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1 **Powerful CEOs and CSR performance:**

2 **Empirical Evidence from France**

3 O. Yousfi¹, N. Loukil², and R. Béji³

4 5 6 **Abstract**

7 This study aims to examine how CEO's traits could influence CSR performance, and different
8 areas of CSR activities. It is drawn on all listed firms on the SBF120⁴ between 2002 and
9 2013. The paper provides the following results. First, we show that powerful CEOs decrease
10 socially responsible activities. Second, CEOs with advanced science or engineering degrees
11 are negatively associated with global social performance and many specific areas of CSR
12 activities. Third, when social performance increases, powerful CEOs have less influential
13 effects on CSR scores. Also, in family-controlled businesses, business-graduated CEOs are
14 more likely to increase the global social performance through investing in more ethical
15 projects and considering communities' expectations. Finally, the effects of CEO's attributes
16 on CSR performance are more influential in non-family firms and high-tech industries.

17
18 **Keywords:** powerful CEO, CEO traits, education, social performance, family firms.

19 **JEL Classification Codes:** M14, G30, G39, J1

20

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⁴ The SBF120 index consists of the largest 120 capitalizations listed on the French stock Exchange market (SBF: Société des Bourses Françaises).

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The strong connections between corporate businesses and their environment and how they continually change, have shifted the interest towards leaders, more specifically their qualities, instead of focusing on supervisors (Vallejo, 2009). The central role of CEOs on the business performance and strategy, on innovation and risks has been extensively analyzed (see among others, Lee et al., 2016; Adams et al., 2015; Tin et al., 2015; Helft, 2014; Brown and Sarma, 2007; Hambrick, 2007; Bertrand and Schoar, 2003 and Pearce and Zahra, 1991). Studies provide evidence that CEOs and top executives have a powerful role in corporate behavior and performance: they could shape corporate decisions, particularly investments decisions (Bertrand and Schoar, 2003).

Finkelstein, (1992) was among the pioneers to focus on powerful CEOs, specifically CEOs who have capacities to achieve their goals. CEO's power is a multidimensional concept that is likely to be strengthened in different ways and through different channels.

According to Bebchuk and Fried (2005), CEO power is defined as the ability of the CEO to affect significantly directors' decision-making, which revokes, thus, the effectiveness of corporate governance mechanisms.

Haleblian and Finkelstein (1993) consider CEO Power as the ability of the CEO to influence consistently the decision-making process of the firm and to overcome resistance. Accordingly, it shows how much decision-making power is concentrated in the hands of the CEO (Liu and Jiraporn, 2010). Finkelstein (1992) defines power as the ability of the CEO to tackle both internal and external source of uncertainty. The CEO's power is strengthened when the CEO is also the chair of the board (the structural power), is skillful and has a board membership experience (the expert power), holds a share of capital (the ownership power),

1 and enjoys a good reputation and has powerful contacts in their book address (the prestige
2 power). The CEOs' power does not stem only from their formal position, ownership, expert,
3 and prestige (Faccio et al., 2016; Farag and Malling, 2016, and Wei and Ling, 2015), it could
4 also come from their social, behavioral and psychological characteristics (Hambrick and
5 Mason, 1984).

6 Indeed, CEO-owners enjoy an ownership power as they are also shareholders. In dual
7 structure, CEOs are board's chairs: they display a structural power. Being skillful and having
8 a past board membership experience add an expert power. Finally, when CEOs have a good
9 image/reputation in the marketplace and an extensive address book, they could benefit a
10 prestige power.

11 However, the CEOs' power and influence do not stem only from their formal position,
12 ownership, expertise, and prestige (Faccio et al., 2016; Farag and Malling, 2016, Wei and
13 Ling, 2015, Bach and Smith, 2007), they could be closely related to cognitive factors such as
14 their social, behavioral and psychological characteristics (Hambrick and Mason, 1984). For
15 instance, Bach and Smith (2007) advance that CEO power is the capacity to exert influence
16 and to change the behavior of a person or group in some intended way.

17 According to Yim (2013), as CSR is a discretionary activity undertaken by the top
18 management of the company, CEO's could be considered as the main executive in a
19 company. Thus, decisions on CSR investments could strongly rely on them.

20 Among all the studies in this emergent stream, CEO power has attracted a fair share of
21 attention (Lee et al., 2016; Adams et al., 2015; Yim, 2013; Brown and Sarma, 2007). Indeed,
22 the relationship between CEO power and a firm's performance has received a considerable
23 attention in the literature in the past decades (Adams et al., 2005; Core et al., 1999; Daily and
24 Johnson, 1997). Furthermore, the existing literature provides an extensive body of research on
25 how powerful CEOs could influence risk preferences (Lu and Wang 2017; Faccio et al., 2016;

1 Farag and Malling, 2016; Lee et al., 2016; Adams et al., 2015; Tin et al., 2015; Wei and Ling,
2 2015; Helft, 2014, Chikh and Filbien, 2011), the firm investments (see among others Bouslah
3 et al., 2018; Rekker et al., 2014; Cai et al., 2011; Mahoney and Thorn, 2006), the choice of
4 strategic relationships (Finkelstein, 1992, Child, 1972), diversification (Miles and Cameron,
5 1982), and innovation (Loukil et al., 2020; Sunder et al., 2017, Damanpour, 1991).

6 Turning to social performance, very few studies have analyzed how CEO's attributes could
7 influence corporate social responsibility CSR (Cherian et al., 2020; Harper and Sun, 2019;
8 Muttakin et al., 2018; Sheikh, 2019; Li et al., 2016; Fabrizi et al., 2014; Manner, 2010). Most
9 of them are drawn on US and Asian data and using KLD ratings to assess the level of
10 corporate social performance (CSP).

11 To the best of our knowledge, there are no studies conducted on European countries
12 examining specific areas of CSR. This is the first paper to raise the question drawn on data of
13 listed firms on SBF120 index. We rely on a European agency of CSR rating: Vigeo Eiris CSR
14 scores to assess the global CSR performance and more specific CSR performances.

15 In fact, in France, CEOs belong to the same networks and business fields as board members,
16 many CEO's had a board membership experiences while some board directors had a CEO
17 experience. Many CEO and directors have close relationships; it is therefore interesting to
18 examine to which extent CEO could be powerful over the decision-making process in such
19 environment. Also, CEOs have graduated from the same prestigious and selective institutions
20 (Grandes écoles). In the last years, their programs have been updated and they became more
21 focused on social and environmental issues: they have introduced courses to promote
22 entrepreneurship and CSR.

23 Despite the introduction of the New Economic Regulations (NER) law in 2001 that
24 recommends the separation between the CEO and the chair board functions, surprisingly,

1 more than 50 % of our firm-year observations display a non-compliant structure where the
2 CEO is also the chairperson.

3 Also, the increase of female representation after the introduction of the gender quota law in
4 2011 has a positive effect on the increase of the board sensitivity towards social and
5 environmental insights. Many studies found that women in top positions are positively
6 associated with CSR performance (Beji et al, 2020; Hafsi and Turgut, 2013; Bear et al., 2010;
7 and Luthar et al., 1997). However, the number of female CEOs is still too small (in 2021, 8%
8 at Fortune 500 companies⁵ , only one female CEO in CAC40 firms⁶). Shedding light on CEOs
9 role and specifically their traits could lead to a better understanding of CSR decisions.

10 Furthermore, the French socially responsible investment (SRI) market is very dynamic since
11 the late 1990s (Crifo and Mottis, 2016). It is considered as the leading European SRI market
12 both in terms of assets under management and number of funds (EUROSIF 2016). Indeed,
13 France has become a world leader in ESG integration in recent years with a total of €338
14 billion of assets including ESG in 2015 (EUROSIF 2016).

15 Moreover, France is the first European country to have legislated on reporting on sustainable
16 development. In fact, since 2001, the French government has been concerned about social and
17 environmental impact of conventional investments. It has introduced many initiatives and
18 laws to encourage CSR investments and increase transparency, like for example the New
19 Economic Regulations (NER law, 2001), the Grenelle Environment Forum (2007 and 2010),
20 the Energy Transition Act (2015), the France's Due Diligence Law (2017) and the PACTE

⁵ <https://www.statista.com/chart/13995/female-ceos-in-fortune-500-companies/#:~:text=Only%208%20Percent%20of%20CEOs%20At%20Fortune%20500%20Companies%20Are%20Female,-Fortune%20500&text=As%20of%20June%2C%20there%20were,the%20country's%20biggest%20public%20businesses.>

⁶ <https://www.tradingsat.com/cac-40-FR0003500008/actualites/cac-40-ou-sont-les-patronnes-957375.html#:~:text=Une%20seule%20femme%20%C3%A0%20la%20t%C3%AAt%20d'une%20entreprise%20du%20CAC%2040&text=Ce%20dernier%20a%20promu%20au,int%C3%A9rim%20assur%C3%A9%20par%20Clair%20Waysand.>

1 Law (2019). This puts a pressure on French firms, particularly listed ones, to regularly
2 improve their CSR ratings.

3 Furthermore, according to the latest barometer, comparing the CSR commitments of French
4 companies with those of the OECD and the BRICS, France is the third in the global ranking
5 of CSR management after Sweden and Finland with an average score of 51 out of 100. In
6 fact, almost 70% of SMEs / mid-size companies and 75% of large companies now have a
7 CSR management system adapted to exemplary, according to the same study.

8 Accordingly, the choice of the French context complements the existing literature, which has
9 mostly examined the association between CEOs and CSR performance in emerging
10 economies (Khan et al. 2013; Meng et al., 2013) and less often in advanced economies
11 (Harjoto and Jo, 2011).

12 The current paper contributes to this emerging literature on the influence of CEO on social
13 performance, and therefore on enhancing CSR performance. This literature is mainly drawn
14 on three theories.

15 On the one hand, from agency theory perspective, increasing the CEO power is more likely to
16 increase investments in CSR activities to expropriate rents and increase personal benefits.
17 Indeed, over-powerful or entrenched CEOs get, most often, involved in a personal building
18 reputation to enhance their public image at the expense of shareholders' interests
19 (Malmendier and Tale, 2005; and Friedman, 1970). This is the CSR-overinvestment
20 hypothesis, according to which CSR investments are not likely to align interests of managers
21 and shareholders (Barnea and Rubin, 2010; and Jensen and Ruback, 1983). However, Sheikh
22 (2019) and Li et al. (2016) provide evidence that powerful CEOs do not prefer socially
23 responsible investments. To assess the CEO power, they rely on different proxies such as the
24 CEO pay, tenure and duality. Hong et al. (2016) and Jo and Harjoto (2011) show that internal
25 and external corporate governance mechanisms, such as CEO's compensation, board

1 leadership, board independence, institutional ownership, analyst following and anti-takeover
2 provisions, are determinant keys of managerial incentives for social performance. More
3 recently, Cherian et al. (2020) provide evidence that the separation between CEO and chair
4 positions decrease agency conflicts and increases CSR disclosures. All these results are the
5 exact opposite of what the agency assumption suggests.

6 On the other hand, according to the upper echelon theory (Hambrick and Mason, 1984), the
7 firm's decisions are reflection of the values and cognitive features of its powerful actors.
8 CEOs characteristics, such as age, gender, education, past professional experience, could
9 influence the decision-making process and the firm's outcomes. Accordingly, if CEOs decide
10 to invest in CSR activities, it is not to take advantage of the situation: they could be sensitive
11 to the stakeholders' expectations and/or they believe that increasing the firm's value cannot
12 be achieved without going beyond the shareholders' expectations. In this sense, Jiraporn and
13 Chintrakarn (2013) find that engagement in CSR activities is enhanced, when the power of
14 less-powerful CEOs increases. However, when they become entrenched and more powerful,
15 investment in CSR is diminished.

16 The current paper provides the following results. First, our findings provide evidence that
17 powerful CEOs decrease socially responsible activities. Second, CEOs with advanced science
18 or engineering degrees are negatively associated with global social performance and many
19 specific areas of CSR activities. Third, when social performance increases, CEO's traits have
20 less influential effects on CSR scores. Also, in family-controlled business, business-graduated
21 CEOs are more likely to increase the global social performance through investing in more
22 ethical projects and taking into account communities' expectations. Finally, we provide
23 evidence that the effects of CEO's attributes on CSR performance depend on industry
24 characteristics like for example the technology dimension.

1 The current study is structured in the following. Section (1) provides the survey of the
2 literature and the hypotheses. Data, variables and methodology are presented in section (2).
3 Section (3) discusses the results. We test the robustness of our findings in section (4). The last
4 section concludes the paper.

