

# **Active versus Speculative Monitoring: Evidence from pre-WWI Paris-Listed Firms**

**Authors: Emilie Bonhoure<sup>1</sup>, Laurent Germain<sup>2</sup>, David Le Bris<sup>3</sup>**

**Corresponding author: Emilie Bonhoure**

## **Abstract:**

The corporate statutes of the five hundred firms listed on the unofficial Paris market before WWI stated the amount of dividends as a fixed percentage of profits: as a result, managers could not use dividends as a market signal. This setting offers the opportunity to study the agency explanation of dividends, while clearly excluding the signaling theory. Moreover, we investigate speculative (active) monitoring costs as proxied by distance between investors and the company's main activities (or head office). We confirm the effect of agency costs and find that speculative monitoring costs are more important in explaining dividend yield.

**Keywords:** dividends, agency theory, monitoring costs, historical finance, French market

## **I. Introduction**

A better understanding of agency costs is of particular interest because this concept is suspected of playing a crucial role in many economic issues. An agency relationship is “a contract under which one or more persons (the principal) engage another person (the agent) to perform some service on their behalf, which involves delegating some decision-making authority to the agent” (Jensen and Meckling, 1976). The delegation of some of these rights by the principal to the agent indeed creates a conflict of interests between them. In the case of separation of ownership and control, such a delegation exists between investors and managers. While the principal aims to reach the highest possible return on investment, the agent who has more information on the firm's cash and activities

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<sup>1</sup> Université Toulouse 1 Capitole and Toulouse Business School (contact: [e.bonhoure@tbs-education.org](mailto:e.bonhoure@tbs-education.org) & 14 place Saint Pierre, 31000 Toulouse, France)

<sup>2</sup> Toulouse University, Toulouse Business School (contact: [l.germain@tbs-education.fr](mailto:l.germain@tbs-education.fr) & Laurent Germain, département Economie et Finance at Toulouse Business School, 20 boulevard Lascrosses, 31068 Toulouse, France)

<sup>3</sup> Toulouse University, Toulouse Business School (contact: [david.lebris@gmail.com](mailto:david.lebris@gmail.com) & David Le Bris département économie et finance at Toulouse Business School, 20 boulevard Lascrosses, 31068 Toulouse, France)

may appropriate firm resources for his own consumption or not commit enough to activities that may increase the firm's value (because this involves too much effort, pressure, or time).

Tirole (2006) summarizes the different types of agency costs implied by the separation of ownership separating incentivizing and monitoring costs. Among the monitoring costs, he distinguishes two different types: *active* and *speculative* costs. In this study, we empirically test both types of monitoring costs to determine which one has the greatest impact on the payment of dividends and, more broadly, to bring further support to the agency explanation of dividends.

There are two ways of addressing the divergence of interests between the principal and the agent: the principal can incentivize and monitor the agent. The “monitoring part” of the agency costs can be performed through either *active* or *speculative* monitoring (Tirole, 2006). *Active monitoring* implies collection and analysis of information to influence business activities and management decisions, and thus to enhance firm value. In particular, it is related to access of shareholders to “prospective” information to act on the decision-making process (e.g. before the decision is made and implemented). On the contrary, *speculative monitoring* is only about collecting information to measure firm value at a given time, to assess and evaluate managerial efficiency. In particular, it is related to access to “retrospective” information, which is collected and used after the decision-making process and even after decisions are implemented, and is “value-neutral” (it does not aim to affect firm value).

This clearly demonstrates just how crucial access to information about the firm is for shareholders and how asymmetry of information can adversely affect them. If they have no or less access to information, it certainly is harder and costlier for them to incentivize and especially to monitor managers. Put differently, higher asymmetry of information increases agency costs borne by investors. Furthermore, agency costs are inevitable: if they are not monitored or incentivized, managers may use their informational advantage to misuse or appropriate firm cash. We thus use this degree of asymmetry of information to test the particular impact of the two types of monitoring costs on dividend payouts.

The main solution identified in the literature for reducing the magnitude of all types of agency costs is the payment of dividends. They allow shareholders to minimize the cash available to management: in this way, they prevent management from consuming or investing cash in negative-net present value (NPV) projects (Easterbrook, 1984; Jensen, 1986) and/or increase the firm's need for external funding, and thus manager monitoring by capital markets (Jensen, 1986).

However, alternative explanations for the payment of dividends have been proposed (see a summary in Allen and Michaely, 1995). Another potential explanation is the signaling effect caused by the asymmetry of information between markets and managers, but in terms of firm prospects rather than due to an agency issue. Dividend changes are then considered to convey information (“signal”) to the

markets in order to reduce this asymmetry: typically, a dividend increase will signal optimistic management views about the firm's future profits to the market, whereas a decrease should signal a possible decrease in profits. Fiscal issues offer a third explanation because if dividends are more heavily taxed than capital gains, and if investors are not able to reduce the tax burden, they will be more likely to turn to non-dividend-paying stocks. Finally, investors may simply prefer dividend-payer firms because of "personal" reasons: i. the "prudent man rule" (many institutions, because of their mandates, are authorized to hold only dividend-paying stocks); and ii. transaction costs (if an investor wants more regular income, dividend-paying stocks may be the best way to reach this goal).

Our experimental field offers the unique opportunity to exclude any potential effect of the explanation of dividend payments other than agency cost issues, and allows us to focus on particular types of agency costs. For each year between 1905 and 1909, we studied the approximately 500 firms listed on the unofficial Paris stock exchange. We focus on the unofficial market because investors in such a market do not enjoy any legal protection; thus, the problems of agency can express themselves freely. The frequent theoretical explanation rivaling with agency costs is the signaling effect. Fortunately, in our period, a fixed rule of distribution of profits excludes the signaling effect because managers were not free to set the amount of dividends paid. This fixed payout rule is a particular feature of pre-WWI firms. Each corporation's statutes state the distribution of profits (in percentages) between reserves, board, shareholders, and other agents or items. In particular, the fixed rule of distribution of most firms in our dataset defines the payment of dividends as a percentage of profits, thus preventing managers from adapting the amount of dividends relative to profits that are paid to shareholders. This payout rule is set at the creation of each company in our dataset and does not change during the company's lifespan.

Other explanations of dividends are also irrelevant in our experimental field. The fiscal explanation does not apply because there were practically no taxes (whether on revenues or capital gains) at this time, and again the fixed rule of profit distribution prevents the use of dividends to make the most of a fiscal benefit.<sup>4</sup> The presence of institutional investors is very limited during this era of individual holding, limiting the potential effect of a rule regarding the payment of dividends. The potential effect of a transaction cost is controlled for by using the market capitalization as a control variable.

