareholders and top executives, because in our model, interest of shareholders and top executives are aligned when $\delta_{out} = \delta_{ins}$
However, this particular result could be found by introducing another form of conflict of interest — such as a private benefit for top executives on one or the other of the projects.

would suggest that $\delta_{ins} > \delta_{out}$. We however study both cases when this inequality is satisfied and when it is not.

We assume that the board composition is decided by shareholders before the choice of the project.

1.2.3. Directors' preferences

We assume that all directors of a same type – outsiders, insiders or employees – act accordingly to their type and vote for their group preferred project. The decision is taken on the simple majority rule. In case of equality, the chairman takes the decision and, the chairman is always an outsider[22].

Outsiders and insiders preferred project depends on the factor at which they discount future cash-flows. Since outsiders act in the shareholders best interest, they want to maximize the firm value, which means that, in the absence of employee representation, they have a preference for the long-term project if and only if:

$$\delta_{out} \times R \geq p \times R \Leftrightarrow \delta_{out} \geq p$$

We assume that insiders enjoy a reputational benefit relative to the firm value, that we model by a share $b > 0$ of the firm value. Therefore, in the absence of employee representation they have a preference for the long-term project if and only if:

$$b \times \delta_{ins} \times R \geq b \times p \times R \Leftrightarrow \delta_{ins} \geq p$$

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[22] We make this assumption for the sake of simplicity only as it does not change the signification of the different outcomes.

We therefore define the preference for the long (short) term as the value of the discount factor for the long-term project relative to the risk of the short-term project in the absence of employee representation.

We assume that employee representatives always prefer the long-term project because 1/ employees have generally no claim on the firm's benefit once their wages are paid, and 2/ while both projects bring the same revenue, one of them is riskier than the other. We assume that in case of failure of P2, employees incur a loss C_{er} capturing the fact that bad firm performance in the studied period can result in lay-offs or wage cuts at a later period. As we said, we assume that incentivizing employee representatives alone is not possible; we furthermore assume that it is too costly to incentivize employees to induce them to prefer the project P2. Formally:

$$C_{er} > \frac{(p - \delta_{out}) \times R_1}{\delta_{er} \times (1 - p)} \quad \text{(see Appendix 1)}$$

In Chemla (2005) the threat of a takeover refrain stakeholders investment. We adopt a somehow similar view by assuming that employees only cooperate with the board if the long-term project is chosen, that is if they are given some sort of insurance that the management do not intend to destroy jobs. At some level, information sharing by the employee representatives can be seen as the employees' investment in a project. This investment should be greater if there is less risk for them to be laid-off. Note that we assume that financial distress costs are greater for employees than for shareholders and top executives. For simplicity we assume that financial distress costs equal 0 for outsiders and insiders.

Finally, insiders can be incentivized so as to induce them to vote for the shareholders' preferred project. For simplicity, incentives are paid at the same time the project brings a revenue – that is at the beginning of the period for P2 and at the end of the period for P1.

Finally, we assume that the discount factor used by shareholders is known from all players because it can be extracted from the rate of return they require. We also assume that all players also know that employee representatives always prefer the risk-free project P1 but that only the top executives know their own discount factor which they only reveal once asked what project they will support.

The timing is thus as follows:

1/ The shareholders elect a board with N_{ins} insiders, N_{out} outsiders and employees elect N_{er} of their peers according to the law

2/ The shareholders learn the discount factor – preference – of the insiders

3/ The shareholders decide whether or not to incentivize insiders

4/ The board choose to invest in project P1 or P2

5/ If chosen, P2 yields an immediate revenue with probability p.

6/ At the end of the period, P1 yields, if chosen, a certain revenue.

1.3. Impact of employee representation in the absence of conflict of interest

In the following section, we determine the optimal board composition in the absence of conflict of interest, that is, if all directors want to invest in the project P1. Note that since shareholders do not know if insiders will behave or not they may prefer not to elect the optimal number of insiders. In the absence of conflict of interest, taking the derivative of R_1 in N_{er} gives:

$$\frac{dR_1}{dN_{er}} = \alpha_{er} \times \frac{1}{\left(1+N_{er}\right)^2} - \psi$$

$$\frac{dR_1}{dN_{er}} = 0 \Leftrightarrow \psi = \alpha_{er} \times \frac{1}{\left(1+N_{er}\right)^2}$$

$$\frac{dR_1}{dN_{er}} = 0 \Leftrightarrow N_{er} = \sqrt{\frac{\alpha_{er}}{\psi}} - 1$$

Proposition 1: in the absence of conflict of interest there is a cutoff $\alpha_{er}{}^{\min}$ such as for all $\alpha_{er} \geq \alpha_{er}{}^{\min}$ it is always value maximizing to have at least one employee representative.

This means that if shareholders, insiders and employee representatives all prefer the long-term project, it is always optimal for the shareholders to have a least one employee seating on the board as long as employees hold information with sufficient value.

From the previous result, it is optimal for the shareholders to have at least one employee representative seating on the board if and only if:

$$\sqrt{\frac{\alpha_{er}}{\psi}} - 1 \geq 1 \Leftrightarrow \alpha_{er} \geq \alpha_{er}{}^{\min} = 4 \times \psi$$

Similarly, we find that

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$$\frac{dR}{dN_{ins}} = 0 \Leftrightarrow N_{ins} = \sqrt{\frac{\alpha_{ins}}{\psi}} - 1$$

$$\frac{dR}{dN_{out}} = 0 \Leftrightarrow N_{out} = \sqrt{\frac{\alpha_{out}}{\psi}} - 1$$

Hence, it is optimal for the shareholders to have at least one director of type i seating on the board if and only if:

$$\alpha_i \geq 4 \times \psi$$

In particular, in the absence of conflict of interest, the optimal number of employee representatives is between 1 and one third of the total seats number – the requirements of the French law – if and only if α_{er} is such as:

$$2 \times \sqrt{\psi} \leq \sqrt{\alpha_{er}} \leq \frac{1}{2} \times \left(\sqrt{\alpha_{ins}} + \sqrt{\alpha_{out}} \right) \qquad \text{(see Appendix 2)}$$

The revenue with this optimal composition is therefore:

$$R_1^* = \alpha_{ins} + \alpha_{out} + \alpha_{er} - 2 \times \sqrt{\psi} \times \left(\sqrt{\alpha_{ins}} + \sqrt{\alpha_{out}} + \sqrt{\alpha_{er}} \right) - 3 \times \psi \quad \text{(see Appendix 3)}$$

Lemma 1: in the absence on conflict of interest, a board with a relative majority of insiders maximizes the shareholder value.

Since we assume that $\alpha_{ins} \leq \alpha_{out}$ we have $\sqrt{\frac{\alpha_{ins}}{\psi}} - 1 \leq \sqrt{\frac{\alpha_{out}}{\psi}} - 1 \Leftrightarrow N_{ins} \leq N_{out}$

Since we assume that $\alpha_{er} \leq \alpha_{out}$ we have $\sqrt{\frac{\alpha_{er}}{\psi}} - 1 \leq \sqrt{\frac{\alpha_{out}}{\psi}} - 1 \Leftrightarrow N_{er} \leq N_{out}$

In particular, this means that in the absence of conflict of interest, a majority of employee representatives, as required by the German law in largest firms, is never optimal[23].

In the absence of employee representation it means that leaving the control of the board to insiders is value maximizing for shareholders in the absence of conflict of interest. It can also be the case even in the presence of conflict of interest as in Adams & Ferreira [2007].

Lemma 2: employee representation may reduce the conflict of interest between employees and shareholders as well as between employees and insiders.

Since the presence of employee representatives alters the revenues of P1 and P2, it is possible that a conflict of interest between them and outsiders and or between them and insiders vanish when they hold seats on the board.

Formally, it is possible that the two following inequalities be true:

$$\delta_{out} \leq p$$

$$\delta_{out} \times R_1 \geq p \times R_2$$

This means that while shareholders are better off with project 2 in the absence of employee representation, project 1 maximizes the shareholder value when employee representatives hold board seats.

Because $\delta_{out} \times R_1 \geq p \times R_2 \Leftrightarrow \delta_{out} \times \left(R_2 + \alpha_{er} \times \dfrac{N_{er}}{1 + N_{er}} \right) \geq p \times R_2$ the higher the value of the information held by employee representatives, the more likely the inequality to be verified.

The same relation holds for insiders if $\delta_{ins} \leq p$ and $\delta_{ins} \times R_1 \geq p \times R_2$.

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[23] However, since we do not modelize monitoring, this may not stand, in particular in a dual board system.

We can also remark that employee representation can align the interests of shareholders and insiders if these where conflicting in the absence of employee representation. Formally, when

$$\delta_{out} \le p \quad \text{and} \quad \delta_{out} \times R_1 \ge p \times R_2 \quad \text{and} \quad \delta_{ins} \ge p \quad \text{or when} \quad \delta_{out} \ge p \quad \text{and} \ \delta_{ins} \le p \quad \text{and} \quad \delta_{ins} \times R_1 \ge p \times R_2 .$$

This is consistent with Ginglinger et al. (2011) who found that employee representation reduces the agency costs. The adverse effect here is that employee representation can also create conflict of interest if both outsiders and insiders would have had a preference for the short-term project in the absence of employee representation but that one of the two groups do not anymore with employee representation.

1.4. Impact of employee representation with conflict of interest

Proposition 2: A board with employee representatives invests in the long-term project P1 while it would have invested in the short-term project P2 without them when $\delta_{out}^{\ max} \geq \delta_{out} \geq \delta_{out}^{\ min}$. The cutoffs $\delta_{out}^{\ max}$ and $\delta_{out}^{\ min}$ take different values depending on the values of δ_{out} and δ_{ins} relative to p.

This means that employee representation may, as predicted by the Gallois report, alter the board choice, making it switch from short-term to long-term strategy. This can happen when the difference in terms of shareholder value between the short-term and the long-term strategies is not too large. Indeed, if the short-term project maximizes by large the shareholder value, it is unlikely that the value added by employee representatives to the long-term project be large enough to modify shareholders' preference.

We distinguish and study three cases here to determine the different values taken by the cutoffs:

1/ shareholders would have preferred the long-term project in the absence of employee representation but insiders would have preferred the short term project. Formally, $\delta_{out} \geq p$ and $\delta_{ins} \leq p$.

2/ shareholders would have preferred the short-term project in the absence of employee representation but insiders would have preferred the long term project. Formally, $\delta_{out} \leq p$ and $\delta_{ins} \geq p$.

3/ shareholders and insiders would have preferred the short-term project in the absence of employee representation. Formally, $\delta_{out} \leq p$ and $\delta_{ins} \leq p$.

Note that if both shareholders and insiders would have preferred the long-term project in the absence of employee representation, the presence of employee representatives has no impact on the choice of the project although it does have an impact on the project value.

Indeed, since

$$\begin{cases} R_1 = R + \alpha_{er} \times \dfrac{N_{er}}{1 + N_{er}} - N_{er} \times \psi \\ R_2 = R - N_{er} \times \psi \end{cases}$$

Then,

$$\begin{cases} \delta_{out} \times R \geq p \times R \\ b \times \delta_{ins} \times R \geq b \times p \times R \end{cases} \Rightarrow \begin{cases} \delta_{out} \times R_1 > p \times R_2 \\ b \times \delta_{ins} \times R_1 > b \times p \times R_2 \end{cases}$$

1/ For the proposition to hold in the first case, that is with $\delta_{out} \geq p$ and $\delta_{ins} \leq p$ a board with no employee representatives must choose the project P2 while a board with a number $N_{er} \geq 1$ of employee representatives must choose the project P1.

In the absence of employee representatives, that is $N_{er} = 0$, the board choose the project P2 if outsiders are a minority and incentivizing insiders to induce them to pick P1 is too costly.

To induce the insiders to behave, shareholders must give each of them a share β_{ins} of the revenue of P1 such as:

$$(\beta_{ins} + b) \times \delta_{ins} \times R \geq b \times p \times R$$
$$\Leftrightarrow \beta_{ins} \geq \beta_{ins}{}^{min} = b \times \dfrac{p - \delta_{ins}}{\delta_{ins}}$$

$\beta_{ins}{}^{min}$ is the minimum share of revenue that must be given to insiders for them to behave.

