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Strengthening the CEO–CFO interplay: The role of regulatory focus and similar compensation plans

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ABSTRACT

In this study, we examine how personality attributes and a coordinated compensation design jointly contribute to complementarity in the CEO–CFO dyad. Drawing on regulatory focus theory, we propose that the combination of a CEO with a promotion focus and a CFO with a prevention focus benefits firms. In such a dyad, promotion-focused CEOs bring creativity, speed, and eagerness to advancement, whereas prevention-focused CFOs attend to vigilance, helping to keep promotion-focused CEOs grounded. We further argue that the effectiveness of this CEO–CFO dyad depends on promotion-focused CEOs being open to critical advice from prevention-focused CFOs. To make CEOs more amenable to CFOs' advice, we suggest similar compensation plans that foreground common objectives. We empirically test our arguments by focusing on the CEO–CFO dyad's influence on investment spending and firm performance in a longitudinal sample covering more than 10,000 firm years. Our results indicate a positive association between CEO promotion focus and investment spending, as well as firm performance. We further find that CFO prevention focus weakens the association between CEO promotion focus and investment spending, but strengthens the association with firm performance. These moderating influences of CFO prevention focus are more pronounced for higher compensation similarity in the CEO–CFO dyad. In sum, our findings exemplify that deliberately considering CEO and CFO personality attributes and their compensation design jointly strengthens the functioning of the CEO–CFO dyad.

1. Introduction

Prior research has repeatedly highlighted that CEOs matter for corporate decision-making (for an overview see, [Hanlon et al., 2022](#)). While firms benefit from successful CEOs, this also makes them vulnerable to CEOs' misjudgments. To forestall negative consequences of potential misjudgments, the literature has shown increasing interest in the CFO's role in establishing a form of bottom-up governance ([Shi et al., 2019](#); [Uhde et al., 2017](#)). CFOs are responsible for scrutinizing decision alternatives and providing advice to CEOs in the decision-making process, while CEOs develop strategic ideas and bear the ultimate decision authority (e.g., [Hoitash et al., 2016](#); [Shi et al., 2019](#)). Thus, if CEOs and CFOs act according to their roles, they complement each other and can thereby improve decision quality. However, as managers tend to "impose their beliefs and preferences on the firms that they lead" ([Hanlon et al., 2022](#), p. 1177), CEOs' and CFOs' idiosyncratic characteristics may compromise their roles' complementarity.

Recent studies further highlight the tendency of CFOs to become more CEO-like ([Bernard et al., 2021](#); [Caglio et al., 2018](#)), which casts doubt on whether such CFOs actually complement CEOs. In this study, we therefore seek to understand (1) CEO and CFO characteristics that align with their roles' distinct responsibilities, thereby facilitating complementarity and (2) supporting structural mechanisms.

Previous research has primarily focused on the individual influence of either the CEO or CFO (see, [Hanlon et al., 2022](#)). Yet some studies have begun to explore the interplay between CEO and CFO characteristics. These studies focus on the influence of specific personality attributes (e.g., overconfidence) and show that the alignment of CEOs and CFOs related to a certain attribute facilitates strategy implementation ([Chen et al., 2018](#); [Hsieh et al., 2018](#)). However, [Chen et al. \(2018\)](#) raise concerns regarding a lack of scrutiny of strategic alternatives and a lack of diversity of opinions due to such an alignment, and indicate that a misalignment can benefit firm performance. While opposing views are important to fuel discussions between CEOs and CFOs ([Landier et al.,](#)

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2009; Shi et al., 2019), merely focusing on dissimilarities overlooks the executives' distinct role requirements, which likely demand specific personality attributes. At the same time, opposing views induced by different personality attributes can also pose a risk to the cooperation between the CEO and CFO (Hsieh et al., 2018). Therefore, in addition to CEOs' and CFOs' personality attributes, it is important to consider structural mechanisms that ensure the needed cooperation between CEOs and CFOs, an aspect that has so far been neglected by prior CEO–CFO studies (e.g., Chen et al., 2018; Hsieh et al., 2018; Shi et al., 2019). Our study aims to advance the understanding of the interplay in the CEO–CFO dyad by combining both elements.

We draw on regulatory focus theory (RFT) to theorize which distinct personality attributes of the CEO and the CFO align with their roles' responsibilities and facilitate complementarity in the CEO–CFO dyad. RFT distinguishes between a promotion focus, in which individuals are motivated by accomplishments regulating their behavior toward approaching gains, and a prevention focus, in which individuals are motivated by responsibility regulating their behavior toward avoiding losses (Higgins, 1997, 1998). The psychology literature (e.g., Lanaj et al., 2012) suggests that individuals' regulatory focus provides a comprehensive explanation for their approach to tasks, roles, and decision-making. Importantly, the RFT literature suggests that individuals with distinct foci complement each other and thereby improve work outcomes (e.g., Kark & Van Dijk, 2019). In light of the distinct roles of CEOs and CFOs, we argue that firms benefit when CEOs with a high promotion focus collaborate with CFOs with a high prevention focus. A combination of both foci can improve work outcomes, as promotion-focused individuals approach tasks with "creativity, movement, and speed," whereas prevention-focused individuals attend to "details and vigilance, thus helping reduce errors and keep things grounded" (Kark & Van Dijk, 2019, p. 536). Considering that CEOs are expected to shape firms' strategies and initiate investment plans, we suggest that a promotion focus is most suitable for this role. As CFOs typically challenge the economic implications of the proposed investments and advise their CEOs, we suggest that a prevention focus is most appropriate to complement a promotion-focused CEO.¹

Given the authority gradient between CEOs and CFOs, we consider their compensation plans as an important mechanism to reinforce the complementarity between promotion-focused CEOs and prevention-focused CFOs. The extent to which CFOs can exercise their advisory role depends on CEOs' receptiveness to their advice. The openness of decision-makers to advice increases when they perceive their advisors' goals as related (Gillenkirch et al., 2023; Patt et al., 2006). Similar incentive compensation structures for promotion-focused CEOs and prevention-focused CFOs help to foreground their common objectives (Gillenkirch et al., 2023; Haesebrouck et al., 2018), and can thereby favor CEOs' appreciation of CFOs' advice. This foregrounding of common objectives is particularly important for the interplay between a promotion-focused CEO and a prevention-focused CFO, as their distinct motivational approaches may lead to the perception of goal unrelatedness. Dissimilar compensation plans likely fuel promotion-focused CEOs' skepticism of prevention-focused CFOs' goals, leading them to

disregard their advice, while similar compensation plans can encourage CEOs to perceive goal-relatedness and rely on CFOs' advice despite their different regulatory foci. Hence, we suggest that similar compensation plans reinforce the complementarity between promotion-focused CEOs and prevention-focused CFOs.²