Empirical examinations of the agency-related explanation of dividends are numerous. Lang and Litzenberger (1989) provide support for the agency-related explanation rather than for the signaling effect. To do this, they use Tobin's  $Q$  as a proxy for investment opportunities:  $Q$  lower than 1 stands for a firm that has fewer investment opportunities, whereas  $Q$  greater than 1 means more investment opportunities. However, later results are quite mixed: while Smith and Watts (1992) confirm this

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<sup>4</sup> Except a very limited tax on dividends implemented in 1872 (3%, increased to 4% in 1890, French government bonds being exempted).

explanation, showing that larger firms and firms with fewer growth options are likely to pay higher dividends, other studies invalidate these results (Yoon and Starks, 1995; Bernheim and Wantz, 1995). Other papers investigate the question by using different sets of data or methods. In particular, Denis and Osobov (2008) study international data to provide some support to the agency-related hypothesis, while invalidating the signaling effect. Brav et al. (2005) use surveys and interviews of firms' executives, and surprisingly find support for none of the usual explanations of dividends.

Studies on historical data also contribute to this mixed evidence. Concerning firms listed on the London Stock Exchange respectively between 1895 and 1905, and in 1883, Braggion and Moore (2011) find support for the dividend signaling but not for the agency explanation, while Campbell and Turner (2011) provide evidence for both explanations.

In addition, a part of the literature extends the investigation to the sole agency-related explanatory model. In line with this model, many studies show that firms with greater amounts of cash are larger, older, more profitable, and have fewer investment opportunities (Rozeff, 1982; Gaver and Gaver, 1993; Moh'd et al., 1995; Fama and French, 2001; Denis and Osobov, 2008). These firms are the most likely to pay dividends because greater amounts of cash may be misused or appropriated by managers and thus increase agency costs. Conversely, other studies provide no support for the agency-related explanation, showing that a dividend increase or initiation announcement has more impact on stock prices when the firm is smaller (Eddy and Seifert, 1988; Jin, 2000).

An important insight was brought to this debate by John et al. (2011). They provide evidence for the agency theory of dividends by exploring the distance effect on them. They find that remote firms are more likely to pay higher dividends to reduce agency conflicts, and the effect is even higher for firms with free cash-flow issues and fewer investment opportunities. The intuition behind this is that the further the firm is, the more difficult it is for shareholders to monitor managerial decisions. Hence, these authors provide support for the agency explanation of dividends. In addition, they control for the possibility of a dividend-signaling effect by studying the interaction between location and a proxy for asymmetry of information (e.g. the number of analyst forecasts of earnings per share, over one year). They find that this interaction is not significant (asymmetry of information does not affect the relationship between location and dividends), allowing them to exclude the signaling hypothesis.

However, empirical examinations that distinguish the impact of incentivizing and monitoring costs on dividends are less common. Moreover, the focus of such studies is mostly on corporate governance issues: for instance, it has been shown that, among Malaysian firms, monitoring costs decrease as the board size increases (Germain et al., 2014). Furthermore, to the best of our knowledge, no study has distinguished between the impact of *active* versus *speculative* monitoring costs on dividends.

In our study, we assess the different types of agency costs and consider that they are included at different levels of the dividend process. Incentivizing costs are internalized and paid by the company itself, which negatively affects the amount of dividends paid. Consequently, dividends paid to the shareholders already include these incentivizing costs. On the contrary, monitoring costs are borne by the shareholders, who should thus require a higher dividend yield in order to balance this type of agency cost. Our tests focus on this last point: we examine whether the dividend yield is affected by an increase in the monitoring costs we measure by a distance variable.

Many studies suggest that a good proxy for asymmetry of information (which contributes to the increase in monitoring costs) is geography, in a word, the distance between principal and agent<sup>5</sup>. They find that if the agents are located close to companies: i. in which they invest (Coval and Moskowitz, 1999, 2001; Hau, 2001, in particular for German traders; Ivkovic and Weisbenner, 2005), ii. that they want to analyze (Malloy, 2005), or iii. that they wish to acquire (Kang and Kim, 2008), these agents (respectively investors or traders, analysts, acquirers) have an informational advantage. These studies also suggest that this link between geographical proximity and information may be due to possible easier access to this information, to less strong competition for accessing it, which should result in better performance for the related entities.

Compared to the existing literature, our study is able to clearly exclude a potential signaling effect thanks to the fixed rule of distribution of profits set by firms of our dataset at their creation. Moreover, our key contribution is to make the distinction between *active* and *speculative* monitoring costs, proxying them by the distance between Paris and respectively the firm's head office or the firm's location of activities. The rationale is that asymmetry of information (that we measure here by the distance) increases agency costs; in particular, asymmetry of information between investors (assumed to be located in Paris) and decisional managers (located at the head office) should increase costs of *active* monitoring, while asymmetry of information between investors and the main activities of the firm should increase costs of *speculative* monitoring. Due to the increase in these types of agency costs, according to agency theory, investors should require a higher dividend yield to compensate for this.

*Speculative* monitoring is thus assumed to be related to the distance between Paris and the firm's activities location. Indeed, if investors look at firm activity level, they can only measure performance *ex post*; the decision-making process already having been completed, they can only observe the

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<sup>5</sup> In the historical context (beginning of the 20<sup>th</sup> century) we focus on, the use of distance is even more relevant. Indeed, at that time, communication networks were far less developed and contacts were of course not as fast and simple as they are today. Even if one considers the development of telegraph or telephone networks, both were first developed to connect main centers (such as capitals or strategic towns) and at the beginning of the 20<sup>th</sup> century did not necessarily yet connect (in particular for the telephone which was then a relatively recent innovation) smaller places in Africa or South America where mines for example had been established. Consequently, the distance variable appears to be more relevant than in John et al.'s (2011) paper, where it applies to the 1990s and 2000s.

results. *Speculative* monitoring costs should then increase as the distance between Paris and firm's activities increases. Conversely, *active* monitoring should be related to the distance between Paris and the firm's head office. Of course, when shareholders work with head office managers in the framework of their monitoring, they can influence the decision-making process and thus monitor decisions *ex ante* (for instance by correcting misleading choices). Then, *active* monitoring costs should increase as the distance between Paris and the head office increases.

The purpose of the present paper is to test the agency-related explanation of dividends by focusing on the types of monitoring costs. First of all, we assess the importance of the distance effect on the profit level as revealing a first type of agency relationship: the relationship existing between decisional managers at the head office and operational managers working in the main activities location. To do this, we examine the relationship between the ratio of profits over the total size of the balance sheet and the distance between the head office and activities location; we expect it to be negative. Consistently, we find that our profit variable is negatively affected by the distance between firm's head office and activities, confirming that monitoring problems are clearly magnified by distance.