Incentivizing the insiders does not maximize the shareholder value if shareholders are better off letting them misbehave and choose P2 that is if and only if:

$$\delta_{out} \times R \times \left(1 - N_{ins} \times b \times \frac{p - \delta_{ins}}{\delta_{ins}}\right) \leq p \times R$$

$$\Leftrightarrow \delta_{out} \leq \delta_{out}{}^{max\prime} = p \times \frac{\delta_{ins}}{\delta_{ins} - N_{ins} \times b \times \left(p - \delta_{ins}\right)}$$

When there are employee representatives on the board, that is $N_{er} \geq 1$, the board always choose P1 if the insiders are a minority, that is if $N_{er} + N_{out} \geq N_{ins}$, in which case $\delta_{out}{}^{min\prime} = 0$. Otherwise, when insiders control the board, the firm invests in P1 if and only if shareholders find it value maximizing to incentivize insiders.

In order to behave, each insider must be given a share β_{ins} of the revenue such as:

$$\left(\beta_{ins} + b\right) \times \delta_{ins} \times R_1 \geq b \times p \times R_2$$

$$\Leftrightarrow \beta_{ins} \geq \beta_{ins}{}^{min} = b \times \frac{p \times R_2 - \delta_{ins} \times R_1}{\delta_{ins} \times R_1}$$

Incentivizing the insiders to behave maximizes the shareholder value if and only if:

$$\delta_{out} \times R_1 \times \left(1 - N_{ins} \times b \times \frac{p \times R_2 - \delta_{ins} \times R_1}{\delta_{ins} \times R_1}\right) \geq p \times R_2$$

$$\Leftrightarrow \delta_{out} \geq \delta_{out}{}^{min\prime} = p \times \frac{\delta_{ins} \times R_2}{\delta_{ins} \times R_1 \times \left(1 + N_{ins} \times b\right) - N_{ins} \times b \times p \times R_2}$$

Thus, proposition 2 holds in this case for $\delta_{out} \leq \delta_{out}^{max'} = \dfrac{p \times \delta_{ins}}{\delta_{ins} - N_{ins} \times b \times (p - \delta_{ins})}$ and

$\delta_{out} \geq \delta_{out}^{min'} = \dfrac{p \times \delta_{ins} \times R_2}{\delta_{ins} \times R_1 \times (1 + N_{ins} \times b) - N_{ins} \times b \times p \times R_2}$ if insiders are a majority or $\delta_{out}^{min} = \delta_{out}^{min'} = 0$

if they are not.

2/ For the proposition to hold in the second case, that is with $\delta_{out} \leq p$ and $\delta_{ins} \geq p$ a board with no

employee representatives must choose the project P2 while a board with a number $N_{er} \geq 1$ of

employee representatives must choose the project P1.

In the absence of employee representatives, the board controlled by outsiders will always choose

P2, in which case $\delta_{out} \leq \delta_{out}^{max''}$ is always satisfied – that is to say that $\delta_{out}^{max''}$ equals 1. Otherwise,

a board controlled by insiders will invest in P2 only if shareholders are better off incentivizing

insiders.

Insiders behave if given each a share β_{ins} of the revenue such as:

$(\beta_{ins} + b) \times p \times R \geq b \times \delta_{ins} \times R$

$\Leftrightarrow \beta_{ins} \geq \beta_{ins}^{min'} = b \times \dfrac{\delta_{ins} - p}{p}$

Hence, incentivizing the insiders maximizes the shareholder value if and only if:

$p \times R \times \left(1 - N_{ins} \times b \times \dfrac{\delta_{ins} - p}{p}\right) \geq \delta_{out} \times R$

$\Leftrightarrow \delta_{out} \leq \delta_{out}^{max''} = p - N_{ins} \times b \times (\delta_{ins} - p)$

When there are employee representatives on the board, the firms invest in P1 in two cases:

- if insiders and employee representatives are a majority but outsiders are better off not giving incentives to insiders
- if outsiders control the board but find it more profitable to invest in P1 than in P2 – because the presence of employee representatives changes the revenues of P1 and P2.

In order to induce insiders to behave, shareholders must give each of them a share β_{ins} of the revenue such as:

$$\left(\beta_{ins} + b\right) \times p \times R_2 \geq b \times \delta_{ins} \times R_1$$

$$\Leftrightarrow \beta_{ins} \geq \beta_{ins}{}^{\min''} = b \times \frac{\delta_{ins} \times R_1 - p \times R_2}{p \times R_2}$$

Incentivizing the insiders does not maximize the shareholder value if and only if:

$$p \times R_2 \times \left(1 - N_{ins} \times b \times \frac{\delta_{ins} \times R_1 - p \times R_2}{p \times R_2}\right) \leq \delta_{out} \times R_1$$

$$\Leftrightarrow \delta_{out} \geq p \times \frac{R_2}{R_1} \times \left(1 - N_{ins} \times b \times \frac{\delta_{ins} \times R_1 - p \times R_2}{p \times R_2}\right)$$

Outsiders find it more profitable to vote for P1 if and only if:

$$p \times R_2 \leq \delta_{out} \times R_1$$

$$\Leftrightarrow \delta_{out} \geq p \times \frac{R_2}{R_1}$$

Therefore, since,

$$p \times \frac{R_2}{R_1} \geq p \times \frac{R_2}{R_1} \times \left(1 - N_{ins} \times b\right) - N_{ins} \times b \times \delta_{ins}$$

the value for the cutoff is $\delta_{out}{}^{min''} = p \times \dfrac{R_2}{R_1}$.

Thus, proposition 2 holds in this case for $\delta_{out}{}^{min} = \delta_{out}{}^{min''} = p \times \dfrac{R_2}{R_1}$ and

$$\delta_{out}{}^{max} = \delta_{out}{}^{max''} = p - N_{ins} \times b \times (\delta_{ins} - p).$$

3/ For the proposition to hold in the third case, that is with $\delta_{out} \leq p$ and $\delta_{ins} \leq p$ a board with no employee representatives must choose the project P2 while a board with a number $N_{er} \geq 1$ of employee representatives must choose the project P1.

In this case, since $\delta_{out} \leq p$ and $\delta_{ins} \leq p$ a board without employee representatives always pick the project P2 because it maximizes the value for both the shareholders and the insiders.

In the presence of employee representatives, the board choose the project P1 if one of the following is true:

- P1 maximizes the shareholder value and insiders are a minority

- P1 maximizes both the shareholder and insider value

- P1 maximizes the shareholder value and insiders are majority but shareholders are better off incentivizing them

- P1 maximizes the insider value and shareholders are better off not incentivizing them

P1 maximizes the shareholder value if and only if:

$$p \times R_2 \leq \delta_{out} \times R_1$$
$$\Leftrightarrow \delta_{out} \geq \delta_{out}{}^{min''} = p \times \dfrac{R_2}{R_1}$$

P1 maximizes the insider value if and only if:

$$b \times p \times R_2 \le b \times \delta_{ins} \times R_1$$

$$\Leftrightarrow \delta_{ins} \ge \delta_{ins}^{\ min} = p \times \frac{R_2}{R_1}$$

Shareholders are better off incentivizing insiders if and only if:

$$\delta_{out} \times R_1 \times \left(1 - N_{ins} \times b \times \frac{p \times R_2 - \delta_{ins} \times R_1}{\delta_{ins} \times R_1}\right) \ge p \times R_2$$

$$\Leftrightarrow \delta_{out} \ge \delta_{out}^{\ min'} = \frac{p \times \delta_{ins} \times R_2}{\delta_{ins} \times R_1 \times (1 + N_{ins} \times b) - N_{ins} \times b \times p \times R_2}$$

(from Case 1/)

Then the binding constraint for proposition 2 to holds in this case is:

$$\delta_{out} \ge \delta_{out}^{\ min'''} = \max\left[\delta_{out}^{\ min'}; \delta_{out}^{\ min''}\right]$$

Finally the values of the cutoff for proposition 2 to hold in any case are:

$$\delta_{out}^{\ min} = \max\left[\delta_{out}^{\ min'}; \delta_{out}^{\ min''}\right] = \max\left[\frac{p \times \delta_{ins} \times R_2}{\delta_{ins} \times R_1 \times (1 + N_{ins} \times b) - N_{ins} \times b \times p \times R_2}; p \times \frac{R_2}{R_1}\right]$$

$$\delta_{out}^{\ max} = \min\left[\delta_{out}^{\ max'}; \delta_{out}^{\ max''}\right] = \min\left[p \times \frac{\delta_{ins}}{\delta_{ins} - N_{ins} \times b \times (p - \delta_{ins})}; p - N_{ins} \times b \times (\delta_{ins} - p)\right]$$

Unsurprisingly, since $R_1 = R_2 + \alpha_{er} \times \dfrac{N_{er}}{1 + N_{er}}$, the higher the value of the information held by the

employees the lower the minimal cutoff.

The higher the probability of success of the project 2, the higher the minimal and maximal

cutoffs.

Proposition 3: There is a cutoff $\underline{\delta_{out}}$ such as for all $\delta_{out} \geq \underline{\delta_{out}}$ and $\delta_{out}^{\,max} \geq \delta_{out} \geq \delta_{out}^{\,min}$ the presence of employee representatives always maximizes the shareholder value.

This means that when the presence of employee representatives has an impact on the board strategy, it also maximizes the shareholder value if shareholders use a large enough discount factor.

To determine the cutoff $\underline{\delta_{out}}$, we use the same the same three cases as in proposition 2.

1/ In the first case $\delta_{out} \geq p$, and

$$\left[\delta_{out}^{\,min\prime};\delta_{out}^{\,max\prime}\right]=\left[\frac{p\times\delta_{ins}\times R_2}{\delta_{ins}\times R_1\times(1+N_{ins}\times b)-N_{ins}\times b\times p\times R_2};p\times\frac{\delta_{ins}}{\delta_{ins}-N_{ins}\times b\times(p-\delta_{ins})}\right]$$

The employee representation that switches the board choice from project 2 to project 1 maximizes the shareholder value if one of the followings in verified:

- $N_{er}+N_{out}\geq N_{ins}$ and $\delta_{out}\times R_1\geq p\times R$

- $N_{ins}>N_{er}+N_{out}$ and $\delta_{out}\times R_1\geq p\times R\times\left(1-N_{ins}\times b\times\frac{\delta_{ins}-p}{p}\right)$

Therefore, the binding constraint is $\delta_{out}\times R_1\geq p\times R\Leftrightarrow\delta_{out}\geq\underline{\delta_{out}}{}'=p\times\dfrac{R}{R_1}$

In particular, since we know that $\delta_{out}\geq p$ and that $R=R_1-\alpha_{er}\times\dfrac{N_{er}}{1+N_{er}}+N_{er}\times\psi$ the constraint is always met when the benefit of employee representation exceed its cost, that is when

$\alpha_{er}\times\dfrac{N_{er}}{1+N_{er}}\geq N_{er}\times\psi$.