We examine the interplay between CEO promotion focus and CFO prevention focus on a longitudinal sample of more than 10,000 firm years of S&P 900 firms between 2003 and 2018, capturing more than 3000 unique CEO–CFO dyads. We investigate investment spending and firm performance. Investment spending reflects the strategic responsibilities of the CEO–CFO dyad and allows us to make predictions about the immediate influence of the CEO–CFO dyad. A well-functioning CEO–CFO dyad in which both parties assume their roles' responsibilities should further improve investment spending and ultimately translate into better firm performance. We measure CEOs' and CFOs' regulatory foci via text-based proxies derived from their speech in earnings conference calls (Gamache et al., 2015). To construct a measure for compensation plan similarity, we build on Cabezón (2024) and calculate the cosine similarity between the compensation elements of the CEO and CFO that reflect their plans' incentive profiles (options, stock, delta, vega, non-equity incentives, fixed component, and bonus). Our hypotheses suggest that CEO promotion focus is positively associated with investment spending and firm performance. CFO prevention focus is assumed to weaken the influence of CEO promotion focus on investment spending but to strengthen the corresponding influence on firm performance. Finally, we propose that the moderating effects of CFO prevention focus are strengthened by higher compensation similarity in the CEO–CFO dyad. Our empirical results support our predictions.

We consider multiple sources of endogeneity. First, we are careful not to pick up the effects of other personality constructs by controlling for overconfidence, optimism, assertiveness, and the Big 5 personality traits of CEOs and CFOs. Second, we isolate the influence of firm fundamentals on CEOs' and CFOs' word choices and create regulatory focus measures that are independent of firm fundamentals. Third, we account for the possibility that CEOs and CFOs are endogenously selected by firms, and run tests that include self-selection correction factors.

We also perform several additional tests. First, we explore structural CFO power as a more coercive alternative to reinforce complementarity between promotion-focused CEOs and prevention-focused CFOs. We find that CFO power reinforces the weakening influence of CFO prevention focus on the relationship between CEO promotion focus and investment, but that this has no reinforcing effect on future firm performance. Prevention-focused CFOs with too much structural power might deprive promotion-focused CEOs of their discretion in their role-specific tasks and, thereby, of too many of their benefits. Second, we compare dyads consisting of promotion-focused CEOs and prevention-focused CFOs with combinations of other regulatory foci. We find that the combination of CEO promotion focus and CFO prevention focus has a significantly stronger positive relationship with future firm performance than the other possible combinations. Third, we examine the influence of contextual demands on the benefits of the proposed

¹ We believe that the two distinct regulatory foci are better suited for conceptualizing complementary effects between executives than the personality characteristics typically studied in the accounting literature, such as overconfidence (e.g., Hribar & Yang, 2016) or narcissism (e.g., Ham et al., 2017). Overconfidence, for example, explains the tendency of individuals to overestimate the value they can generate when selecting investments. While this helps to understand why some CEOs engage in overinvestment, it provides little insight into the complementary effect of the CEO and CFO. Specifically, non-overconfidence does not sufficiently explain individuals' behavior (i.e., the absence of the bias) and thus it is hard to conceptually justify how it counterbalances the bias of another individual. Similar concerns apply to the construct of narcissism.

² While some studies warn against the negative ramifications of similar compensation plans for executives (T. Kim et al., 2022), we argue that these likely do not apply to a CEO–CFO dyad consisting of a high CEO promotion focus and a high CFO prevention focus. Negative ramifications may stem from an increased willingness to work together, leading to detrimental collusion. However, prevention-focused individuals have a strong aversion to neglecting their responsibilities and duties (Kark & Van Dijk, 2019), which contradicts such collusion. Moreover, the underlying logic of a regulatory focus is that a promotion and a prevention focus relate to different motivational approaches and behaviours when aiming to achieve the same goal (Higgins, 1997). Hence, foregrounding common objectives by means of similar compensation plans does likely not change promotion-focused CEOs' and prevention-focused CFOs' distinct approaches toward these objectives. This maintains some of the intended tension between them.

CEO–CFO dyad. We consider contexts with high degrees of dynamism, which require fast decision-making that prevention-focused CFOs could inhibit by intensively scrutinizing promotion-focused CEOs. We find that in highly dynamic industries, CFO prevention focus increases the association between CEO promotion focus and future firm performance to a lesser extent. Finally, we test whether firms consider the interdependence between selecting a CEO–CFO dyad with a high CEO promotion focus and a high CFO prevention focus, as well as designing highly similar compensation plans. A demand specification test provides scant evidence that firms tend to jointly opt for the proposed CEO–CFO dyad and high compensation plan similarity.

Our study contributes to the literature in the following ways. First, we contribute to studies investigating the functioning of the CEO–CFO dyad. On the one hand, some recent studies warn that increasing CEO–CFO alignment could harm the necessary diversity of opinions (Chen et al., 2018; Shi et al., 2019). On the other hand, studies suggest that such alignment could enhance collaboration (Fang et al., 2022; Hsieh et al., 2018). We bring both aspects together to advance our understanding of complementarity in the CEO–CFO dyad. To begin with, we outline the role of regulatory focus to better understand how specific dissimilarities between CEOs and CFOs can help them internalize and perform their distinct roles. We show that it is not only about a misalignment of one particular characteristic (Chen et al., 2018; Hsieh et al., 2018), but that seemingly contradictory characteristics complement each other if they correspond to the roles' inherent responsibilities. Relatedly, we attend to studies indicating that dissimilarities between the CEO and CFO may hamper their collaboration (Fang et al., 2022; Hsieh et al., 2018) and argue that in such cases, structural mechanisms helping to foreground common objectives reinforce the complementary interplay in a personality-wise dissimilar CEO–CFO dyad. Specifically, we show that similar compensation plans are an important mechanism for encouraging CEOs to incorporate CFOs' advice, despite their inherent differences. The underlying reasoning is that similar compensation plans encourage the perception of goal-relatedness (Gillenkirch et al., 2023; Haesebrouck et al., 2018), thus facilitating the appreciation of different approaches to goal achievement.

Second, our suggested combination of distinct personality attributes with corresponding compensation plans in the CEO–CFO dyad resonates with the literature on the interdependence of control instruments (Bedford, 2020; Grabner & Moers, 2013; Masschelein & Moers, 2020). Our analyses show that firms can benefit from the composition of CEO–CFO dyads with distinct characteristics combined with more similar compensation plans. A demand specification test also indicates that firms partly align the composition of the CEO–CFO dyad with their compensation plans. Thereby, we exemplify that the composition of individual characteristics in the CEO–CFO dyad and a concerted compensation design jointly form a control system that strengthens the functioning of the CEO–CFO dyad. Given directors' means to gather personality information of (prospective) CEOs and CFOs (see, Kaplan et al., 2012; Kaplan & Sorensen, 2021) and their influence on the design of compensation plans, our study advocates for even more consideration of the interdependence between the CEO–CFO personality characteristics and their compensation structure. This focus on the interdependence between executive selection and compensation design at the level of the CEO–CFO dyad extends the prevailing focus on optimizing compensation plans for single executives (e.g., Benischke et al., 2019; Core et al., 2003; Gibbons & Murphy, 1992).