We then turn to the agency relationship between investors and managers, testing the respective importance of *active* and *speculative* monitoring costs. In a first set of tests, we find that they have a different effect on dividend yields. We show that the effect of the distance between Paris and the firm's activities location is positive and significant on the dividend yield, while the impact of the distance between Paris and the firm's head office is much less robust. We thus provide further support for the agency explanation of dividends, and refine it by showing that within agency costs, *speculative* monitoring carries the most weight in explaining the payment of dividends.

In a final investigation, we explore whether corporate governance was designed to compensate initial investors for the agency costs. We examine the relationship between both distance variables and the theoretical payout ratio calculated from the fixed rule of distribution of profits (as we hypothesize that this rule has been set to compensate for monitoring costs borne by investors); we expect the same results as in the previous tests. However, evidence is more mixed and sometimes even contrary to our hypotheses: we even find a negative relationship between the theoretical payout ratio and the distance between Paris and the firm's head office or activities.

All these tests are performed while controlling for a large panel of potential correlated variables. We control for the age, the size, the industry, risk and Tobin's Q of each firm. We also control for the involvement of board members.

On the basis of these results, our contribution is two-fold. First, we provide further evidence of the agency explanation of dividends and we even refine it. Second, we provide empirical support for the importance of the speculative monitoring costs.

## II. Background of the Experimental Field

Before WWI, Paris was probably the second largest financial center in the world after London. An interesting characteristic was the division into two distinct markets, the *Parquet* and the *Coulisse*. The *Parquet* was the official French stock exchange. The government initially drove the formation of this official stock exchange from 1800, and imposed a number of limitations and regulations in exchange for the monopoly on financial transactions. In particular, only a state-controlled list of securities could be traded on the spot market; forward transactions were forbidden until 1885. The listing list was supervised by the government: firms had to comply with certain requirements, especially in terms of size and organization to be included on the list.

The second market, the *Coulisse*, was actually illegal (but tolerated for most of the century) and was thus far less regulated, and organized more loosely. It developed in reaction to the formation of the official market. There, investors could trade any other types of products such as forwards and options, and most firms that were listed on the *Coulisse* did not satisfy *Parquet* requirements (such as foreign or recent companies) (Hautcoeur and Riva, 2012).

Firms on this bipolar market mostly had different characteristics. *Parquet* firms were usually larger, French enterprises, and operated in specific sectors, whereas *Coulisse* firms were usually smaller, less well-established regarding their activity and their profits, and sometimes foreign. In the present research, we focus on firms listed on the *Coulisse* market to be sure that there were no regulations disrupting the expression of agency issues.

## III. Data

Our tests examine the firms listed on the unofficial Paris stock exchange, the *Coulisse*, between 1905 and 1909 (around 500 firms). We build a complete hand-collected database of all the characteristics of the firms listed on the *Coulisse*. To collect these data, we mostly relied on the *Annuaire Desfossés* which compiled almost all the information we needed once a year. We also used additional sources (such as *Le Journal des finances : Cote universelle et correspondance des capitalistes*) to supplement our database, in particular for monthly stock prices.

Table 1 displays the list of the variables we developed. A few require specific explanations. An original measure is the *theoretical payout ratio* we used as the explained variable to assess the dividend payout design. This measure is specific to our experimental field, in which the statutes of almost all firms establish a fixed rule of distribution of earnings into dividends and other items. *Th.*

$payout\ ratio_{it}$  has been calculated using the fixed rule of distribution of profits of each firm in each year. We first calculate the average ratio of profits over nominal capital for each year to assess the average rate of profits in terms of nominal capital in a given year. Then, we use this annual average rate of profits to deduce, for each firm  $i$ , the amount of theoretical profits. Importantly, this is a purely theoretical value: none of the firms in our dataset for a given year actually made this precise amount of profits. We then calculated what the firm  $i$  would have distributed as dividends to shareholders for this specific amount of profits according to their firm-specific fixed rule of distribution of profits. For instance, the statutes of *Le Secours* (an insurance company) state that 5% of the profits will be put into reserves, 5% of the paid capital (not of the profits) will be given to shareholders, 10% of the surplus of the profits to the board, and finally 90% of this surplus again to shareholders. These calculations allow us to obtain comparable figures (as firms do not make the same amount of profits compared with each other) and to estimate what firm statutes promise to shareholders depending on its profits.

A second original measure is board involvement (*Board*). Most of the statutes require that board members hold a specific number of firm shares. We assess this involvement by measuring the ratio of the number of shares that board members are required to hold over the total number of firm shares assuming that a board holding a high share of the total number of shares is more involved. Finally, as a matter of detail, the average price of stock  $i$  in year  $t$  has been calculated from twelve monthly prices (or less in case of missing data) of stock  $i$  displayed by the last issue of the month of the weekly *Journal des Finances : Cote universelle et correspondance des capitalistes*. Market prices for each month in year  $t$  have been calculated as the arithmetic mean of the monthly prices of the firms in our whole dataset (for which there was a price).

Table 1: Variables List

$Profits/BS_{it}$	Profits over the size of the balance sheet	Calculated as the ratio of the amount of profits of firm $i$ in year $t$ over the total size of the balance sheet (either the asset or the liabilities column) of the firm $i$
$Div\ yield_{it}$	Dividend yield	Calculated as the ratio of the dividends paid by firm $i$ in year $t$ over the last available price of year $t-1$
$Th.\ payout\ ratio_{it}$	Percentage of profits distributed as dividends	Theoretical value calculated using the fixed rule of distribution of profits of the firm $i$ : for a given amount of profits for all firms in year $t$ , the amount of dividends that the fixed rule of distribution of profits gives to shareholders
$Dist_{it,act}$	Distance between Paris and activities location	Distance in km between Paris and the place where most activities of the firm $i$ take place, in year $t$
$Dist_{it,HO}$	Distance between Paris and the head office	Distance in km between Paris and the city of firm $i$ 's head office, in year $t$
$Dist_{it,HO-act}$	Distance between the head office and activities location	Distance in km between the city of firm $i$ 's head office and the place where most activities of the firm $i$ take place, in year $t$
$Age_{it}$	Age	Calculated as the year $t$ minus the date of creation of the firm $i$
$Beta_{it}$	Beta	Calculated as the ratio of the covariance of 12 monthly prices of the stock $i$ with 12 market prices over the variance of market prices
$Board_{it}$	Board involvement in the firm capital	Calculated as the ratio of the minimum number of shares of firm $i$ that board members have to hold over the total number of shares of firm $i$ , in year $t$
$Change\ in\ profits_{it}$	Change in profits from year $t-1$ to year $t$	Calculated as the percentage of change in profits of firm $i$ in year $t$ compared with the profits of firm $i$ in year $t-1$
$Market\ cap_{it}$	Market capitalization	Calculated as the total number of shares of firm $i$ in year $t$ time the average price of stock $i$ in year $t$
$Tobin's\ Q_{it}$	Tobin's Q	Calculated as the ratio of the market capitalization of the firm $i$ in year $t$ over the book value of the assets of firm $i$ in year $t$
$Industry_{it}$	Industry fixed-effects	Dummy variables for ten industries: bank and insurance, railways, other carriages, coal, gold mines, other mines, car industry, metal industry, water gas and electricity, other industries