2/ In the second case $\delta_{out} \leq p$ and $\left[\delta_{out}^{\ \min''}; \delta_{out}^{\ \max''}\right] = \left[p \times \dfrac{R_2}{R_1}; p - N_{ins} \times b \times (\delta_{ins} - p)\right]$

The board choose the project 1 in the presence of employee representatives if outsiders are a minority and incentivizing insiders is too costly. Hence, employee representation maximizes the shareholder value if and only if

$$\delta_{out} \times R_1 \geq p \times R \times \left(1 - N_{ins} \times b \times \frac{\delta_{ins} - p}{p}\right)$$

$$\Leftrightarrow \delta_{out} \geq \underline{\delta_{out}}' = p \times \frac{R}{R_1} \geq \underline{\delta_{out}}'' = p \times \frac{R_2}{R_1} \times \left(1 - N_{ins} \times b \times \frac{\delta_{ins} \times R_1 - p \times R_2}{p \times R_2}\right)$$

3/ In the third case $\delta_{out} \leq p$ and the constraint for the board to board to switch from the short-term to the long-term project is $\delta_{out}^{\ \min} = \max\left[\dfrac{p \times \delta_{ins} \times R_2}{\delta_{ins} \times R_1 \times (1 + N_{ins} \times b) - N_{ins} \times b \times p \times R_2}; p \times \dfrac{R_2}{R_1}\right]$

The presence of employee representatives maximizes the shareholder value if:

-   $N_{er} + N_{out} \geq N_{ins}$ and $\delta_{out} \times R_1 \geq p \times R$

-   $N_{ins} > N_{er} + N_{out}$ and $\delta_{out} \times R_1 \times \left(1 - N_{ins} \times b \times \dfrac{p \times R_2 - \delta_{ins} \times R_1}{\delta_{ins} \times R_1}\right) \geq p \times R$

The latter is the binding constraint; hence proposition 3 holds in this case for:

$$\delta_{out} \geq \underline{\delta_{out}}''' = \frac{p \times \delta_{ins} \times R}{\delta_{ins} \times R_1 \times (1 + N_{ins} \times b) - N_{ins} \times b \times p \times R_2}$$

Finally,

$$\underline{\delta_{out}} = \max\left[\underline{\delta_{out}}';\underline{\delta_{out}}'';\underline{\delta_{out}}'''\right] = \max\left[p\times\frac{R}{R_1};p\times\frac{R}{R_1}\times\left(1-N_{ins}\times b\times\frac{\delta_{ins}-p}{p}\right);\frac{p\times\delta_{ins}\times R}{\delta_{ins}\times R_1\times\left(1+N_{ins}\times b\right)-N_{ins}\times b\times p\times R_2}\right]$$

Since $\underline{\delta_{out}}' \geq \underline{\delta_{out}}''$, this simplifies to

$$\underline{\delta_{out}} = \max\left[p\times\frac{R}{R_1};\frac{p\times\delta_{ins}\times R}{\delta_{ins}\times R_1\times\left(1+N_{ins}\times b\right)-N_{ins}\times b\times p\times R_2}\right]$$

Thus, employee representation not only may impact the choice of the project by the board, but it also can be done in the shareholders best interest. It is also obviously always in the employees interest since we assume that the short-term project P2 always costs them more than the long-term project P1.

As for insiders, they always benefit from employee representation if:

$$b\times\delta_{ins}\times R_1 \geq b\times p\times R$$
$$\Leftrightarrow \delta_{ins} \geq p\times\frac{R}{R_1}$$

1.5. Policy implications and empirical predictions

Our model provides several empirical predictions regarding the impact of employee representation. In this section we detail these predictions before discussing their policy implications.

We show that even if employees hold only a minority of the board seats, they can influence the board decisions, and in particular make the firm shift from short-to long-term investments, as argued in the Gallois report. Thus, firms with employee representatives on their board should invest more in long-term assets than firms with no employee representation. This does not contradicts Faleye, Mehrotra and Morck (2006) who find that labor-controlled firms invest less in long-term assets because we assume in our model that employees are not shareholders. In sectors already investing a lot in long-term projects, such as aeronautical, defense or pharmaceutical industries, employee representation should have a stronger positive impact on shareholder value that in other sectors, because of the relative convergence of interest between shareholders and employees. However, the model predicts that it will only be the case for firms whose shareholders have a relatively long-term time horizon – passive funds rather than hedge funds.

We also show that employee representatives can provide the board with valuable information, thus possibly reducing the extent of the conflict of interest between them and shareholders as well as between shareholders and managers. Hence, firms in which employee representation has an impact on the time-horizon of investments, should have a higher market value than firm without employee representation and lower agency costs which should lead higher payouts to shareholders. This is consistent with Fauver and Fuerst (2006) who find that a limited employee representation increases significantly the value of large German firms as well as with Ginglinger,

et al. (2011) who find that dividends are higher in companies with employee representatives on the board, what they interpret as a reduction of the agency costs. The opposite effects – lower market value and higher agency costs – should be observed in firms whose shareholders have a shorter time horizon.

Finally, employee representation may have an impact on the shareholder structure of firms, driving away investors with the shortest time horizons.

Our model thus offers support for a mandatory employee representation. If the objective pursued by the policy-maker is either to give a real power to employees in firms' decision-making, or to induce firms to invest in long-term projects rather than in short-term risky ones, it can be achieved by making employee representation on the board directors a requirement. Depending on the time horizon of the shareholders base and management of the targeted firms, such a policy may hurt or benefit the shareholders. Regardless of the impact on shareholders wealth, employee representation may be optimal if we take into account the impact on other stakeholders.

However, because employee representation may discourage investors looking for short-term returns, the policy-maker may want to refrain to extend it to firms with high growth prospects, or to firms which typically attract short-term investors such as venture capitalist.

1.6. Conclusion

While the shareholder value theory is increasingly challenged both inside and outside the academic world, more attention is paid to the role of other stakeholders. We study the impact of employee representation on the board of directors. Employees are stakeholders who hold valuable information but whose interest and time horizon may differ from these of shareholders and managers. We show that a minority of employee representatives on the board can impact the strategic choices made by the firm, and cause lead to more investment in long-term projects. We show that employee representation increases the shareholder value if the conflict of interest is not too severe and employees can provide valuable enough information.

Employee representation is always beneficial to employees and can also be to shareholders and managers if they have relatively long time horizons. For the firms where employee representation is detrimental to shareholders, it may still be beneficial to a stakeholder society – including the state, communities, commercial contractors, etc.

Thus, mandating employee representation on the board of directors appears as an attractive policy since it could have a globally positive impact on stakeholders' wealth. In particular, it should increase the shareholder value as long as the policy is restricted to large, mature firms whose shareholders have a relatively long time horizon.

Appendix

Appendix 1: Condition under which incentivizing employees is too costly for shareholders

In order to behave – pick P2 over P1 – employees could be given a share β of the expected

revenue of P2, such as:

$$\beta \times p \times \left(\alpha_{ins} \times \frac{N_{ins}}{1+N_{ins}} + \alpha_{out} \times \frac{N_{out}}{1+N_{out}} + \alpha_{er} \times \frac{N_{er}}{1+N_{er}} - \left(N_{ins} + N_{out} + N_{er} \right) \times \psi \right) \geq \delta_{er} \times (1-p) \times C_{er}$$

$$\Leftrightarrow \beta \geq \frac{\delta_{er} \times (1-p) \times C_{er}}{p \times R_1}$$

The minimal level for incentives is thus $\beta = \dfrac{\delta_{er} \times (1-p) \times C_{er}}{p \times R_1}$.

It is not in the shareholders interest to give them this incentive if and only if:

$$p \times R_1 \times (1-\beta) < \delta_{out} \times R_1$$

$$\Leftrightarrow p \times \left(1 - \frac{\delta_{er} \times (1-p) \times C_{er}}{p \times R_1} \right) < \delta_{out}$$

$$\Leftrightarrow p - \delta_{out} < \frac{\delta_{er} \times (1-p) \times C_{er}}{R_1}$$

$$\Leftrightarrow C_{er} > \frac{(p - \delta_{out}) \times R_1}{\delta_{er} \times (1-p)}$$

Appendix 2: Optimal number of employee representation is between 1 and one third of the number of seats

$$\sqrt{\frac{\alpha_{er}}{\psi}} - 1 \leq \frac{1}{3} \times \left(\sqrt{\frac{\alpha_{er}}{\psi}} - 1 + \sqrt{\frac{\alpha_{ins}}{\psi}} - 1 + \sqrt{\frac{\alpha_{out}}{\psi}} - 1 \right)$$

$$\Leftrightarrow \sqrt{\frac{\alpha_{er}}{\psi}} \leq \frac{1}{3} \times \left(\sqrt{\frac{\alpha_{er}}{\psi}} + \sqrt{\frac{\alpha_{ins}}{\psi}} + \sqrt{\frac{\alpha_{out}}{\psi}} \right)$$

$$\Leftrightarrow \frac{2}{3} \times \sqrt{\frac{\alpha_{er}}{\psi}} \leq \frac{1}{3} \times \left(\sqrt{\frac{\alpha_{ins}}{\psi}} + \sqrt{\frac{\alpha_{out}}{\psi}} \right)$$

$$\Leftrightarrow \sqrt{\alpha_{er}} \leq \frac{1}{2} \times \left(\sqrt{\alpha_{ins}} + \sqrt{\alpha_{out}} \right)$$

$$\Leftrightarrow 2 \times \sqrt{\psi} \leq \sqrt{\alpha_{er}} \leq \frac{1}{2} \times \left(\sqrt{\alpha_{ins}} + \sqrt{\alpha_{out}} \right)$$

Appendix 3: Revenue with the optimal board composition in the absence of conflict of interest

$$R_1 = \alpha_{ins} \times \frac{\sqrt{\frac{\alpha_{ins}}{\psi}} - 1}{1 + \sqrt{\frac{\alpha_{ins}}{\psi}} - 1} + \alpha_{out} \times \frac{\sqrt{\frac{\alpha_{out}}{\psi}} - 1}{1 + \sqrt{\frac{\alpha_{out}}{\psi}} - 1} + \alpha_{er} \times \frac{\sqrt{\frac{\alpha_{er}}{\psi}} - 1}{1 + \sqrt{\frac{\alpha_{er}}{\psi}} - 1} - \left(\sqrt{\frac{\alpha_{ins}}{\psi}} - 1 + \sqrt{\frac{\alpha_{out}}{\psi}} - 1 + \sqrt{\frac{\alpha_{er}}{\psi}} - 1 \right) \times \psi$$

$$R_1 = \alpha_{ins} \times \left(1 - \sqrt{\frac{\psi}{\alpha_{ins}}} \right) + \alpha_{out} \times \left(1 - \sqrt{\frac{\psi}{\alpha_{out}}} \right) + \alpha_{er} \times \left(1 - \sqrt{\frac{\psi}{\alpha_{er}}} \right) - \frac{1}{\sqrt{\psi}} \left(\sqrt{\alpha_{ins}} + \sqrt{\alpha_{out}} + \sqrt{\alpha_{er}} - 3 \times \sqrt{\psi} \right) \times \psi$$

$$R_1 = \alpha_{ins} + \alpha_{out} + \alpha_{er} - 2 \times \sqrt{\psi} \times \left(\sqrt{\alpha_{ins}} + \sqrt{\alpha_{out}} + \sqrt{\alpha_{er}} \right) - 3 \times \psi$$

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Chapter 3: Politically Connected Firms: Shadow Connections

Abstract

A number of papers have investigated the implications of political connections. Empirical results strongly suggest that there are benefits for a company to be tied with a politician. In particular, it has been showed that politically connected firms enjoy better conditions on bank loans. We introduce a more accurate definition of political connection. Because politicians with business ties can be suspected of collusion or ethic breach, which can cost them dearly, we distinguish between connections with a top profile, more exposed, politician and connections with a politician at a lesser level. We conduct a cross-country study that shows the importance of making such a discrimination. We find that politically connected firms borrow at a significantly discounted interest rate if 1/ the borrowing company is tied to a lower level politician and 2/ the bank is politically connected. The effect is stronger if the bank also is tied to a less exposed politician. Furthermore, our results suggest that politically connected firms try to minimize the probability of their links being exposed as they avoid borrowing from banks tied to top politicians, particularly during political campaigns.

3.1. Introduction

Politically connected firms have been widely studied over the past 20 years. A number of empirical studies have shown various effects of these connections. The impact of political connections on corporate debt have been particularly thoroughly studied, with studies proving that politically connected firms enjoy various benefits such as access to a greater credit availability, or a higher probability to be bailed out in case of financial distress. Some studies also suggest that these advantages do not come for free and that politically connected firms help politicians get (re)elected more than non-connected one do.

But the number of scandals of bribery involving politicians – such as the very famous cases of former Peru President Fujimori or former Italy Prime Minister Berlusconi who were both convicted, one for bribery, the other for tax fraud – have also shown that, for politicians, having business ties may be risky. Obviously, there is the risk of being charged and convicted, for one involved in illegal activities, but there is also a risk in terms of reputation and career concerns. In 2014, a French Secretary of State had to resigned when it was made public than relatives of his were being investigated for being awarded public contracts. He was not being prosecuted at the time – and still has not been yet – but resigned nonetheless. Thus, it appears that being tied to a company is risky for a politician, whether or not this leads him to some form or misconduct. In this case, one could then expect politicians to be particularly careful when they have such ties, particularly if they enjoy a large media exposure.

