Dividend Policy and Managerial Overconfidence: French Evidence

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Abstract

This paper examines the impact of managerial overconfidence on dividend policy. The literature has identified two strands of reasoning. Deshmukh et al. (2013) argue that overconfident managers with relatively high investment needs perceive external funds as more costly than internal financing. This leads them to pay out lower dividends. Conversely, Wu and Liu (2011) claim that overconfident CEOs expect higher future cash flows and are prone to pay out higher dividends. We study a sample of 120 French firms for the period 2000–2015. Our results provide evidence that CEOs' overconfidence plays a decisive role in explaining the dividend policy of French firms. Managerial overconfidence exerts a positive effect on firms' dividend payouts.

Keywords: *Dividend Policy, CEO Overconfidence, Behavioral Finance, Cognitive* Bias

JEL Codes: G35, G40

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1. Introduction

This paper examines the role of managerial overconfidence in explaining the dividend policy of French firms. Research into behavioral corporate finance has focused on the behavior of managers, taking into consideration the main assumption that choices made by managers may not maximize utility and that managers may make poor choices due to many irrational biases such as moods, emotions, limited information, cognitive ability, and managerial biases in their investment decisions (Malmendier and Tate, 2005, 2008, 2011). Moore and Schatz (2017) discuss overconfidence under three different headings: overestimation is the illusion that you are better than you are; overplacement is an unjustified belief that you are better than anyone; and overprecision is an unfounded belief that you know the facts. These three forms of overconfidence arise under different conditions, for different reasons and entail a wide variety of implications. It would be an error to treat them as if they were the same or to assume that they share the same psychological background. Therefore, following the pioneering work of Malmendier and Tate (2005), we define overconfidence as the fact that managers are prone to overestimation.[1] This definition is similar to one of the three visions of overconfidence identified by Moore and Healy (2008; p5): "The first definition of overconfidence is the overestimation of one's actual ability, performance, level of control, or chance of success."

If managers are prone to psychological biases, firms may be in sub-optimal situations in which managers believe they are maximizing their firm's value while actually reducing it. In this vein, empirical tests identify an adverse impact of overconfidence on major financial decisions (Baker et al., 2007). The areas explored are investment and finance (Hackbarth, 2008;[2] Heaton, 2002;[3] Malmendier et al., 2011), mergers and acquisitions (Malmendier and Tate, 2008[4]), and to a lesser extent, dividend policy (Cordeiro, 2009; Deshmukh et al., 2013[5]). The main concern of this paper is the influence of overconfidence on dividend policy.

Ben David et al. (2007), Cordeiro (2009), and Deshmukh et al. (2013) state that overconfident executives appear to pay out lower dividends. They use several methods to point out that CEOs are on average highly overconfident. For example, the 80% confidence interval for their one-year estimates includes only 36.6% of realized returns.

Recent behavioral corporate finance literature examines the effect of cognitive management bias (e.g. overconfidence) on corporate financial choices. For instance, Heaton (2002)

1 Malmendier and Tate (2005: p. 2662) state that "overconfident CEOs systematically overestimate the return to their investment projects".
2 Hackbarth (2008) reports that overconfident CEOs tend to choose higher debt levels.
3 Heaton (2002) confirms that managers' overconfidence significantly affects corporate decisions.
4 Malmendier and Tate (2008) find that overconfident managers are more likely to invest in assets that are value destroying.
5 Desmukh et al. (2013) and Cordeiro (2009) report that overconfident managers are less likely to distribute dividends to shareholders.

shows that value is significantly reduced by overconfident managers. He points out that even if they are loyal to shareholders, executives overvalue their investments and may prefer to spend more on negative net present value projects as they find them worthwhile. He also shows that overconfident managers will at some point turn down positive net present value projects if those projects require external finance since overconfident managers have the perception that capital markets undervalue their firm's securities. Malmendier and Tate (2005) report that investment choices are extremely sensitive to free cash flow in companies managed by overconfident CEOs. Despite the extensive literature on dividend policy, since the irrelevance theory of Modigliani and Miller (1961) and the subsequent research based on different theories and hypotheses (Jensen, 1986; Easterbrook,1984;[6] and Allen and Michaely, 2003[7]), the empirical evidence remains inconclusive. Previous research mainly studied the impact of managerial biases on investment and financing decisions; however, the influence of those biases on dividend policy remains largely unexplored. Furthermore, France is one of the most generous countries in the European Union in terms of dividends (Henderson Global Investors, 2019). Dividends rose by more than 11% in France in 2015. For seven years (2013–2019), France has been the leading European country for dividend distribution (Henderson Global Investors, 2019).

France is Europe's leading dividend payer thanks to the large extraordinary dividends from Natixis and Energie. It was the only country to post record payments in 2019. Recent dividend payments reached US$51 billion in 2017 and USD 63.9 billion in 2019 (2.8 times more than in 2003). By way of comparison, the German economy paid out USD 38.5 billion in dividends over this period, down 11% compared to the second quarter of 2018.

Moreover, not only have dividends risen but the YPO confidence index[8] has also indicated that confidence has been higher in the Euro area than in the rest of the world. The index shows an overall positive sentiment in spite of political uncertainty and the financial crisis. French firms have withstood economic and political turmoil slightly better than others. According to Campello et al. (2010), financial and/or economic crises have consequences for corporate financial policies in subsequent years. They produce exogenous shocks on corporate performance and cash flow. They clearly reduce the expected profitability of investment opportunities. Moreover, the sharp deterioration in prices which they generate offers opportunities for firms still in the process of investing (Byoun and Xu, 2016). Deshmukh et al. (2013) find that CEOs are more confident in times of great uncertainty.

[6] Linking dividend policy with free cash flow provides support for agency theory: managers prefer to undertake projects with negative value rather than distribute dividends to shareholders in order to reduce conflicts.
[7] If dividends increase, free cash flow decreases and agency problems are thereby mitigated.
[8] YPO surveys its network of more than 24,000 CEOs in more than 130 countries on questions related to current and expected economic conditions affecting their businesses. About a third of YPO members are entrepreneurs, another third run family businesses, and the rest are professional (hired) executives.

It is widely accepted that dividends play an informative role: under the signaling hypothesis (Bhattacharya, 1979) it is also accepted that market information is imperfect. Managers force uninformed investors to scrutinize corporate behavior in order to infer the necessary information. According to Akron (2011), the informative role of dividends should strengthen during the crisis, as these positive signals reassure the market about the sustainability of corporate prospects.

The French context is very interesting because it is characterized by a particularly concentrated shareholder base with a marked family component and specific expectations (Miller et al., 2007), which influences dividend distribution policies (Setia-Atmaja, 2010). Similarly, the ownership structure itself affects dividend distribution policies (e.g. Mancinelli and Ozkan, 2006; Gugler and Yurtoglu, 2003; Truong and Heaney, 2007). It therefore seems necessary to take these elements into account in our research context.