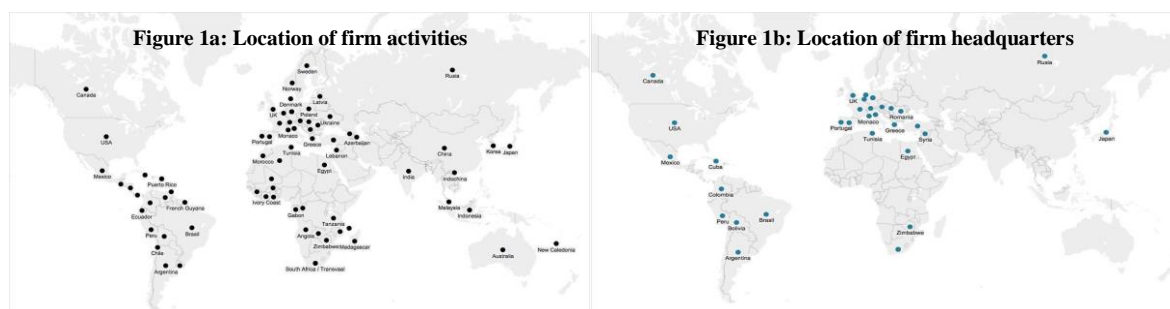


Table 2 shows basic descriptive statistics for all our variables. The number of observations varies depending on the variables, because of the lack of data. An interesting specific pattern concerns the distance variables: the distance between Paris and activities location is on average greater than the distance between Paris and the firm's head office. This means that firms listed on the *Coulisse* are mostly "Western" firms whose head office is located in a big Western city near Paris but whose activities may also take place all around the world.

Figures 1a and 1b show the geographical locations of the main activities and the official headquarters of firms. These maps show that the data sample includes firms working in a large variety of countries and continents. This feature can be easily explained by historical and geopolitical considerations that we will not cover here. Moreover, many firms were from Paris and also had their activities located there (the "0km" distance in Table 2). These firms mostly operated in sectors such as insurance, water, gas and electricity, industries linked to carriage in particular the car services, as well as firms in the "Other" category, which includes various sectors such as cinema, newspapers, hotels, entertainment, wholesale, and stores, indicating a certain correlation between our distance measures and industry ranking that our later results confirm.

**Table 2: Descriptive Statistics Summary**

	Mean	Median	Maximum	Minimum	Standard Deviation	Number of observations
Age (years)	10.46	7.00	74	0	12.77	2358
Beta	0.87	0.43	19.87	-13.51	1.88	1139
Board: min number of shares	0.43%	0.25%	7.50%	0.00%	0.53%	1894
Market Capitalization	32 165 628	6 387 500	1 062 654 545	29 438	80 768 989	1167
Tobin's Q	96.75%	71.87%	674.69%	1.35%	88.42%	1113
Distance between Paris and activities location (km)	2 923.55	892.00	16 988	0	3 718.38	2 372
0km	0	0	0	0	0	543
0km < d ≤ 407km	225.30	252.50	405.00	5.00	119.71	406
407km < d ≤ 1841km	973.84	892.00	1825.00	409.00	394.38	474
1841km < d ≤ 8165km	4099.05	3215.00	8104.00	1852.00	2076.03	474
8165km < d ≤ 16988km	9344.51	8720.00	16988.00	8180.00	1471.83	475
Distance between Paris and head office (km)	1 443.00	265.00	10 930	0	2 851.51	2 369
0km	0	0	0	0	0	475
0km	0	0	0	0	0	476
0km < d ≤ 345km	267.04	300.00	345.00	5.00	103.45	707
345km < d ≤ 1710km	804.48	690.00	1710.00	346.00	403.39	240
1710km < d ≤ 10930km	6447.14	8720.00	10930.00	1865.00	3044.98	471
Distance between head office and activities location (km)	1 626.45	37	16 983	0	3 125.36	2 369
0km	0	0	0	0	0	580
0km	0	0	0	0	0	581
0km < d ≤ 315km	134.83	74.50	315.00	5.00	103.16	264
315km < d ≤ 2117km	1035.01	1009.00	2117.00	324.00	508.41	474
2117km < d ≤ 16983km	7078.44	7584.00	16983.00	2118.00	3333.12	470
Profits / total balance sheet	8.02%	5.46%	645.89%	-42.58%	22.36%	990
Dividends (amount in francs)	31.63	6.25	1 100	0	89.42	1 435
Dividend Yield	18.88%	4.33%	751.88%	0.00%	71.35%	998
0%	0%	0%	0%	0%	0%	357
0% < dy ≤ 3.03%	2.14%	2.16%	3.03%	0.70%	0.57%	42
3.03% < dy ≤ 4.97%	4.24%	4.33%	4.97%	3.03%	0.52%	200
4.97% < dy ≤ 6.58%	5.63%	5.56%	6.57%	4.98%	0.44%	199
6.58% < dy ≤ 751.88%	83.90%	9.13%	751.88%	6.58%	142.01%	200
Amount of profits distributed as dividends	73.47%	79.44%	100%	0%	18.73%	1 425



#### IV. Identification strategy

The agency-related explanation of dividends states that firms pay dividends to reduce agency conflicts between the principal (investors) and the agent (managers). Indeed, dividends are a way of taking firm cash out of managers' hands in order to prevent them from misusing it or simply appropriating it. Dividends can also be regarded as a compensation given to shareholders for the (agency) costs they bear in order to reduce these agency conflicts.

The so-called agency costs result from the asymmetry of information between the principal and the agent. Among other determinants, asymmetry of information usually results from a longer distance. On the topic of dividends, John et al. (2011) find a positive relationship between the dividend yield (as well as the payout ratio) and geographical distance, explaining that remote firms pay higher dividends to compensate for the greater difficulty in monitoring managers of such firms.

Following John et al. (2011), our study focuses on the relationship between dividends and different measures of geographical distance, using the fact that a higher distance between the principal and the agent increases the asymmetry of information between them. This in turn makes it more difficult for the former to monitor the latter, which increases related agency costs. Consequently, should the agency explanatory theory of dividends hold, higher dividends should be paid out to shareholders to compensate for the higher distance.

More specifically, we focus here on monitoring costs. Clearly, incentivizing costs (the other component of agency costs) are internalized (namely paid by the firm), which has a negative impact on the amount of dividends paid. As a consequence, the dividends that are paid out to shareholders already include this first type of agency cost. Conversely, monitoring costs are borne by shareholders, who should then require a higher dividend yield to compensate for this second type of agency cost. In our tests, we focus on this second type: we examine whether the dividend yield is affected by an increase in monitoring costs measured by distance.