5

6 **1. State of art and hypotheses**

7

8 **1.1 CEO power and CSR performance**

9

10 According to the stakeholder theory and the resource-based view theory, CEOs invest in CSR
11 to balance the interests of stakeholders, to increase firm value, to create competitive edge and
12 not to enhance their personal reputations (Jo and Harjoto, 2011).

13 On the other hand, from a Jensen and Meckling's (1976) agency perspective, Barnea and
14 Rubin (2010) point out that CEOs have an interest in over-investing in CSR in order to build
15 their personal reputations as good social citizens at the expense of shareholders.

16 Prior research considers that powerful CEOs tend to be more entrenched than able managers
17 (see among others Abernethy et al.2015; Withisuphakorn and Jiraporn, 2015; Dikolli et al.,
18 2014; Jiraporn et al. 2012; Morse et al., 2011). Hence, many studies have investigated how
19 CEO power could influence CSR performance (see among others, Francoeur et al., 2021;
20 Harper and Sun, 2019; Sheikh, 2019, Muttakin et al., 2018; Li et al., 2016). Most of them are
21 based on an agency approach and conducted on US data. They provide evidence that powerful
22 CEO are reluctant to engage in social responsibility activity which leads to lower CSR
23 performance (Harper and Sun, 2019; Sheikh, 2019, Muttakin et al., 2018; Li et al., 2016). In
24 the same vein, Sheikh (2019) stated that the structural and ownership dimensions of CEO
25 power are negatively related to CSR performance while the expert dimension has no
26 significant effect. Using CEO pay slice (Bebchuk et al., 2011), CEO tenure and CEO duality

1 to measure CEO power, Li et al. (2016) find a negative relation between CEO power and
2 CSR. However, using the same measure, Joubert (2019) and Jiraporn and Chintrakarn (2013)
3 provide mixed results. For instance, using a sample of US firms, Jiraporn and Chintrakarn
4 (2013) find that the CEO power-CSR association is non-monotonic: less powerful CEOs are
5 relatively more incited to engage on CSR while more powerful CEOs are relatively reluctant
6 to engage on CSR. Jiraporn and Chintrakarn (2013) argue that, after consolidating their power
7 to a certain point, CEOs do not view CSR favourably, which reduces CSR investments.
8 Indeed, Harper and Sun (2019) also used a sample of 1574 US firms and confirm that CEO
9 power influences negatively CSR performance. In cross country study (USA, Canada, France
10 and Spain), Joubert (2019) shows that CEO power is positively related to firm's engagement
11 in CSR and this relation is more prominent in countries with stronger investor protection,
12 strict law enforcement, and higher corporate governance quality. Recently, Francoeur et al.
13 (2021) provide evidence that powerful CEOs could influence positively environmental
14 performance. This effect is more pronounced in profitable businesses.

15 In light of the previous results, we attempt to test the following:

16 **H1. CEO power has an impact on CSR performance**

17

18 **1.2. CEO age and CSR performance**

19

20 It is highly argued that CEO's age has a significant influence on CEO's decisions
21 (Amran et al., 2014; Jackling and Johl, 2009). There are two competing arguments in the
22 literature about the relationship between CEO age and CSR performance.

23 On the one hand, younger CEOs are more engaged in a reputation-building process than older
24 ones: this is the career concerns' assumption (Holmström, 1999). Less experienced CEOs
25 have a pressure to deliver a positive signal to the labor market. To gain legitimacy in the eyes

1 of board members, they prefer to focus on short-term profitable investments at the expense of
2 long-term investments with less and risky outcomes such as R&D and CSR activities. In the
3 same vein, Serfling (2014), Graham et al. (2013), Brockmann and Simmonds (1997) and
4 Carlsson and Karlsson (1970) show that young CEOs are more risk tolerant and prefer growth
5 opportunities. Fabrizi et al. (2014) argue that, as CSR activities are long-term investments,
6 young CEO are more incited to forego CSR investments. Old CEOs, feeling less pressure
7 from the market, are more concerned about stakeholders' interests. In addition, literature
8 review shows that old managers assign more importance to trust and honor than money and
9 career concerns (Barnett and Karson, 1989, and England, 1978) and have more incentives to
10 "give back" to their communities (Mc Cuddy and Cavin, 2009). One explanation could be that
11 as CEOs get older, they accumulate social expertise and cultural intelligence (Ng and Sears,
12 2012).

13 On the other hand, old CEOs are usually more conservative (Hambrick and Mason, 1984) and
14 adopt more conventional and common management styles. They take, therefore, less
15 transformational decisions (Bertrand and Schoar, 2003). In fact, older CEOs, who are near
16 retirement, are less likely to engage on long-term projects (Oh et al., 2016; Oh et al., 2014;
17 McClelland et al., 2012; and Matta and Beamish, 2008). In line with the upper echelon theory,
18 Oh et al. (2016) provide evidence that young CEOs are more likely to take socially
19 responsible decisions.

20 According to these arguments, we test the following:

21 **H2. CEO age affects significantly CSR performance**

22

23 **1.3. CEO education and CSR performance**

24

1 Education shapes values (Frank et al., 1993). For instance, highly-educated CEOs
2 could better understand complex decisions and absorb new ideas and technology (Kuo et al.
3 2018; Li et al., 2017; Farag and Mallin, 2016; and Barker and Mueller, 2002). Accordingly,
4 post-graduated CEOs could have preferences for long-term and innovative projects (see
5 among others Lewis et al., 2014; Slater and Dixon-Fowler, 2010; and Ghoshal, 2005).
6 Gadenne et al. (2009) and Vives (2006) show that appointing post-graduated candidates to top
7 management positions could lead to increase the firm commitment to CSR activities. Also,
8 Goll and Rasheed (2004) find a significant and positive relationship between high-educational
9 level and rational decision-making. In the same vein, Shahgholian (2017) put forward that
10 high education is associated with better knowledge of environmental issues.

11 Accordingly, we state the following hypothesis:

12 **H3. CEO's education level is positively related to CSR performance.**

13 Regarding the type of the academic background, business-educated CEOs have
14 business competences, specifically on finance and on accounting areas. They are likely to
15 achieve a better financial performance and to handle risks (Maraghni and Nekhili, 2014;
16 Nekhili and Gatfaoui, 2013; and Gendron and Bedard, 2006). Empirical studies show that
17 CEOs, who have humanities and social sciences degrees, could get involved in CSR activities
18 and increase therefore social performance (Velte, 2019; and Manner, 2010⁷). Business
19 advanced studies could drive ethical and sustainable activities (Panapanaan et al., 2003).
20 According to Sleeper et al, (2006), there is a positive relationship between CSR and business
21 education. In the same line, Lewis et al. (2014) show that MBA degrees are positively related
22 to carbon disclosure project participation.

23 **H4. Business-educated CEOs are likely to increase CSR performance.**

24

⁷Manner (2010) finds that proactive corporate social performance is negatively associated with CEOs who have a bachelor in economics and their level of short-term compensation.

1 Science-educated CEOs, such as CEOs with Science and Engineering degrees have better
2 skills when they have to take risky decisions (Tyler and Steensma, 1998). They could increase
3 the probability of accepting and introducing new changes such as CSR activities.

4 **H5. CEOs with a science or engineering degree will increase CSR performance.**

5

6 **1.4 CEO compensation and CSR**

7

8 Some studies highlight that executive compensation influences significantly CSR
9 performance in different contexts such as Germany (Claassen and Ricci, 2015), Canada
10 (Mahoney and Thorn, 2006), and the US (Jian and Lee, 2015; Fabrizi et al., 2014; McGuire et
11 al., 2003).

12 The relation between CEO compensation and CSR performance has been in hot debate for
13 decades, and there has been no consensus. Mahoney and Thorn (2006) argue that even with
14 the use of the same measures and methods, the results differ from one national institutional
15 context to another. They argue that further work is needed in this area to determine the extent
16 to which these results apply to other databases and other national institutional contexts.

17 According to Murphy (1999), the executive compensation includes fixed compensation
18 (salary), short-term incentives (Bonus and primes) and long-term incentives (such as stock
19 options, and incentive plans). From an agency perspective, CEO compensation, in particular
20 the variable part is considered, as an effective tool to mitigate agency conflicts between
21 shareholders and CEOs.

22 In fact, most studies have focused on the association between long-term and short-term
23 compensations in US firms, and KLD ratings (Rekker et al., 2014; Manner, 2010; Deckop et
24 al., 2006; McGuire et al., 2003). McGuire et al., (2003) show that CEO's compensation
25 reduces corporate social responsibility performance. Focusing on different compensation
26 components shows a positive association between long-term compensation and CSR
27 performance (Deckop et al., 2006) and a negative one between short-term compensation and
28 CSR performance (Manner, 2010; Deckop et al., 2006). Rekker et al., (2014) disaggregate
29 CSR and CEO compensation into various sub-components and show a negative association
30 between CEO compensation (cash, salary and long-term measures of compensation) and CSR
31 performance. When they examine specific dimensions of CSR, they find that employee's

1 relations, the environment and diversity dimensions are driving this negative association.
2 However, this association is weakened under specific conditions.
3 Based on EIRIS ratings, Fabrizi et al., (2014) provide evidence that the monetary incentives
4 (bonus, stock options and compensation related to CEO portfolio value), used to reduce
5 agency conflicts between CEO and shareholders, influence negatively corporate social
6 responsibility.
7 Few studies have been conducted in European countries on CEO compensation-CSR
8 performance association. In Germany, the variable part of the CEO compensation such as
9 stock options cash, and short-term measures of compensation, enhances social performance
10 while the fixed part has no significant impact (Claassen and Ricci, 2015). In Canada, bonus
11 and stock options have a positive effect on CSR (Mahoney and Thorn, 2006). In the same
12 vein, Joubert, (2019) compares the Anglo-American and the European corporate governance
13 models and demonstrates that CEO compensation is positively related to the firm's
14 engagement in CSR. This association is more prominent in countries with stronger investor
15 protection, strict law enforcement, and higher corporate governance quality.

16 Accordingly, we state the following:

17 **H6. CEO variable compensation has an impact on CSR performance.**

18

19 **2. Variables, data and methodology**

20

21 **2.1. Data**

22

23 Our analysis is conducted on firms listed on the SBF120 index between 2002 and
24 2013. We consider CSR scores (see appendix A) provided by VigeoEiris⁸ as proxies for social
25 performance⁹. VigeoEiris is a CSR rating agency and a global provider of environmental,
26 social and governance (ESG) research to investors and public and private corporates in 41
27 sectors. CSR scores vary from 0 to 100. Also, they cover specific CSR areas: environment,

⁸ <http://vigeo-eiris.com>

⁹ More details are presented in appendix A.

1 human resources, business ethics, corporate governance, community involvement, and human
2 rights.

3 Financial data are provided by FactSet-IODS, and Bloomberg, while governance and
4 ownership structure data are hand-collected from annual reports and provided by Governance-
5 IODS¹⁰. R&D data are provided by SIES surveys conducted by the INSEE^{11, 12}

6 The empirical study is drawn on all firms listed on the SBF120 index, end of the year 2013.
7 However, when we filter out firms with missing data on CSR scores and CEO compensation,
8 the final sample consists of 55 firms (182 firm-year observations).

9

10 [Insert table 1]

11 **2.2. Variables**

12

13 To measure the CEO power we rely on prior literature showing that CEO power is a
14 multidimensional concept with a structural power, ownership power, expert power, and
15 prestige power (Arena et al., 2018; Sheikh, 2018; Li et al., 2017; Han et al., 2016; Chen,
16 2014; Bebchuk et al., 2011; Finkelstein, 1992). Accordingly, we calculate a proxy for CEO
17 power as follows:

- 18 - The CEO structural power is measured by the sum of the following variables:
 - 19 • A dummy variable equal to 1 when the CEO is the business founder.
 - 20 • A dummy variable equal to 1 when the CEO is the chairperson.
- 21 - The ownership power is given by the CEO share of ownership
- 22 - The expertise power is measured by the CEO tenure.
- 23 - The prestige power is measured by the sum of the following variables:
 - 24 • A dummy variable equal to 1 when the CEO has a political connection.
 - 25 • A dummy variable equal to 1 when the CEO has board membership
 - 26 experiences.

27 Then, we sum up these proxies to calculate a proxy for CEO power (CEOP).

¹⁰ This data access was funded by CTE-Gestion, University of Montpellier.

¹¹ Project Governance and Innovation in France GOUINFR (SIES data, INSEE2016).

¹² This work is supported by a public grant overseen by the French National Research Agency (ANR) as part of the « Investissements d'avenir » program, specifically Governance and Innovation in France GOUINFR, 2016 (reference : ANR-10-EQPX-17 – Centre d'accès sécurisé aux données – CASD).