It is important to point out that the relationship between managerial overconfidence and dividend policy has not yet been studied in France. How can French CEOs' behavior explain dividend policy? We suggest an explanation for the policy of dividend payout and for suboptimal behavior of corporate managers. Instead of concentrating on company-level characteristics, we link corporate choices to CEOs' personal attributes.

In our paper, we follow Wu and Liu (2011) who assume that CEOs strive to maximize the value of their firm despite a bias toward overconfidence with managers wanting the market to perceive them as knowledgeable and competent (Blanton et al., 2001). This research examines the impact of the overconfidence of French managers on dividend policy using several original proxies to measure managerial overconfidence. Our paper contributes to the growing literature on behavioral corporate finance which highlights the central role of managers' characteristics and biases in explaining corporate outcome variables such as dividend policy decisions. This paper builds on the behavioral corporate finance literature which explores the impact of CEO overconfidence, firm characteristics, and corporate governance on corporate decisions. We examine a period that spans from 2000 to 2015, encompassing the subprime crisis and the Euro debt crisis. Our sample includes 120 firms and 1920 firm-observations. Our contribution to the literature lies in the explanation we give for overconfident management behavior in France.

Moreover, our study relies on a different methodology than other studies. Studies of overconfidence and dividends generally use qualitative methods such as press coverage and analyze textual information data (Juhel and Anouar, 2014) or logistic models (Cordeiro, 2009; Fama and French, 2001) which differ considerably from our fixed-effect estimation and GMM dynamic model approach. Finally, one of the main difficulties in investigating behavior relating to corporate finance lies in providing operational measures of overconfidence. Our approach examines several proxies for overconfidence in France. This ensures our conclusions are robust. To the best of our knowledge, this

is the first research using a quantitative methodology with different measures of overconfidence in a French context.

The structure of our paper is as follows. Section 2 describes the theoretical background and our research hypotheses. Section 3 discusses the measurement of managerial overconfidence. Section 4 presents the data and variables, and section 5 the methodology and findings. Finally, section 6 offers conclusions and contributions.

2. Literature Review

Research on behavioral corporate finance underscores the complexity of human psychology (Baker et al., 2004). Plous (1993) points out that "no problem in judgment and decision making is more prevalent and more potentially catastrophic than overconfidence". Hence, to better understand irrational individual behavior, Kahneman (2011) makes a distinction between "confidence" and "high confidence" or "overconfidence": "Confidence is a feeling, which reflects the coherence of the information and the cognitive ease of processing it. It is wise to take admissions of uncertainty seriously, but declarations of high confidence mainly tell you that an individual has constructed a coherent story in his mind, not necessarily that the story is true."

Research on behavioral corporate finance reports that overconfidence and optimism are likely to appear jointly (Taylor and Brown, 1988; Ahmed and Duellman, 2013). Optimistic people will tend to be overconfident and vice-versa. These two concepts may need to be defined separately to better understand the decision-making process. Overconfidence bias may be related to two explanations: underestimating the risk of future events and/or overestimating individual ability to positively affect outcomes for the firm based on the private information managers may have about their firms (De Long et al., 1991; Fabre and François-Heude, 2009). Therefore, optimism is usually defined as a personal characteristic that is stable in its nature. Optimists are more likely to expect favorable outcomes independently of their individual skills and actual situation (Scheier and Carver, 1985). Managerial overconfidence is considered as one of the most significant and robust findings concerning behavioral corporate finance (Wu and Liu, 2011). This leads us to focus on overconfidence biases and to analyze their impact on dividend payout policy. In this study, we will focus on the impact of overconfidence as an irrational bias with respect to dividend payout policy. Baker et al. (2006) argue that it is difficult to establish a reasonable prediction about the impact of managerial overconfidence on dividend payout policy.

The literature contains two strands of research on the connection between overconfidence and dividend policy. The first strand suggests that overconfident managers distribute lower dividends. Managers who are confident about their firm's future prefer to invest cash in projects rather than to distribute dividends. Previous studies support this assumption (Cordeiro, 2009; Deshmukh et al.,

2013; Ben David et al., 2007, 2010) and define overconfident managers as those who tend not to diversify their portfolios and who are well perceived by others.

Malmendier and Tate (2005) and Malmendier et al. (2007) report that overconfident managers are reluctant to raise funds from external sources and exhibit financing preferences in line with the pecking order theory (Myers and Majluf, 1984). This preference for internal resources suggests that overconfident CEOs tend to pay out lower dividends so as to enhance the potential for internal funding.

Malmendier et al. (2011) examine the relationship between managerial overconfidence and capital structure choices. They find that overconfident managers are less likely to issue equity because they think their firms are undervalued. They are therefore also reluctant to issue risky debt since they believe that the interest rates creditors' demands are too high. However, the researchers report that overconfident managers' reluctance to raise funds from external sources leads to pecking-order financing. Thus, overconfident CEOs prefer debt to equity because debt allows current shareholders to remain the residual claimants on the firm's future cash flows.

Deshmukh et al. (2013) develop a theoretical model and show that overconfident managers tend to pay lower dividends than rational CEOs because they perceive external financing to be costlier than rational managers do. The idea is that overconfidence leads to a perception that the firm is undervalued, which, in turn, leads to a higher perceived cost of equity. Since overconfident CEOs invariably perceive their company as undervalued and since external financing is costly, they prefer to pay lower dividends so as to accumulate cash flow for investment in future projects. Those same authors also report that the link between overconfident CEOs and dividend policy is stronger in corporations with lower growth opportunities and lower cash flows.

Cordeiro (2009) provides evidence that firms managed by overconfident CEOs are less likely to pay out dividends. This behavior may be explained by the fact that they are confident about the company's future cash flow or because they expect cash flow from current projects to rise. Consequently, overconfident managers are more reluctant to pay dividends to shareholders since they believe they can earn higher returns by investing in their firms. But this involves the managerial perception of their company's substantive value and/or future prospects, which may be mistaken. Such overconfidence may be interpreted as overplacement (perception by CEOs that they are doing better than the market because the latter undervalues the firm). However, misjudgments by overconfident CEOs may well wipe value off their company.

It may be difficult and complicated to determine whether managers make suboptimal decisions because of psychological biases or because they rationally maximize their private targets at shareholders' expense.

For instance, the fact that managers are more likely to overinvest rather than distribute cash to shareholders may look like moral hazard or managerial overconfidence. They are persuaded that funds create more value when invested than when they are kept back for shareholders.

The second strand of research tells a different story. Overconfident managers tend to pay out higher dividends. The main idea is that overconfident managers do not worry about the riskiness of their investment. They are very confident in the choices they make and do not think they will encounter financial difficulties. This overconfidence may be perceived as overestimation, when CEOs feel they are better than they actually are. They use free cash flow to pay more dividends to their shareholders.