The above statement may also be consistent with the signaling effect of dividends (as a higher distance implies higher asymmetry of information). However, our dataset allows us to clearly exclude this possibility. Indeed, most firms quoted on the *Coulisse* between 1905 and 1909 had included in their statutes a fixed rule of distribution of profits. This rule also included fixed percentages of profits distributed to shareholders and did not change from one year to another. Managers were then unable to increase or decrease the portion of dividends over profits to signal respectively good or poor expectations about the firm's future profits.

Furthermore, we refine the hypothesis of the agency explanation of dividends by differentiating among monitoring costs the impact of the *speculative* and the *active* ones. We make the distinction

between the distance between Paris and the activities location (which we consider to measure *speculative* monitoring costs) and between Paris and the head office (to measure *active* monitoring costs).

We study several principal-agent relationships and explore them using three different distance measures (Table 3). “Investors” are the firm shareholders. As firms in our dataset are quoted on the Paris stock exchange, we assume that most of them are also located in Paris.<sup>6</sup> “Decisional managers” are the most powerful managers in the firm (today, equivalent for instance to a CEO), who make strategic decisions and decide of the main orientations of the firm; we thus assume them to be located at the firm’s head office. Conversely, “operational managers” are those who daily and practically manage firm activities and apply its overall strategy and major orientations decided at the head office; we then assume them to be located where most firm activities take place. For instance, for a British mine quoted on the *Coulisse* in Paris which operates in the Johannesburg area of South Africa, investors are considered to be in Paris, decisional managers to be in London, and operational managers in Johannesburg. The case of the Galeries Lafayette is simpler: its investors, and decisional and operational managers are all considered to be in Paris. The three different measures of distance will then be the distances between these different locations.

As a preliminary investigation, in addition to the classical agency relationship between investors and managers, we also study the one between decisional and operational managers within a firm (Table 3, line 1). Naturally, in the case of a long distance between the headquarters (decisional managers) and the main activities (operational managers), the second, who is an agent of the first, can use his specific information to divert money in his own interests. More specifically, we explore the effect of distance between the firm head office and its activities location on the level of profits relative to the size of the balance sheet,  $\frac{Profits}{BS}_{it}$ . The point is to measure how much agency issues really cost the firm from an economic and more practical perspective, and how much they affect firm profits. We hypothesize that if this distance between head office and activities location increases, agency costs should also increase and thus negatively affect profits, namely:

*Hypothesis 1:  $\frac{Profits}{BS}_{it}$  are negatively correlated with  $dist_{it, HO-act}$ ;*

We then turn to the monitoring costs created by the investor-manager agency relationship. According to Tirole (2006), in *speculative* monitoring, shareholders only measure firm value at a given time. Set differently, they only observe and monitor *ex post* the consequences of any managerial decision, in other words firm activities; they therefore do not have any influence on the decision-making process

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<sup>6</sup> They may also be located in London but due to the geographical proximity of these two cities, our measure of distance from Paris would be about similar from London.

and can only judge the results by observing it. We assume this type of monitoring cost to be correlated with the distance between Paris and firm activities location. Indeed, when investors focus on firm activities, they can only look at and measure the performance generated by these activities *ex post*, this observation being easier for closer firms. Once they have chosen to look at the activity level, the decision-making process has already been completed and they can no longer influence it *ex ante*. So, speculative monitoring costs should increase as the distance between Paris and firm activities location increases. *Active* monitoring implies collection and analysis of information to check business activities and managerial decisions; the point for shareholders is then to monitor managers by acting on the decision-making process by being part of this process. We assume this type of monitoring to be correlated with the distance between Paris and the firm's head office. When shareholders monitor and work with head office managers (namely decisional managers), they can influence the decision-making process and monitor them *ex-ante*. So, *active* monitoring should increase as the distance between Paris and the head office increases.

This setting allows us to examine the two forms of monitoring costs. First, we focus on *speculative* monitoring costs through the relationship between the dividend yield and the distance between Paris and activities location (*dist\_act*) (Table 3, line 2a). We expect the relationship to be positive, as a higher distance means that agency costs increase as well, which leads to an increase in dividends to compensate for this. Second, we study *active* monitoring costs through the relationship between the dividend yield and the distance between Paris and the firm's head office (*dist\_HO*) (Table 3, line 2b). We again expect a positive relationship for the same reason: a higher distance means higher agency costs, which in turn mean higher dividend yield to compensate. Consequently, if *dist\_act* (respectively *dist\_HO*) has a greater explanatory power for the dividend yield, we may conclude that monitoring costs mostly result from *speculative* (respectively *active*) monitoring.

*Hypothesis 2a: Div yield<sub>it</sub> is positively correlated with dist<sub>it, act</sub>.*

*Hypothesis 2b: Div yield<sub>it</sub> is positively correlated with dist<sub>it, HO</sub>.*

*Hypothesis 2c: The effect of dist<sub>it, act</sub> on div yield<sub>it</sub> is stronger than the effect of dist<sub>it, HO</sub>.*

By observing the relationships between investors-firm distance and dividend yield (Hypotheses 2a and 2b), we replicate the results reported by John et al. (2011). The originality of our work is to clearly exclude the possibility of a signaling effect thanks to the corporate statutes establishing a fixed rule of distribution of profits, as managers cannot change dividends from one year to another in order to signal information about the firm's future profits.

In a final set of tests, we examine whether the payout rules were designed to compensate for the agency costs between shareholders and different types of managers with another dividend variable

used as the explained variable: the theoretical percentage of profits distributed to shareholders for a given amount of profits (Table 3, lines 3a and 3b). In fact, depending on their sector, their maturity, and their size, among other determinants, companies do not make the same amount of profits and in particular the same amount of profits relative to their capital. The calculation of the *Th. payout ratio<sub>it</sub>* variable allows us to obtain comparable figures. Our intuition is that the fixed rule of distribution of profits might exert a signaling effect on something other than future profits; of course, the signal studied here is not the classic one expressed by managers changing the dividends paid. For instance, the fixed rule may have been set up in such a way that it signals information on the overall quality of the firm, and in particular on the agency costs that could be induced by its different characteristics. In other words, we want to know whether corporate governance at that time includes in its statutes a signal on agency costs to be borne through the fixed rule of distribution of profits.

We expect the relationship to be positive between *Th. payout ratio<sub>it</sub>* and the distance variables, namely *dist\_act* and *dist\_HO*. Should the distance increase, there may be more uncertainty about the firm's quality due to the increase in asymmetry of information. To compensate for this, statutes may thus promise shareholders a higher dividend relative to profits.