Based upon the definition given by Faccio (2006) in her seminal paper, we introduce a new dimension to political connection, by subcategorizing politically connected firms into firms connected with a high profile politician and firms connected with people close to power but in a less visible role. In some sense, we make the hypothesis that while a congressmen need to be very careful to avoid being suspected – of ethic breach or worse – his less-exposed chief of staff have more latitude to do as he pleases. We conduct a cross-country study of the impact of political connection on the interest rate of bank loans, taking into account the visibility variable we introduce.

We find significant evidence that discriminating matters. While Infante and Piazza (2014) show that the bank connection level – local, regional, national – influences the rate of the loan they offer to politically connected borrowers, we show that there is also a strong effect linked to the visibility of the politician a borrower is connected to.

Indeed, using the traditional non-discriminating definition of political connection we show that politically connected firms borrow money from banks at a significantly lower interest rate. Using definitions which distinguish between highly visible and less visible connections, we show that politically connected firms borrow money from banks at a significantly lower interest rate only if 1/ their connection is a less visible one and 2/ the lender is also politically connected.

Finally, we show that politically connected firms borrow less frequently from lenders with a highly visible connection, and that this effect appears to be particularly strong during political campaign prior to an election.

Overall, we provide evidence that the impact of political connections on bank loans strongly differ based on the visibility of the connection of the borrower as well as of the banker.

The paper is organized as follows. Section 2 gives a literature review of politically connected firms. Section 3 describes the methodology, data and model. Section 4 details the results we find. Section 5 gives an extension of the study to account for the effect of elections. Finally, we sum-up and discuss the results in section 6.

3.2. Litterature review

Political connections have already received a large attention, particularly since Faccio (2006) seminal paper on politically connected firms. Even before, in one of the first academic papers to investigate the question of the relation between politicians and firms, Shleifer and Vishny (1994) build a model showing how politicians can benefit from their ties with companies while it could also add value to companies.

While political connections may impact a company's value in many ways, their impact on debt – availability, price, leverage… – has been one of the most studied topics.

What is a politically connected firm? Faccio (2006) gives an excellent definition of political connection: a firm is politically connected when one of its directors, top executives or large shareholders is a current or former member of the parliament, member of the government, head of state or top official. The firm is also considered politically connected if one of its prominent members is closely related – being a close relative or a close friend – to one of the aforementioned persons. In this paper, we use a definition derived from Faccio's – excluding shareholders, relatives and friends – and we also propose and test a new definition, based on the idea that some connections might be as strong – or stronger – while less visible. We assume that the media exposure of top politicians such as member of the parliament or of the government, not to mention the head of state, may limit their room for maneuver because politicians try to avoid being publicly accused or suspected of having conflicting interest. Multiple scandals over the past

few years give support to his assumption. For instance, in November 2014, French State secretary for war veterans resigned from office after it was revealed that a company managed by his relatives received public contracts from the Midi-Pyrénées region whose head belonged to the same political party as the State secretary. Thus, companies might gain more advantages from a connection with someone close to power – even though he might not formally hold any – but has a less visible role, such as a chief of staff.

One of the main advantages for firms to be politically connected seems to be that it increases the availability of credit. Regarding performance, the results are a bit more controversial, although a majority of studies seem to suggest an increase in performance.

Faccio (2006) finds that politically connected firms have higher leverage than others, as well as a worse performance (based on accounting measure). She also finds that a political connection increases the likelihood for a distressed firm to be bailed out. This could explain why politically connected firms are able to borrow more money, at a cheaper rate and therefore have a higher leverage.

This is consistent with Khwaja and Mian (2005) who find that politically connected firms in Pakistan enjoy higher credit availability than their non-connected pairs. They also find the default rate to be more important for politically connected firms. Similarly, Charumilind et al. (2006) find that Thai firms with a connection to banks or to politicians have easier access to long-term loans, are required less collateral and rely more on long-term loans.

Johnson and Mitton (2003) establish a positive link between the value of politically connected Malaysian firms and the ability of the government to provide subsidies. Other politically related advantages of political connections include a greater number of procurement contracts as shown by Goldman et al. (2013) and a protection against regulator enforcement action as well as lower penalties, as shown by Correia (2014). Blau et al. (2013) show that, following the 2008 financial crisis, politically connected firms or firms that lobbied were more likely to receive TARP funds, and in greater amount.

Boubakri et al. (2012) confirm the link between political connection and easier access to credit. Moreover, they find that once politically connected, firms take higher risk and enjoy better performance

Sapienza (2004) find that state-owned banks charge lower interest rates, particularly when they are in a strong electoral position.

Infante and Piazza (2014) conduct a study that offers some similarities with our. They find that politically connected firms in Italy enjoy lower interest rates on bank loans when borrowing to a bank connected at the local level. However, we differ significantly in the scope of the study and the definitions we use. Rather than the "geographical level" – local, regional, national – connection of the lender, we distinguish between highest profile politicians – members of the parliament, of the government or heads of state – and politicians who stay in the shadows – chiefs of staff, ambassadors… - while still having a national influence.

Goldman et al. (2009) find a positive abnormal stock return on the announcement of the nomination of a politically connected directors as well as an increase (decrease) in the firm value when connected to Republicans (Democrats) after the election of a Republican president in 2000.

In the same vein, Akey (2013) finds it rewarding for firms, in term of equity value, to contribute to political campaigns, and the reward is greater when betting on the winner.

Ferguson and Voth (2008) find similarly that firms who supported the Nazi party in Germany outperformed their competitors after Hitler had risen to power. Cooper and al. (2009) find that firms who contribute to political campaign in the US experienced higher stock return, an effect stronger for Democrats and House candidates. However, Fisman et al (2012) find no effect on the market valuation of firms with personal ties to US Vice-President Cheney on various events - Cheney nomination, heart attacks, probability of election, the probability of a war…

Bunkanwanicha and Wiwattanakantang (2007) find that business owners who have been elected to political office use their influence to increase the value of the firms they own. They also find that the business owners who rely the more on government concessions are, along with the wealthiest, the more likely to run for office. Their election is linked with a strong increase in their firms' valuations.

Boubakri, El Ghoul and Saffar (2013) find that politically connected firms hold more cash than others, which, since other studies show that they have less liquidity constraint, is interpreted by the authors either as a sign of weak governance or as a sign of a use by politicians of these firms

as cash cows. This last interpretation can be put in regard with Bertrand, Kramarz, Shoar and Thesmar (2007) who show that politically connected firms create more jobs and destroy fewer plants in swing states, particularly around election years.

Related lending seems to have close effects to political connection but the results appears to be more controversial.

La Porta et al. (2003) find related lending to be associated a lower interest rate, as well as higher rate of default and a lower recovery rate. Petersen and Rajan (1994) find that related lending is valuable in terms of credit availability but not in term of price. Dahiya et al. (2003) find that the negative market reaction on the announcement of a borrower financial distress situation is stronger for banks with a relationship with the borrower.

However, Ferreira and Matos (2012) find that banks implied in a borrower's corporate governance serve more often as lead arranger and charge higher rates, suggesting the existence of a form of looting to the benefit of the bank.

Finally, Maurer and Haber (2003) argue that related lending does not need to lead to looting, but that it is a response to high information and contract enforcement costs.

3.3. Methodology and sample

3.3.1. Data

We obtain data on corporate loans from the DEALSCAN database. We only keep the facilities from a bank to a non financial corporation and only keep the facilities for which the lender is a lead or co-lead arranger or lender. We then only keep the facilities for which we could find ISIN numbers in order to gather accounting data. This reduces the sample to 1142 facilities out of the total 245221 provided by DEALSCAN. We extract accounting information on the borrower on the INFINANCIAL database and information – as well as biographies – on the composition on the board of directors and or of the managers for the lender and the borrower from the database REUTERS and BLOOMBERG BUSINESS. The size of sample was furthermore reduced to 572 facilities as we needed three years of accounting data for each facility. We then determine the politically connected firms based on their current directors and executives biographies, and assumed political connections to remain constant through time.

We also compiled the election dates of between 1979 and 2013 for the countries represented in our sample. We take into account the dates of legislative elections for all countries of the sample as well as the date of presidential elections only for countries in which the president hold significant power[24] .

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[24] These countries are Austria, Finland, France, Indonesia, Ireland, Mexico, Portugal, Russia, South Korea, Taiwan and the United States of America.

3.3.2. Determining political connections

We use a modified version of Faccio's definition as well as a new definition in an attempt to add a new dimension in the study of political connections that we call "exposure" or "visibility".

Faccio (2006) define a politically connected firm as one whose one of the top officers – directors or top executives – or large shareholders is a current or former head of state, member of the government or of the parliament, or is a close friend or relative to one of them. Except for the close friends or relatives, these people indeed hold power, but it is interesting to notice that they enjoy – or suffer from… – a high media exposure. Working for a company while also being a current or former high profile politician might however be risky.

Because there have been multiple scandals of collusion and corruption of politicians by companies – the Whiskey Ring and the Crédit Mobilier scandals in the post Civil War United States, the Stavisky scandal in the 1930's France, the Lockheed bribery scandal in Cold War Europe and United States are only some examples – these implied in a firm's governance might be hampered in their ability to work for the firm as they may fear to be suspected of collusion. Importantly, breaching the law is not the same thing as being suspected of breaching it. The aforementioned French Secretary of state who had to resign when his ties to a public contractor company were made publicly known was not being charged at the time, and still has not. In other words, with power comes media exposure and with media exposure comes precaution, which here could translate into a lower ability to help a company obtaining advantages.

Thus, we make the hypothesis that the impact of political ties on corporate debt – more particularly on credit rate – depends on the media exposure of the politicians the companies – borrower and lender – are linked to. In particular, politically connected borrowers should prefer

to borrow money either from non-connected lenders, or from lender with a low-visibility connection as the advantages in terms of loan price and credit availability would be more important.

To test the hypothesis we use two different definitions of political connections: the first one aims at categorizing the firms that have a highly visible political connection – this means that they are connected through a politician with high media exposure – while the second one aims at categorizing the firms that have a lowly visible political connection. The first definition is derived from Faccio's definition but we exclude from it the companies that are connected through a close relationship as we assumed this would not constitute a highly visible connection. For instance, if one of the directors of a company is a member of a government, the company has a highly visible connection. But if instead of being a member of the government himself the director is a friend or a nephew of a member of the government, we assume this would not qualify as a highly visible connection. In fact, we assume that such a connection may be or may not be highly visible and thus exclude such connections from both definitions. Because of the lack of data, we also exclude connection through a large shareholder.

Definition 1 (type 1 connection): a company is politically connected if one of its directors or managers currently is or formerly was one of the followings:

- head of state
- member of the government
- member of the parliament (including, in one case, of the European parliament).

Definition 2 (type 2 connection): a company is politically connected if one of its directors or managers is or formerly was one of the followings:

- ambassador
- head of a region – such as a governor[25]
- national official – people who work directly under a top official such as head of state or member of the parliament. Examples of people belonging to this category include chiefs of staffs and high level members of a staff/minister, head of a national agency.

Definition 3: the firm is connected either through definition 1 or definition 2.

Importantly, we classify as type 1 someone that we find to be both type 1 and type 2. For instance, a retired army general qualifies as type 2, but a retired army general who is also a former member of the parliament qualifies as type 1. Thus, if such a person seats on the board of directors of a company, the company is labeled as type 1. A company may be politically connected by a number of type 1 and type 2 links but can only be categorized as type-1-connected or as type-2-connected.

Infante and Piazza (2014) offer similarities in the discrimination of the definition, as well as close results. However, while they discriminate connected banks at different levels – local, regional… – we only account for national or top regional level connections for both borrowers and lenders

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[25] Such as US

and distinguish between firms connection based on whether or not they are connected to a high or low profile politician. Importantly, almost all political connections in our sample are at a national level. Indeed, while definition 1 exclude all politicians but national level ones, definition 2 include top regional level politicians such as state governors – though they account in fact for a very small number of our sample. The main difference between the two definitions is the level of media exposure of the politicians.