Third, we add to the RFT literature by providing empirical evidence of the complementarity of different regulatory foci. Prior research has largely investigated the alignment of individuals with regard to one regulatory focus (e.g., Chen et al., 2018). Conceptual RFT studies, however, suggest that the collaboration of individuals with different regulatory foci can be particularly beneficial for work outcomes (Brockner et al., 2004; Kark & Van Dijk, 2019). By indicating the complementarity of a promotion and a prevention focus in the CEO–CFO dyad, we provide empirical evidence that supports this idea. In this

context, we argue and find that regulatory foci in the CEO–CFO dyad not only need to be distinct, but must also correspond to the respective role in the dyad. By showing that role-specific responsibilities are crucial to understanding complementary effects between the regulatory foci of the CEO and CFO, we also extend the findings of Chen et al. (2018), who focus on the (mis-)alignment regarding one particular regulatory focus.

2. Theoretical background and hypotheses

2.1. The intertwined responsibilities in the CEO–CFO dyad

As heads of companies, CEOs bear the primary responsibility for firms' strategies and investments (Abernethy et al., 2019; Shi et al., 2019). This involves defining the firm's strategic position and being aware of prospective investments (Lafley, 2009). CEOs thus proactively seek investment opportunities, but they also promote strategies within the organization that stimulate investment ideas (Kammerlander et al., 2015; Makri & Scandura, 2010). CEOs do not delegate this decision authority easily; instead, they gather information that supports their decision-making process, for example, regarding financial implications (Graham et al., 2015).

As direct subordinates to CEOs, CFOs play a crucial role in the process of strategic planning, discussing and determining investments (Bernard et al., 2021; Caglio et al., 2018). CFOs are expected to assess the economic implications of larger investments and strategic plans to make CEOs aware of potential risks, and thus function as "watchdogs" who safeguard the firms' financial interests (e.g., Um et al., 2021). Further responsibilities of CFOs involve performing financial due diligence and exploring the financing options of these plans (Hoitash et al., 2016). Correspondingly, CFOs advise their CEOs and are required to intervene in cases of imminent misjudgment (Shi et al., 2019; Uhde et al., 2017). While CFOs typically scrutinize plans, they may also proactively suggest strategic alternatives to CEOs.

In sum, the CEO–CFO dyad involves a set of intertwined responsibilities that require CEOs and CFOs to complement each other rather than resemble one another. This is consistent with the bottom-up governance notion (Acharya et al., 2011; Landier et al., 2013), according to which CFOs, as the immediate subordinates to CEOs, are seen as an important counter-power to improve CEOs' decision quality (Shi et al., 2019; Uhde et al., 2017). As a result, CFOs assume a governance role vis-a-vis CEOs and thus a control function, ensuring that CEOs act in the firms' interests.

2.2. The relevance of personality attributes for the functioning of the CEO–CFO dyad

Upper echelon literature highlights that executives' behavior is influenced by their idiosyncrasies and dispositions, and thereby suggests that individuals approach their roles differently (Hambrick, 2007; Hambrick & Mason, 1984). These idiosyncrasies are largely shaped by personality attributes which shape the perception and interpretation of different situations (Carpenter et al., 2004). From this perspective, it requires two aspects in the CEO–CFO dyad for CFOs to assume a governance role toward the CEO: (1) that both CEO and CFO adhere to their designated roles and (2) that their personality attributes align with their role-inherent and distinct responsibilities, rather than being alike.

Prior studies on personality attributes in the CEO–CFO dyad have mostly indicated that either CEO or CFO characteristics matter for corporate decisions (Hanlon et al., 2022). Only recently have a few studies focused on the joint effect of the CEO–CFO dyad (Chen et al., 2018; Hsieh et al., 2018). These studies mainly follow the idea that a CFO with similar characteristics substantiates a CEO's personal biases. For example, Hsieh et al. (2018) find that when both the CEO and CFO are overconfident, firms are more prone to pursue tax-avoidance activities. They conclude that similar personal preferences of CEOs and CFOs aid strategy implementation as envisioned by the CEO. In a similar vein,

Chen et al. (2018) show that firms have a greater propensity for corporate growth when both CEOs and CFOs exhibit growth motivation. However, they also indicate that a misalignment regarding growth orientation is favorable for firm performance. From these CEO–CFO studies, we infer that distinct characteristics of the CEO and CFO can help alleviate CEOs' personal biases.

While the dissimilar personality characteristics of the CEO and CFO may serve as a good starting point, several questions remain. On the one hand, the sole focus on dissimilar characteristics neglects the distinct requirements of each role that demand specific characteristics for its enactment (and not only the absence of a specific bias, such as overconfidence). On the other hand, focusing on the misalignment of a personality attribute leaves manifold combinations of CEO and CFO characteristics to study, which requires careful consideration of distinct characteristics in light of executives' specific roles.

In the following, we turn to psychology research and focus on RFT (see, Higgins, 1997, 1998) to address these challenges. RFT allows us to understand how individuals approach their roles, as well as their congruence with certain roles (Johnson et al., 2015). Recent syntheses of the RFT literature provide further direction for understanding the complementary effects of individuals in dyads (Brockner et al., 2004; Kark & Van Dijk, 2019).

2.3. A regulatory focus perspective on the interplay of CEO and CFO personalities

RFT is a motivational theory that extends the generic hedonic principle that all individuals seek to approach pleasure and avoid pain by distinguishing between two self-regulatory foci, namely, a promotion focus and a prevention focus (Higgins, 1997, 1998). The two foci explain why individuals approach this overarching objective differently by concentrating on individuals' self-regulation. Self-regulation is a motivational process that regulates individuals' affect, cognition, and behavior toward the attainment of their goals (Johnson et al., 2015). A promotion focus involves an inclination toward growth and accomplishments, which relates to a higher sensitivity to the presence and absence of positive outcomes (Higgins, 1997, 1998). This regulates the behavior of promotion-focused individuals toward maximizing prospects for gains and minimizing prospects for non-gains (i.e., eagerness approach) (Mount & Baer, 2022). A prevention focus implies a propensity for safety and security, which relates to a higher sensitivity to the presence and absence of negative outcomes (Higgins, 1997, 1998). This regulates the behavior of prevention-focused individuals toward minimizing prospects for loss and maximizing prospects for non-loss (i.e., vigilance approach) (Mount & Baer, 2022).³