*Hypothesis 3a: Th. payout ratio<sub>it</sub> is positively correlated with dist<sub>it, act</sub>.*

*Hypothesis 3b: Th. payout ratio<sub>it</sub> is positively correlated with dist<sub>it, HO</sub>.*

Table 3 summarizes the agency relationships we instigate as well as the expected effects.

**Table 3: Hypotheses Sum-Up**

	Principal	Agent	Dividend measures	Type of distance	Related hypothesis(es)	Expected sign	Agency costs	Results in
1	Decisional managers	Operational managers	Profits relatively to the size of the balance sheet	Head office - activities Dist (HO-act)	1	Negative	Monitoring costs	Table 4
2a	Investors	Operational managers	Dividend yield	Paris - activities Dist_act	2a & 2c	Positive	Speculative monitoring costs	Table 5A
2b	Investors	Decisional managers	Dividend yield	Paris - head office Dist_HO	2b & 2c	Positive	Active monitoring costs	Table 5B
3a	Investors	Operational managers	Theoretical payout ratio	Paris - activities Dist_act	3a	Positive	Speculative monitoring costs	Table 6A
3b	Investors	Decisional managers	Theoretical payout ratio	Paris - head office Dist_HO	3b	Positive	Active monitoring costs	Table 6B

A number of other potential determinants of dividends have also been considered because, according to previous literature on agency theory, they must have an impact on dividend payouts. In particular, older and larger firms usually hold more cash that may potentially be misused or appropriated by managers. Consequently, such firms should be more likely to pay dividends (or higher ones), an effect that for instance Fama and French (2001) and Denis and Osobov (2008) clearly show in their

respective studies. We thus control for the age and the market capitalization of each firm. In addition, firms with fewer investment opportunities (usually measured by a lower Tobin's Q or negative change in past profits), should pay higher dividends for the same reasons: such firms are less likely to invest and thus likely to hold more cash (Rozeff, 1982; Lang and Litzenberger, 1989; Moh'd et al., 1995). Consequently, should our control variables be significant, we expect age and size to be positively correlated with dividends, whereas Tobin's Q and change in profits to be negatively correlated with them.

Furthermore, the firm beta taken to measure the firm's risk should be positively correlated with dividends, as the riskier the firm is, the higher the dividends it needs to pay in order to attract investors and compensate them for this increased risk. The minimum number of shares that board members must own may also affect dividend payouts: when this minimum number increases, (1) board members' interests become more aligned with those of shareholders, and (2) this reduces ownership dispersion (this aspect has been assessed by Jensen and Meckling, 1976). Both phenomena make board members' monitoring of managers easier and better, which makes the payment of dividends less crucial:  $Board_{it}$  should thus be negatively correlated with dividends.

More formally, we run the following ordinary least squares (OLS) regressions:

$$\text{Hypothesis 1: } \frac{Profits}{BS}_{it} = \alpha + \beta * Dist_{it,H0-act} + \gamma * \text{matrix of control variables} \quad (1)$$

$$\text{Hypothesis 2a: } Div\ yield_{it} = \alpha + \beta * Dist_{it,act} + \gamma * \text{matrix of control variables} \quad (2)$$

$$\text{Hypothesis 2b: } Div\ yield_{it} = \alpha + \beta * Dist_{it,H0} + \gamma * \text{matrix of control variables} \quad (3)$$

$$\text{Hypothesis 2c: } \text{Comparison of (2) and (3)}$$

$$\text{Hypothesis 3a: } Th.\text{payout ratio}_{it} = \alpha + \beta * Dist_{it,act} + \gamma * \text{matrix of control variables} \quad (4)$$

$$\text{Hypothesis 3b: } Th.\text{payout ratio}_{it} = \alpha + \beta * Dist_{it,H0} + \gamma * \text{matrix of control variables} \quad (5)$$

## V. Results

### A. Distance effect on the level of profits

Table 4 shows that results are in line with Hypothesis 1: the distance has a negative effect on profits but this relationship is not always significant. The significance appears when the distance variable is coupled with one control variable (columns 2 to 7) but disappears when the industries fixed-effect and all variables are controlled for (columns 8 and 9). Industry fixed-effects are strongly correlated with the distance as utilities, services and "Others" category are usually located closer to their head office (the distance variable is then at zero or almost zero), whereas mines are much further from it.

Among the control variables, Tobin's Q is always highly significant (at the 1% level) but the sign of its coefficient is mixed. On the one hand, the negative sign (column 7) is not consistent with our expectations, but on the other, the positive coefficient (column 9) is, as a higher Tobin's Q means more investment opportunities the firm may take advantage of, which should positively affect its profits.

Table 4: Profits and distance

	Dep. Variable: Profits / BS									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Distance (HO-act)	-3.230E-06 (4.228E-06)	-1.483E-05** (6.891E-06)	-1.368E-05** (6.847E-06)	-2.367E-05*** (7.312E-06)	-3.606E-05*** (8.941E-06)	-1.739E-05*** (6.623E-06)	-1.052E-05** (4.632E-06)	-7.631E-06 (7.672E-06)	-1.025E-05 (6.801E-06)	5.095E-05 (4.219E-05)
Dist (HO-act) ^2										-2.326E-08* (1.193E-08)
Dist (HO-act) ^3										1.545E-12* (7.989E-13)
Age		-1.046E-03 (1.214E-03)							-5.838E-04 (1.074E-03)	2.103E-03* (1.109E-03)
Beta			7.656E-03 (9.616E-03)						9.001E-04 (0.0095)	2.324E-03 (9.676E-03)
Board				2.546E+00 (4.280E+00)					1.293E-01 (4.178E+00)	2.834E+00 (4.275E+00)
Change in profits					6.648E-04 (6.236E-04)				1.320E-04 (4.360E-04)	5.637E-04 (4.770E-04)
Market cap.						-1.347E-09*** (1.995E-10)			-2.852E-10 (4.407E-10)	-3.012E-10 (4.495E-10)
Tobin's Q							-3.829E-01*** (1.372E-02)		1.086E-01*** (1.951E-02)	-3.376E-01*** (1.988E-02)
Industry FE	No	No	No	No	No	No	No	Yes	Yes	Yes
Year FE	No	No	No	No	No	No	No	No	Yes	Yes
Observations	841	666	651	544	562	666	666	666	453	453
R <sup>2</sup>	-0.00050	0.00442	0.00373	0.01612	0.02490	0.06738	0.54160	0.06970	0.06638	0.50470

Note: Heteroskedasticity-robust standard errors are reported in parentheses. \*\*\* Significant at the 1 percent level, \*\* Significant at the 5 percent level and \* Significant at the 10 percent level. Dist (HO-act) is the distance between the firm head office and its main activities location.

## B. Distance effect on the dividend yield

First of all, we do find a statistical effect of distance on dividend yield, confirming the agency-related theory of dividends. We thereby confirm the results reported by John et al. (2011) but with higher control for the alternative theory, the signaling effect, thanks to the fixed payout rule preventing managers from using dividends as a signal.