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[Insert table 2]

2.3. Descriptive statistics

Descriptive statistics (Table 3, Panel A) show that the average global CSR score is 44.18 with a low standard deviation (12.51). Regarding CSR sub-scores, all average scores are lower than 50. The highest average score is the score of human rights score (49.14) assessing the quality of wellbeing and protection of employees. The community involvement score (CIN) that measures the firm’s involvement in projects serving communities’ interests, displays the highest volatility (18.48) while the less variable sub-score is the corporate governance score (CG).

Also, Panel (A) shows that the CEOP index is equal, on average, to 12.15 and significantly varies among firms (the standard deviation is 14.65). On average, the CEO is 55 years old with a low standard deviation (6 years). Panel (B) summarizes some qualitative CEO traits and shows that most of the CEOs are post-graduated (87.3%): 51% of them are business-educated while 49% are science-educated. Surprisingly, despite the social pressure to appoint more women on top management positions and the introduction of gender legislation on board composition, we find that only 1.19% of CEOs are women.

[Insert table 3]

Table 4 provides correlation matrix. Some significant correlations exceed 0.5. However, there are no multicollinearity problems: the VIF values do not exceed 2. The correlation matrix shows a negative and significant association between all CSR scores and CEO power, at the

1 1% level. Also, we find positive and significant correlations between CEOAGE and CSR
2 scores (except BB score).

3 Regarding CEO education, correlation coefficients are mixed. For instance, EDU is positively
4 and significantly correlated with almost all CSR scores. However, the type of CEO education
5 shows that BEDU is positively and significantly related to BB and CG scores while SEDU is
6 negatively and significantly correlated with GG score.

7 Finally, the variable part of CEO compensation (LnSal) is positively and significantly related
8 to CSR scores, except with CG score (the correlation coefficient is negative).

9 [Insert table 4]

10 **3. Models and results**

11 **3.1 Model**

12

13 We test the following model:

$$14 \text{ CSR Score}_{i,t} = \delta + \sum \beta_i * \text{CEO-traits} + \sum \alpha_i * \text{Board-Charact} + \sum \mu_i * \text{Firm-Charact} + \varepsilon_{i,t} \quad (1)$$

15 where $\text{CSR Score}_{i,t}$ is a proxy for CSR performance given by VigeoEiris CSR scores of the
16 firm i at the year t. *CEO-traits* are proxies for the CEO power PCEO, the CEO age CEOAGE,
17 the CEO education (EDU, BEDU, and SEDU), and the CEO compensation LnSal.¹³ *Board-*
18 *characteristics* are the board size BSIZE, the percentage of female directors on the board
19 PFD, the percentage of independents directors PIND, the percentage of foreign directors
20 PFOR, and the percentage of foreign directors PFD. *Firm-characteristics* are the firm size
21 LnEmp, the firm age FAGE, the cash-flows to total assets ratio CFTA, the book value of debt
22 to total assets ratio LEV, R&D intensity and ROA.

¹³ Because of the very small percentage of female CEOs in our sample, we decided to drop FCEO from the list of independent variables in our regressions.

1 **3.2 Results**

2 We have initially run some tests that confirm the existence of fixed individual specific effects
3 and the presence of heteroscedasticity and autocorrelation problems. To deal with these
4 issues, we used panel-corrected standard error (PCSE) methods for linear cross-sectional time
5 series models where the parameters are estimated by OLS ¹⁴. Hence, this model take into
6 account implicitly time effects.

7 Estimates are presented in table 5. They show a negative association between CEOP and CSR
8 scores. This association is significant in CSR, HR, ENV and CIN regressions. We are tempted
9 to conclude that powerful CEOs are less concerned about social performance: they are less
10 involved in activities related to the employees' safety and conditions, environmental issues
11 and communities' interests. Unlike Francoeur et al. (2021), our results show a negative and
12 significant association between the ENV score and CEOP. One explanation is that their study
13 is conducted on US firms. Another explanation is the measure of CEO power: they adopt
14 Bebchuk et al. (2011) approach and use the ratio of CEO compensation to the aggregate
15 compensation of the top five most highly paid executives, while our measure captures many
16 dimensions of CEO power such as the structural, expertise and prestige powers.

17 Accordingly, we are likely to conclude that powerful CEOs tend to be more entrenched and
18 could prefer more conventional investment decisions. In fact, CEOs are often submitted to
19 short-term financial pressure which leads them to focus on projects with immediate returns at
20 the expense of long-term profitable activities specifically risky ones (R&D projects) and more
21 sustainable and less profitable ones, like for example CSR projects (Kaplan and Minton,
22 2006, and Porter, 1992).

¹⁴ We suspected endogeneity problems between on the one side CEO traits and CSR scores and on the other side governance characteristics and CSR scores. We used system GMM method to estimate model (1). However, the results are non-conclusive.

1 As powerful CEOs have more discretion, they could be prone to invest in socially responsible
2 activities in order to have private benefits serving their personal interests. This could be at the
3 expense of activities that could serve the interests of stakeholders, such as employees and
4 local communities. This strategy could worsen CSR performance (Harper and Sun, 2019;
5 Sheikh, 2019, Muttkin et al. 2018; and Li et al. 2016). However, as this association is non-
6 significant in BB, CG and HRts regression, we cannot accept H1.

7 Regarding the influence of the CEO age, results show a non-significant association between
8 CEOAGE and CSR scores. Hence, hypothesis H2 is rejected. In line with Fabrizi et al.
9 (2014), we find that the CEO age does not influence the CSR engagement. One explanation
10 could be that most of the CEOs in our sample are middle-aged: CEOAGE standard deviation
11 is low (see table 3, panel A).

12 When we focus on CEO's education, we find the following. First, post-graduated CEOs have
13 influential effects only in specific areas of CSR, such as governance quality, the involvement
14 in projects serving communities and the protection of human rights. However, we notice that
15 these effects are mixed. For instance, high-educated CEOs have a negative influence on CG
16 and a positive effect in CIN and HRts. Accordingly, we reject H3. Unlike Kuo et al. (2018),
17 Li et al., (2017), Farag and Mallin, (2016) and Barker and Mueller (2002) who show that
18 highly-educated CEOs could understand complex decisions and absorb new ideas, our results
19 provide evidence that they are likely to marginalize sustainable projects. One explanation
20 could be that most the CEOs are post-graduated (87.3%, table 1, panel A) and are middle
21 aged (55 years old, table 1, panel A): they belong to "old schools of management" where
22 performance is reduced to its only and unique financial dimension and no connections are
23 documented between the firm and its environment. Also, the pool of top managers in France
24 comes from prestigious and selective institutions called *Grandes Ecoles*, such as *Ecole*

1 *Polytechnique (X)*¹⁵, *Ecole Nationale d'Administration (ENA)*¹⁶ and *SciencesPo*¹⁷. Most of
2 top executives, public officers and policymakers in France have graduated from *Grandes*
3 *Ecoles* (see Ferreira et al., 2020; Bernard et al., 2018; Zenou et al., 2017; and Dudouet and
4 Joly, 2010). Besides, the concept of socially responsible investments and social performance
5 has recently emerged. They have been gradually integrated in Universities curricula and
6 become as important as financial performance.

7 Taking into account the type of academic background shows that business and science-
8 graduated CEOs do not display the same priorities when it comes to socially responsible
9 activities. For instance, BEDU displays a significant coefficient in CIN and CG regressions.
10 According the coefficients' sign, business-educated CEOs have controversial effect on social
11 performance: they increase (respectively decrease) significantly governance quality
12 (respectively investments that benefit communities) which leads to a non-significant influence
13 on the overall score. Besides, management-graduated CEOs have, due to their academic
14 background, assimilated specific skills and knowledge to increase financial performance and
15 decrease risks (Maraghni and Nekhili, 2014; Nekhili and Gatfaoui, 2013, Gendron and
16 Bedard, 2006). Indeed, Klassen and Whybark (1999) argue that firms focusing on improving
17 social performance cannot improve competitiveness. Hence, findings show that business-
18 educated CEOs prefer investing firms 'resources and management efforts to increase profits.
19 Unlike management-graduated CEOs who have non-significant influence on the overall score,
20 CEOs who have sciences or engineering degree decrease significantly the global social
21 performance. Unlike Huang (2013), SEDU has a negative and significant association with
22 almost all CSR subscores. Accordingly, science-graduated CEOs are likely to be not
23 concerned about all areas of CSR. Also, the correlation matrix (table 4) shows a negative and

¹⁵ <https://www.polytechnique.edu/en>

¹⁶ <https://www.ena.fr/eng/ENGLISH>

¹⁷ <https://www.sciencespo.fr/en/home>

1 significant (at the 5% level) EDU/BEDU correlation coefficient (-0.06) while EDU-SEDU
2 coefficient is positive and significant at the 1% level (0.22). In other words, most of the
3 science-educated CEOs, unlike business-graduated ones, are likely to have a
4 Master/MBA/PhD degree. This implies that CEOs in our sample have advanced degree in
5 science and are negatively associated with social performance.

6 This is consistent with Tyler and Steensma (1998) who find that CEOs who have a science or
7 engineering degree are risk-tolerant: they are prone to increase the probability of accepting
8 and introducing risky and short-term profitable changes at the expense of long term ones . In
9 the light of the previous mixed findings, we reject the hypotheses H4 and H5.

10 Analyzing the influence of the CEO compensation shows that the variable part of CEO salary
11 has no significant effect on CSR performance and hypothesis H6 is rejected. In fact, as
12 highlighted previously, most of the CEOs in our sample are middle-aged, whether they are
13 business or science-graduated, they are prone to focus on financial performance. Furthermore,
14 the variable Sal does not specify if there are compensation incentives related to social
15 performance outcomes. Indeed, firms with good corporate quality are likely to offer a
16 compensation contract that contains incentives for improving CSR (Ikram et al., 2019; and
17 Hong et al., 2016). Also this could be in line with numerous studies (such as Frye et al. 2006;
18 Deckop et al., 2006 and Mahoney and Thorne, 2006, 2005) arguing that CEO compensation is
19 not the only driver of CEO interests: there are non-monetary incentives. Specifically, other
20 considerations such as career, tenure, entrenchment, and power could influence the CEO
21 decisions when it comes to CSR-related decisions.

22 Moreover, table (5) provides some interesting results related to board. First, in line with Beji
23 et al. (2020), we find that large boards are associated with better social performance. In
24 dependency resource theory, large boards could enjoy more resources, connections and

1 knowledge which enhance decision-making process and foster social and environment
2 activities (De Villiers et al., 2011; Carter et al., 2010). From neo-institutional and stakeholder
3 perspectives, large boards are most often diverse and have more social capital which bring
4 diverse views to the table. This helps to balance board decisions and increase CSR
5 performance (Kock et al., 2012; Hillman and Keim, 2001; Hillman et al., 2001; Luoma and
6 Goodstein, 1999; Clarkson 1995; and Pfeffer and Salancik, 1978).

7 Second, the presence of independent directors is positively and significantly associated with
8 the overall CSR score and many specific areas of CSR, such as HR, ENV and CG. In line
9 with Beji et al. (2020), Shaukat et al., (2015), Harjoto and Jo (2011) and Ho and Wong
10 (2001), we are tempted to think that independent directors increase monitoring, transparency,
11 board functioning, etc. For instance, they solve attendance problems on the board meetings
12 (Adams and Ferreira, 2009). Also, they could be concerned about environmental issues (De
13 Villiers et al., 2011).

14 Third, foreign directors are also prone to increase CSR performance, from different
15 perspectives. Harjoto et al. (2018), Lau et al. (2014), and Oxelheim and Randoy (2003)
16 provide evidence that nationality diversity increases the board resources, connections, skills
17 and experiences. It also decreases individual biases and prejudices.

18 Surprisingly, our findings put forward that female directors are positively and significantly
19 related only to CIN score. This result is not consistent with Hafsi and Turgut (2013), Huang
20 (2013) and Bear et al. (2010) who find that board gender diversity could enhance CSR
21 activities. In fact, despite that gender quota law has constrained firms to gradually increase the
22 percentage of female members to achieve of 40% of board composition, women members are
23 not appointed to strategic committees where they could introduce effective changes in the
24 business (Glass cliff theory, Ryan and Haslam, 2007).

1 Also, control variables show that large firms (lnEmp) have better financial performance in
2 almost all CSR activities. Large firms have more pressure to respond to the expectations of
3 social and environmentalist groups: they are concerned about their public image (Beji et al.
4 2020; Siregar and Bachtiar, 2010; and Brammer and Pavelin, 2008). Specifically, when
5 applying to public projects and subventions, governmental institutions, most often, prefer
6 firms with extra-financial activities.