The regulatory focus of individuals, such as CEOs and CFOs, is likely

³ A regulatory focus, like many other psychological constructs, may partly explain an individual's risk preferences. The disposition of prevention-focused individuals to experience pleasure by not failing at goals motivates their behavior toward striving for non-losses (avoiding losses). While a prevention focus could thus relate to risk-aversion, the relationship is likely much more nuanced, as prevention-focused individuals may even seek risk in the pursuit of achieving non-losses (avoiding losses). For example, "when faced with a lack of options that resolve the loss condition to the status quo, prevention focus predicts risk-seeking" (Johnson et al., 2015, p. 1506). Similarly, Mount and Baer (2022) indicate that prevention-focused individuals can be risk-seeking to compensate for performance shortfalls that created a loss situation. We also address this nuanced view by emphasizing that prevention-focused CFOs who strive to avoid losses from investment plans proposed by promotion-focused CEOs are likely to take the risk of confronting CEOs or even voice their concerns to the board (i.e., both career-wise risky strategies). The regulatory focus of the CEO and CFO, therefore, provides a conceptually more nuanced perspective than a sole focus on risk preferences that is often followed in prior studies focusing on executive demographics (e.g., Hoitash et al., 2016; Law & Mills, 2017).

to take the form of a chronic personality tendency (i.e., a trait) (Gamache et al., 2015; Kammerlander et al., 2015; Mount & Baer, 2022).⁴ This chronic tendency is mostly shaped by interactions with caretakers (e.g., parents) during childhood (Kark & Van Dijk, 2019). For example, the caretakers' emphasis on either nurturance or security engenders a tendency toward a promotion or prevention focus (Higgins & Silberman, 1998). Psychology research highlights that individuals' chronic promotion or prevention focus predicts working behavior and that it has a more proximal influence than other personality constructs (e.g., Big 5 traits, hubris, or narcissism) (see, Lanaj et al., 2012).

The regulatory focus literature further suggests that task performance increases when individuals with a chronically high promotion focus and a high prevention focus work together. Kark and Van Dijk (2019) point out that such a dyad could be beneficial for work outcomes, as "one [i.e., promotion-focused] is more eager and highlights the aspirations, thus, enabling creativity, movement, and speed, whereas the other [i.e., prevention-focused] helps with details and vigilance, thus helping reduce errors and keep things grounded" (p. 536). While empirical insights into the interaction between promotion-focused and prevention-focused individuals are surprisingly rare (Kark & Van Dijk, 2019; Lanaj et al., 2012), Memmert et al. (2015) provide an illustrative example in the form of an experimental table soccer tournament. Memmert et al. (2015) found that dyads with different regulatory foci were the most successful, however, only if there was a collective fit. This collective fit implied that the promotion-focused individual was assigned to the offence position (i.e., mainly responsible for scoring goals) and the prevention-focused individual was assigned to the defence position (i.e., mainly responsible for preventing goals). This idea builds on the notion of regulatory fit, which suggests that task performance increases when an individual's chronic regulatory focus is congruent with task characteristics (Higgins, 2000, 2005). Brockner et al. (2004) suggest that such a collective fit also helps in entrepreneurial ventures. The underlying assumption is that tasks such as "generating ideas with the potential to be successful" are best pursued by a promotion-focused individual and tasks related to "doing the 'due diligence' when screening ideas" by a prevention-focused individual (Brockner et al., 2004, p. 204).

Building on the idea of collective fit, we argue that the CEO–CFO dyad benefits from distinct regulatory foci that correspond to CEOs' and CFOs' specific roles. We argue that the regulatory focus needs to correspond to their roles' inherent responsibilities, as they differ considerably and are not interchangeable. For example, some CFOs may be more involved in the strategy development, but the CEO will still have the ultimate authority to make the decisions. Similarly, some CEOs may be more involved in evaluating the financial implications of strategic alternatives, but hardly take the operative lead in performing the due diligence. To achieve a collective fit, regulatory foci can thus not be represented interchangeably by either the CEO or CFO.⁵

⁴ Nevertheless, the promotion focus and prevention focus are conceptually viewed as independent systems (Lanaj et al., 2012). This suggests, for example, that the strength of the promotion focus allows for no inference about the strength of the prevention focus. Correspondingly, we also treat them as orthogonal constructs in our empirical analyses.

⁵ Hence, we deliberately chose to focus on the complementarity between CEO promotion focus and CFO prevention focus. The opposite combination of CEO prevention focus and CFO promotion focus is, by contrast, likely not ideal. The downsides of promotion-focused CFOs (e.g., lacking diligence) can affect the core responsibilities of CFOs, such as conducting proper financial due diligence. Here, it seems rather unlikely that CEOs (even with a high prevention focus) would overtake such CFO responsibilities to counterbalance their downsides (e.g., CEOs are hardly likely to supervise the financial due diligence of investment plans). Moreover, while a promotion focus could improve CFOs' contribution to firm strategy and help prevention-focused CEOs struggling in this area, they can hardly overtake CEOs' role as visionary leaders. In line with this, Table 10 shows that a dyad consisting of a CEO with a high prevention focus and a CFO with a high promotion focus does, on average, not benefit firms.

2.4. The interplay between CEO promotion focus and CFO prevention focus

In our hypothesis development, we focus on investment spending and firm performance as two major outcomes of the interaction between CEOs and CFOs. Investment spending reflects the firm's strategic considerations and plans, and thus reflects the strategic responsibilities of the CEO–CFO dyad. A well-functioning CEO–CFO dyad in which both parties assume their roles' responsibilities should improve a firm's investment spending and ultimately translate into better firm performance. The CEO has the most direct influence on investment spending, while the CFO's advice may moderate this influence. Hence, we first theorize which regulatory focus is suited to the CEO role and, second, how a regulatory focus that fits the CFO role complements it.

From an RFT perspective, a high promotion focus corresponds to the CEO role, which requires developing and promoting investment ideas that maximize firm performance. Psychology research emphasizes that promotion-focused individuals tend to be more creative (Friedman & Förster, 2001), more open to change (Lieberman et al., 1999) and generate more alternative solutions (e.g., Förster et al., 2003). These facets of promotion-focused individuals facilitate the realization of valuable investment opportunities (Brockner et al., 2004). Kammerlander et al. (2015) further show that promotion-focused CEOs increase not only explorative activities, but also that their eagerness for accomplishments strengthens exploitative activities. However, promotion-focused individuals tend to focus on the opportunities and gains of a course of action (e.g., Gamache et al., 2015). Consequently, they are less likely to identify potential pitfalls (Brockner et al., 2004; Johnson et al., 2015) and may evaluate investment opportunities more favorably (e.g., Gamache et al., 2015; Scoresby et al., 2021). Their ambition to maximize "hits" and to avoid errors of omission may further tempt them from missing out on any potentially gainful opportunity (Gamache et al., 2015) and may likely lead to the sunk cost fallacy (Higgins et al., 2001).

Taken together, we argue that promotion-focused CEOs are associated with more investment spending. Regarding firm performance, we assume the ability of promotion-focused CEOs to identify and stimulate both explorative and exploitative investment opportunities to generate benefits, while their tendency to neglect diligent evaluations also incurs some costs. Financial and risk assessments of investments are typically the CFO's responsibility rather than the CEO's. On average, we thus expect that CFOs' advice mitigates some of the costs related to the potential misjudgments of promotion-focused CEOs, which makes it likely that the benefits of promotion-focused CEOs for firm performance prevail. Consequently, we predict the following:

Baseline expectation (a). CEO promotion focus is positively associated with investment spending.