3.3.3. Model and variables description

We test the following regression:

$$Spread_i = \alpha + \beta_1 \times \sigma(profitability)_i + \beta_2 \times profitability_i + \beta_3 \times leverage_i + \beta_4 \times liquidity_i$$
$$+\beta_5 \times assets_i + \beta_6 \times amount_i + \beta_7 \times maturity_i + \beta_8 \times listed_i + \beta_9 \times related_i + \beta_{10} \times democracy\_index_i$$
$$+\beta_{11} \times Strength(L2)_i + \beta_{12} \times Strength(B1)_i + \beta_{13} \times Strength(B2)_i + \beta_{14} \times L1_i + \beta_{15} \times L2_i$$
$$+\beta_{16} \times B1_i + \beta_{17} \times B2_i + \beta_{18} \times L1*B1_i + \beta_{19} \times L1*B2_i + \beta_{20} \times L2*B1_i + \beta_{21} \times L2*B2_i$$

$Spread_i$ is the number of basis points added to the interest rate level to form the interest rate of facility i.

$\sigma(profitability)_i$ is the volatility of the profitability of the borrower involved in facility i. It is calculated as the standard deviation of the ratio of the EBITDA over the value of total assets of the borrower over the three years prior to the facility start year. It proxies for the risk of the borrower.

profitability$_i$ is the sector-adjusted profitability of the borrower involved in facility *i*. It is calculated as the difference between the ratio of the EBITDA over the value of total assets of the borrower and the average ratio of the sector over the three years prior to the facility start year.

leverage$_i$ is the sector-adjusted leverage of the borrower involved in facility *i*. It is calculated as the difference between the ratio of the value of the long-term debt over the value of total assets of the borrower and the average ratio of the sector over the three years prior to the facility start year.

liquidity$_i$ is the sector-adjusted proxy for liquidity of the borrower involved in facility *i*. It is calculated as the difference between the ratio of the value of the cash & short-term investments over the value of total assets of the borrower and the average ratio of the sector over the three years prior to the facility start year.

assets$_i$ is the log of the total amount of assets of the borrower involved in facility *i*.

amount$_i$ is the logarithm of the amount in USD of facility *i*.

maturity$_i$ is the logarithm of the maturity expressed in months of facility *i*.

listed$_i$ is a dummy variable worth 1 if the borrower involved in facility *i* is a listed company, and 0 otherwise.

related$_i$ is a dummy variable worth 1 if the borrower involved in facility *i* was previously involved in another facility with the same lender as in facility *i*. It proxies for the existence of a lending relationship between the borrower and the lender.

democracy_index$_i$ is the logarithm of the democracy index 2014 published by the Economist Intelligence Unit, for the country of the borrower involved in facility *i*. We use it as a control for country fixed effects.

Strength(L2)$_i$ is either equal to the total number of links of type 2 of the lender involved in facility *i* minus 1, or to 0 if this number of links of type 2 is equal to 0. It proxies for the strength of the type 2 link of the lender[26].

Strength(B1)$_i$ is either equal to the total number of links of type 1 of the borrower involved in facility *i* minus 1, or to 0 if this number of links of type 1 is equal to 0. It proxies for the strength of the type 1 link of the borrower.

Strength(B2)$_i$ is either equal to the total number of links of type 2 of the borrower involved in facility *i* minus 1, or to 0 if this number of links of type 2 is equal to 0. It proxies for the strength of the type 2 link of the borrower. Notice that *Strength(B1)$_i$* and *Strength(B2)$_i$* are not exclusive.

L1$_i$ is a dummy worth 1 if the lender involved in facility *i* is type-1-connected, and 0 otherwise.

L2$_i$ is a dummy worth 1 if the lender involved in facility *i* is type-2-connected, and 0 otherwise. Notice that *L1$_i$* and *L2$_i$* are exclusive.

B1$_i$ is a dummy worth 1 if the borrower involved in facility *i* is type-1-connected, and 0 otherwise.

B2$_i$ is a dummy worth 1 if the borrower involved in facility *i* is type-2-connected, and 0 otherwise. Notice that *B1$_i$* and *B2$_i$* are exclusive.

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[26] No lender in the sample has more than one connection of type 1. Hence, *Strength(L1)$_i$* is always worth 0.

L1*B1$_i$ is a dummy worth 1 if both the lender and borrower involved in facility *i* are type-1-connected, and 0 otherwise.

L1*B2$_i$ is a dummy worth 1 if the lender involved in facility *i* is type-1-connected while the borrower is type-2-connected, and 0 otherwise.

L2*B1$_i$ is a dummy worth 1 if the lender involved in facility *i* is type-2-connected while the borrower is type-1-connected, and 0 otherwise.

L2*B2$_i$ is a dummy worth 1 if both the lender and borrower involved in facility *i* are type-2-connected, and 0 otherwise.

α and *β$_1$* to *β$_{20}$* are the parameters of the model to be estimated. Figure 9 gives a visual description of the regression we test.

Figure 9: Testing the Determinants of the Interest Rate

Lender characteristics

Is the lender type-1-connected?
Is the lender type-2-connected?
Strength of the lender type-2 connection?

Lender-Borrower Interaction

Do they have a lending relationship ?
Are they both type-1-connected?
Is the lender type-1 and the borrower type 2?
Is the lender type-2 and the borrower type 1?
Are they both type-2 connected?

Borrower characteristics

Is the borrower type-1-connected ?
Is the borrower type-2-connected ?
Strength of the borrower type-1 connection
Strength of the borrower type-2 connection
Borrower risk
Borrower profitability
Borrower leverage
Borrower liquidity
Borrower assets
Is the borrower listed?

Borrower country characteristics

Borrower country democracy index

Loan price

Facility Rate Spread

Facility characteristics

Amount
Maturity

126

3.3.4. Sample description

Our sample includes 572 bank loans, involving 51 unique banks and 256 unique borrowers. Most firms come from North America, Europe, Japan or Southeast Asia. The borrower side of the sample is dominated by US firms which accounts for 39% of the number of borrowers, with Japanese firms accounting for 28% of it. Type-1-connected lenders (borrowers) account for 12% (10%) of the total number of lenders (borrowers) which is a relatively high number compared to similar cross-country studies[27] and politically connected firms might be overrepresented due to the greater availability of accounting data (see table 7 in appendix 4). Type-2-connected lenders (borrowers) account for 37% (27%) of the total number of lenders (borrowers) – this proportion not being comparable to any other studies.

Consistent with this, type-2-connected lenders (borrowers) exhibit an average number of links equal to 1.17 (1.70), slightly higher than the average number of links of type-1-connected lenders (borrowers) which equals 1.00 (1.21) (see table 5 in appendix 2).

Borrowers involved in deals with type-2-connected banks appears to be larger in size with a mean total assets close to $50millions against $39millions for borrowers involved in deals with type-1-connected banks.

Borrowers that are connected through a type-2 link have total assets of much larger value with a mean of $88millions against $16millions for borrowers connected through a type 1 links. The difference is even larger for these involved in deals with politically connected lenders (see table

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[27] Lower however than the 23% (37%) of connected firms (lenders) found by Khwaja and Mian (2005)

4a in appendix 1). The average amount of the loan to a type-2-connected borrower is also larger ($1.6millions) than for type-1-connected borrowers ($1.2millions) (see table 4a in appendix 1).

Contrary to what can be found in the literature we do not find strong structural differences between connected and non-connected borrowers. Unlike for instance Faccio (2006), we do not find politically connected borrowers to exhibit a worst – or better – accounting performance. Unlike Boubakri et al. (2013) we do find them to hold more cash or have higher leverage. Neither do we find them to have higher leverage. In fact, our results suggest that type-2-connected borrowers could even have a lower leverage (see table 4b in appendix 1 and table 8 in appendix 5).

3.3.5. Hypotheses

H1a: The interest rate spread is lower for politically connected borrowers than for non-connected borrowers.

Although evidence from the literature is contrasted, we expect to find that being politically connected allow a company to borrow money at a lower rate.

H1b: The interest rate spread is lower for type-2-connected borrowers than for type-1-connected borrowers connected.

As we distinguish between the two types of connection based on the idea that people in a less exposed position are able to help a company more efficiently, we expect that firms with such

connections would have access to cheaper loans than firms connected with a high profile politician.

H1c: The interest rate spread is lower for borrowers with stronger political connections.

We expect to find a positive correlation between the number of political connections within a firm and the interest rate at which the firm borrows money.

H2a: The interest rate spread is higher for politically connected lenders than for non-connected lenders.

Unlike what may have been suggested by Sapienza (2012), we expect to find that politically connected lenders benefit from their connections by charging higher rates than their non-connected peers.

H2b: The interest rate spread is higher for type-2-connected lenders than for type-1-connected lenders.

As for H1b, we expect that the less visible a connection is the less effective it is.

H2c: The interest rate spread is higher for lenders with stronger political connections.

As for H1c, we expect to find a correlation between the number of links of a lender and the rate the lender charges.

H3a: Politically connected borrowers borrow less frequently from connected lenders than from non-connected lenders.

We expect to find that politically connected borrowers try to minimize the visibility of their connection by refraining from borrowing money from banks that are also connected.

H3b: Politically connected borrowers borrow more frequently from lenders connected through type 2 definition than through type 1

Similarly, we expect politically connected borrowers to prefer to borrow money from lenders with a lowly than with a highly visible connection.

One important question remains: what is the impact of a double connection – with both the lender and the borrower connected – on the rate? Litterature give contrasted results. While Khwajan and Mian (2004) do not seem to find an impact, Infante and Piazza (2014) suggest a negative impact on the interest rate when banks politically influenced at the local level lend to politically connected firm. As the scope of our study and, more importantly, the definitions we use significantly differ from theirs, we make no such hypothesis on the impact of a same type double connection – meaning two type-1 connected counterparts or to type-2 connected counterparts –

but we hypothesize that the expected effect from H1b and H2b would hold, that is that it is beneficial to be type-2 rather than type-1 connected for the lender as for the borrower. That is, we make the hypothesis that a company derives stronger benefits from being connected with a politician with a low media exposure than with a high profile politician.

H4: When both the borrower and the lender are connected, the rate is lower if the borrower is type-2-connected than if he is type-1-connected

This hypothesis is similar to H1b but focuses on the effect of a connection on both sides of the loan. As in H1b, we expect to find that a less visible connection confers a greater advantage to the borrower than a more visible one.

H5: When both the borrower and the lender are connected, the rate is higher if the lender is type-2-connected than if he is type-1-connected

This hypothesis is similar to H2b but focuses on the effect of a connection on both sides of the loan. This hypothesis is the lender-equivalent of H4. As in H2b, we expect to find that a less visible connection confers a greater advantage to the lender than a more visible one.

While the "a" hypotheses are intended to test the general effect of political connection for lenders and for borrowers, the "b" hypotheses – as well as H4 and H5 – are particularly designed to test the difference between the two categories of connections we defined. Finally, the "c" hypotheses are designed to test the effect of the number of links, which we assume could capture the strength of a connection.

3.4. Empirical results

3.4.1. Regression results

Our results show that firms – whether they be lenders or borrowers – benefit from political connection in a more complex way than what has been shown so far.

The main result is that connected borrowers of type 2 have access to cheaper credit only if the lender is connected – whether type 1 or type 2, the effect being stronger for type 2. This effect does not hold for type-1-connected borrowers.

We also show that politically connected lenders charge significantly higher rates. This effect is stronger when the lender has multiple connections of type 2 – there is too little diversity in the sample to test this relation for type 1 links.

Moreover, there is a significant positive impact of the borrower's profitability on the rate of interest. While this result could seem counter-intuitive, there might be several explanations for this: borrowers with a higher profitability bear higher risk and therefore are charged more – although we do not find the profitability and volatility of profitability to be correlated – or, paying a higher rate could positively pressured a borrower into performing better. Finally, lenders could take advantage of the more profitable borrowers, as they may have less interest in trying to negotiate lower rates.