Wu and Liu (2011) propose a theoretical model and identify a positive relationship between overconfident managers and dividend policy. Before a firm's earnings are disclosed, the dividend payout policy conveys the manager's perception of future prospects. They study overconfidence, taking into account rational CEO perception and overconfident CEO perception. Overconfident managers think that their firms will certainly pay out dividends and they are convinced corporate earnings are stable. Overconfident CEOs overestimate the persistence of transient earnings shocks considering them to be permanent earnings available for paying dividends.

As a result, Wu and Liu (2011) conclude that overconfident CEOs tend to distribute more dividends.

This leads us to propose our hypothesis:

H1: Overconfident CEOs tend to pay out more dividends

3. Measures of managerial overconfidence in the French context

Psychological research reveals that people are not fully rational. One of the key factors influencing their decisions and behavior is overconfidence (Plous, 1993). The main objective of this section is to develop proxies for overconfidence in a French context. First, we begin by explaining why the exercise of stock options and company share purchases cannot be used in France as a measure of managerial overconfidence. Malmendier and Tate (2005, 2008, and 2011) use such a measure in the context of the United States. Second, to circumvent this limitation, we use a set of measures based on overinvestment to quantify this psychological bias (Ahmed et al., 2013; Schrand and Zechman, 2012).

A common measure of overconfidence builds on the works of Malmendier and Tate (2005, 2008) (exercise of stock options and company's share purchases). These measures are not without their limitations. By nature, they are cross-sectional whereas empirical studies deal with panel data. This leads to an insufficient update of the measure of overconfidence. In a French context, such stock-option-based measures would lead to a large number of missing values in the data, which is a potential limitation for any empirical investigation. Moreover, executive compensation structures differ by

country. French and US remuneration standards differ. In French law, there are two legal processes that make it easier for certain employees to become partners in a company. In order to align CEO performance and actions with their firm's success, (1) stock options and (2) performance shares may be used. The stock option, directly inspired by the North American system, was introduced by Law No. 70-1322 of December 3, 1970 and then amended several times. After authorization by the EGM[9], the board of directors offers certain employees the right to purchase at a set price. Thus, if there is an increase in the share value, the employees will have acquired shares at below market price. However, companies in France have tended to abandon this possibility because of the associated fiscal and welfare contribution costs. Nowadays, some executives prefer to own free shares rather than stock options. Therefore, employees who hold performance shares, unlike those who own stock options, do not take any financial risk, because the shares are free-of-charge. The gain is locked in. For this reason, stock options are tending to give way to free shares in France. Contrary to what happens with stock options, beneficiaries are certain to derive a substantial financial benefit at no risk. This new system is now favored by many firms looking to retain certain employees by partially replacing wages and salaries with a compensation system that is exempt from social security contributions and that benefits from a more favorable tax regime than can be had for the taxable wage income and stock options of employees.

According to research by Malmendier and Tate (2005) and Heaton (2002), overinvestment is considered as a potential consequence of overconfidence. They study the sensitivity of investment to cash flow. In their model, overconfident managers overinvest because they overestimate the returns on their projects. When the financial constraints become too great and the only way to obtain additional resources is to issue capital, overconfident managers do not want to raise external funds because they think their firms are undervalued. In that case, the sensitivity of investment to cash flow increases. Ben David et al. (2007) report that overconfident managers tend to overinvest compared to the average, which is in line with the assumption that CEOs overestimate the cash flow of investment projects and underestimate the risk. The main result is that overconfident managers tend to invest more.

Firms with overconfident managers will tend to overinvest in assets, resulting in above-average capital expenditures and/or above-average growth in assets (relative to sales growth) (Schrand and Zechman, 2012; Ahmed and Duellman, 2013). Ben David et al. (2010) find that managers miscalibrate in estimating the internal rate of return on their investment and they underline that miscalibration is one form of overconfidence. As a result, overconfident miscalibrating managers tend on average to invest more than their peers. Ahmed et al. (2013) use two proxies for overconfidence based on investment capital expenditure.

[9] The extraordinary general meeting for shareholders.

First, they use a dichotomous variable equal to one if the capital expenditure deflated by lagged total assets in each year is greater for their firm than for the median level of the entire industry for that year, and zero otherwise. Second, they exploit the excess asset growth based on the study by Schrand and Zechman (2012), which is the amount of excess investment in assets from a residual of regression of total assets growth on sales growth run by industry-year ("overinvest"). They set "overinvest" to one if the residual from the excess investment regression is greater than zero; otherwise it is set to zero. Intuitively, if assets grow faster than sales, this suggests that managers are overinvesting in their company compared to their peers.

4. Data

4.1. Sample

Our sample is made up of 120 (1920 firm-observations) French listed firms quoted on the SBF250 (*Société des Bourses Françaises* 250 index) during the period 2000–2015. SBF250 is a stock market index that includes all sectors of the French economy. Some 40% of the firms operate in the fields of technology and consumer services while industrial firms make up 16.67% of the sample.[10] All regulated firms, such as financial institutions, banks, and insurance companies are removed from the sample. Firms with missing data are also excluded. Data on ownership structure and corporate governance were all collected manually from the website of the AMF (*Autorités des Marchés Financiers*); otherwise, we resorted to firms' annual reports displayed on their respective websites. Dividend payout ratios and financial statements were collected from Datastream.

4.2. Dependent variable

The dividend payout ratio ($Div_{i.t}$) is the percentage of earnings paid to shareholders in dividends during the year. This measure displays the portion of profits the firm decides to keep for funding operations and the portion of profits that is paid out to its shareholders. The variable used to measure the dividend level is the dividend distribution rate or dividend payout ratio The dividend payout is an important financial term used by investors. This measure shows investors how much of a firm's earnings are distributed to shareholders. Therefore, it also provides information about retained earnings.

4.3. Independent variables

We now detail our proxies for overconfidence. First, we use overinvestment-based measures of overconfidence in our empirical approach. Our first investing-based proxy for overconfidence is from Schrand and Zechman (2012) and Ahmed and Duellman (2013). It is a dichotomous variable (INVESTDUMMY)[11] and is equal to one if the firm's residual from a regression of total asset growth

[10] See table 2 for more details.

[11] Following Schrand and Zechman (2012) and Ahmed and Duellman (2013), this proxy measures excess investment. If assets are growing faster than sales, then managers are overinvesting in their firm relative to peers.

on sales growth less the industry median residual is greater than zero and is set to zero otherwise. Our other proxies were proposed by Schrand and Zechman (2012): INVESTIND[12] corresponds to an excess investment defined as an investment greater than the median for the industry. The third proxy we use is CAPEXIND[13] (Ahmed and Duellman, 2013). It is a dichotomous variable set to one if the capital expenditure deflated by lagged total assets is greater than the industry median level of capital expenditure to lag total assets (and is otherwise equal to zero). Our firth proxy (DEBTIND),[14] the firm's industry-adjusted debt-to-equity ratio, is equal to long-term debt scaled by the firm's market value less the industry median for the year. A debt-to-equity ratio higher than the industry median is indicative of managerial overconfidence biases (Malmendier et al., 2007; Ben David et al., 2007). Second, using principal components analysis, we construct an overconfidence index based on the previous four proxies. In order to build an overconfidence index, we retain components with an eigenvalue greater than one. In addition, the variance analysis shows that more than half of the variability in the overconfidence index (62.76%) is explained through its components. OVERCONFIDENCE INDEX[15] is a dichotomous variable set to one if the overconfidence index (score) is greater than the median level of the overconfidence index; otherwise it is equal to zero.