7 Finally, the ratio of R&D expenditures to total assets is positively and significantly related to
8 the overall CSR score: the association is significant at the 5% level. More specifically, raising
9 money in innovative activities increases significantly the firm's involvement in
10 environmental, ethical and more humanitarian activities: ENV, BB and HRts display positive
11 and significant coefficient (at the 5 % level). This is consistent with an emerging literature on
12 the positive association between CSR and innovation (Van Wijk et al., 2019; Mithani, 2017;
13 Costa et al., 2015; and London, 2012). For instance, Cainelli et al. (2020) argue that
14 innovation is a key factor for the development of circular economy, while for London (2012)
15 assessing community problems could help to identify innovation opportunities.

16

17 [Insert table 5]

18

19 **4. Robustness analysis**

20 **4.1. Quantile regression analysis**

21

22 To check the robustness of our previous results, we conduct a quartile (QR) analysis to
23 explore the influence of CEO attributes on CSR performance. QR helps to analyze the
24 association at different levels of the CSR distribution instead of the average distribution in
25 OLS regressions (McKelvey and Andriani, 2005).

1 Table 6 reports the QR estimation results. It shows that powerful CEOs have negative and
2 significant influence on the overall CSR score. When we scrutinize specific areas of CSR, the
3 1st, 2nd, and 3rd regressions show that powerful CEOs are negatively and significantly
4 associated with employees' safety and protection (HR) and environmental issues (ENV).
5 Furthermore, powerful CEOs have negative and significant effect in all CSR subscores, in
6 firms with low CSR performance (1st quartile regressions). CEOP displays more significant
7 coefficients at the 1st quartile than at the 3rd quartile. In the light of the previous results, we
8 conclude that when the social performance increases, powerful CEOs become less influential
9 in specific areas of CSR, such as business ethics, corporate governance and the involvement
10 in community projects.

11 For CEO age, we find mixed results. Hypothesis H2 is, therefore, rejected for all quartile
12 regressions. However, the 1st quartile regressions show that the CEO age is related positively
13 and significantly to the whole CSR score at level of 5%. Specifically, in less socially
14 responsible firms, old CEOs are more concerned about the global social performance but less
15 concerned about human rights performance. The 2nd and 3rd quartile regressions display non-
16 significant associations between CEO age and the overall CSR score. At the median quartile,
17 CEO age is positively and significantly related to human resource score: older CEOs assign
18 more importance to human resources. In firms with high CSR performance (the 3th quartile
19 regressions), CEO age is negatively and significantly related to corporate governance score.
20 Thus, as CEOs get older, they are less likely to prefer long-term projects improving the
21 governance structure and quality (Oh et al., 2016; Oh et al., 2014; McClelland et al., 2012;
22 and Matta and Beamish, 2008).

23 For education and background variables, the previous results are robust. Specifically, EDU
24 and BEDU display non-significant coefficients while SEDU is negatively and significantly
25 related to the overall CSR in all quartile regressions. The negative influence of science-

1 educated CEOs on social performance comes from their negative and significant influence on
2 human resources and environmental-related issues. Furthermore, science-graduated CEOs
3 become more influential in all CSR areas when they are appointed to high socially responsible
4 firms.

5 For CEO compensation, coefficients are non-significant in the 2^{sd} and 3rd quartile regressions.
6 We notice, however, that for firms with low social performance (1st quartile regressions),
7 CEO salary is significantly influential in specific areas of CSR: it improves business ethics
8 and lessens the firm's involvement in projects serving the community interests.

9 To conclude, Q1, Q2 and Q3 estimates show that CEO's traits have more influential effects in
10 firms with low CSR scores than in firms with high CSR scores.

11 [Insert table 6]

12 **4.2. CEO attributes and CSR performance in Family and non-family firms**

13
14 Family firms are typical in France. Almost two thirds of the firms are family-controlled
15 businesses (Nekhili et al., 2016; Boubaker and Labégorre, 2008; Sraer et al., 2007, and Faccio
16 and Lang, 2002).

17 Studies on the association between family firms and CSR activities provide mixed results. On
18 the one hand, many studies argue that family firms have strong social beliefs and care more
19 about social values than non-family firms (Le Breton-Miller and Miller, 2016; Block and
20 Wagner, 2014; Berrone et al. 2012; Donckels, 1998; Flören and Wijers, 1996; and Kuratko
21 and Welsch, 1994). In family firms, the decision-making process is based on the respect of the
22 business values, the protection of human resources, community involvement, management
23 integrity, concern for reputation, long-term orientation, respect for tradition and family values
24 (Leach, 1993; Miller and Le Breton-Miller, 2003; Neubauer and Lank, 1998; Poza, 1995;

1 Ward, 1987; and Donnelly, 1964). In fact, the firm is considered as a heritage for the family
2 future generations. Accordingly, there is a greater personal commitment to the firm's success.
3 There are strong incentives to care about personal relationships, and employees' welfare
4 (Argandoña, 2008). This could drive them to meet customers' expectations (Flören and
5 Wijers, 1996).

6 On the other hand, opportunistic behavior could emerge when family firms have a large share
7 of the market. They neglect, therefore, CSR projects (Berrone et al., 2012; Burak and
8 Morante, 2007; and Morck and Yeung, 2004). They also could face more obstacles when they
9 get involved in socially responsible projects; specifically they challenge the existing
10 organization and leadership style (Berger-Douce, 2008). Furthermore, they could be reluctant
11 to adopt a transformational leadership and prefer a more conventional one, particularly when
12 they are financially constrained (Berrone et al., 2012; Berger-Douce, 2008).

13 To test the robustness of our previous findings, we divide the initial sample into two
14 subsamples: family versus non-family controlled businesses.

15 A family-controlled firm is a firm where (1) the founder or a member of the founder's family
16 is a blockholder of the company and (2) when this blockholder has more than 20% of the
17 voting rights (Sraer et al., 2007). The number of firm-year observations in our sample (68) is
18 small in comparison with previous studies. One explanation is that authors focus on either all
19 French listed firms appearing in the World scope database (Boubaker and Labégorre, 2008),
20 or small and medium-sized corporations (Faccio and Lang, 2002), or non-financial listed
21 firms (Nekhili et al., 2016).

22 Then, we estimate the model (1) in family and non-family firms to contribute to this debate.

23 Table 7 presents proportion and mean difference tests (MDT) in family and non-family firms.

24 Results show no significant difference between non-family firms and family firms in terms of

1 the overall CSR score. However, non-family firms have better CG score than family ones: the
2 mean difference test is significant at the 1 % level. Also, we find that CEOs appointed to
3 family firms are more powerful and older than CEOs in non-family firms.

4 Surprisingly the number of female directors in family firms is larger than in non-family firms,
5 they could be, however, affiliated to the family owner (Loukil et al., 2019). Besides, women
6 directors sitting in family boards are likely to be recruited within families, without carrying
7 out an external and neutral selection process (Campbell and Miguez-Vera 2008). In fact,
8 being a member of the founding family helps women to overcome barriers they usually face
9 to achieve higher positions (glass ceiling theory). In that sense, family firms could offer better
10 careers' opportunities (Curimbaba, 2002). However, they appoint less independent and
11 foreign directors than non-family businesses. They have, therefore, smaller boards.

12 [Insert table 7]

13 Finally, focusing on the CEO academic background shows that family businesses appoint less
14 post-graduated CEOs and more CEOs with management degrees than non-family ones. In
15 fact, business-educated CEOs have financial and accounting competences enabling them to
16 handle risks and achieve better financial performance.

17 Estimates of model (1) are in tables 8 and 9.¹⁸ Results show that family and non-family firms
18 display different features.

19 Unlike the previous findings, CEOs in family-controlled businesses seem to be significantly
20 powerful over the CSR decision-making process (table 8). CEOP coefficient is positive and
21 significant (at the 1% level) in all CSR regressions. These results are consistent with a large
22 brand of the literature showing that family-controlled firms have stronger incentives to be

¹⁸ To avoid over specification problems, in a small sample such as family sample, we drop some variables from the initial models, particularly variables with consequent missing data such as LnSal. Specifically, we drop SWON, LEV, RD, CFTA and LnSal from the regressions.

1 concerned about social and environmental issues and to get involved in socially responsible
2 projects (Le Breton-Miller and Miller, 2016; Block and Wagner, 2014; Berrone et al. 2012;
3 Donckels, 1998; Flören and Wijers, 1996; and Kuratko and Welsch, 1994), specifically to
4 meet community's expectations (see among others Miller and Le Breton-Miller, 2003;
5 Neubauer and Lank, 1998; and Flören and Wijers, 1996).

6 Another interesting result is the negative and significant association between CEO age and
7 many CSR proxies. This finding could be in line with the conservative assumption of old
8 CEOs (Oh et al., 2016; Oh et al., 2014; Bertrand and Schoar, 2003; Hambrick and Mason,
9 1984) according to which old CEOs are likely to adopt a more conventional leadership. They
10 prefer to undertake profitable activities that have returns during their mandate, at the expense
11 of long-term profitable ones (Oh et al., 2016; Oh et al., 2014; McClelland et al., 2012; and
12 Matta and Beamish, 2008). In the same vein, it provides evidence that young CEOs are more
13 sensitive to environmental and social issues as they, most often, have attended more courses
14 on CSR and sustainable development than old CEOs (Oh et al., 2016).

15 Regarding the academic background, EDU and BEDU show robust findings. However, SEDU
16 displays a positive and significant coefficient in table (8) in many regressions. This means
17 that CEOs with science degrees, in family businesses, are likely to increase the firm's
18 involvement in many social and environmental areas, specifically related to the business
19 organization such as the employees' conditions in the marketplace, and the quality of
20 governance, the involvement in local community's issues.

21 [Insert table 8]

22 Turning to non-family firms, CEO power has more controversial effects on CSR areas (table
23 9). Unlike family firms, in non-family ones, powerful CEOs are prone to decrease the global
24 social performance: CEOP displays a negative and significant (at the 1% level) coefficient in

1 CSR regression. This effect is given by the lack of taking part in many social activities linked
2 to employees' conditions in the marketplace, the governance quality and the local
3 communities.

4 Also, the CEO academic background has significant effects on the overall CSR score and
5 many CSR subscores. Specifically, our findings show that EDU is significantly and positively
6 associated with the global social performance. This is in line with Kuo et al. (2018), Li et al.
7 (2017), Lewis et al. (2014) and Orens and Reheul (2013): they provide evidence that highly-
8 educated CEOs are likely to be less risk-averse, more open to new ideas and are better
9 informed about their external environment.

10 Regarding the type of the CEO academic degree, unlike in family-controlled businesses, we
11 show that management and science-graduated CEOs are negatively and significantly
12 associated with social performance and specific dimensions of CSR performance. One
13 explanation could be that management-graduated CEOs are willing to take more risks (Beber
14 and Fabbri, 2012) while CEOs with science or engineering degrees are less risk-averse, or
15 better risk-takers (Barker and Muller, 2002; and Tyler and Steensma, 1998).

16 Finally, the comparison of tables (8) and (9) provides evidence that powerful CEOs and some
17 traits such as the academic background influence differently the business involvement in
18 social activities. One explanation could be that family firms may be looking for CEOs not
19 challenging the management style of the firm: they appoint CEOs who could increase returns
20 and save the business image, most often, based on trust, and family values. They are looking
21 for CEO's traits that are "compliant" with their business values.

22 [Insert table 9]

23 **4.3. CEO attributes and CSR performance in high tech and non-high tech firms**

24

1 Our previous findings show a positive and significant association between R&D ratio and the
2 overall CSR score, robust in almost all regressions.

3 Accordingly, we estimate model (1) in the two sub-samples: (1) high-technology (hereafter
4 high-tech) firms; and (2) low-technology and non-technology (hereafter low-tech) firms. The
5 distinction between high and low tech firms is based on the technological intensity of the
6 statistical classification of economic activities in the European Community (NACE) at 2-digit
7 level¹⁹: 1) high-technology (hereafter high-tech) firms; and 2) low-technology and non-
8 technology (hereafter low-tech) firms.

9 The high-tech sample consists of all the firms implemented in Manufacture of basic
10 pharmaceutical products and pharmaceutical preparations; and Manufacture of computer,
11 electronic and optical products. The low-tech subsample consists of businesses in the
12 following sectors: manufacture of food products, beverages, tobacco products, textile,
13 wearing apparel, leather and related products, wood and of products of wood, paper and paper
14 products, printing and reproduction of recorded media; manufacture of furniture and other
15 manufacturing.

16

17 Unlike our previous findings, table (10) shows that CEO education matters in social
18 performance. Specifically, highly-educated CEOs are positively and significantly associated
19 with the overall score. Whether they are business or science-graduated CEOs, they are prone
20 to significantly decrease the global social performance. However, these results are explained
21 by their ability to influence some specific CSR areas, like for example the degree of
22 involvement in community activities, and the protection of human rights.