These results thus corroborate empirical studies which show that there are benefits for a firm to be politically connected. Importantly, they also support the importance of the type of connection – which we categorized based on a visibility criteria.

In particular, we show that:

1/ a borrower politically connected through a low profile politician (type 2) has access to cheaper credit but only if he borrows from a politically connected lender – with a stronger effect for a type-2-connected lender.

2/ a politically connected lender charges higher rates on average, but lowers rates to a type-2-connected borrower – there is no significant effect with a borrower of type 1.

3/ the strength of the lender link has a positive impact on the rate he charges. This is true for link of type 2 only, as there is not enough variety in the sample to test this relation for type 1 connections. There is no significant impact of the strength of the borrower connection on the rate. However, the variable we use to proxy for the strength offers some redundancy with the variable controlling for the existence of a political connection and a more accurate proxy is probably needed to better test the strength effect.

To furthermore demonstrate the importance of discriminating between highly visible and lowly visible connection, we also run the regression without taking into account the lowly visible connections. That is, we run the regression without the dummies accounting for type 2 connections – these dummies being $Strength(B2)_i$, $L2_i$, $B2_i$, $L1B2_i$, $L2B1_i$ and $L2B2_i$. This is regression (2) on table 1, and this is the closest to what can be found in the literature, as less visible connections are not taken into account. The results are similar to the previous ones but with two major differences: type-1-connected borrowers have access to cheaper credit and the significance is weaker. These differences are driven by the fact that type-2-connected borrowers

pay non-significantly higher rates unless they borrow to a connected lender – type-1 or type-2-connected, with a stronger impact for type-2 – in which case the rate is lower.

We also run a regression (3) taking only into account the connections of type 2: being type-2-connected as no effect on the rate unless both the lender and the borrower are, in which case the rate is significantly lower.

Finally, we run the same regression again (4) but without discriminating between highly visible and lowly visible connections. In this regression type-1 and type-2 form a unique category that we call type 3 (see table 1). In this regression, notice that $Strength(L3)_i$ accounts for the total number of links of the lender involved in facility i – that is, the sum of the number of links of type 1 and of type 2. The same goes for $Strength(B3)_i$.

$Strength(L3)_i$ is equal to the total number of links of the lender involved in facility i minus 1, or to 0 if this number is equal to 0.

$Strength(B3)_i$ is equal to the total number of links of the borrower involved in facility i minus 1, or to 0 if this number is equal to 0.

Moreover, we also find that the more cash a company holds, the higher the rate. The liquidity measure might be a proxy for the quality of governance, as holding cash is usually seen as a sign of weak governance. This would explain the negative relation. Boubakri et al. (2013) find that politically connected firms hold more cash. We do not find significant results, as politically

connected borrowers from our sample exhibit a non significant slightly higher liquidity ratio than their non connected pairs. Unsurprisingly, we find that the higher (lower) the amount (maturity) of the loan, the lower (higher) the rate. Consistent with LaPorta and Lopez-de-Silanes (2003), we find that the existence of a lending relationship between the lender and the borrower lowers the rate of interest, although the relation is most often non-significant. We establish that listed borrowers are charged a higher rate than non-connected ones. Again, there is more than one plausible explanation. Listed companies having access to bond markets, the fact that listed borrowers take bank loans might capture the fact that their debt is perceived as risky – we find that listed companies have a slightly higher leverage and a slightly lower volatility of profitability, but the these differences are not significant. In line with Ferreira and Matos (2012), one might also argue that this relates to a form of looting from lenders involved in a borrower's corporate governance, as lenders can more easily be shareholders of listed borrowers. Finally, the size of total assets lower the rate, which might be interpreted as lower risk of default by the banker or equivalently as higher collateral. We also find that the results do not hold for revolver type loans.

Table 1: Determinants of the interest rate spread of bank loans
Variables are as defined in sections 2.3. and 2.4. ***, ** and * are significantly
different from 0 at the 10%, 5% and 1% level

Variable	Coefficient (standard error)			
	(1)	(2)	(3)	(4)
Intercept	2,2919*** (0,62988)	2,70952*** (0,58449)	2,55622*** (0,62015)	2,12233*** (0,60884)
σ(Profitability)	-3,21426* (1,93132)	-3,36306* (1,92141)	-3,53914* (1,89775)	-3,12647 (1,90784)
Profitability	3,3619*** (0,78546)	3,55662*** (0,77471)	3,35365*** (0,769)	3,07268*** (0,77244)
Leverage	0,14086 (0,29609)	0,08365 (0,29697)	0,12892 (0,29754)	0,0508 (0,29449)
Liquidity	2,10778*** (0,7368)	2,06281*** (0,74005)	2,05526*** (0,73379)	2,12407*** (0,72761)
Assets	-0,27913*** (0,07579)	-0,27815*** (0,07603)	-0,29493*** (0,07532)	-0,29499*** (0,07463)
Amount	0,02788 (0,08827)	0,00544 (0,08711)	0,03042 (0,08716)	0,0604 (0,08652)
Maturity	0,51335*** (0,11479)	0,55774*** (0,11514)	0,53813*** (0,11523)	0,51461*** (0,11493)
Listed	0,1547** (0,07475)	0,12679* (0,07358)	0,12888* (0,0739)	0,14581** (0,07378)
Related	-0,10175 (0,0816)	-0,13217 (0,08118)	-0,12161 (0,08062)	-0,09409 (0,08063)
Democracy_Index	-1,00343** (0,39019)	-1,14241*** (0,38658)	-1,10033*** (0,38927)	-1,01966*** (0,38368)
Strength(L2)	0,42138*** (0,15001)		0,47526*** (0,14821)	
Strength(L3)				0,29997** (0,1193)

Strength(B1)	0,16228 (0,23083)	0,20936 (0,23003)		
Strength(B2)	-0,00821 (0,03951)		-0,01282 (0,03643)	
Strength(B3)				-0,01101 (0,03389)
L 1	0,37423*** (0,1234)	0,1548* (0,09395)		
L2	0,27834** (0,10881)		0,1009 (0,08688)	
L3				0,31911*** (0,09646)
B 1	-0,10498 (0,1647)	-0,22293* (0,11679)		
B2	0,18033 (0,11281)		0,07197 (0,0906)	
B3				0,11686 (0,10629)
L1*B1	-0,05865 (0,25223)	0,1565 (0,2148)		
L1*B2	-0,38528* (0,20984)			
L2*B1	-0,19229 (0,22844)			
L2*B2	-0,43348*** (0,16579)		-0,25643* (0,14792)	
L3*B3				-0,35136** (0,1367)
R^2	0,267	0,238	0,247	0,259
Adjusted R^2	0,239	0,219	0,227	0,239
F-Statistic	9,5587***	12,4185***	12,1836***	12,9322***

3.4.2. Hypotheses validation

H1a: The interest rate spread is lower for politically connected borrowers than for non-connected borrowers.

This hypothesis is validated if taking into account definition 1 only – the closest from Faccio's – and considering type-2-connected firms as not politically connected, as the rate is significantly lower at the 1% level when the borrower is politically connected.

However, this hypothesis is only validated in this case, and not if we account for both type of connections, whether we discriminate (regression 1) or not (regression 4) between type 1 and type 2. Results of regression (3) show no effect when we only take into account connections of type 2 and that the borrower is type-2 connected.

H1b: The interest rate spread is lower for type-2-connected borrowers than for type-1-connected borrowers connected.

This hypothesis is not validated. In fact, non significant results from regression (1) suggest that type-1-connected borrowers enjoy cheaper rates on average while type-2-connected borrowers are charged more.

However, it is worth noticing that when we ignore definition 2 (regression 2), the type-1-connected borrowers enjoy significantly lower rates, but that this does not hold if we distinguish between type 1 and type 2 (regression 1).

This suggests that it is less advantageous for a borrower to be type-1-connected than studies which do not integrate the visibility dimension show.

H1c: The interest rate spread is lower for borrowers with stronger political connections.

This hypothesis is not validated. The strength of the link of the borrower does not appear to have any effect on the interest rate. Excluding the variable capturing the strength of the links from the regression give similar results as shown by table 9 (appendix 6).

Thus, the rate of interest paid by the borrower is independent of the strength of his political connection.

H2a: The interest rate spread is higher for politically connected lenders than for non-connected lenders.

This hypothesis is validated as results from regressions (1), (2) and (4) show a significant increase in the rate of the loan when the lender is politically connected. This is consistent with the literature. Regression (3) shows no significant effect however of a type-2 lender connection, but the effect of the strength of the type-2 link remains. As the result table 9 in appendix 6 suggests, this might due to the redundancy of the strength variable and the type-2 connection dummy variable.

H2b: The interest rate spread is higher for type-2-connected lenders than for type-1-connected lenders.

This hypothesis is not validated. On the opposite, regression results show that the spread is higher for type-1-connected lenders than for type-2-connected lenders. This result is further discussed in section X.

H2c: The interest rate spread is higher for lenders with stronger political connections.

This hypothesis is validated as results show that the stronger the link of the lender, the higher the rate.

H3: When both the borrower and the lender are connected, the rate is lower if the borrower is type-2-connected than if he is type-1-connected

This hypothesis is validated. Regression results show that the rate is significantly lower when the lender is connected and the borrower is type-2-connected but show no effect when the lender is connected and the borrower is type-1-connected. This effect appears to be stronger when the lender is type-2-connected than when he is type-1-connected, providing support to the interpretation that highly visible political connections have a lesser impact than less visible political connections.

H4: When both the borrower and the lender are connected, the rate is higher if the lender is type-2-connected than if he is type-1-connected

We do not validate this hypothesis. In fact, regression results show that when both the lender and the borrower are politically connected, there is no significant effect when the borrower is type-1-connected. When the borrower is type-2-connected and the lender is connected, the rate is significantly lower, and the effect is stronger when the lender is also of type-2.

We also look at the distribution of the loans between connected borrowers and lenders. We use the proportion of connected lenders and borrowers to calculate a random theoretical distribution and compare it to the effective distribution. Results show that the effective distribution is significantly different from the theoretical one. The number of loans involving a connected borrower and a type-1-connected lender is significantly lower than in the random distribution.

Table 2: Variation of effective distribution from theoretical distribution (Khi2 value)

	L1	L2	L3
B1	-0,04 (0,06234)	0,12 (0,49769)	0,04 (0,11939)
B2	**-0,28*** (6,69675)**	0,11 (1,15315)	-0,07 (1,09689)
B3	**-0,21** (5,64724)**	0,11 (1,73037)	-0,04 (0,53115)

H5a: Politically connected borrowers borrow less frequently from connected lenders than from non-connected lenders

This hypothesis is not validated. Table 2 shows that politically connected borrowers tend to borrow less from politically connected lenders than if they chose the lender randomly, but this variation is not significant.

H5b: Politically connected borrowers borrow more frequently from lenders connected through type 2 definition than through type 1

This hypothesis is validated as results show that the frequency of loans between politically connected borrowers and type-1-connected lenders is significantly lower than if borrowers chose lenders randomly while the frequency of loans between borrowers and type-2 connected lenders is non-significantly higher. This result is even stronger for type-2-connected borrowers, but does not hold for type-1-connected borrowers.

While this result should be corroborated with a larger sample, it gives an indication that politically connected borrowers tend to avoid to borrow money from lenders with a highly visible connection but favor these with a less visible connection.

3.5. Extension: The role of elections

On the 1142 facilities from our facility, 290 deals were made during the 6 months prior to an election and 201 occurred during the 6 months past an election. While we do not find a significant difference between the interest rates of pre and post election periods – neither do they differ significantly from the rates of non election periods, studying the distribution of loans depending on the political connections of the borrower and the lender yields interesting results.

For each time period, we test the distribution of the deals categorized depending on the politically connected statuses of the borrower and the lender with a Pearson's chi squared test. Table 3 exhibits the results of this test.