4.4. Control variables

We now discuss our control variables. We begin with a presentation of the variables relating to the CEO. Several studies show the importance of CEO duality and CEO ownership in explaining risky decisions (Adams et al., 2005). Managers with more power in their company will be free to act as they wish.

CEO DUALITY: Krenn (2014) shall act on the same individual basis as the chair of the board and the chief executive officer. Chen et al. (2011) show that the relationship between CEO duality and the company's propensity to pay dividends is negative. We expect a negative relationship between CEO duality and dividend policy.

[12] If excess investment is greater than the industry median for that year, the CEO is considered highly overconfident.

[13] This measure is associated with overinvestment as well as excess asset growth. Referring to Ben David et al., (2007, 2010), this measure indicates that firms managed by overconfident CEOs have more significant capital expenditures. Malmendier and Tate (2005) also find that overconfident CEOs tend to overinvest in capital projects. Likewise, a proxy for managerial overconfidence is used by Campbell et al. (2011), the firm investment level. They consider CEOs are overconfident if their firms figure in the highest quintile of the industry-adjusted investment rate for two successive years. A similar proxy is applied by Boulton and Campbell (2016).

[14] Hackbarth (2008) suggests that overconfident managers choose a higher level of debt and issue new debt more often. A high debt-equity ratio generally means that CEOs have an aggressive practice in financing their growth opportunities, which is linked with the high level of risk. This behavior can be explained by the fact that overconfident CEOs may overestimate their firm's capacity to meet its liabilities.

[15] In our case the index represents a linear combination of quantitative variables via their factorial coefficients.

CEO OWNERSHIP: It is important to study the impact of CEO ownership on dividend policy. Deshmukh et al. (2013) and Haye (2014) show that CEO ownership has a negative impact on dividend policy. We assume a negative association between CEO ownership and dividend payment.

We then switch to our control variables for firms' characteristics.

PROFITABILITY: McCabe (2011) argues that profitability is the most important and reliable indicator as it provides a broad gauge of the capacity of an insurance company to raise its income level. Firms that make large profits are expected to pay high dividends to shareholders. Howatt et al. (2009) show that positive dividend adjustments are combined with favorable future changes in mean real income per share. We predict a positive association between profitability and dividend payout.

CASH FLOW: To minimize the agency problem, Easterbrook (1984) and Jensen (1986) indicate that by paying dividends or repurchasing stocks, executives should transfer excess cash flow to stakeholders. We expect a positive relationship between cash flow and dividend payments.

BOARD SIZE: The function of the board of directors in corporate governance is to protect shareholders' interests and to discipline management. A large board provides more knowledge and expertise, strengthening the relationship between corporate performance and the external market (Pearce and Zahra, 1991) and reducing the CEO's decision-making autonomy (Conyon and Peck, 1998). Other studies, however, have shown that small boards are better than large ones (Jensen, 1992). We assume a negative association between board size and dividend policy.

LEVERAGE: Agency theory predicts that debt and dividend policy might serve as a tool to tackle agency problems. Jensen (1986) argues that corporate debt can be used as a substitute for dividends to mitigate conflicts. This suggests that firms with high leverage pay out lower dividends (Jiraporn et al., 2011). We predict a negative association between leverage and dividend payout.

FIRM SIZE: As in many papers on corporate finance, we control for firm size. Some previous papers show that larger firms tend to pay higher dividends (Fama and French, 2001; Denis and Osobov, 2005, 2008). We expect a positive relationship between firm size and dividend.

FIRM AGE: Consistent with Von Eije and Megginson (2008), firm age is positively related to dividend payout policy, as predicted by life cycle theory. The firm life cycle hypothesis of dividends captures the idea that as a firm matures, its capacity to generate cash overtakes its ability to find gainful investment opportunities and projects. Eventually it becomes ideal for those firms to distribute their free cash flow back to shareholders. Bulan et al. (2007) report that companies begin paying dividends after achieving maturity in their life cycle.

INVESTORS FAMILY: Some of France's most successful businesses, such as Dassault (defense), Louis Vuitton (luxury goods) and Peugeot (automobiles) were founded by families, and these families still maintain some influence over them. Firms with a controlling family tend to pay

lower dividends because conflicts of interest and information asymmetry between the manager and the controlling family are assumed to be less severe, making dividends less important as a governance tool. In family-controlled companies, managers are usually members of the controlling family (Claessens et al., 2000). If the manager is from outside the family, the large family owners have ample resources and the power to control the management effectively. In both cases, family-controlled companies appear to pay lower dividends due to lower agency issues. Family ownership will have a negative impact on company dividends.

BOARD INDEPENDENCE: Independent non-executive directors may act as a monitoring device for the managers of the firm and therefore, in principle, reduce the need for higher dividend payments. Unless independent directors are an efficient monitoring tool, the independence of the board and the policy on dividends should be substitutes for monitoring agency problems. If the number of outside positions held by board members increases, this will have a negative impact on company dividends.

BLOCKHOLDERS: There is a little empirical evidence that the type of controlling owner is likely to influence corporate decisions including dividend policy (Gugler, 2003). Large shareholders have more incentives than smaller shareholders to monitor executive managers' behavior and decisions. In our work, the concentration of ownership is measured by the percentage of shares held by the top three shareholders. Blockholders will have a negative impact on dividends.

INSTITUTIONAL INVESTORS: Short et al. (2002), using a sample of UK public firms, find a positive association between institutional investment and dividend payments. Firth et al. (2016) examine this relationship in the Chinese setting and find that only one class of institutional investors—mutual funds—influence firms to pay higher cash dividends. On the other hand, firms controlled by institutional investors are said to favor lower and not necessarily smoothing dividend payments in order to better shield from bankruptcies (Amihud and Murgia, 1997) and satisfy more contractual solvency standards. Predictions about dividend policy in firms controlled by institutional investors are also confusing. We expect a positive relationship between institutional investors and dividends.

5. Empirical results

5.1. Descriptive statistics

Table 1 summarizes descriptive statistics for ownership concentration, corporate governance, and financial characteristics, including dividend payout ratio. Table 1 highlights that the three largest shareholders hold on average 69.26% of the capital and sometimes the entirety of it; this reveals the concentrated ownership of most French firms mainly due to pyramiding and cross-holdings. Table 1 also reports that about 63.33% of firms have a family blockholder. Table 1 also shows that French listed firms distribute around one-third of their net incomes as dividends. These statistics are similar to those reported in other studies carried out in France (Truong and Heaney, 2007). The boards of

French firms are not entirely made up of independent directors. The latter represent only 34.8% of the whole number but in some cases the proportion reaches 94%.