¹⁹ https://ec.europa.eu/eurostat/cache/metadata/Annexes/htec_esms_an3.pdf

1 We notice also that CEOs who are highly-educated or have science degree are able to have
2 meaningful effects on almost all areas of social performance.

3 Furthermore, our findings show that powerful CEOs significantly increase business behavior,
4 the involvement in community projects and corporate governance areas. However, this is not
5 enough to drive a significant rise of the social performance. Also, old CEOs seem to
6 significantly lessen ethical investments and investments serving the community's interests.
7 Unlike our previous findings, estimates show that the increase of the variable component of
8 the CEO salary in high-tech firms is likely to significantly decrease the firm involvement in
9 corporate socially responsible projects, specifically projects related to the protection of
10 employees' interests and human rights. One could explain that compensation incentives such
11 as aligning the CEO compensation with financial performance, is more likely to increase
12 investment decisions that firstly lead to higher returns and therefore higher salaries.
13 Furthermore, in very competitive industries, such as high-tech industries, "old school" CEOs
14 prefer short-term profitable activities at the expense of less profitable and more sustainable
15 ones.

16 [Insert table 10]

17 Unlike previous findings, young CEOs increase significantly the global social performance in
18 low-tech industries (table 11). In CSR regression, the CEOAGE coefficient is significant at
19 the 5% level. In line with Oh et al. (2014), we show that young CEOs have stronger
20 incentives than old ones, to raise capital in socially responsible and sustainable activities.
21 However, they influence only specific areas of CSR: they take decisions serving the interests
22 of employees and communities. They also are likely to get involved in more ethical activities
23 and are concerned about the protection of human rights. This negative association between
24 CEO age and CSR could be amplified by the high levels of industry-level discretion and

1 blockholder ownership (Oh et al., 2014). Another explanation, consistent with Holmström
2 (1999), is that young CEOs have urgent need to deliver a positive signal on their CEO-type to
3 the market. In fact, the market suffers a lack of information regarding their abilities as they
4 are most often newly appointed to the CEO position. Because of the update of universities'
5 curricula more concerned about social performance, young CEOs are more sensitive to
6 sustainable development and business ethics.

7 In the same vein, we find that business-graduated CEOs increase significantly the global
8 social performance through their positive and significant effect on specific areas of CSR, such
9 as choosing more ethical projects (BB) and taking into account the employees' interests (HR).
10 In universities curricula, there are sustainable development and CSR programs. Furthermore,
11 markets are less competitive in low tech industries than in high-tech ones: the CEOs are not
12 submitted to the same short-term financial pressure.

13 Surprisingly, taking decisions aligning the business, employees and communities' interests is
14 not a priority for post-graduated CEOs: EDU displays a negative and significant coefficient in
15 HR and CIN regressions. This leads to a significant decrease of the overall CSR score.

16 To conclude, industry characteristics of firms, in particular technology dimension, seem to
17 moderate the effects of CEO attributes on corporate social performance: CEO's traits have
18 more influential effects on social performance in high-tech industries. This means that firms
19 implemented in these industries are looking for ambitious CEOs who are able to introduce
20 new changes that are not necessarily socially responsible ones.

21 [Insert table 11]

22

23

1 **Conclusion**

2

3 The current study examines how CEO's attributes could influence the global social
4 performance and specific areas of CSR. It is drawn on firms listed on the SBF120 index
5 between 2002 and 2013.

6 We show that CEO power is negatively associated with social performance. One explanation
7 could be that powerful CEOs are less concerned about the employees' well beings in the
8 workplace and the environment, as well as the community interests. However, they are less
9 influential in specific CSR areas such as the governance quality and the protection of human
10 rights. Accordingly, we cannot support the agency assumption, specifically the CSR
11 overinvestment hypothesis, according to which powerful CEOs could be entrenched and take
12 advantage of CSR projects to catch some private benefits.

13 Also, the CEO academic background is likely to influence the firm's involvement in CSR
14 activities. Specifically, CEOs who have science or engineering degree are prone to decrease
15 CSR global performance while business educated CEOs are significantly associated with
16 limited CSR areas such as the governance quality and the involvement in community projects.
17 Surprisingly, many business and science programs have been updated and have
18 entrepreneurship, CSR and sustainable development courses. Most of the Grandes Ecoles
19 where many CEOs have graduated have sustainable business programs. However as most of
20 the CEOs in our sample are middle-aged (55 years old on average with a low standard
21 deviation), they seem to adopt a less-transformational leadership, prioritizing projects with
22 short-term returns.

23 Finally, we provide evidence that the effects of CEO's attributes on CSR performance depend
24 on industry characteristics like for example the technology dimension.

1 This study contributes to the debate on why businesses should pay attention to the
2 psychological and cognitive traits of top managers to achieve their objective instead of
3 focusing on disciplinary mechanisms. For instance, the percentage of female CEOs is too
4 small despite the debate on the urgent need to increase gender diversity in top management
5 position, which is a social requirement of stakeholders. There is evidence that the presence of
6 women in boards is likely to increase social performance (see among others Beji et al., 2020,
7 Sunderasen et al., 2016, and Boulouta, 2013). Despite the fact that the evidence on the
8 influence of female CEO is scarce, Manner (2010) and Bernardi et al. (2009) show positive
9 and significant effects. Then, the question that should be raised: is gender legislation on CEO
10 position necessary to drive businesses to be more socially responsible?

11 For future research, it would be interesting to focus on other European countries as most of
12 the existing studies are draws on US data. This is going to be very helpful to see if the current
13 results could be extended and display some European dimensions. Also, the sample period is
14 2002-2013, it does not help to see the effects of the Grenelle II Law (2010), specifically on
15 CEO's appointments.

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Appendix A

A brief summary of VigeoEiris CSR scores

CSR scores					
Human Resources (HR)	Environment (ENV)	Business Behavior (BB)	Corporate Governance (CG)	Community Involvement (CIN)	Human Rights (HRts)
Social dialogue	Environmental strategy	Product safety	Board of directors	Local social and economic development	Fundamental rights
Employee participation	Pollution prevention and control	Information to customers	Audit and internal controls	Societal impact of products and services	Fundamental labour rights
Responsible re-organizations	Green products and services	Responsible customer relations	Shareholders	Philanthropic contributions	Nondiscrimination and diversity
Career development	Biodiversity	Supply chain management (Contractual Standards)	Executive remuneration		Forced labour and child Labour
Responsible remuneration systems	Water	Supply chain management (Environmental standards)			
Health and safety	Energy	Supply chain management (Labour standards)			
Responsible working hours	Atmospheric emissions	Corruption			
	Waste management	Competition			
	Local pollution (noise/vibration)	Lobbying			
	Transportation				
	Impacts of product use and disposal				

Table (1) Sample composition

Sectors	Percentage (%)
Utilities	15.96
Consumer goods	22.47
Basic Materials	2.29
Financial	16.12
Health care	5.82
industrials	22.73
Oil and Gas	2.77
Technology	11.85

Table (2) Variables' definitions and measures

Code	Proxies
<i>Dependent variables</i>	
CSR	VigeoEiris Global Corporate social responsibility score
CG	VigeoEiris corporate governance
CIN	VigeoEiris community involvement score
HR	VigeoEiris human resources score
ENV	VigeoEiris environmental score
HRts	VigeoEiris human rights score
BB	VigeoEiris business ethics score
Independent variables	
PCEO	<p>A multidimensional CEO power index measured by the sum of:</p> <ul style="list-style-type: none"> • Structural power: when the CEO is: <ul style="list-style-type: none"> - The business founder=1 if the CEO is the business founder and 0 otherwise; <p>and/or</p> <ul style="list-style-type: none"> - The chair of the board=1 if the CEO is also the chair of the board and 0 otherwise • Ownership power=1 if the CEO is a shareholder and 0 otherwise • Expert power measured by the CEO tenure in the business • Prestige power, measured by: <ul style="list-style-type: none"> - Political connections=1 if the CEO has political connections in France and 0 otherwise. - Past board experiences=1 if the CEO has at least one board experience and 0 otherwise
CEOAGE	The CEO age
EDU	If the CEO has a Master, MBA or PhD degree, EDU=1, 0 otherwise
SEDU	If the CEO has a science or an engineering degree, SEDU=1, 0 otherwise
BEDU	If the CEO has a business/management/ corporate law education. BEDU=1, 0
FCEO	If the CEO is a woman, FCEO=1, 0 otherwise
LnSal	The logarithm of variable CEO compensation
BFSIZE	The number of directors in the boardroom
PIND	The percentage of independent directors in the boardroom
PFD	The percentage of female directors
S-OWN	The State share of capital
INS-OWN	The institutional investors' share of capital
F-OWN	The family share of capital
ROA	The return on asset ratio
FAge	The firm age
CFTA	The cash-flows to total assets ratio
RD	The ratio of R&D expenses to total assets
LEV	The book value of debt to total assets ratio
LnEmp	The firm size given by the number of employees
Industry-effect	Dummy variable to control for industry effects

Table (3) Descriptive statistics**Panel (A) Quantitative variables**

Variable	N	Mean	Std. Dev.	Min	Max
CSR	612.000	44.185	12.509	8.000	73.000
HR	612.000	46.351	16.974	0.000	81.000
ENV	612.000	41.595	16.965	0.000	86.000
BB	612.000	42.990	14.371	0.000	81.000
CIN	612.000	46.376	18.484	0.000	90.000
CG	612.000	43.206	11.748	0.000	72.000
HRts	612.000	49.142	14.865	14.000	84.000
CEOP	1091.000	12.152	14.647	0.000	108.920
CEOAGE	1333.000	55.582	6.993	26.000	76.000
LnSal	489.000	13.282	0.872	9.473	15.384
FOWN	1268.000	9.104	18.207	0.000	80.480
INSOWN	1270.000	23.033	23.417	0.000	98.510
SOWN	1269.000	2.696	11.361	0.000	89.200
PIND	1254.000	47.845	20.596	0.000	100.000
PFD	1334.000	11.993	11.099	0.000	50.000
PFOR	1044.000	17.158	17.206	0.000	77.780
BSIZE	1334.000	11.997	3.768	3.000	24.000
RD	1402.000	5.102	25.718	0.000	530.113
CFTA	1189.000	0.002	0.013	-0.010	0.293
LnFAge	1394.000	3.757	1.062	0.000	5.852
ROA	1244.000	3.958	6.520	-43.014	55.472
LEV	1320.000	0.574	0.230	-0.253	2.011
LnEmp	1237.000	9.778	1.789	3.178	13.113

Panel (B) Qualitative variables: table of frequencies

		N	Percentage
FCEO	0	1324	98.81
	1	16	1.19
EDU	0	169	12.7
	1	1162	87.3
BEDU	0	645	48.39
	1	688	51.61
SEDU	0	671	50.38
	1	661	49.62

Table (4) Pairwise Correlation Matrix

*, **, *** significant respectively at the level 10%, 5%, 1%

	CSR	HR	ENV	BB	CIN	CG	HRts	CEOP	CEOAGE	EDU	BEDU	SEDU
CSR	1.000											
HR	0.8744***	1.000										
	0.000											
ENV	0.8656***	0.7706***	1.000									
	0.000	0.000										
BB	0.8224***	0.7044***	0.6912***	1.000								
	0.000	0.000	0.000									
CIN	0.7027***	0.6009***	0.6059***	0.6198***	1.000							
	0.000	0.000	0.000	0.000								
CG	0.5699***	0.4086***	0.4036***	0.4228***	0.3177***	1.000						
	0.000	0.000	0.000	0.000	0.000							
HRts	0.8297***	0.8030***	0.7127***	0.7032***	0.6649***	0.3438***	1.000					
	0.000	0.000	0.000	0.000	0.000	0.000						
CEOP	-0.2412***	-0.2038***	-0.1601***	-0.1799***	-0.1606***	-0.2338***	-0.2062***	1.000				
	0.000	0.000	0.000	0.000	0.000	0.000	0.000					
CEOAGE	0.0869*	0.0715*	0.1053***	0.043	0.1438***	-0.0750*	0.0741*	0.1977***	1.000			
	0.033	0.079	0.010	0.293	0.000	0.065	0.069	0.000				
EDU	0.1377***	0.1667***	0.1259***	0.1249***	0.057	0.1195***	0.1443***	-0.1878***	-0.1604***	1.000		
	0.001	0.000	0.002	0.002	0.159	0.003	0.000	0.000	0.000			
BEDU	0.031	-0.052	-0.013	0.0713*	-0.030	0.1666***	-0.011	-0.0889***	-0.1073***	-0.0619**	1.000	
	0.442	0.206	0.744	0.080	0.463	0.000	0.788	0.003	0.000	0.024		
SEDU	-0.022	0.018	-0.012	0.021	0.051	-0.1199***	0.021	-0.0594*	0.003	0.2163***	-0.5417***	1.000
	0.588	0.657	0.771	0.608	0.213	0.003	0.610	0.050	0.908	0.000	0.000	
LnSal	0.1518***	0.1279*	0.1406*	0.2393***	0.1052*	-0.1077*	0.1166*	-0.1597***	0.1051**	-0.039	-0.005	0.1358***
	0.009	0.027	0.015	0.000	0.069	0.063	0.044	0.001	0.020	0.393	0.916	0.003