Table 3: Variation of effective distribution from theoretical distribution (Khi2 value)

	6 months prior to election	6 months following an election
L1	-0,019 (0,03916)	**0,327*** (8,42779)**
L2	**-0,265*** (9,34196)**	0,06 (0,33568)
B1	-0,234 (1,6627)	**0,368* (2,83988)**
B2	-0,009 (0,00752)	-0,04 (0,1095)
L1*B1	**-0,741** (4,34327)**	**1,059** (6,15271)**
L1*B2	**-0,42** (3,93753)**	0,185 (0,52821)
L2*B1	0,16 (0,22715)	0,339 (0,70683)
L2*B2	-0,05 (0,06212)	0,309 (1,66247)

The results show that companies borrow from a politically connected bank significantly more after an election than before. While there is no significant difference for type-2-connected borrowers, type-1-connected borrowers borrow significantly more after an election.

Finally, loans between a type-1-connected lender and a connected borrower of type 1 or 2 occur significantly more frequently after an election than before. It should however be noted that while

the tests show statistical significance for L1*B1 and L1*B2, the small number of observations of these types of deals commands some prudence in the interpretation of the results.

A very interesting result is the difference between the distribution of loans involving type-1 and type-2 connected borrowers. While companies with more visible links borrow significantly more after than before an election, results show no such variation for companies with less visible political ties.

A possible interpretation for this is linked to the political uncertainty. Since the uncertainty about the election outcome is higher before than after the election, politically connected borrowers and lenders might be tempted to delay on borrowing money before the outcome of the election is known.

Another possible interpretation, consistent with the idea that politicians try to influence the firms they are tied to so as to minimize their exposure, is that an electoral period might be a particularly bad time for a politician to be suspected of collusion or to have his business ties exposed. Hence, the more visible the political connection of a company (bank) the more reluctant they are to borrow (loan) money from (to) a politically connected lender (borrower), particularly if this connection has a high visibility. Firms with a highly visible political connection would thus delay deal making to a period when the potential cost for politicians of being suspected of collusion is lower.

However, other explanations could be advanced and more data is probably needed before any conclusive results can be reached. For instance, taking into account the affiliation to a particular

political party of the lenders and borrowers as well as the expected outcome of the election – or the uncertainty over the outcome – could bring interesting results. Moreover, detailed data on electoral outcomes and links could allow us to proxy more accurately for the strength of political connections, as Khwaja and Mian (2005) do on a sample of Pakistani firms. This would however require defining international categories of political affiliations.

Overall, we show that elections matter, but we would need more accurate political data to corroborate studies such as Akey (2013), Ferguson and Voth (2008) or Cooper et al. (2009) on the impact of being connected to the election winner (looser).

3.6. Discussion

We introduce a new dimension to the definition of political connection. We assume that politicians at the highest levels have a larger media exposure and are more careful in trying to prevent any possible suspicion of collusion. In particular, this would lead firms connected with high profile politician to be less positively impacted by these ties than firms connected with lower profile politicians. This would also lead firms tied to a more exposed politician to try to avoid doing business with politically connected banks.

We conduct a cross-county study of the impact of these different political connections on the interest rate paid on loans by companies and find significant evidence in support of the pertinence of this discrimination. We find that politically connected firms obtain significantly lower interest rates when they are connected with a lower profile politician and that they borrow money from politically connected banks. Firms connected with highly visible politicians do not appear to enjoy any similar discount. Our results offer some consistency with Khwaja and Mian (2005) who find that politically connected borrowers derive rents on their loans. Since we use different definitions and variables, comparing our results has limited meaning.

We share some similarities with Infante and Piazza (2014) who find that politically connected companies have access to significantly cheaper credit when borrowing to banks politically influenced at a local level in Italy. We find a similar impact but on a larger scope and with different definitions. Indeed we do not investigate local connections and only take into account

national and top regional politicians. Importantly, we use an innovative definition of political connections by introducing a "media exposure" criterion.

Companies which borrow money from politically connected banks pay a significantly higher interest rate unless they are themselves politically connected. Sapienza (2012) find that state-owned banks charge a lower interest rate. Because we use different definitions – politically connected instead of state-owned firms – it is somewhat difficult to compare our results with hers. However, if one was to assume comparability between state-owned and politically connected banks, the difference in our results could be explained by the fact that double-connection – both the lender and the borrower – matters and that politically connected banks favor only politically connected borrowers.

We also try to determine if politically connected borrowers deal more frequently with politically connected lenders, and if the distinction we propose between different levels of connection plays a role.

Consistent with the hypothesis that visibility matters, our results indicate that politically connected borrowers tend to avoid lenders who have a highly visible political connection and suggest that they favor these with a lowly visible connection or no connection at all. We suggest that this could come from the fact that politicians want to minimize the chance of their business ties becoming a news story, because this would hurt their reputation and be a political cost for them – by lowering their poll ratings, or forcing them to resign. To give more consistency to this

interpretation we also test the distribution of loans in the six months preceding and in the six months following a national election. We find evidence that deals involving a politically connected borrower occur with a higher frequency after rather than before the election. This is also the case for loans involving a borrower connected through a high profile politician. This suggests some consistence with studies such as Bertrand et al. (2007) who show the impact of electoral process on the decisions made by politically connected firms but also calls for the use of more variables to corroborate the effects of siding with the winning party as shown by Akey (2013) amongst others.

While this can be seen as a support of the visibility hypothesis, there are however other possible explanations, and these results could also be driven by the uncertainty over the outcome of the election as well as by the political affiliations of firms.

Overall, our results are consistent with the literature – such as Khwaja and Mian (2005), Charumilind et al. (2006), Johnson and Mitton (2003) or Blau et al. (2013) – suggesting that political connections are beneficial. Importantly, we show that connections can be discriminated based on their level and what we labeled as visibility or media exposure and that political connections might be especially – or only – beneficial for politically connected companies that 1/ have a lowly visible connection and 2/ borrow money from politically connected banks.

3.7. Conclusion

We introduce a new dimension to the definition of political connection that we call the "visibility" of a political connection. We subcategorize politically connected firms into firms connected to politicians with a large media exposure and lower level politicians and test the impact of these subcategories on the interest rate of bank loans.

We find evidence in support of the accuracy of this exposure based discrimination. While companies connected with a top profile politician enjoy lower credit rates on average, the effect is much stronger if they are connected with a lower profile politician and the lender is also politically connected.

While politically connected banks charge significantly higher rates on average, the effect does not hold when the borrower is also politically connected. Moreover, we find that companies tied with less exposed politicians avoid borrowing money from banks connected with high profile politicians. There are multiple possible interpretations for this effect. It is possible that these companies want to minimize the risk of their political connections making it to the news and thus try to keep their ties in the shadows. It is also possible that less exposed politicians being lower level politicians, they refrain to negotiate with these banks to avoid putting themselves in a situation where political hierarchal links could interfere.

Finally, we study the impact of electoral periods on loans between politically connected agents. While we do not find the interest rate to vary significantly before or after an election, loans from

politically connected lenders occur significantly more frequently in the 6 months following a national-level election than in the 6 months before. We also find that companies tied to a high profile politician borrow significantly more frequently after an election than before, but that companies connected to a lower profile politician do not. This suggests that connected companies and the politicians they are connected to try to minimize the risk of being, wrongly or rightly, publicly accused of ethic breach or collusion.

Overall, our results give significant support to the necessity of a more subtle definition of political connection as we show that less visible connections have a stronger impact than connections with high profile politicians.

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Appendix

Appendix 1: Borrowers characteristics

Table 4a: Borrowers characteristics

Remark: The borrower column gives the category of deals borrowers are involved in. The "L1" line thus gives data on borrowers involved in a deal with a type-1-connected lender

Borrower	Facilities		Borrower Total Assets		Loan Amount		Loan Maturity	
	Number	*%*	Mean	*Median*	Mean	*Median*	Mean	*Median*
L 1	109	*19%*	39 448	*7 355*	1 082	*400*	48	*60*
L2	226	*40%*	50 180	*10 839*	860	*425*	51	*60*
B 1	86	*15%*	16 205	*9 481*	1 234	*1 000*	42	*60*
B2	77	*13%*	87 951	*18 414*	1 454	*750*	43	*57*
L1*B1	23	*4%*	15 360	*9 481*	1 615	*1 200*	40	*60*
L1*B2	27	*5%*	143 526	*37 133*	1 847	*732*	43	*60*
L2*B1	30	*5%*	20 192	*14 032*	1 291	*1 000*	41	*57*
L2*B2	63	*11%*	123 839	*24 307*	1 284	*750*	48	*60*
All	572	*100%*	41 658	*9 534*	1 107	*575*	51	*60*

Table 4b: Borrowers characteristics

Remark: The borrower column gives the category of deals borrowers are involved in. The "L1" line thus gives data on borrowers involved in a deal with a type-1-connected lender

Borrower		Spread	σ(Profitability)	Profitability	Leverage	Liquidity	% of Listed
L 1	Mean	1,2509	1,81%	-0,27%	-1,94%	-1,71%	25,55%
	Median	*0,7500*	*1,28%*	*-0,18%*	*-1,66%*	*-1,74%*	*0,00%*
L2	Mean	1,1251	2,45%	0,94%	-3,00%	-0,60%	24,23%
	Median	*0,6000*	*1,63%*	*-0,21%*	*-2,61%*	*-1,25%*	*0,00%*
B 1	Mean	0,5399	1,94%	1,19%	-1,21%	-1,80%	56,48%
	Median	0,2000	1,73%	-0,67%	-0,27%	-1,56%	100,00%
B2	Mean	0,8177	1,97%	-0,08%	-3,66%	-1,25%	27,59%
	Median	0,3750	1,36%	-0,06%	-6,93%	-1,68%	0,00%
L1*B1	Mean	0,7521	2,48%	-0,84%	-0,56%	-2,70%	65,52%
	Median	0,7250	2,32%	-1,26%	0,92%	-2,67%	100,00%
L1*B2	Mean	1,0911	1,25%	-0,50%	-4,05%	-0,55%	15,25%
	Median	0,5000	0,95%	-0,06%	-8,90%	-1,42%	0,00%
L2*B1	Mean	1,0911	1,25%	-0,50%	-4,05%	-0,55%	15,25%
	Median	0,5000	0,95%	-0,06%	-8,90%	-1,42%	0,00%
L2*B2	Mean	0,8279	2,04%	-0,54%	-2,99%	-0,78%	31,68%
	Median	*0,4125*	*1,40%*	*-0,32%*	*-0,21%*	*-1,12%*	*0,00%*
All	Mean	1,0043	2,24%	0,24%	-2,39%	-1,28%	26,01%
	Median	0,5000	1,57%	-0,18%	-1,86%	-1,55%	0,00%

Appendix 2: Links per connected borrowers and lenders

**Table 5: Average number of links
per connection category**

Company	Number of links	
	Mean	*Median*
L 1	1	*1*
L2	1,1687657	*1*
B 1	1,212963	*1*
B2	1,6966292	*1*

Appendix 3: Deals distribution per year

Table 6: Deals distribution per year

Year	Number of deals over total number of deals
1987	0%
1988	0%
1996	1%
1997	3%
1998	2%
1999	3%
2000	4%
2001	7%
2002	7%
1994	1%
1995	0%
2003	13%
2004	7%
2005	9%
2006	5%
2007	6%
2008	10%
2009	12%
2010	7%
2011	4%

Appendix 4: Geographical distribution

Table 7: Political connected firms distribution per country

Country	Lenders					Borrowers				
	Total	L1	*% of L1 lenders*	L2	*% of L2 lenders*	Total	B1	*% of B1 Borrowers*	B2	*% of B2 borrowers*
United Arab Emirates	1	0	*0%*	1	*100%*	0	0		0	
Austria	2	0	*0%*	2	*100%*	1	0	*0%*	0	*0%*
Australia	1	0	*0%*	0	*0%*	4	0	*0%*	1	*25%*
Belgium	1	0	*0%*	0	*0%*	3	2	*67%*	0	*0%*
Canada	0	0		0		1	0	*0%*	1	*100%*
Switzerland	2	0	*0%*	0	*0%*	1	0	*0%*	0	*0%*
China	2	1	*50%*	1	*50%*	0	0		0	
Germany	0	0		0		9	0	*0%*	2	*22%*
Denmark	1	0	*0%*	1	*100%*	0	0		0	
Spain	2	1	*50%*	0	*0%*	2	0	*0%*	0	*0%*
Finland	1	0	*0%*	0	*0%*	2	0	*0%*	0	*0%*
France	2	0	*0%*	2	*100%*	12	0	*0%*	7	*58%*
United Kingdom	1	1	*100%*	0	*0%*	7	1	*14%*	1	*14%*
Hong Kong	3	0	*0%*	2	*67%*	2	0	*0%*	1	*50%*
Indonesia	0	0		0		1	0	*0%*	1	*100%*
Ireland	0	0		0		4	1	*25%*	2	*50%*
Israel	2	0	*0%*	2	*100%*	1	0	*0%*	1	*100%*
India	1	1	*100%*	0	*0%*	3	0	*0%*	1	*33%*