Baseline expectation (b). CEO promotion focus is positively associated with firm performance.

Our prior arguments suggest that the degree to which the benefits of promotion-focused CEOs translate into higher firm performance depends (to some extent) on CFOs' ability to forestall misjudgments. From an RFT perspective, a prevention focus strongly corresponds to CFOs' responsibility to act as vigilant watchdogs who scrutinize CEOs' plans. Individuals with a high prevention focus are sensitive to potential negative consequences and concentrate on duties and details (Higgins, 1997, 1998). They typically approve only of decisions that have been diligently scrutinized and are more willing to discard an initial course of action to avoid a potential loss (Johnson et al., 2015). Prevention-focused individuals are, therefore, typically regarded as better able to assess ideas (Brockner et al., 2004). Brockner et al. (2004) also emphasize that "individuals in a prevention focus [...] may want to constrain the overly optimistic forecasts of their promotion [focused] partners, thereby making the final expectancies more accurate" (p. 215). Hence, we infer that CFOs with a high prevention focus complement

CEOs with a high promotion focus.

In light of the notion of bottom-up governance (Acharya et al., 2011; Landier et al., 2013), RFT provides a theoretical foundation that allows for theorizing how distinct characteristics correspond to distinct roles in the CEO–CFO dyad and thereby facilitate a complementary effect. From RFT, we derive that CFOs with a high prevention focus are more able to identify the economic threats of investments and provide critical appraisals to CEOs. As direct subordinates of CEOs, CFOs may raise such concerns at various stages of an investment decision. For example, they may intervene at an early stage when strategic ideas are discussed (e.g., at strategy workshops) or at more mature stages when specific investment plans are evaluated by the CFO for their financial implications. CEOs and CFOs also interact in the recurring capital allocation process when, for example, deciding between reinvesting in or discontinuing a certain project. While promotion-focused CEOs may favor reinvestments even if only a scant possibility of gains remains, prevention-focused CFOs would advise them to "pull the plug" (Brockner et al., 2004). A strong prevention focus (i.e., striving to avoid losses) is also the motivational approach that increases a CFO's willingness to stand up to a promotion-focused CEO who is eager to push a subpar investment decision. Hence, in case of disagreements with CEOs, a strong prevention focus makes it more likely that CFOs will report concerns and risks regarding investment plans to the board.

Taken together, we argue that CFOs' prevention focus complements promotion-focused CEOs' investment decisions by forestalling overhasty and insufficiently scrutinized decisions. Hence, we expect that CFOs' prevention focus will weaken promotion-focused CEOs' tendency for higher investment spending but will reinforce their positive association with firm performance.

Hypothesis 1a. CFO prevention focus weakens the positive association between CEO promotion focus and investment spending.

Hypothesis 1b. CFO prevention focus strengthens the positive association between CEO promotion focus and firm performance.

2.5. The role of similar compensation plans between the CEO and CFO

We further extend our theoretical argument by proposing that a similar incentive compensation structure reinforces the complementarity between CEO promotion focus and CFO prevention focus. The inherent authority of the CEO over the CFO entails the imminent risk that promotion-focused CEOs will ignore the critical advice of prevention-focused CFOs and thereby inhibit the advantageous complementarity. Experimental research suggests that decision-makers' openness to advice depends on whether they perceive the advisors' goals as related to their own goals (Gillenkirch et al., 2023).⁶ In this regard, compensation plans can be a useful mechanism to foreground common goals of decision-makers and advisors, and thereby enhance decision-makers' appreciation of advice (Gillenkirch et al., 2023; Patt et al., 2006). Similarity in the incentive compensation structure signals that decision-makers and advisors share their losses and gains, which increases the decision-makers' perceived goal-relatedness. Perceived goal-relatedness enhances the credibility of advisors (Holzmeister et al., 2023; Patt et al., 2006) and has been shown to increase decision-makers' willingness to follow their advice (Gillenkirch et al., 2023). It can also encourage decision-makers to actively engage in information exchange and help overcome the detrimental effects of hierarchical differences (Haesebrouck et al., 2018). Creating more similarity in the compensation between the CEO and CFO is thus likely an important mechanism for firms to encourage promotion-focused CEOs to incorporate the advice of prevention-focused CFOs.

⁶ This idea builds on the goal interdependence theory (Deutsch, 1949; Tjosvold, 1989), which argues that the interactions of individuals are determined by their perception of goal interdependence (see also, Haesebrouck et al., 2018).

Furthermore, the distinct motivational approaches to goal achievement by promotion- and prevention-focused individuals make it particularly important that their incentive compensation foregrounds a common goal. When discussing investment opportunities, promotion-focused CEOs will strive to maximize prospects for gains, while prevention-focused CFOs will dutifully strive to minimize losses in the decision process. The tension that arises from the different approaches to an investment decision may cause promotion-focused CEOs to perceive the goals of prevention-focused CFOs as diverging from their own goals. Dissimilarities in compensation plans likely amplify promotion-focused CEOs' skepticism, as they may suspect that prevention-focused CFOs' dissent stems from unrelated economic incentives. These dissimilarities thus likely reduce the willingness of promotion-focused CEOs to incorporate prevention-focused CFOs' advice and prompt them to limit their involvement. Similarity in compensation plans, in contrast, signals that prevention-focused CFOs share promotion-focused CEOs' goals and could encourage the incorporation of CFOs' advice, even in cases of dissent.

While our previous arguments suggest that similarity in compensation plans reinforces the complementarity of promotion-focused CEOs and prevention-focused CFOs, it is also important to consider potential negative ramifications. Prior literature warns that an increased willingness to collaborate, motivated by similar incentive compensation, may lead to collusion among managers (Itoh, 1993; T. Kim et al., 2022). This logic implies that instead of challenging the investment plans of CEOs, CFOs may be more willing to accept them and be open to manipulating earnings post hoc. Such behavior, however, highly contradicts prevention-focused individuals who feel very strongly about their obligations (Kark & Van Dijk, 2019). Any questionable collusion opposes the nature of prevention-focused individuals, as their regulatory focus is linked to instinctively avoiding unethical behavior (Cornwell & Higgins, 2015; Cornwell & Korenmann, 2021; Gino & Margolis, 2011). Additionally, despite compensation plan similarity emphasizing goal-relatedness, promotion-focused CEOs and prevention-focused CFOs would still approach goals differently. The underlying idea of a regulatory focus is that a promotion and a prevention focus lead to different motivational approaches and behaviors when aiming to achieve the same goal (Higgins, 1997). Different risk perceptions, for example, remain and hamper tacit collusion (Glover & Kim, 2020). Based on this, we expect that the negative ramifications of similar compensation plans are less likely in dyads consisting of prevention-focused CFOs and promotion-focused CEOs.