Table 1. Summary statistics

Variables	Obs	Feq.	Mean	Max	Min	Median	Std, Dev
DIV	1908		0.30	1.00	0.00	0.27	0.28
CASHFLOW	1920		0.097	0.442	-0.075	0.074	0.112
LEVERAGE	1920		0.274	1.000	0.003	0.220	0.252
PROFITABILITY	1920		0.032	0.150	-0.230	0.042	0.083
FIRMSIZE	1920		13.387	17.332	9.639	13.061	2.275
FIRMAGE	1920		3.465	5.011	2.013	3.401	0.808
CEO_OW	1920		15.402	84.450	0.000	1.090	22.593
BLOCK	1920		69.269	100.000	3.900	78.300	28.721
DUALITY	1920	70.57 %					
INV_FAM	1920	63.33%					
INV_INST	1920		21.659	96.790	0.000	9.945	25.526
IND_CA	1920		0.348	0.94	0.00	0.33	0.24
BS	1920		1.666	18.000	0.000	0.429	3.053

DIV: Dividend payout. CASH FLOW: Ratio of pre-tax profit plus depreciation to the book value of total assets. LEVERAGE: Leverage measured as total debt scaled by book value of total assets. PROFITABILITY: Income after taxes for the fiscal year divided by total revenue for the same period. FIRM SIZE: Natural logarithm of the book value of total assets. FIRM AGE: Logarithm of firm age since first formed. CEO OWNERSHIP: Total stock owned by CEO divided by total stock issued. BLOCK: percentage shareholding of the first three shareholders. DUALITY: Dummy variable = 1 if the CEO also serves as the board chair, and 0 otherwise. INV_FAM: dummy variable = 1 if the largest shareholder is a family. INV_INST: Institutional ownership is the ratio of shares that institutions own in the firm divided by the total number of outstanding shares. IND_CA: the proportion of independent directors on the board of directors. BS: Total number of board members.

Table 2 present the sectoral distribution of our sample after removing financial institutions, according to the ICB "Industry Classification Benchmark" classification system. Our sample includes 10 sectors. Therefore, we conclude that our sample seems representative of all sectors. This results in a final sample of 120 companies.

Table 2. Tabulation of firms by industry

Industry	Number of firms	Freq.	Percent	Cum.
Technology	26	416	21.67	21.67
Consumer Good	15	240	12.50	34.17
Consumers services	22	352	18.33	52.50
Health and care	9	144	7.50	60.00
Utilities	8	128	6.67	66.67
Industry	20	320	16.67	83.33
Software	7	112	5.83	89.17
Media and Telecommunication	4	64	3.33	92.50
Oil and Gas	4	64	3.33	95.83
Basic Materials	5	80	4.17	100.00

Table 3 presents the descriptive statistics of firms split by dividend payout levels. The mean cash flow is about 11.1% for high dividend payouts and 8.2% for firms with low dividend payouts. This esult implies that higher cash flows lead to higher dividend payments. The mean profitability is about 4.80% for high dividend payouts and 1.5% for low dividend payouts. The leverage mean is 29.80% for high dividend payouts and 24.8% for low dividend payouts. The mean firm size for high dividends is 14.03% and about 12.71% for low dividend payouts. This result provides evidence that large firms are more likely to distribute high dividends. The results show that firm and CEO characteristics are affected by dividend payout policy (high or low payout).

Table 3: Results of descriptive statistics of independent and control variables through a Dividend Payout

Stats	CASHFLOW	LEVERAGE	PROFITABILITY	FIRMSIZE	FIRMAGE	CEO_OW	BLOCK	DUALITY	INV_INST	IND_CA	BS
Panel A Result of descriptive statistics for high dividend payout											
Sd	0.103	0.265	0.062	2.269	0.761	22.364	30.901	0.474	27.226	0.233	2.932
Mean	0.111	0.298	0.048	14.038	3.662	15.106	66.207	0.661	24.022	0.379	1.423
p50	0.079	0.230	0.047	13.955	3.611	0.52	75.63	1	10.32	0.4	0.429
Min	-0.075	0.003	-0.23	9.639	2.013	0	4.67	0	0	0	0
Max	0.442	1	0.15	17.332	5.011	84.45	100	1	95	0.941	18
Panel B Result of descriptive statistics for low dividend payout											
Sd	0.119	0.235	0.097	2.076	0.805	22.835	25.909	0.432	23.400	0.240	3.154
Mean	0.082	0.248	0.015	12.713	3.261	15.708	72.440	0.752	19.211	0.316	1.919
p50	0.067	0.205	0.036	12.485	3.178	1.62	80.15	1	9.58	0.333	0.4
Min	-0.075	0.003	-0.23	9.639	2.013	0	3.9	0	0	0	0
Max	0.442	1	0.15	17.332	5.011	81.94	100	1	96.79	0.9	15

We take 0.27 as median of payout to split our sample into high and low dividend payouts.

Table 4 presents the pairwise correlation among variables. The results show overconfidence proxies are significantly related to dividend payout policy. Moreover, the findings show that CEO characteristics are significantly associated with overconfidence. This section primarily uses the correlation matrix to detect the collinearity problem, and hence, two highly correlated variables will not be included in the same model. As in Kervin (1992), results in Table 4 indicate that all correlation coefficients are lower than 0.7. We conclude that bi-variable multicollinearity is absent for all models. For more advanced collinearity diagnostics, we use the variance inflation factor (VIF). The VIF examines how collinearity affects the variance of the estimated coefficients. Collinearity can be a problem when VIF is greater than 10 (Belsley et al., 2005). So, mean VIF >10 or 1/VIF <0.10 indicate trouble. VIF is computed for all estimated models in order to check whether collinearity is a major concern in the sample.

Table 4 presents the pairwise correlation:

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
(1) DIV	1																	
(2) CASHFLOW	**0.167***	1																
(3) LEVERAGE	**0.109***	**0.405***	1															
(4) PROFITABILITY	**0.194***	**0.306***	**0.090***	1														
(5) FIRMSIZE	**0.229***	**-0.106***	**0.146***	**0.119***	1													
(6) FIRMAGE	**0.204***	-0.017	**0.176***	**0.098***	**0.402***	1												
(7) CEO_OW	0.028	-0.005	**-0.142***	0.035	**-0.367***	**-0.071***	1											
(8) DUALITY	**-0.075***	0.008	-0.012	**-0.069***	**-0.092***	**-0.191***	**0.238***	1										
(9) BLOCK	**-0.111***	**-0.091***	**-0.095***	**-0.044***	**-0.231***	**-0.081***	**0.304***	**-0.063***	1									
(10) INV_INST	**0.062***	**-0.076***	**0.078***	-0.02	**0.305***	**0.117***	**-0.229***	**0.048***	**-0.231***	1								
(11) INV_FAM	-0.015	0.001	0.021	0.018	0.005	0.023	-0.012	0.019	0.015	-0.002	1							
(12) IND_CA	**0.088***	**-0.047***	**0.086***	0.029	**0.402***	**0.338***	**-0.285***	**-0.171***	**-0.226***	**0.278***	0	1						
(13) BS	**-0.121***	**-0.092***	**-0.160***	**-0.054***	-0.025	**-0.095***	**-0.055***	**-0.066***	0.015	**-0.042***	0.006	**0.167***	1					
(14) INVESTDUMMY	**0.108***	0.03	0.006	-0.026	-0.015	-0.018	-0.006	-0.003	0.006	-0.023	0.015	-0.034	0.003	1				
(15) INVESTIND	**0.157***	**0.076***	**0.103***	0.003	**0.068***	**0.061***	**-0.039***	-0.011	-0.013	**0.046***	0.002	**-0.044***	**-0.468***	**0.632***	1			
(16) DEBTIND	**0.121***	**0.043***	**0.108***	0.017	0.024	-0.029	**-0.060***	-0.015	-0.016	-0.008	-0.007	**-0.073***	**-0.124***	**0.218***	**0.215***	1		
(17) CAPEXIND	**0.018**	0.025	**-0.268***	**-0.146***	**-0.288***	**-0.194***	**0.042***	**-0.047***	**0.073***	**-0.069***	-0.018	**-0.096***	-0.035	**0.083***	**0.105***	**0.391***	1	
(18) OVERCONFIDENCE_~X	**-0.116***	**0.085***	**-0.140***	**-0.145***	**-0.745***	**-0.307***	**0.287***	**0.110***	**0.162***	**-0.176***	-0.009	**-0.314***	0.037	0.023	0.036	**-0.086***	**0.412***	1

* shows significance at the ,1 level.

DIV: Dividend payout of the firm (i) at time (t). CASH FLOW: Ratio of pre-tax profit plus depreciation to the book value of total assets. LEVERAGE: Leverage measured as total debt scaled by book value of total assets. PROFITABILITY: Income after taxes for the fiscal year divided by total revenue for the same period. FIRM SIZE: Natural logarithm of the book value of total assets. FIRM AGE: Logarithm of firm age since first formed. CEO OWNERSHIP: Total stock owned by CEO divided by total stock issued. DUALITY: Dummy variable = 1 if the CEO also serves as the board chair, and 0 otherwise. BLOCK: percentage of shareholding of the first three blockholders. INV_INST: Institutional ownership is the ratio of shares that institutions own in the firm divided by the total number of outstanding shares. INV_FAM: dummy variable = 1 if the largest shareholder is a family. IND_CA: The proportion of independent directors on the board of directors. $DIV_{i,t-1}$: Dividend payout of the firm (i) at time (t-1). BS: Total number of board members. INVESTDUMMY: Dummy variable that takes a value of 1 if INVEST is greater than 0, and 0 otherwise. INVESTIND: The residual from a regression of total asset growth on sales growth less the industry median residual measured at the firm level. DEBTIND: Dummy variable = 1 if the debt to equity ratio of a firm is greater than the industry median, and 0 otherwise. CAPEXIND: Dummy variable = 1 if the capital expenditure deflated by lagged total assets is greater than the industry median level of capital expenditure to lag total assets, and 0 otherwise. OVERCONFIDENCE INDEX: Using principal component analysis, we have constructed an overconfidence index based on the previous proxies; dummy variable = 1 if the overconfidence index is greater than the median level of the overconfidence index, and 0 otherwise.

Notes: This table reports the pairwise correlations among the variables for the firm-specific factors, corporate governance factors, and CEO characteristics. The figures in bold indicate that the coefficient is significant at the 1% level. As in Kervin (1992), results in Table 4 indicate that all correlation coefficients are lower than 0.7. We conclude there is no bi-variable multicollinearity.

Variables	VIF	1/VIF
FIRMSIZE	3.29	0.304066
OVERCONFID~X	3.28	0.305239
INVESTIND	2.83	0.352812
INVESTDUMMY	2.17	0.461360
CAPEXIND	1.89	0.529758
BS	1.77	0.565309
LEVERAGE	1.53	0.654845
DEBTIND	1.50	0.667290
CASHFLOW	1.47	0.681637
IND_CA	1.45	0.688236
CEO_OW	1.42	0.705270
FIRMAGE	1.37	0.731372
INV_INST	1.23	0.815503
PROFITABILITY	1.22	0.819249
BLOCK	1.20	0.832714
DUALITY	1.19	0.841696
INV_FAM	1.00	0.996789
Mean VIF	1.75	

5.2. Fixed effect Estimation

This study examines the relationship between dividend payout and CEO overconfidence. To test our hypothesis, we estimate the following regression:

$$Div_{i.t} = \beta 0 + \beta 1\ OVERCONFIDENCE + \beta 2\ CEO\_OW_{i.t} + \beta 3\ DUALITY_{i.t} + \beta 4\ BS_{i.t} + \beta 5\ LEVERAGE_{i.t} + \beta 6\ FIRM\ SIZE_{i.t} + \beta 7\ CASH\ FLOW_{i.t} + \beta 8\ PROFITABILITY_{i.t} + \beta 9\ FIRM\ AGE_{i.t} + \beta 10\ INV\_FAMI_{i.t} + \beta 11\ IND\_CA_{i.t} + \beta 12\ BLOCK_{i.t} + \beta 13\ IV\_INST_{i.t} + \beta 14\ Div_{i.t-1} + \psi_t + \eta_i + \varepsilon_{i,t} \quad (1)$$

Where i denotes firms in the sample (i = 1, 2, …, 120); t refers to time period (t = 2000, 2007, … 2015). Finally, the expressions, ψt, ηi and εi,t refer to unobserved firm fixed-effects, time-specific effects that are time-variant and common to all companies, and the classical error term which is assumed to be independent and identically distributed, respectively.

Table 5 presents several specifications of the fixed effect estimation of equation (1).

Table 5. The regression results of dividends on managerial overconfidence proxies: Fixed effect panel specifications