Italy	1	0	*0%*	0	*0%*	3	0	*0%*	0	*0%*
Japan	6	1	*17%*	2	*33%*	72	0	*0%*	2	*3%*
South Korea	2	0	*0%*	1	*50%*	5	0	*0%*	0	*0%*
Cayman Islands	0	0		0		1	0	*0%*	1	*100%*
Luxemburg	0	0		0		1	0	*0%*	0	*0%*
Mexico	0	0		0		1	0	*0%*	0	*0%*
Malaysia	1	0	*0%*	0	*0%*	1	0	*0%*	1	*100%*
Netherlands	0	0		0		3	0	*0%*	1	*33%*
Norway	0	0		0		1	0	*0%*	0	*0%*
Philippines	1	1	*100%*	0	*0%*	1	1	*100%*	0	*0%*
Portugal	1	0	*0%*	0	*0%*	0	0		0	
Russia	0	0		0		1	0	*0%*	0	*0%*
Saudi Arabia	3	0	*0%*	2	*67%*	1	0	*0%*	0	*0%*
Sweden	0	0		0		2	0	*0%*	0	*0%*
Singapore	1	0	*0%*	1	*100%*	1	1	*100%*	1	*100%*
Taiwan	11	0	*0%*	2	*18%*	7	1	*14%*	1	*14%*
United States of America	2	0	*0%*	0	*0%*	100	18	*18%*	44	*44%*
South Africa	0	0		0		2	0	*0%*	1	*50%*
All	51	6	*12%*	19	*37%*	256	25	*10%*	70	*27%*

Appendix 5: Politically connected firms characteristics regression results

Table 8: Impact of political connection on firm characteristics
Variables are as defined in sections 2.3. and 2.4. ***, ** and * are significantly different from 0 at the 10%, 5% and 1% level

Variable	Coefficient (standard error)		
	Profitability	Leverage	Liquidity
Intercept	0,07276*** (0,02564)	-0,22726*** (0,06209)	-0,00027 (0,02672)
σ(Profitability)	0,3221*** (0,07805)	-0,45785** (0,19096)	0,11016 (0,0817)
Profitability		0,01408 (0,08527)	0,00863 (0,03639)
Leverage	0,00238 (0,01444)		-0,11266*** (0,01445)
Liquidity	0,00802 (0,03384)	-0,61844*** (0,0793)	
Assets	-0,02014*** (0,0031)	0,01158 (0,00771)	-0,00104 (0,0033)
Amount	0,01835*** (0,00349)	-0,00416 (0,00863)	0,00413 (0,00368)
Maturity	0 (0,00495)	0,00914 (0,01202)	0,01904*** (0,00509)
Listed	0,01266*** (0,00361)	0,00847 (0,00884)	-0,00073 (0,00377)
Related	-0,00753** (0,00342)	0,01643** (0,00833)	0,0111*** (0,00354)
Democracy_Index	-0,11128*** (0,01877)	0,16956*** (0,0462)	-0,08704*** (0,01965)

B 1	0,00396 (0,00511)	-0,00784 (0,01242)	-0,00557 (0,0053)
B2	-0,00353 (0,00392)	-0,03092*** (0,00946)	-0,00462 (0,00406)
R^2	0,153	0,141	0,148
Adjusted R^2	0,141	0,130	0,136
F-Statistic	13,3176***	12,1446***	12,8056***

Appendix 6: Interest rate spread regression results

Table 9: Determinants of the interest rate spread of bank loans without the strength variable

Variables are as defined in sections 2.3. and 2.4. ***, ** and * are significantly different from 0 at the 10%, 5% and 1% level

Variable	Coefficient (standard error)			
	(1)	(2)	(3)	(4)
Intercept	1,94272*** (0,6199)	2,71291*** (0,58439)	2,20562*** (0,61507)	1,87559*** (0,60301)
σ(Profitability)	-3,07093 (1,92829)	-3,5017 (1,91507)	-3,18303 (1,90406)	-2,75092 (1,90718)
Profitability	3,10216*** (0,78364)	3,5121*** (0,77305)	3,12044*** (0,77028)	2,85264*** (0,77025)
Leverage	0,07869 (0,29652)	0,08462 (0,29692)	0,06093 (0,29879)	0,05729 (0,29519)
Liquidity	2,31028*** (0,73105)	2,15866*** (0,7324)	2,20559*** (0,73563)	2,2302*** (0,72779)
Assets	-0,28547*** (0,07562)	-0,28598*** (0,07553)	-0,29632*** (0,07574)	-0,30335*** (0,07476)
Amount	0,06203 (0,08788)	0,01336 (0,08666)	0,05815 (0,08735)	0,08639 (0,08623)
Maturity	0,54768*** (0,11439)	0,5654*** (0,11481)	0,57347*** (0,11489)	0,54617*** (0,11418)
Listed	0,144** (0,07278)	0,11645 (0,07268)	0,12089* (0,07162)	0,14274** (0,07131)
Related	-0,10688 (0,08133)	-0,12507 (0,08079)	-0,14048* (0,08069)	-0,11098 (0,08041)
Democracy_Index	-0,96291** (0,3895)	-1,17109*** (0,38524)	-1,03626*** (0,3907)	-0,99875*** (0,38449)

L 1	0,37501*** (0,12405)	0,15416 (0,09393)		
L2	0,35756*** (0,10524)		0,16981** (0,08481)	
L3				0,36957*** (0,09467)
B 1	-0,07256 (0,1573)	-0,1837* (0,10853)		
B2	0,17744 (0,11095)		0,06154 (0,09049)	
B3				0,11319 (0,10276)
L1*B1	-0,03856 (0,24982)	0,15902 (0,21475)		
L1*B2	-0,39716* (0,21088)			
L2*B1	-0,26819 (0,22684)			
L2*B2	-0,46193*** (0,16623)		-0,26439* (0,149)	
L3*B3				-0,372*** (0,13694)
R²	0,256	0,237	0,233	0,250
Adjusted R²	0,231	0,219	0,215	0,233
F-Statistic	10,5451***	13,3115***	13,0640***	14,3222***

Appendix 7: Impact of pre- and post-electoral periods on the interest rate spread regression results

Table 10: Impact of elections on interest rate spread
Variables are as defined in sections 2.3. and 2.4. *-6fullm* (*6fullm*) is a dummy worth 1 is the facility start date was in the 6 months preceding (following) a national-level election, and 0 otherwise. ***, ** and * are significantly different from 0 at the 10%, 5% and 1% level

Variable	Coefficient (standard error)	
	(1)	(2)
Intercept	2,28742*** (0,63208)	2,60619*** (0,58609)
s(Profitability)	-3,33821* (1,92538)	-3,39965* (1,90268)
Profitability	3,29857*** (0,78746)	3,31162*** (0,76998)
Leverage	0,12654 (0,29789)	0,08136 (0,29974)
Liquidity	2,2208*** (0,74264)	2,13169*** (0,74587)
Assets	-0,29147*** (0,07625)	-0,29822*** (0,07635)
Amount	0,04008 (0,08895)	0,03457 (0,08716)
Maturity	0,51868*** (0,11475)	0,57947*** (0,11505)
Listed	0,15253** (0,07533)	0,10115 (0,07204)
Related	-0,09436 (0,08169)	-0,13883* (0,08103)

Democracy_Index	-1,02346*** (0,38889)	-1,17874*** (0,38604)
Strength(L2)	0,43337*** (0,14969)	
Strength(B2)	-0,00978 (0,0398)	
L 1	0,3854*** (0,12487)	
L2	0,28205** (0,10941)	
B 1	-0,07366 (0,15906)	
B2	0,18185 (0,11289)	
L1*B1	-0,05771 (0,25258)	
L1*B2	-0,38944* (0,21003)	
L2*B1	-0,19566 (0,22923)	
L2*B2	-0,43992*** (0,16646)	
-6fullm	0,00561 (0,08203)	-0,00117 (0,08152)
6fullm	-0,05341 (0,08711)	0,01898 (0,08676)
R²	0,267275055	0,226806693
Adjusted R²	0,237912671	0,210208625
F-Statistic	9,10263***	13,66464***

General conclusion

As have been underlined throughout this thesis and mainly in its first chapter, major corporate scandals have led to an increase in shareholder activism – with the "apply or comply" rule – and to strengthened rules and regulations – with laws such as the 2002 Sarbanes-Oxley Act in the US. This, in turn, caused, or speeded up, an evolution in the composition of boards of directors. In particular, boards have become more independent from the CEO as well as more gender diversified. Empirical findings suggest such boards are more efficient, in a particular in their monitoring of the management, and that they are more likely to replace incompetent or misbehaving executives. In the first chapter, we also draw a succinct description of the history of employee representation, to show how this specific type of directorship has been developed for political rather than economical reasons. Interestingly, firm performance concerns have recently emerged as an argument in the debate over employee representation.

In chapter 2, we design a simple model of employee representation on the board of directors from which we derive some interesting stylized facts. In particular, we show that if employees have access to valuable private information, a shareholder value maximizing board may decide to prefer long- to short-term investments when there is a limited employee representation without which it would not have. Moreover, we show that this may increase shareholder value that employee representation may therefore be in the shareholders best interest. While employee representation is always beneficial for employees, it is, in some cases, beneficial also to shareholders and management alike. Overall, our model provides a theoretical explanation for value enhancing role of employee representation that empirical studies suggest. It also gives

support to a limited level of employee representation on the boards of directors in sectors where inside information is more valuable.

In chapter 3, we introduce a subtle distinction in the usual definition of political connection that could have a large impact on empirical studies. Our results suggest that it indeed plays a role.

While there already exists a vast literature related to political connection implications, and that some empirical studies share similarities with ours, we provide an original, new perspective for investigating politically connected firms. The new definition we give emphasized the risk that politicians bear when closely tied to corporations. Because high profile politicians are under tougher scrutiny, there are more likely to see their business ties exposed if they appeared to constitute a breach of ethics. We assume that in order to prevent an unwanted and damaging media coverage they have a lesser involvement than politicians that occupy less visible positions and are thus less efficient

We find that politically connected companies pay significantly lower interest loan rates under two conditions: 1/ that a company be politically connected through a politician with low media exposure and 2/ that the lending bank be politically connected. We find the effect to be even stronger if the bank also is connected to a politician with limited visibility. Our results furthermore show that politically connected companies borrow much less frequently from banks

tied with a top profile politician, particularly during the political campaign that precedes a national election.

Thus, our results give support to the theory that politically connected companies tend to limit their involvement with politically connected banks, as it minimize the risk of the relation being publicly exposed and the politician(s) they are tied with to be – rightly or wrongly – suspected of ethic breach – or worse.

While we found interesting results that highlight the importance of what we label as "shadow" connections, we have yet to enlarge the scope of this study. In particular, we only partially cover the role of elections and intend to dig deeper into it. This will require a more precise, and probably larger, set of data, so as to include most notably the political affiliations of companies, the outcomes and expected outcomes of elections, as it remains to be seen if companies find it more beneficial to borrow from banks with a shared political "allegiance". As a number of the loans in our sample are international loans – between a borrower and a lender from different countries – this will require to build a categorization process of political affiliation, or/and to increase the sample size so as to have a large enough number of domestic deals per countries. The results from such a further study should be helpful in confirming, or invalidating, the definition we propose. They could also allow us lead us to a better knowledge of the extent of the effect we identify, as well as to consider laying a new bridge between finance, law and political sciences.