Consequently, we suggest that firms can make use of more similar incentive compensation structures to reinforce the complementary effect of prevention-focused CFOs and promotion-focused CEOs.⁷

Hypothesis 2a. More similar compensation plans of the CEO and CFO reinforce the weakening influence of CFO prevention focus on the positive association between CEO promotion focus and investment spending.

⁷ The idea behind our second hypothesis resonates with the management control literature on the interdependence of control instruments (Bedford, 2020; Grabner & Moers, 2013) by suggesting that the effectiveness of one control instrument (i.e., selecting a prevention-focused CFO who scrutinizes a promotion-focused CEO) can be reinforced by the design of another control instrument (i.e., the similarity of the incentive compensation between the CEO and CFO). In testing this interdependence, similar to recent research (Grabner et al., 2022; Speckbacher & Wabnegg, 2020), we decided to follow a performance function approach (for an overview of approaches see, Grabner & Moers, 2013; Masschelein & Moers, 2020). We thus assume that not all firms optimally align the regulatory focus in the CEO–CFO dyad with the compensation design at the dyad level. In our additional tests, we investigate a demand function approach to understand whether firms, to some extent, coordinate the CEO–CFO compensation design with selecting a dyad consisting of a high CEO promotion focus and a high CFO prevention focus.

Hypothesis 2b. More similar compensation plans of the CEO and CFO reinforce the strengthening influence of CFO prevention focus on the positive association between CEO promotion focus and firm performance.

3. Empirical design

3.1. Sample and data

Our initial sample includes all non-financial firms (SIC codes 6000–6999 excluded) once listed in the S&P 500 or S&P Mid-Cap 400 indices (i.e., S&P 900 firms) between 2003 and 2018.⁸ We collect accounting data from COMPUSTAT and information on CEOs and CFOs from ExecuComp and BoardEx. For the regulatory focus of CEOs and CFOs, we use their spoken text from earnings conference call transcripts, which we collect from Thomson Reuters Streetevents and LexisNexis Fair Disclosure. Similar to Adebambo et al. (2023), we require at least 500 words of spoken text by each CEO and CFO,⁹ leaving us with a final sample of 11,310 observations. These firm years represent 1047 unique firms, 2129 unique CEOs, 2318 unique CFOs, and 3315 unique CEO–CFO pairs. Table 1 displays the sample selection and shows the industry distribution of the sample.

3.2. Variable definitions

3.2.1. Dependent variable—Investment spending

In line with prior studies, we use an aggregated investment measure, as firms may substitute investments in one area for one another (e.g., Campbell et al., 2019). Focusing on firms' aggregated investments allows us to better proxy for the level of their investment spending. Like prior research, we sum up the three major forms of investment

Table 1
Sample selection & composition.

Panel A: Sample selection		
Description		
+	potential firm years of listed S&P 900 non-financial firms between 2003 and 2018	19,934
–	missing financial control or investment data	4469
–	missing compensation, ownership, board, CFO, or CEO data	3686
–	missing conference call data	378
–	CEO or CFO text less than 500 words	91
=	final investment sample	11,310
=	final performance sample	10,981
Panel B: Industry composition		
Industry Sector	%	Obs.
Mining (SIC 10–14)	6.3	709
Construction (SIC 15–17)	1.8	209
Manufacturing (SIC 20–39)	47.3	5348
Telecommunication, Transportation, and Utilities (SIC 40–49)	13.1	1482
Wholesale (SIC 50–51)	3.3	377
Retailing (SIC 52–59)	8.3	943
Services (SIC 70–88)	17.6	1987
Other	1.8	200
Total	100	11,310

Notes: This table presents information on the sample. Panel A reports the sample selection procedure. Panel B describes the industry composition of the sample. For the performance analysis, we focus on the performance in the two following years (t+1 and t+2), which slightly reduces our sample.

⁸ As our dependent variable of firm performance covers the following two years, our data spans until 2020.

⁹ We also tested alternative restrictions of 1000 and 1500 words as well as no restriction and found similar results.

spending—capital expenditures, R&D expenditures, and acquisitions—and subtract the sale of property, plant, and equipment (e.g., Biddle et al., 2009). We divide the resulting net spending by the firm's total assets. To account for differences in investment spending across industries, we subtract the yearly industry median (Fama French 48) to derive our final investment variable (*INVEST*) (measured in $t+1$).¹⁰

3.2.2. Dependent variable—Firm performance

To measure firm performance, we use firms' return on assets (ROA) as an accounting-based performance measure. We measure ROA as the income before extraordinary items divided by lagged total assets. As we expect CEOs' and CFOs' joint impact on firms' investments not to immediately translate into firms' performance, we capture firm performance (*ROA2Y*) over the next two years (average of $t+1$ and $t+2$).

3.2.3. Independent and moderator variables—CEO and CFO regulatory focus

Variable measurement. We follow Gamache et al. (2015), who derive proxies based on computer-aided text analysis to measure CEOs' and CFOs' regulatory foci. Specifically, they develop two dictionaries that capture promotion- and prevention-foci-oriented words (see Appendix 1). Gamache et al. (2015) derive the strength of the CEOs' regulatory focus from the CEOs' letters to shareholders. We focus on earnings conference calls to obtain text for CEOs and CFOs for several reasons. First, research has shown that conference calls feature both CEOs and CFOs very prominently (Li et al., 2014). Second, studies highlight that the content and language are mainly driven by manager-specific attributes (Davis et al., 2015; Gow et al., 2016; Green et al., 2019). Third, transcribed conference call text is available for most listed companies. Thus, we extract CEOs' and CFOs' entire spoken text (i.e., presentation and Q&A)¹¹ from conference calls from the last 5 years, which guarantees larger text corpora. We require a minimum of 500 spoken words by both the CEO and CFO (see, Adebambo et al., 2023) to ensure that neither of them is only in the calls for ceremonial reasons. Based on the extracted text from over 60,000 conference calls, we measure CEO promotion focus (*CEO_PROM*) as the number of promotion-oriented words spoken by the CEO divided by the total number of words spoken by the CEO. After that, we multiply the ratio by 100. We measure CFO prevention focus (*CFO_PREV*) analogously.