VARIABLES	model1 Div	model2 Div	model3 Div	model4 Div	model5 Div
CASHFLOW	0.412	0.393	0.393	0.533**	0.534**
	(0.251)	(0.266)	(0.273)	(0.261)	(0.254)
LEVERAGE	-0.045	-0.068	-0.099	0.109	-0.055
	(0.147)	(0.136)	(0.127)	(0.128)	(0.115)
PROFITABILITY	-0.064	-0.156	-0.401**	-0.367*	-0.239
	(0.194)	(0.207)	(0.202)	(0.192)	(0.173)
FIRMSIZE	0.021	0.021	0.004	0.015	0.031
	(0.020)	(0.021)	(0.023)	(0.024)	(0.019)
FIRMAGE	0.010	0.016	0.035	0.044	0.021
	(0.039)	(0.035)	(0.039)	(0.038)	(0.036)
CEO_OW	0.001	0.001	0.002*	0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
DUALITY	0.070	0.057	0.052	0.070	0.057
	(0.044)	(0.043)	(0.042)	(0.052)	(0.047)
BLOCK	-0.000	-0.000	-0.001	-0.000	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
INV_INST	0.003***	0.002**	0.003**	0.002**	0.002**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
INV_FAM	0.001	0.005	0.002	0.013	0.007
	(0.024)	(0.023)	(0.023)	(0.022)	(0.022)
IND_CA	0.037	-0.035	0.082	0.028	-0.037
	(0.106)	(0.089)	(0.097)	(0.095)	(0.086)
BS	-0.010	0.010	-0.009	-0.006	-0.004
	(0.009)	(0.009)	(0.009)	(0.010)	(0.010)
INVESTDUMMY	0.119***				
	(0.023)				
INVESTIND		0.121***			
		(0.020)			
DEBTIND			0.089***		
			(0.016)		
CAPEXIND				0.175***	
				(0.033)	
OVERCONFIDENCE_INDEX					0.096**
					(0.047)
Constant	-0.389	-0.368	-0.148	-0.409	-0.449*
	(0.254)	(0.270)	(0.289)	(0.293)	(0.262)
Firm fixed-effects	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes
FE/RE	FE	FE	FE	FE	FE
Observations	1,782	1,782	1,782	1,782	1,782
Number of id	120	120	120	120	120

* Significant at the 0.10 level. **Significant at the 0.05 level. *** Significant at the 0.01 level.

Table 5 presents the results of Eq. [1]. Regardless of the method used—FE method. Consistent with H1, all five coefficients of managerial overconfidence are positive and significant with dividend payout ratio at the 1% level of significance in columns (1), (2), (3), (4), and (5). Our findings indicate that overconfident CEOs are more likely to pay dividends since they systematically overestimate the return in their projects. This mechanism suggests that an

overconfident manager will increase the dividend payout more than a rational CEO (Wu and Liu, 2011).

The results also show that the coefficient on INV_INST is positive and significant with dividend payout. Consistent with the agency theory claim, several studies argue that the share of capital held by institutional investors, especially external investors, has a positive impact on dividends (Wang et al., 2014). This is due, in particular, to their great material wealth, advanced skills, and extensive networks (Gillan and Starks, 2007). Institutional investors' tax preferences in favor of dividend income may also explain the positive relationship between large institutional shareholdings and dividends (Short et al., 2002). With the dominant influence of institutional investors, other blockholders are less likely to take advantage of private benefits; this may lead to higher dividends. They are assumed to be institutional blockholders.

5.3. Endogeneity

A major technical challenge in the empirical literature on finance is to determine the appropriate estimation method for the regression model. We use a panel data framework to test the link between management overconfidence and dividend policy. Our study deals with a specification that must control for the endogeneity problem (1) that can arise either because of unobserved heterogeneity (unobservable characteristics of the firm, for example, that may be highly correlated with the regressor) or because of reverse causality. As a result, OLS would report biased and inconsistent estimates. Wintoki et al. (2012) argue that any corporate financial decisions are likely to be dynamic, i.e., the past action itself may proxy for some important unobservable attributes of the firm that may determine the current action. These authors refer to this relationship as "dynamic endogeneity". They also argue that using the traditional static model to estimate Eq. [1] may induce biased inferences by ignoring dynamic endogeneity (2).

Because of (1) and (2), we use dynamic panel estimation techniques to solve these problems.

5.4. GMM

The Generalized Method of Moments (GMM) dynamic panel method is the most widely used in the empirical literature. This method controls for specific individual and time effects and compensates for variable endogeneity biases. The difference GMM approach is employed to overcome the heterogeneity and endogeneity problems inherent in dynamic panel data models.

In particular, the system GMM technique involves stacking equations in difference with equations in levels and performing GMM estimates using lagged levels of all variables as instruments for the difference in equations and lagged differences as instruments for the equations in levels. First differentiation eliminates unobserved heterogeneity and omitted variable bias. Then, using the past as an instrument for the present reduces the potential bias of simultaneity and reverse causality. The reliability of the GMM system estimates is also checked with the Hansen Validity Test and the Arellano

and Bond (1991) Serial Uncorrelated Error Test: (i) the Sargan/Hansen over-identification test asserts the validity of lagged variables as instruments; (ii) the Arellano and Bond autocorrelation test checks whether the null hypothesis of the absence of the first-order autocorrelation of errors can be accepted. In our regressions, the results of these two tests are in line with expectations. The statistics of the two tests allow us to accept their null hypothesis (validity of the lagged variables as instruments and absence of a second-order autocorrelation AR (2)). The next subsections discuss the results obtained from the two-step GMM system method, which allows us to control these potential sources of endogeneity.

5.5. GMM Results

Table 6. The regression results of dividends on managerial overconfidence proxies: the dynamic GMM model

VARIABLES	Model6 Div	Model7 Div	Model8 Div	Model9 Div	Model10 Div
LAGGED-DIV	0.380***	0.376***	0.393***	0.390***	0.385***
	(0.036)	(0.036)	(0.036)	(0.038)	(0.038)
CASHFLOW	0.412	0.393	0.393	0.533**	0.534**
	(0.251)	(0.266)	(0.273)	(0.261)	(0.254)
LEVRAGE	-0.045	-0.068	-0.099	0.109	-0.055
	(0.147)	(0.136)	(0.127)	(0.128)	(0.115)
PROFITABILITY	-0.064	-0.156	-0.401**	-0.367*	-0.239
	(0.194)	(0.207)	(0.202)	(0.192)	(0.173)
FIRMSIZE	0.021	0.021	0.004	0.015	0.031
	(0.020)	(0.021)	(0.023)	(0.024)	(0.019)
FIRMAGE	0.010	0.016	0.035	0.044	0.021
	(0.039)	(0.035)	(0.039)	(0.038)	(0.036)
CEO OW	0.001	0.001	0.002*	0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
DUALITY	0.070	0.057	0.052	0.070	0.057
	(0.044)	(0.043)	(0.042)	(0.052)	(0.047)
BLOCK	-0.000	-0.000	-0.001	-0.000	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
INV_INST	0.003***	0.002**	0.003**	0.002**	0.002**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
INV FAM	0.001	0.005	0.002	0.013	0.007
	(0.024)	(0.023)	(0.023)	(0.022)	(0.022)
IND CA	0.037	-0.035	0.082	0.028	-0.037
	(0.106)	(0.089)	(0.097)	(0.095)	(0.086)
BS	-0.010	0.010	-0.009	-0.006	-0.004
	(0.009)	(0.009)	(0.009)	(0.010)	(0.010)
INVESTDUMMY	0.119***				
	(0.023)				
INVESTIND		0.121***			
		(0.020)			
DEBTIND			0.089***		
			(0.016)		
CAPEXIND				0.175***	
				(0.033)	
OVERCONFIDENCE INDEX					0.096**
					(0.047)
Constant	-0.389	-0.368	-0.148	-0.409	-0.449*
	(0.254)	(0.270)	(0.289)	(0.293)	(0.262)
Observations	1,782	1,782	1,782	1,782	1,782
Wald Chi-squared statistic	192.41***	240.82***	219.86***	223.34***	192.71***
Number of clusters	120	120	120	120	120
Hansen-J test of over-identification	1.000	1.000	1.000	1.000	1.000
AR (2)	0.240	0.221	0.655	0.505	0.210

* Significant at the 0.10 level. **Significant at the 0.05 level. *** Significant at the 0.01 level.