More precisely, we first confirm Hypothesis 2a. The distance between Paris and firm activities location is highly significant to explain the dividend yield, supporting the idea of the importance of the *speculative* monitoring agency costs (Table 5A). There was a distance effect: investing in firms whose activities are located further from Paris provides higher dividends. The relationship remains positive and significant when adding all controls, none of them being significant when they are all added to the distance effect. Moreover, distance has a strong non-linear effect on dividends. The R<sup>2</sup> strongly increases when square and cubic distances are added to the regression (Table 5A, column 9 compared with column 10): in further research, our hypothesis should be improved as this relationship rather displays a reverse distance effect with some important thresholds in the distance.

Results related to Hypothesis 2b are more mixed. The relationship between the dividend yield and the distance between Paris and the firm's head office, thus assessing the *active* monitoring costs, generally



yields less robust results than the distance to activities: the relationship between dividends and this distance is not significant or not strongly significant (at the 10% level) (Table 5B). Surprisingly, when it is significant (Table 5B, columns 6 and 9), dividend yield becomes negatively correlated with the distance: there is therefore a sort of reverse distance effect. This might be due to the fact that head offices were usually located in big cities and were well connected to the transport and communication networks, even at the beginning of the 20<sup>th</sup> century. The distance between firm investors and its decisional managers thus matters far less. Similarly, the test of a possible non-linear effect of distance on dividends (Table 5B, column 10) does not yield strong results.

These results allow us to confirm Hypothesis 2c and to demonstrate a strong difference between *speculative* and *active* monitoring costs: results on the distance between Paris and activities location are more robust than those using the distance to the head office. This means that the difficulty of monitoring and the resulting increasing agency costs are mostly due to *speculative* monitoring (e.g. when activities are located further from Paris) rather than to *active* monitoring (e.g. when the head office is further from Paris). The main result is then that the dividend yield increases mainly to compensate for agency costs implied by *speculative* monitoring.

Table 5: Dividend yield and distance

Dep. Variable: Dividend yield										
A: Test of the speculative monitoring										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Distance_act	1.374E-05*** (2.718E-06)	1.424E-05*** (2.739E-06)	1.402E-05*** (2.756E-06)	1.511E-05*** (3.147E-06)	2.135E-05*** (3.488E-06)	1.029E-05*** (2.741E-06)	1.374E-05*** (2.807E-06)	1.578E-05*** (3.060E-06)	2.375E-05*** (4.623E-06)	-1.447E-04*** (2.776E-05)
Dist_act ^2										4.478E-08*** (7.721E-09)
Dist_act ^3										-2.803E-12*** (5.272E-13)
Age		7.601E-04 (5.421E-04)							5.287E-04 (7.905E-04)	-4.516E-04 (7.841E-04)
Beta			-4.386E-03 (4.394E-03)						-4.859E-03 (0.0067)	-1.774E-03 (6.496E-03)
Board				-2.017E-01 (1.997E+00)					-1.290E+00 (3.006E+00)	-3.186E+00 (2.930E+00)
Change in profits					-3.634E-04 (2.995E-04)				-4.833E-04 (3.073E-04)	-2.522E-04 (3.149E-04)
Market cap.						4.827E-10*** (9.048E-11)			2.873E-10 (3.252E-10)	3.086E-10 (3.126E-10)
Tobin's Q							3.415E-02*** (9.189E-03)		1.435E-02 (1.387E-02)	1.094E-02 (1.333E-02)
Industry FE	No	No	No	No	No	No	No	Yes	Yes	Yes
Year FE	No	No	No	No	No	No	No	No	Yes	Yes
Observations	668	668	657	540	552	668	646	668	442	442
R <sup>2</sup>	0.03551	0.03691	0.03566	0.03855	0.06062	0.07370	0.05609	0.04546	0.06246	0.13590
B: Test of the active monitoring										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Distance_HO	5.580E-06 (4.288E-06)	5.600E-06 (4.290E-06)	5.619E-06 (4.330E-06)	-3.630E-06 (5.792E-06)	5.450E-06 (4.829E-06)	-8.911E-06* (4.723E-06)	4.868E-06 (4.547E-06)	5.741E-06 (4.789E-06)	-1.678E-05* (9.432E-06)	3.040E-05 (4.487E-05)
Dist_HO ^2										-2.479E-08 (2.027E-08)
Dist_HO ^3										2.150E-12 (1.728E-12)
Age		3.970E-04 (5.476E-04)							-7.392E-04 (8.075E-04)	-8.058E-04 (8.106E-04)
Beta			-2.853E-03 (4.463E-03)						-4.178E-03 (6.917E-03)	-3.671E-03 (6.935E-03)
Board				-1.749E+00 (2.065E+00)					-2.653E+00 (3.093E+00)	-2.662E+00 (3.112E+00)
Change in profits					-7.522E-05 (3.054E-04)				-2.031E-04 (3.105E-04)	-2.094E-04 (3.108E-04)
Market cap.						6.526E-10*** (1.006E-10)			9.908E-10*** (3.590E-10)	9.596E-10*** (3.606E-10)
Tobin's Q							3.642E-02*** (9.351E-03)		4.445E-03 (1.439E-02)	5.663E-03 (1.443E-02)
Industry FE	No	No	No	No	No	No	No	Yes	Yes	Yes
Year FE	No	No	No	No	No	No	No	No	Yes	Yes
Observations	668	668	657	540	552	668	646	668	442	442
R <sup>2</sup>	0.00104	0.00033	0.00009	-0.00199	-0.00120	0.05909	0.02266	0.00900	0.01114	0.01009

Note: Heteroskedasticity-robust standard errors are reported in parentheses. \*\*\* Significant at the 1 percent level, \*\* Significant at the 5 percent level and \* Significant at the 10 percent level. Dist\_act is the distance between Paris and firm activities location, Dist\_HO is the distance between Paris and the firm head office.

### C. Distance effect and firms' statutes design

Table 6 displays the results on the distance to activities and to the head office that do not confirm Hypotheses 3a and 3b. The distance effect on the theoretical payout ratio is significant only when we add controls. Moreover, when it is significant, the theoretical payout ratio is a negative function of both distances, which is contrary to Hypotheses 3a and 3b. On the contrary, the further firm head office/activities are from Paris, the less important the part given to shareholders and determined by firm statutes will be. There may be several explanations for this. In particular, even though they were located far from Paris, head offices were usually in big cities and were well connected to the transport and communication networks. Moreover, there may be an "Empire effect" on both distances (to activities and head offices): Paris may indeed be better connected to Libreville or to Saigon than to New York because these cities were in the French colonial empire. In all cases, the consequence is that the distance matters less (or even no longer matters). Other explanations may be related to the fixed

rule of distribution of profits itself. For instance, this rule might not be optimal or might be designed in such a way that it signals something other than how the firm deals with agency costs. In addition, we may not have considered other important controls, such as the reputation of board members, due to the specificity of our dataset.