Table (4) Pairwise Correlation Matrix (continued)

FOWN	-0.1797***	-0.1627***	-0.1300***	-0.1275***	-0.0853*	-0.1961***	-0.1166***	0.2920***	0.0507*	0.020	0.0816***	-0.0719**
	0.000	0.000	0.002	0.002	0.038	0.000	0.005	0.000	0.073	0.474	0.004	0.011
INSOWN	0.1029*	0.0871*	0.1758***	0.0756*	-0.016	0.1589***	-0.009	-0.047	-0.014	0.0616**	0.0916***	0.011
	0.012	0.034	0.000	0.066	0.699	0.000	0.828	0.127	0.627	0.029	0.001	0.699
SOWN	0.1368***	0.1795***	0.1668***	0.055	0.1894***	-0.043	0.2189***	-0.0996***	0.0587**	0.0825***	-0.030	0.0649**
	0.001	0.000	0.000	0.182	0.000	0.292	0.000	0.001	0.038	0.004	0.295	0.022
PIND	0.2382***	0.1391***	0.1670***	0.1520***	0.065	0.4465***	0.034	-0.2071***	-0.015	0.0966***	0.0912***	0.006
	0.000	0.001	0.000	0.000	0.114	0.000	0.405	0.000	0.593	0.001	0.001	0.847
PFD	0.021	-0.044	0.0706*	-0.013	0.014	0.007	-0.010	0.0598**	0.1113***	-0.0566**	0.026	-0.0868***
	0.598	0.277	0.082	0.751	0.740	0.873	0.814	0.049	0.000	0.039	0.342	0.002
PFOR	0.1365***	0.0706*	0.1461***	0.1378***	0.052	0.2515***	0.017	-0.1080***	-0.033	0.1670***	-0.023	0.1105***
	0.001	0.099	0.001	0.001	0.221	0.000	0.692	0.002	0.298	0.000	0.460	0.000
BSIZE	0.3639***	0.3932***	0.3403***	0.2726***	0.3205***	0.0706*	0.3347***	-0.1744***	0.1187***	0.033	0.007	0.0609**
	0.000	0.000	0.000	0.000	0.000	0.083	0.000	0.000	0.000	0.225	0.806	0.027
RD	0.024	0.014	0.0700*	0.065	-0.041	-0.006	0.025	0.010	-0.044	0.0556**	0.015	0.0716***
	0.548	0.738	0.085	0.111	0.311	0.874	0.535	0.734	0.113	0.043	0.595	0.009
CFTA	-0.2831***	-0.2346***	-0.2091***	-0.2122***	-0.2687***	-0.1922***	-0.2503***	0.019	-0.039	0.020	0.0584**	-0.0651**
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.563	0.186	0.508	0.048	0.027
LnFAge	0.0780*	0.0931**	0.1558***	0.029	0.0884*	0.033	0.060	-0.1042***	0.0895***	-0.011	0.0994***	-0.0680**
	0.054	0.021	0.000	0.478	0.029	0.409	0.136	0.001	0.001	0.683	0.000	0.013
ROA	-0.1592***	-0.1298***	-0.0751*	-0.1491***	-0.1018*	-0.1297***	-0.1333***	0.013	0.0624**	-0.011	0.0670**	-0.047
	0.000	0.002	0.074	0.000	0.015	0.002	0.002	0.673	0.031	0.708	0.020	0.101
LEV	0.1156***	0.1750***	0.0717*	0.1340***	-0.007	0.054	0.0887**	-0.036	0.015	0.1583***	-0.010	0.0629**
	0.005	0.000	0.084	0.001	0.866	0.193	0.032	0.247	0.604	0.000	0.720	0.026
LnEmp	0.4837***	0.4574***	0.4008***	0.4158***	0.4739***	0.1454***	0.4710***	-0.1016***	0.1019***	0.037	-0.1678***	0.1247***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.209	0.000	0.000

Table (5) OLS regression of CEO attributes on CSR performance

VARIABLES	(1) CSR	(2) HR	(3) ENV	(4) BB	(5) CIN	(6) CG	(7) HRts
CEOP	-0.367*** (0.112)	-0.601*** (0.170)	-0.477*** (0.163)	-0.175 (0.160)	-0.425* (0.225)	-0.162 (0.118)	-0.252 (0.162)
CEOAGE	0.0303 (0.145)	0.0937 (0.220)	0.173 (0.211)	-0.289 (0.207)	-0.0799 (0.292)	-0.144 (0.153)	-0.0971 (0.210)
EDU	3.155 (2.617)	2.216 (3.977)	4.672 (3.819)	0.369 (3.745)	10.55** (5.277)	-7.157** (2.767)	9.179** (3.806)
BEDU	-1.045 (1.591)	-3.642 (2.418)	-3.368 (2.322)	2.233 (2.277)	-8.325** (3.209)	3.154* (1.682)	-1.755 (2.314)
SEDU	-6.446*** (1.871)	-9.670*** (2.843)	-7.416*** (2.730)	-2.105 (2.677)	-9.595** (3.772)	3.138 (1.978)	-6.570** (2.721)
LnSal	0.284 (1.025)	1.073 (1.558)	0.339 (1.496)	1.901 (1.467)	-2.571 (2.067)	0.267 (1.084)	-1.581 (1.491)
FOWN	-0.0538 (0.0445)	0.00685 (0.0676)	-0.0563 (0.0649)	-0.129** (0.0637)	0.0305 (0.0897)	-0.156*** (0.0471)	0.0285 (0.0647)
INSOWN	-0.00249 (0.0311)	0.0229 (0.0473)	0.0230 (0.0454)	-0.00368 (0.0445)	-0.0827 (0.0628)	0.0732** (0.0329)	-0.0471 (0.0453)
SOWN	0.0371 (0.0499)	0.141* (0.0759)	0.0901 (0.0729)	-0.188*** (0.0714)	0.0230 (0.101)	0.146*** (0.0528)	0.0673 (0.0726)
PIND	0.0949** (0.0410)	0.165*** (0.0623)	0.144** (0.0599)	-0.0635 (0.0587)	0.0581 (0.0827)	0.114*** (0.0434)	-0.0714 (0.0597)
PFD	-0.00775 (0.0642)	-0.128 (0.0976)	0.103 (0.0937)	0.0381 (0.0919)	0.233* (0.129)	-0.0730 (0.0679)	0.0749 (0.0934)
PFOR	0.141*** (0.0469)	0.193*** (0.0713)	0.226*** (0.0684)	0.0639 (0.0671)	0.113 (0.0946)	0.0924* (0.0496)	0.0992 (0.0682)
BSIZE	1.262*** (0.316)	1.788*** (0.480)	2.152*** (0.461)	1.491*** (0.452)	1.997*** (0.637)	-1.069*** (0.334)	0.542 (0.460)
RD	0.143** (0.0599)	0.147 (0.0910)	0.191** (0.0873)	0.189** (0.0857)	0.165 (0.121)	0.0306 (0.0633)	0.214** (0.0871)
CFTA	-1,985 (1,300)	-3,895* (1,976)	802.8 (1,897)	387.3 (1,861)	2,637 (2,622)	-3,334** (1,375)	-4,951*** (1,891)
LnFAge	-0.251 (0.731)	-1.017 (1.111)	0.927 (1.067)	0.0217 (1.046)	1.526 (1.474)	-1.017 (0.773)	-0.0642 (1.063)
ROA	-0.235 (0.147)	-0.231 (0.224)	-0.201 (0.215)	-0.652*** (0.211)	-0.162 (0.297)	-0.196 (0.156)	-0.307 (0.214)
LEV	-3.561 (3.431)	1.165 (5.213)	-6.206 (5.006)	-5.800 (4.909)	-5.832 (6.917)	-1.649 (3.627)	-7.777 (4.989)
LnEmp	2.870*** (0.514)	3.150*** (0.781)	3.429*** (0.750)	2.942*** (0.735)	4.950*** (1.036)	0.892 (0.543)	4.486*** (0.747)
Industry-effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-6.142 (15.92)	-28.94 (24.19)	-46.49** (23.23)	-5.628 (22.78)	-18.56 (32.10)	64.26*** (16.83)	29.67 (23.16)
Observations	182	182	182	182	182	182	182
R-squared	0.602	0.567	0.485	0.467	0.448	0.513	0.529

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table (6) Quantile Regression of CEO attributes on CSR performance

VARIABLES	Q1 CSR	Q1 HR	Q1 ENV	Q1 BB	Q1 CIN	Q1 CG	Q1 HRts
CEOP	-0.575*** (0.122)	-0.666*** (0.186)	-0.591*** (0.219)	-0.452** (0.195)	-0.590* (0.334)	-0.289* (0.170)	-0.332* (0.177)
CEOAGE	0.315** (0.158)	0.133 (0.242)	0.270 (0.284)	-0.266 (0.252)	0.00545 (0.434)	0.167 (0.220)	-0.439* (0.230)
EDU	1.163 (2.851)	-3.188 (4.372)	7.926 (5.134)	2.718 (4.567)	0.653 (7.845)	-5.384 (3.980)	9.007** (4.154)
BEDU	-1.011 (1.734)	-2.372 (2.658)	-7.572** (3.122)	2.077 (2.777)	3.923 (4.770)	4.665* (2.420)	-0.660 (2.526)
SEDU	-7.758*** (2.038)	-6.725** (3.125)	-10.42*** (3.670)	-2.534 (3.265)	1.605 (5.608)	3.770 (2.845)	-4.119 (2.969)
LnSal	0.0628 (1.117)	2.057 (1.713)	1.909 (2.011)	3.133* (1.789)	-5.478* (3.073)	0.663 (1.559)	0.644 (1.627)
FOWN	-0.0293 (0.0485)	-0.0104 (0.0744)	-0.0725 (0.0873)	-0.153** (0.0777)	0.0175 (0.133)	-0.109 (0.0677)	0.0719 (0.0706)
INSOWN	0.0184 (0.0339)	0.0673 (0.0520)	-0.00585 (0.0611)	0.00108 (0.0543)	-0.0970 (0.0933)	0.0444 (0.0474)	-0.0548 (0.0494)
SOWN	-0.0107 (0.0544)	0.215** (0.0834)	-0.0281 (0.0980)	-0.236*** (0.0871)	-0.0864 (0.150)	0.104 (0.0759)	0.126 (0.0793)
PIND	0.155*** (0.0447)	0.206*** (0.0685)	0.189** (0.0805)	-0.00876 (0.0716)	-0.0203 (0.123)	0.0807 (0.0624)	-0.0975 (0.0651)
PFD	-0.0952 (0.0700)	-0.115 (0.107)	0.166 (0.126)	0.0605 (0.112)	0.192 (0.192)	-0.162* (0.0977)	0.0277 (0.102)
PFOR	0.167*** (0.0511)	0.169** (0.0783)	0.206** (0.0920)	0.120 (0.0818)	0.186 (0.141)	0.0485 (0.0713)	0.120 (0.0744)
BSIZE	1.303*** (0.344)	1.288** (0.528)	2.529*** (0.620)	1.879*** (0.552)	2.710*** (0.947)	-0.730 (0.481)	0.491 (0.502)
RD	0.110* (0.0652)	0.0957 (0.1000)	0.192 (0.117)	0.234** (0.104)	0.180 (0.179)	-0.117 (0.0910)	0.0561 (0.0950)
CFTA	-2,768* (1,417)	-5,142** (2,172)	2,791 (2,551)	1,975 (2,269)	1,629 (3,898)	-2,479 (1,978)	-2,591 (2,064)
LnFAge	-2.499*** (0.797)	-1.354 (1.221)	-1.109 (1.434)	-1.613 (1.276)	1.165 (2.192)	-1.549 (1.112)	-0.788 (1.160)
ROA	-0.119 (0.161)	-0.0795 (0.246)	0.0628 (0.289)	-0.559** (0.257)	-0.222 (0.442)	-0.220 (0.224)	-0.0169 (0.234)
LEV	-3.804 (3.738)	-0.698 (5.731)	-10.04 (6.730)	-7.679 (5.987)	0.974 (10.28)	-7.247 (5.218)	-7.663 (5.445)
LnEmp	4.452*** (0.560)	4.032*** (0.859)	4.511*** (1.008)	4.440*** (0.897)	7.374*** (1.541)	1.344* (0.782)	5.794*** (0.816)
Industry-effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-24.47 (17.35)	-45.19* (26.60)	-87.26*** (31.23)	-46.24* (27.79)	-13.10 (47.73)	38.78 (24.22)	3.663 (25.27)
Observations	182	182	182	182	182	182	182