Construct validity. Since the regulatory focus measure has not yet been used in the accounting literature, we pay particular attention to validity tests (see Appendix 3). First, we test whether the regulatory focus scores from conference calls are similar to those based on the letters to shareholders. This is relevant, as several prior studies have documented predictive validity for CEO regulatory focus scores from letters to shareholders (e.g., Agnihotri & Bhattacharya, 2021; Gamache et al., 2020; Mount & Baer, 2022; Scoresby et al., 2021).¹² The word list development by Gamache et al. (2015) is primarily deductive and independent from the text source, suggesting that regulatory focus scores

from different sources should be highly correlated. We gathered letters to shareholders to test this for a subset of our sample. In Panel A of Appendix 3, the correlation coefficients of 0.57 (0.59) for promotion focus and 0.60 (0.71) for prevention focus show high consistency between the text sources on a yearly (aggregated) CEO level. According to Short et al. (2010), correlations above 0.5 suggest convergent validity, and the regulatory focus scores from conference calls and letters to shareholders appear to capture the same construct.¹³

Second, we assume that the CEO and CFO regulatory focus scores are mainly driven by the individual manager and not by the firm and that the regulatory focus of CEOs and CFOs is largely chronic (i.e., consistent over time). Hence, we calculate the intra-class correlation (ICC) for the regulatory focus measures for individual managers as well as for individual firms based on conference calls. Panel B of Appendix 3 reports the results. For managers, we find an ICC of 0.66 for promotion focus and an ICC of 0.71 for prevention focus. For firms, however, we only find an ICC of 0.29 for promotion focus and an ICC of 0.38 for prevention focus.¹⁴ We complement this analysis with a correlation analysis across different time periods, similar to Green et al. (2019). Specifically, we split our sample into three 5-year periods (2004–2008, 2009–2013 and 2014–2018), based on which we calculate separate regulatory focus scores. We then compare the correlations of managers' promotion and prevention focus scores across two adjacent 5-year periods for firms that do not experience a change in the respective position (the same CEO or CFO) with firms that do experience a change in the respective position (a different CEO or CFO). For the former group, *same manager, same firm*, we observe a correlation of 0.77 for promotion focus and 0.69 for prevention focus. In contrast, for the latter group, *different manager, same firm*, we find significantly smaller correlations of 0.36 for promotion focus and 0.42 for prevention focus. The consistency of the regulatory focus scores for individual managers over time and the major differences compared to different managers in one firm provide strong support that the regulatory focus estimates capture a stable measure that reflects manager-specific tendencies.¹⁵

Third, as we extend the use of the regulatory focus measure from CEOs to CFOs, we provide an analysis addressing the consistency of the measure across positions. Panel C of Appendix 3 describes the tests. In the first step, we calculate ICCs for managers across their observations as CEOs as well as CFOs and find very comparable results to our ICC analysis for all managers (0.63 compared to 0.66 for promotion focus and 0.72 compared to 0.71 for prevention focus). In the second step, we calculate the regulatory foci for the same set of managers while being a CEO and while being a CFO. We then perform a correlation analysis of the regulatory foci. The results show a correlation of 0.58 for promotion focus and 0.74 for prevention focus. The consistency across positions provides support for the applicability of the measure for CFOs.

¹⁰ We also test a non-industry adjusted variable for investment and find similar results (Table IA.14 of the Internet Appendix).

¹¹ We use the entire text of CEOs and CFOs, as the presentation reflects CEOs' and CFOs' prepared language without inferences from analysts, while the Q&A section captures a less prepared style of expression but also the influence from analysts. We expect the total of both to yield a more complete picture of CEOs' and CFOs' communication. We also tested measures based solely on the Q&A and presentation sections and found similar results (Table IA.6 of the Internet Appendix).

¹² Beyond the predictive validity provided in prior literature and our tests regarding investments and various M&A outcomes, we conducted additional predictive validity tests (see Appendix 3). Specifically, we find that CEO promotion focus is positively associated with a firm's competitive repertoire (similar to Agnihotri & Bhattacharya, 2021) and strategic renewal. For CFO prevention focus, we test its association with accounting quality and liquidity levels and find the anticipated positive association.

¹³ We further run an analysis pairing the CEO regulatory focus scores from letters to shareholders with the CFO regulatory focus scores from conference calls. Our results remain similar to our main results (Table IA.1 of the Internet Appendix).

¹⁴ The ICCs within managers and the difference in the ICCs between managers and firms are even higher than the ones found in prior regulatory focus studies using the letters to shareholders (Scoresby et al., 2021). Interestingly, the ICCs for the regulatory focus measures within managers even score considerably higher than relatively stable constructs, such as corporate governance (based on the CG variable) within firms (ICC of 0.48).

¹⁵ This is further substantiated by additional tests, in which we only consider managers who changed firms, thus, same manager–different firm. Table IA.2 in the Internet Appendix reports the results, which show meaningful correlations for the focal managers at their different firms. For promotion (prevention) focus, we find a correlation of 0.49 (0.52). These results are comparable and even slightly stronger than the ones reported for letters to shareholders by Scoresby et al. (2021) and Gamache et al. (2015).

3.2.4. Moderator variable—Compensation similarity

We follow the logic of [Cabezon \(2024\)](#) and [Lee et al. \(2021\)](#), who measure the similarity in the compensation design across firms by focusing on the cosine similarity in the major pay components. Cosine similarity is the most widely applied measure of similarity ([Hoberg & Phillips, 2016](#)). It calculates the cosine of the angle between two vectors, but instead of calculating the cosine similarity of compensation across firms, we compute it between the CEO's and CFO's compensation components. In line with our arguments on perceived goal-relatedness, we consider the components of executives' compensation that reflect their incentive profile. Specifically, we focus on options, stock, delta, vega, non-equity incentives, fixed component, and bonus.¹⁶ These components capture important structural features of compensation plans, such as cash-based versus equity-based pay or fixed versus variable pay. Beyond the directly obtainable components from ExecuComp, we also incorporate executives' implied sensitivity to increases in stock price (delta) and stock price volatility (vega),¹⁷ which are both considered important factors in the compensations' incentive profile (e.g., [Chava & Purnanandam, 2010](#); [Coles et al., 2006](#)). To obtain comparable values across the individual components, as required for cosine similarity, we first use the `zscore` command followed by the `normal` function in Stata. We then create a vector of the seven standardized incentive-related components for each CEO year and CFO year. Next, we compute the dot product of the vectors of the CEO and the CFO for each observation in our sample.

$$\text{Similarity}(i, j) = \frac{\sum_{n=1}^7 v_{it}^n v_{jt}^n}{\sqrt{\sum_{n=1}^7 v_{it}^n} \sqrt{\sum_{n=1}^7 v_{jt}^n}} \text{ where } v_{it}^n \text{ is the } n\text{th element of } v_{it}$$

The resulting similarity measures range from zero to one. Zero indicates that the vectors of the CEO and CFO are orthogonal and thus very different. One indicates that the two vectors have the same orientation. Thus, the measure enables us to compare the structure of incentive components in the compensation in a dyad of a CEO and a CFO.

3.2.5. Control variables

First, we consider financial- and governance-related control variables. We include firm size (*SIZE*), cashflow (*CASHFLOW*), cash level (*CASH*), operating cycle (*OPCYCLE*), leverage (*LEVERAGE*), firms' market-to-book ratio (*MTB*), and capital intensity (*CAPTINTS*). These variables likely influence investment spending (e.g., [Biddle et al., 2009](#); [García Lara et al., 2016](#)) and could also play a role in firms' preference for CEO–CFO combinations. We control for the volatility of cashflows (*QCASHFLOW*), sales (*QSALES*), and investments (*QINVEST*). These indicators have been linked to investment spending and may affect CEO–CFO selection, as firms may search for different personalities based on the level of uncertainty. We include financial reporting quality (*FRQ*), as prior research has shown its impact on investment ([Biddle et al., 2009](#)) and the preference for certain CFOs ([Bernard et al., 2021](#)). Similar

¹⁶ For a subset of our sample, we are able to obtain insights into the employed types of performance metrics by using Incentive Lab data. We calculate the overlap in metrics for the CEO and CFO. We rerun our main tests with the Incentive Lab variable and find consistent results ([Table IA.10](#) in the Internet Appendix). Moreover, this variable has high statistical power ($t = 4.88$) in predicting our main measure of compensation similarity ([Table IA.9](#) in the Internet Appendix).