Regarding controls, the market capitalization and Tobin's Q are significant in most regressions, and are consistent with the agency theory (respectively positive and negative). Both measures were then already relevant at the beginning of the 20<sup>th</sup> century in assessing agency issues within a firm. However, one last point to note among the control variables is the surprising non-significance of the beta (and this is true in all the tests run in this study). We explain this by the fact that before 1914, the part of the market risk within the total risk used to be much lower, or in other words, the cross-correlation among stocks was very low (Le Bris, 2012); in fact, contrary to what is currently observed, the specific risk represented the greatest part of this total risk, leading the beta not to be significant here.

In addition, the non-linear test of the distance effect on the theoretical payout ratio yields surprising results (Table 6B, column 10): if the simple distance to head office remains non-significant, the square and the cubic distances are significant at a 1% level when adding controls. Again, there seem to be some thresholds in the distance to head office between which the effect on dividends varies.

Table 6: Theoretical payout ratio and distance

Dep. Variable: Theoretical payout ratio										
A: Test of the speculative monitoring										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Distance_act	3.162E-06 (2.212E-06)	3.848E-06*	1.807E-06 (2.749E-06)	-6.609E-07 (2.408E-06)	-2.335E-07 (2.829E-06)	-1.248E-06 (2.778E-06)	2.854E-07 (2.784E-06)	-2.166E-06 (3.062E-06)	-8.219E-06** (4.039E-06)	-3.070E-05 (2.509E-05)
Dist_act ^2										3.633E-09 (7.005E-09)
Dist_act ^3										-1.266E-13 (4.791E-13)
Age		1.445E-03*** (4.007E-04)							7.561E-05 (6.914E-04)	-1.553E-04 (7.111E-04)
Beta			-5.115E-03 (4.390E-03)						-1.976E-03 (0.0059)	-1.209E-03 (5.911E-03)
Board				-4.380E+00*** (1.433E+00)					-3.197E+00 (2.635E+00)	-3.849E+00 (2.675E+00)
Change in profits					2.436E-04 (2.701E-04)				2.758E-04 (2.694E-04)	2.071E-04 (2.875E-04)
Market cap.						3.315E-10*** (9.096E-11)			5.641E-10** (2.836E-10)	5.784E-10** (2.839E-10)
Tobin's Q							9.487E-03 (9.203E-03)		-2.409E-02** (1.219E-02)	-2.458E-02** (1.220E-02)
Industry FE	No	No	No	No	No	No	No	Yes	Yes	Yes
Year FE	No	No	No	No	No	No	No	No	Yes	Yes
Observations	965	965	643	815	733	658	641	658	441	441
R <sup>2</sup>	0.00108	0.01338	-0.00045	0.00901	-0.00162	0.01712	-0.00142	0.08646	0.05499	0.05497
B: Test of the active monitoring										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Distance_HO	2.496E-06 (3.496E-06)	2.536E-06 (3.476E-06)	4.409E-06 (4.259E-06)	-6.270E-06 (4.180E-06)	2.271E-06 (3.713E-06)	-3.909E-06 (4.754E-06)	1.837E-06 (4.481E-06)	9.062E-07 (3.690E-06)	-3.200E-05*** (7.947E-06)	1.931E-05 (3.729E-05)
Dist_HO ^2										-4.672E-08*** (1.670E-08)
Dist_HO ^3										4.617E-12*** (1.421E-12)
Age		1.386E-03*** (3.998E-04)							-1.899E-04 (6.794E-04)	-4.147E-04 (6.663E-04)
Beta			-5.089E-03 (4.383E-03)						-1.724E-03 (5.803E-03)	-5.015E-05 (5.688E-03)
Board				-4.748E+00*** (1.440E+00)					-3.720E+00 (2.602E+00)	-4.530E+00* (2.559E+00)
Change in profits					2.408E-04 (2.672E-04)				1.773E-04 (2.613E-04)	1.449E-04 (2.557E-04)
Market cap.						3.604E-10*** (9.999E-11)			9.462E-10*** (3.007E-10)	8.244E-10*** (2.953E-10)
Tobin's Q							9.272E-03 (9.208E-03)		-2.970E-02** (1.213E-02)	-2.735E-02** (1.189E-02)
Industry FE	No	No	No	No	No	No	No	Yes	Yes	Yes
Year FE	No	No	No	No	No	No	No	No	Yes	Yes
Observations	965	965	643	815	733	658	641	965	441	441
R <sup>2</sup>	-0.00051	0.01081	0.00055	0.01166	-0.00112	0.01783	-0.00118	0.06567	0.08114	0.12120

Note: Heteroskedasticity-robust standard errors are reported in parentheses. \*\*\* Significant at the 1 percent level, \*\* Significant at the 5 percent level and \* Significant at the 10 percent level. Dist\_act is the distance between Paris and firm activities location, Dist\_HO is the distance between Paris and the firm head office.

## VI. Conclusion

We have studied several specific agency costs, in particular monitoring costs, and provided empirical evidence regarding the distinction between the *active* and *speculative* types of monitoring costs (Tirole, 2006).

We first show that distance captures monitoring costs. A firm characterized by activities far from its head office suffers from internal monitoring costs between decisional and operational managers. These monitoring costs, modeled by the distance between firm head office and activities, do have an impact on firm profits: when the distance between firm head office and activities increases, firm profits decrease significantly.

Regarding the classical agency relationship between investors and managers, we show that the dividend yield is positively affected by an increase in monitoring costs, providing further support for the agency explanation of dividends, while excluding a potential signaling effect thanks to the fixed

rule of distribution of profits. Furthermore, we refine the understanding by distinguishing the impact of *active* and *speculative* monitoring costs. We find that the effect on the payment of dividends of *speculative* monitoring (measured by the distance between Paris and firm activities location) is positive and more robust than the effect of *active* monitoring (measured by the distance between Paris and firm head office). In this way, we show that *speculative* monitoring costs are the most important agency costs that can explain dividend payments. In other words, an increase in the asymmetry of information between investors and operational managers is more important in assessing dividend yields than an increase in the asymmetry of information between investors and decisional managers.

The examination of the relationship between both distance variables and the theoretical payout ratio calculated from the fixed rule of distribution provides more mixed results: the relationship between both is even sometimes negative. This might be related to the design of the fixed rule of distribution of profits: it might be set at the creation of the firm not only with the purpose of solving agency issues, but it might focus on other aspects such as those linked to the more general issue of corporate governance. This leaves room for further research, in particular for the improvement of our hypothesis on the theoretical payout ratio and for potentially stronger results.

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