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table (6) Quantile Regression of CEO attributes on CSR performance (continued)

VARIABLES	Q2 CSR	Q2 HR	Q2 ENV	Q2 BB	Q2 CIN	Q2 CG	Q2 HRts
CEOP	-0.496*** (0.130)	-0.568*** (0.186)	-0.546** (0.213)	0.0177 (0.183)	-0.521* (0.268)	-0.116 (0.156)	-0.314 (0.203)
CEOAGE	0.172 (0.169)	0.405* (0.242)	0.453 (0.276)	-0.290 (0.237)	0.0919 (0.347)	-0.211 (0.203)	-0.130 (0.263)
EDU	4.143 (3.055)	4.376 (4.373)	10.26** (4.998)	5.881 (4.286)	11.15* (6.274)	-10.69*** (3.667)	9.226* (4.760)
BEDU	-2.444 (1.858)	-3.621 (2.659)	-5.933* (3.039)	3.450 (2.606)	-0.596 (3.815)	1.070 (2.230)	-0.360 (2.895)
SEDU	-8.046*** (2.184)	-11.35*** (3.126)	-14.14*** (3.573)	-5.380* (3.064)	-6.307 (4.485)	3.060 (2.622)	-4.328 (3.403)
LnSal	-1.125 (1.197)	0.417 (1.713)	2.382 (1.958)	1.026 (1.679)	-2.972 (2.458)	-0.773 (1.437)	-1.740 (1.865)
FOWN	-0.131** (0.0520)	-0.0135 (0.0744)	-0.156* (0.0850)	-0.220*** (0.0729)	0.118 (0.107)	-0.222*** (0.0624)	0.0553 (0.0810)
INSOWN	-0.0332 (0.0363)	0.0537 (0.0520)	-0.0205 (0.0595)	-0.00487 (0.0510)	0.00347 (0.0746)	0.0421 (0.0436)	-0.0368 (0.0566)
SOWN	-0.0130 (0.0583)	0.176** (0.0834)	-0.0454 (0.0954)	-0.192** (0.0818)	-0.102 (0.120)	0.154** (0.0700)	0.0711 (0.0908)
PIND	0.0967** (0.0479)	0.189*** (0.0686)	0.0982 (0.0784)	-0.108 (0.0672)	-0.0110 (0.0984)	0.159*** (0.0575)	-0.0664 (0.0746)
PFD	0.000864 (0.0750)	-0.207* (0.107)	0.0741 (0.123)	-0.0944 (0.105)	-0.0439 (0.154)	-0.0273 (0.0900)	-0.0161 (0.117)
PFOR	0.203*** (0.0547)	0.127 (0.0784)	0.179** (0.0896)	0.155** (0.0768)	0.179 (0.112)	0.0942 (0.0657)	0.112 (0.0853)
BSIZE	1.563*** (0.369)	1.372** (0.528)	1.870*** (0.604)	1.526*** (0.518)	1.062 (0.758)	-1.184*** (0.443)	0.812 (0.575)
RD	0.166** (0.0699)	0.111 (0.100)	0.133 (0.114)	0.212** (0.0980)	0.114 (0.144)	0.0420 (0.0839)	0.219** (0.109)
CFTA	-2,094 (1,518)	-3,528 (2,173)	790.4 (2,483)	694.6 (2,130)	-398.3 (3,117)	-2,970 (1,822)	-4,069* (2,365)
LnFAge	-0.489 (0.854)	-2.304* (1.222)	-0.625 (1.396)	0.000332 (1.198)	2.173 (1.753)	-0.186 (1.025)	0.389 (1.330)
ROA	-0.145 (0.172)	-0.308 (0.246)	-0.178 (0.282)	-0.609** (0.241)	-0.243 (0.353)	-0.0808 (0.207)	-0.317 (0.268)
LEV	-3.232 (4.005)	0.701 (5.732)	-5.231 (6.552)	0.757 (5.619)	-10.84 (8.224)	1.300 (4.807)	-5.240 (6.240)
LnEmp	3.044*** (0.600)	3.916*** (0.859)	3.490*** (0.981)	3.039*** (0.842)	4.686*** (1.232)	0.782 (0.720)	4.846*** (0.935)
Industry-effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	4.599 (18.59)	-36.65 (26.60)	-70.59** (30.41)	-4.200 (26.08)	0.573 (38.17)	80.23*** (22.31)	24.56 (28.96)
Observations	182	182	182	182	182	182	182

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table (6) Quantile Regression of CEO attributes on CSR performance (continued)

VARIABLES	Q3 CSR	Q3 HR	Q3 ENV	Q3 BB	Q3 CIN	Q3 CG	Q3 HRts
CEOP	-0.488*** (0.146)	-1.035*** (0.224)	-0.341* (0.173)	-0.0760 (0.220)	-0.139 (0.325)	-0.159 (0.114)	-0.0656 (0.199)
CEOAGE	0.00184 (0.189)	0.354 (0.290)	0.122 (0.224)	0.0661 (0.285)	-0.0399 (0.421)	-0.384** (0.147)	-0.218 (0.258)
EDU	3.196 (3.416)	1.379 (5.246)	-5.009 (4.058)	-2.991 (5.155)	11.36 (7.611)	-9.220*** (2.664)	10.25** (4.661)
BEDU	-3.046 (2.077)	-5.351* (3.190)	-1.177 (2.468)	2.130 (3.134)	-12.19*** (4.628)	0.542 (1.620)	-3.479 (2.834)
SEDU	-6.361** (2.442)	-15.00*** (3.750)	-5.547* (2.901)	-5.119 (3.685)	-10.30* (5.441)	5.567*** (1.904)	-8.566** (3.332)
LnSal	-1.141 (1.338)	-0.112 (2.055)	-0.793 (1.590)	-0.0239 (2.019)	-0.160 (2.982)	-0.866 (1.044)	-2.972 (1.826)
FOWN	-0.0302 (0.0581)	0.0770 (0.0892)	-0.212*** (0.0690)	-0.207** (0.0877)	0.0637 (0.129)	-0.154*** (0.0453)	0.0355 (0.0793)
INSOWN	-0.0389 (0.0406)	-0.0562 (0.0624)	0.0196 (0.0483)	-0.00964 (0.0613)	0.0837 (0.0906)	0.0260 (0.0317)	-0.00340 (0.0555)
SOWN	0.0262 (0.0652)	0.0843 (0.100)	0.167** (0.0774)	-0.139 (0.0983)	0.00590 (0.145)	0.0846* (0.0508)	0.0815 (0.0889)
PIND	0.0415 (0.0536)	0.101 (0.0823)	0.193*** (0.0636)	-0.191** (0.0808)	-0.202* (0.119)	0.0933** (0.0418)	-0.167** (0.0731)
PFD	0.0246 (0.0838)	-0.226* (0.129)	-0.0685 (0.0996)	-0.0651 (0.126)	-0.00118 (0.187)	0.108* (0.0654)	0.0981 (0.114)
PFOR	0.205*** (0.0612)	0.272*** (0.0940)	0.179** (0.0727)	0.00490 (0.0924)	0.00617 (0.136)	0.0251 (0.0477)	0.216** (0.0835)
BSIZE	0.940** (0.413)	1.605** (0.634)	1.745*** (0.490)	0.295 (0.622)	0.0938 (0.919)	-1.437*** (0.322)	-0.0927 (0.563)
RD	0.146* (0.0781)	0.0880 (0.120)	0.232** (0.0928)	0.119 (0.118)	0.172 (0.174)	0.00597 (0.0609)	0.230** (0.107)
CFTA	-2,351 (1,697)	-2,576 (2,607)	-2,232 (2,016)	-2,832 (2,561)	-1,631 (3,782)	-1,819 (1,324)	-6,648*** (2,316)
LnFAge	0.638 (0.954)	-1.169 (1.466)	1.170 (1.134)	0.336 (1.440)	1.249 (2.126)	1.422* (0.744)	1.406 (1.302)
ROA	0.0698 (0.192)	0.0333 (0.296)	0.0142 (0.229)	-0.650** (0.290)	-0.0415 (0.429)	-0.492*** (0.150)	-0.194 (0.263)
LEV	-5.627 (4.478)	6.673 (6.877)	7.967 (5.320)	-6.241 (6.757)	-2.418 (9.977)	-1.643 (3.492)	-1.816 (6.110)
LnEmp	1.968*** (0.671)	2.337** (1.030)	0.417 (0.797)	1.564 (1.012)	3.856** (1.495)	0.442 (0.523)	4.322*** (0.915)
Industry-effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	34.39 (20.79)	-4.705 (31.92)	16.63 (24.69)	58.08* (31.36)	10.55 (46.31)	97.83*** (16.21)	64.32** (28.36)
Observations	182	182	182	182	182	182	182

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table (7) Proportion and Difference mean tests (MDT) between family and non-family-controlled firms

*, **, *** significant respectively at the level 10%, 5%, 1%

Quantitative Variables	Family firms	Non-Family firms	MDT
CSR	43.772	44.258	0.486
HR	47.348	46.175	-1.173
ENV	42.641	41.410	-1.232
BB	43.402	42.917	-0.485
CIN	45.304	46.565	1.261
CG	39.446	43.871	4.426***
HRts	49.707	49.042	-0.664
CEOP	19.898	10.037	(-9.861)***
CEOAGE	56.393	55.376	(-1.016)**
INSOWN	15.537	24.816	9.279***
PIND	42.710	49.072	1.3016***
PFD	14.069	11.469	(-2.599)***
PFOR	12.146	18.072	5.9256***
BSIZE	11.030	12.248	1.218***
LnFAge	4.137	3.665	(-0.473)***
ROA	4.538	3.806	-0.733
LnEmp	9.940	9.743	(-0.197)*

Qualitative Variables	Family firms	Non-Family firms	MDT
EDU	82.59%	88.50%	-0.059***
BEDU	59.26%	49.67%	0.096***
SEDU	38.52%	52.45%	-0.139***

Table (8) OLS Regression of CEO attributes on CSR performance in Family Firms

VARIABLES	CSR	HR	ENV	BB	CIN	CG	HRts
CEOP	1.064*** (0.267)	1.013*** (0.317)	1.567*** (0.339)	0.984*** (0.332)	0.692* (0.361)	0.881*** (0.178)	0.681* (0.366)
CEOAGE	-1.791*** (0.563)	-2.714*** (0.670)	-2.989*** (0.715)	-1.541** (0.700)	-0.826 (0.763)	-1.308*** (0.376)	-1.617** (0.773)
EDU	-6.361 (5.292)	-6.095 (6.299)	-12.70* (6.723)	3.384 (6.585)	-12.11* (7.170)	-12.87*** (3.538)	-5.059 (7.264)
BEDU	3.464 (4.520)	-7.713 (5.379)	-9.749* (5.741)	12.64** (5.624)	22.13*** (6.123)	12.80*** (3.021)	-2.589 (6.203)
SEDU	10.03** (4.900)	11.86** (5.832)	15.49** (6.224)	5.909 (6.097)	18.30*** (6.638)	11.00*** (3.276)	10.63 (6.725)
INSOWN	-0.170** (0.0790)	-0.220** (0.0940)	-0.103 (0.100)	-0.313*** (0.0982)	-0.0584 (0.107)	0.00247 (0.0528)	-0.229** (0.108)
PIND	0.385** (0.182)	0.265 (0.217)	0.355 (0.232)	0.304 (0.227)	0.279 (0.247)	0.278** (0.122)	0.378 (0.250)
PFD	0.0150 (0.230)	0.145 (0.274)	0.325 (0.292)	0.190 (0.286)	-0.429 (0.312)	0.0308 (0.154)	-0.0447 (0.316)
PFOR	0.116 (0.204)	0.101 (0.243)	0.289 (0.259)	0.126 (0.254)	0.0348 (0.276)	-0.196 (0.136)	0.0792 (0.280)
BSIZE	1.309* (0.698)	1.871** (0.831)	1.242 (0.887)	3.353*** (0.869)	1.100 (0.946)	-1.107** (0.467)	1.217 (0.959)
LnFAge	12.75*** (3.984)	16.08*** (4.742)	19.93*** (5.061)	13.96*** (4.958)	8.133 (5.397)	-1.374 (2.664)	13.48** (5.468)
ROA	0.0937 (0.176)	-0.0592 (0.209)	0.156 (0.223)	0.163 (0.219)	-0.0939 (0.238)	-0.0509 (0.117)	0.145 (0.241)
LnEmp	3.641** (1.585)	2.607 (1.886)	0.610 (2.013)	4.023** (1.972)	8.972*** (2.147)	2.373** (1.059)	6.533*** (2.175)
Industry-effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	9.130 (46.29)	65.78 (55.09)	83.20 (58.80)	-38.01 (57.59)	-69.19 (62.71)	87.51*** (30.94)	0.525 (63.53)
Observations	68	68	68	68	68	68	68
R-squared	0.729	0.762	0.729	0.694	0.723	0.740	0.728