As shown in Table 6, all our models are globally significant and the coefficient associated with the lag of the dependent variable in columns (columns (1), (2), (3), (4), and (5)) have positive and significant (at the 1% level) impacts on dividend payout ratio. This confirms the dynamic structure of our model. Table 6 also reports the Hansen test of overidentification for which the null hypothesis is that the instruments are valid. It shows that although our model is over-identified (due to the use of many lags as instruments in Equ. [1]), it is insignificant at the 10% level. This means that past values of dividend payout ratio, CEO overconfidence, corporate governance, and firm characteristics are exogenous. In addition, the AR (2) tests, with the null of no autocorrelation in the residuals of the difference equation, suggest that there is no evidence of second-order autocorrelation in the residuals. Overall the specification tests reveal no evidence that our instruments used in Equ. [1] are endogenous.

Our CEO overconfidence proxies: INVESTDUMMY, INVESTIND, DEBTIND, CAPEXIND, and OVERCONFIDENCE_INDEX, have positive and significant coefficients.

These proxies INVESTDUMMY, INVESTIND, and CAPEXIND are linked with both overinvestment and excess asset growth. The positive and significant coefficients of these variables show that firms managed by overconfident CEOs tend to distribute higher dividends (Malmendier and Tate, 2005; Boulton and Campbell, 2016). This behavior could be due also to overestimating which could be interpreted by the individual ability to positively affect outcome based on firm's private information (Moore and Healy, 2008).

DEBTIND has positive and significant coefficients. This finding suggests that overconfident managers pay more dividends. Malmendier et al. (2006) argue that overconfident managers will generally raise more debt than their non-overconfident counterparts with respect to equity. Overconfident managers believe that their firms' projects will generate large cash flows in the future so that more dividends will be distributed, more debts will be incurred and this behavior is linked to a high level of risk.

We find the same results for the robustness check OVERCONFIDENCE_INDEX contracted by Principal Components Analysis (PCA). This is in line with our hypothesis. Our findings show that overconfident CEOs are more likely to pay dividends due to bias in their assessment of future income (Wu and Liu, 2011). The effect of managerial overconfidence on dividend payout policy is not exclusive to US companies (Deshmukh et al., 2013) and should be recognized as a significant determinant of dividend policy in France.

Empirical findings indicate that CEO shareholding has a negative relationship with dividends. However, contrary to these expectations, managerial ownership in column (4) has a positive and significant (at the 10% level) impact on dividend payout ratio. This indicates that

firms with high levels of management ownership consciously prefer high rates of dividends (Vo and Nguyen, 2014).

As shown in Table 6 (columns (4) and (5)), the coefficient of the (CASHFLOW) variable is positive and significant at the 5% level. As expected, the positive coefficient of the (CASHFLOW) variable is consistent with the hypothesis that increasing cash flow will induce an increase in dividend payout in order to avoid agency problems (Jensen, 1986).

As expected, institutional investors are positive and statistically significant at the 1% and 5% levels. Grinstein and Michaely (2005) claim that institutional investors prefer dividends to retained earnings because businesses that pay stable dividends are considered cautious investments. Companies may use dividends to provide good incentives for international investors to invest (Cao et al., 2017).

6. Conclusion

We provide further and new insights about the influence of behavioral cognitive biases on dividend policy in France. This is especially important because French firms are extremely generous in terms of dividends. From the research that has been carried out, it is possible to conclude: firstly, CEO overconfidence positively impacts dividend payout, which is consistent with Wu and Liu (2011); secondly, the findings reinforce the association between institutional investment and dividend payments (Short et al., 2002). To ensure the robustness of our results, we rely on OLS, fixed effect and then GMM model approaches. This permits us to alleviate inverse variables, simultaneity problems, and omitted variables by taking into account the dynamics of dividend payout. Moreover, we use several proxies of overconfidence. To the best of our knowledge, this is the first research using a quantitative methodology with different measures of overconfidence in a French context. This paper contributes to recent research by showing the impact of managerial overconfidence on dividend policy.

This paper is not without limitation. In particular, our measures of overconfidence could be diversified and improved. Graham et al. (2013) study the impact of CEO traits and attitudes on corporate financial policies using a survey-based approach. Such an approach could be implemented in our French context to better and directly assess the psychological attitudes of CEOs, in particular their level of overconfidence.

In our future research, we intend to study the relationship between corporate governance and dividend policy such as CEO Turnover (DeAngelo and DeAngelo, 1990) to ascertain whether the appointment of an overconfident CEO changes this policy. Furthermore, Kolasinski and Li (2013) show that a limited-size board of directors can control the effects of managerial overconfidence. It might be worth testing the effects of this variable. These are open questions which we leave for future research.

Appendix 1

Table. Definition of the variables

Variables	Definition
DIV_{it}	Dividend payout of the firm (i) at time (t)
Managerial Overconfidence	
INVESTIND	The residual from a regression of total asset growth on sales growth less the industry median
INVESTDUMMY	Dummy variable that takes a value 1 if INVEST is greater than 0, and 0
DEBTIND	Dummy variable that takes a value 1 if the debt to equity ratio of a firm is greater than the
CAPEXIND	Dummy variable that takes a value 1 if the capital expenditure deflated by lagged total assetsis greater than the industry median level of capital expenditure to lag total assets, and 0
OVERCONFIDENCE INDEX	Using principal component analysis, we have constructed an overconfidence index based on the previous proxies. Dummy variable that takes a value 1 if the overconfidence index is greater
Firm Characteristics	
CASH FLOW	Ratio of pre-tax profit plus depreciation to the book value of total assets.
PROFITABILITY	Income after taxes for the fiscal year divided by total revenue for the same
LEVERAGE	Leverage measured as total debt scaled by book value of total assets.
FIRM SIZE	Natural logarithm of the book value of total assets.
FIRM AGE	Logarithm of firm age since first formed.
CEO Power	
CEO_OW	Total stock owned by CEO divided by total stock issues.
DUALITY	Dummy variable that takes a value 1 if the CEO also serves as the board chair, and 0
Corporate Governance	
BS	Total number of board members.
INC_CA	The proportion of independent directors on the board of directors
INV_INST	Institutional ownership is the ratio of shares that institutions own in the firm divided by the total number of outstanding shares
INV_FAM	Dummy variable= 1 if the largest shareholder is a family
Lagged variable	
$DIV_{i,t-1}$	Dividend payout of the firm (i) at time (t-1)

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