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table (9) OLS Regression of CEO attributes on CSR performance in non-Family Firms

VARIABLES	CSR	HR	ENV	BB	CIN	CG	HRts
CEOP	-0.181** (0.0756)	-0.221** (0.110)	-0.205* (0.108)	0.0267 (0.101)	-0.0515 (0.130)	-0.308*** (0.0816)	-0.170* (0.102)
CEOAGE	0.0408 (0.0885)	0.0108 (0.129)	0.139 (0.127)	-0.115 (0.118)	-0.144 (0.153)	0.0660 (0.0955)	0.0195 (0.120)
EDU	6.154*** (1.928)	11.04*** (2.803)	6.248** (2.760)	6.037** (2.564)	-5.345 (3.322)	2.863 (2.081)	7.225*** (2.607)
BEDU	-3.509*** (1.216)	-7.895*** (1.767)	-4.577*** (1.741)	-1.190 (1.617)	-8.867*** (2.095)	-0.0388 (1.312)	-3.425** (1.644)
SEDU	-5.628*** (1.202)	-10.46*** (1.747)	-4.829*** (1.721)	-2.753* (1.598)	-7.436*** (2.071)	-1.947 (1.297)	-5.791*** (1.625)
INSOWN	0.0577** (0.0260)	0.0682* (0.0378)	0.119*** (0.0372)	0.0945*** (0.0346)	-0.124*** (0.0448)	0.0534* (0.0281)	-0.0244 (0.0352)
PIND	0.111*** (0.0257)	0.0615 (0.0373)	0.120*** (0.0368)	0.0755** (0.0342)	0.0646 (0.0443)	0.198*** (0.0277)	-0.0260 (0.0347)
PFD	-0.0360 (0.0460)	-0.0432 (0.0668)	0.0179 (0.0658)	-0.0655 (0.0611)	0.139* (0.0792)	-0.0870* (0.0496)	-0.0105 (0.0622)
PFOR	0.0536 (0.0337)	0.112** (0.0489)	0.0911* (0.0482)	-0.000463 (0.0448)	0.0492 (0.0580)	0.120*** (0.0363)	0.0452 (0.0455)
BSIZE	0.792*** (0.182)	0.901*** (0.264)	1.253*** (0.260)	0.702*** (0.242)	1.850*** (0.313)	0.0875 (0.196)	0.715*** (0.246)
LnFAge	-0.681 (0.547)	-1.527* (0.795)	0.879 (0.783)	-0.676 (0.728)	1.173 (0.943)	0.216 (0.591)	-0.403 (0.740)
ROA	-0.195* (0.102)	-0.392*** (0.148)	-0.0377 (0.146)	-0.259* (0.135)	-0.319* (0.175)	-0.271** (0.110)	-0.0719 (0.137)
LnEmp	3.601*** (0.374)	5.306*** (0.544)	3.677*** (0.536)	3.297*** (0.498)	3.966*** (0.645)	1.172*** (0.404)	4.566*** (0.506)
Industry- effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-12.44 (7.852)	-17.34 (11.42)	-27.36** (11.24)	-9.655 (10.45)	-23.56* (13.53)	7.444 (8.477)	-11.00 (10.62)
Observations	320	320	320	320	320	320	320
R-squared	0.596	0.553	0.511	0.417	0.481	0.470	0.481

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table (10) OLS Regression of CEO attributes on CSR performance in high-tech Firms

VARIABLES	CSR	HR	ENV	BB	CIN	CG	HRts
CEOP	0.348 (0.234)	-0.524 (0.365)	0.555 (0.396)	0.558* (0.334)	1.178*** (0.413)	0.618** (0.258)	0.279 (0.393)
CEOAGE	-0.139 (0.208)	0.370 (0.326)	0.0255 (0.353)	-0.557* (0.298)	-1.416*** (0.369)	-0.137 (0.230)	-0.510 (0.350)
EDU	21.95*** (4.889)	6.975 (7.639)	24.03*** (8.277)	24.16*** (6.988)	62.38*** (8.647)	5.795 (5.402)	39.39*** (8.219)
BEDU	-6.882*** (2.508)	-6.816* (3.919)	-6.008 (4.246)	-5.843 (3.585)	-35.39*** (4.436)	-1.742 (2.771)	-13.30*** (4.216)
SEDU	-17.00*** (2.615)	-20.70*** (4.085)	-17.76*** (4.426)	-14.05*** (3.737)	-36.05*** (4.624)	-3.969 (2.889)	-18.68*** (4.395)
LnSal	-2.603* (1.391)	-4.214* (2.173)	-2.743 (2.355)	-2.507 (1.988)	-3.926 (2.460)	-0.599 (1.537)	-4.450* (2.338)
FOWN	-0.0387 (0.0782)	0.125 (0.122)	-0.0850 (0.132)	-0.0328 (0.112)	-0.368*** (0.138)	-0.224** (0.0864)	0.0984 (0.131)
INSOWN	0.0421 (0.0417)	0.0791 (0.0651)	0.0480 (0.0706)	0.133** (0.0596)	-0.164** (0.0738)	0.133*** (0.0461)	-0.0279 (0.0701)
SOWN	0.143* (0.0820)	0.185 (0.128)	0.279** (0.139)	-0.0520 (0.117)	0.554*** (0.145)	0.186** (0.0906)	0.0717 (0.138)
PIND	0.0638 (0.0550)	0.187** (0.0860)	0.0224 (0.0932)	-0.0526 (0.0787)	0.0714 (0.0974)	0.184*** (0.0608)	-0.156* (0.0925)
PFD	0.00130 (0.0860)	-0.169 (0.134)	0.277* (0.146)	-0.0364 (0.123)	0.374** (0.152)	-0.153 (0.0950)	0.168 (0.145)
PFOR	0.109* (0.0622)	0.138 (0.0971)	0.248** (0.105)	-0.0942 (0.0889)	0.147 (0.110)	0.0546 (0.0687)	0.162 (0.104)
BSIZE	0.973* (0.494)	1.945** (0.771)	1.356 (0.836)	1.137 (0.706)	0.590 (0.873)	-0.830 (0.545)	0.485 (0.830)
RD	0.158* (0.0795)	0.150 (0.124)	0.280** (0.135)	0.130 (0.114)	0.339** (0.141)	0.144 (0.0879)	0.154 (0.134)
CFTA	-5,726** (2,291)	-9,227** (3,579)	-5,597 (3,878)	-1,752 (3,275)	3,321 (4,052)	-8,081*** (2,531)	-3,192 (3,851)
LnFAge	-0.172 (1.351)	-0.627 (2.111)	4.084* (2.287)	-1.557 (1.931)	-3.596 (2.390)	-0.535 (1.493)	-3.245 (2.271)
ROA	-0.466* (0.268)	-0.106 (0.419)	-0.625 (0.454)	-0.928** (0.384)	-1.101** (0.475)	-0.418 (0.297)	-0.695 (0.451)
LEV	3.190 (6.950)	15.29 (10.86)	8.955 (11.77)	-8.863 (9.934)	-3.599 (12.29)	7.602 (7.679)	-18.07 (11.68)
LnEmp	4.076*** (0.749)	5.000*** (1.170)	5.808*** (1.268)	3.924*** (1.071)	7.931*** (1.325)	-0.849 (0.828)	7.198*** (1.259)
Industry-effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	25.65 (20.08)	10.78 (31.38)	-31.64 (34.00)	68.17** (28.70)	41.06 (35.52)	67.32*** (22.19)	60.59* (33.76)
Observations	95	95	95	95	95	95	95
R-squared	0.755	0.697	0.637	0.646	0.780	0.677	0.651

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table (11) OLS Regression of CEO attributes on CSR performance in low and no-tech Firms

VARIABLES	CSR	HR	ENV	BB	CIN	CG	HRts
CEOP	-0.0666 (0.194)	0.562** (0.279)	0.00521 (0.254)	-0.201 (0.219)	-0.645** (0.307)	-0.428** (0.211)	0.0940 (0.274)
CEOAGE	-0.711** (0.298)	-1.603*** (0.427)	-0.559 (0.389)	-0.684** (0.336)	-1.124** (0.470)	-0.150 (0.323)	-0.805* (0.420)
EDU	-10.59** (5.036)	-30.13*** (7.226)	-8.843 (6.580)	-5.760 (5.689)	-13.36* (7.952)	-5.560 (5.468)	-10.75 (7.114)
BEDU	5.581** (2.616)	8.402** (3.754)	1.246 (3.419)	9.648*** (2.956)	4.280 (4.131)	3.747 (2.841)	5.404 (3.696)
SEDU	5.052 (4.236)	17.12*** (6.078)	0.922 (5.535)	2.183 (4.785)	18.10*** (6.689)	5.316 (4.599)	8.433 (5.984)
LnSal	0.721 (1.687)	0.0436 (2.421)	0.379 (2.204)	6.609*** (1.906)	-0.422 (2.664)	1.394 (1.832)	0.279 (2.383)
FOWN	-0.162*** (0.0606)	-0.298*** (0.0869)	-0.203** (0.0791)	-0.165** (0.0684)	-0.0687 (0.0956)	-0.187*** (0.0657)	-0.0899 (0.0855)
INSOWN	-0.0496 (0.0480)	-0.00402 (0.0688)	-0.0590 (0.0627)	-0.193*** (0.0542)	0.0851 (0.0757)	0.0590 (0.0521)	-0.0802 (0.0678)
SOWN	0.153 (0.189)	0.188 (0.272)	0.252 (0.247)	-0.272 (0.214)	-0.233 (0.299)	0.286 (0.206)	0.530* (0.268)
PIND	0.131 (0.0854)	0.0317 (0.123)	0.222* (0.112)	0.201** (0.0965)	-0.295** (0.135)	0.0826 (0.0927)	-0.0126 (0.121)
PFD	0.0591 (0.0973)	-0.0239 (0.140)	0.0971 (0.127)	0.192* (0.110)	0.232 (0.154)	-0.165 (0.106)	0.109 (0.137)
PFOR	0.160** (0.0792)	0.278** (0.114)	0.321*** (0.104)	0.146 (0.0895)	-0.0328 (0.125)	0.119 (0.0860)	0.0672 (0.112)
BSIZE	0.900* (0.527)	1.011 (0.757)	1.070 (0.689)	1.313** (0.596)	2.305*** (0.833)	-1.709*** (0.573)	0.0199 (0.745)
RD	-0.0546 (0.153)	-0.129 (0.220)	-0.00127 (0.200)	-0.0193 (0.173)	-0.198 (0.242)	-0.0239 (0.166)	0.0588 (0.216)
CFTA	-3,078 (1,850)	-2,130 (2,654)	1,601 (2,417)	-4,490** (2,090)	-1,090 (2,921)	-1,137 (2,009)	-7,973*** (2,613)
LnFAge	-2.185** (1.043)	-3.325** (1.496)	-2.892** (1.363)	-3.653*** (1.178)	3.190* (1.647)	-1.261 (1.132)	-0.970 (1.473)
ROA	0.0430 (0.188)	0.0116 (0.270)	0.158 (0.246)	-0.0845 (0.213)	-0.235 (0.297)	-0.147 (0.204)	0.0112 (0.266)
LEV	0.867 (3.980)	0.709 (5.711)	-5.746 (5.201)	2.448 (4.496)	6.949 (6.284)	4.865 (4.321)	-2.902 (5.623)
LnEmp	1.407 (0.883)	1.328 (1.268)	2.348** (1.154)	1.845* (0.998)	0.394 (1.395)	0.530 (0.959)	2.659** (1.248)
Industry-effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	42.87 (33.00)	111.7** (47.35)	30.27 (43.12)	-41.39 (37.28)	56.26 (52.10)	52.02 (35.83)	73.54 (46.62)
Observations	87	87	87	87	87	87	87
R-squared	0.758	0.784	0.676	0.805	0.710	0.667	0.684

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1