¹⁷ Delta, which reflects the change in the dollar value of the executive's wealth for a one percentage point change in stock price, is also often labelled as pay-for-performance sensitivity (PPS) by prior studies ([Abernethy et al., 2015](#); [Bushman et al., 2016](#); [T. Kim et al., 2022](#)). Vega, which reflects the change in the dollar value of the executive's wealth for a one percentage point change in the annualized SD of stock returns, is also partly labelled as pay-for-risk sensitivity (PRS) (e.g., [Chang et al., 2016](#)).

to [Abernethy et al. \(2019\)](#), we include an aggregated measure of corporate governance quality (*CG*), which may affect CEO–CFO selection and investment (e.g., [Masulis et al., 2007](#)). We also consider the percentage of financial experts on the board (*FINEXP*) as other actors having a say in firms' investment spending. We further control for firm age (*FIRMAGE*) as an indicator of its lifecycle stage.

Second, we include several variables at the CEO–CFO level. First, we include proxies for CEO (*CEO_OVCONF*) and CFO (*CFO_OVCONF*) overconfidence to clearly differentiate it from promotion focus. Second, we control for CEO (*CEO_AGE*) and CFO (*CFO_AGE*) age based on the career horizon literature (e.g., [Yim, 2013](#)). Third, we include the educational level of CEOs (*CEO_EDU*) and CFOs (*CFO_EDU*).¹⁸ Fourth, we consider CEO (*CEO_DELTA*) and CFO (*CFO_DELTA*) pay-for-performance sensitivity, which might relate to risk-taking. While individuals typically develop one chronic focus (either promotion or prevention) early in their lives, the foci are viewed as orthogonal ([Lanaj et al., 2012](#)), thus requiring control for the level of CEOs' prevention focus (*CEO_PREV*) and CFOs' promotion focus (*CFO_PROM*) in all our regressions ([Gamache et al., 2015](#); [Mount & Baer, 2022](#); [Scoresby et al., 2021](#)). Finally, we include a measure that captures the power relation between the CFO and CEO (*CFOto-CEO.power*). [Appendix 2](#) provides a detailed description of the calculation and source of all variables.¹⁹

3.3. Empirical model

We are interested in the specific effect of CEOs and CFOs on investment spending and firm performance. Thus, we employ firm-fixed effects regressions, which capture unobservable time-invariant firm characteristics and allow us to draw more reliable conclusions about manager-specific effects. We used a robust firm fixed effects estimator using Huber/White/sandwich standard error correction. We forward our dependent variables to address reverse causality concerns. Specifically, we use the following equations with investment (*INVEST*) and firm performance (*ROA2Y*) as dependent variables, and CEO promotion focus (*CEO_PROM*) as the independent variable to estimate our baseline predictions:

$$\begin{aligned} \text{I. } \text{INVEST}_{i,t+1} &= \beta_0 + \beta_1 \text{CEO_PROM}_{i,t} + \beta_2 \text{CFO_PREV}_{i,t} + \sum \beta_j \text{CONTROLS}_{i,t} + t_t + \eta_i + \varepsilon_{i,t}. \\ \text{II. } \text{ROA2Y}_{i,(t+1-t+2)} &= \beta_0 + \beta_1 \text{CEO_PROM}_{i,t} + \beta_2 \text{CFO_PREV}_{i,t} + \sum \beta_j \text{CONTROLS}_{i,t} + t_t + \eta_i + \varepsilon_{i,t}. \end{aligned}$$

To investigate the interaction between CEO promotion focus and CFO prevention focus on investment and firm performance (Hypotheses 1a and 1b), we include an interaction between CEO promotion focus and CFO prevention focus (*CEO_PROM * CFO_PREV*), resulting in the following equations:

$$\begin{aligned} \text{III. } \text{INVEST}_{i,t+1} &= \beta_0 + \beta_1 \text{CEO_PROM}_{i,t} + \beta_2 \text{CFO_PREV}_{i,t} + \beta_3 (\text{CEO_PROM}_{i,t} * \text{CFO_PREV}_{i,t}) + \sum \beta_j \text{CONTROLS}_{i,t} + t_t + \eta_i + \varepsilon_{i,t}. \\ \text{IV. } \text{ROA2Y}_{i,(t+1-t+2)} &= \beta_0 + \beta_1 \text{CEO_PROM}_{i,t} + \beta_2 \text{CFO_PREV}_{i,t} + \beta_3 (\text{CEO_PROM}_{i,t} * \text{CFO_PREV}_{i,t}) + \sum \beta_j \text{CONTROLS}_{i,t} + t_t + \eta_i + \varepsilon_{i,t}. \end{aligned}$$

¹⁸ Given that [Datta and Iskandar-Datta \(2014\)](#) and [Hoitash et al. \(2016\)](#) show the relevance of specific educational degrees in the CFO context, we also test their individual influences in [Table IA.21](#) in the Internet Appendix and find that our results remain robust.

¹⁹ We also test whether our results are driven by the inclusion of certain control variables. Models without controls, with only firm controls, and with only CEO and CFO controls support our main findings ([Table IA.15](#) of the Internet Appendix).

To further examine the influence of compensation similarity on the interaction between CEO promotion focus and CFO prevention focus (Hypotheses 2a and 2b), we include a three-way interaction between compensation similarity, CEO promotion focus, and CFO prevention focus ($CEO_PROM * CFO_PREV * COMPSIM$), resulting in the following equations:

$$\begin{aligned}
 \text{V. } INVEST_{i,t+1} &= \beta_0 + \beta_1 CEO_PROM_{i,t} + \beta_2 CFO_PREV_{i,t} + \beta_3 (CEO_PROM_{i,t} * CFO_PREV_{i,t}) + \beta_4 COMPSIM_{i,t} + \beta_5 (CEO_PROM_{i,t} * CFO_PREV_{i,t} * COMPSIM_{i,t}) + \sum \beta_j CONTROLS_{i,t} + t_t + \eta_i + \varepsilon_{i,t}. \\
 \text{VI. } ROA2Y_{i,(t+1-t+2)} &= \beta_0 + \beta_1 CEO_PROM_{i,t} + \beta_2 CFO_PREV_{i,t} + \beta_3 (CEO_PROM_{i,t} * CFO_PREV_{i,t}) + \beta_4 COMPSIM_{i,t} + \beta_5 (CEO_PROM_{i,t} * CFO_PREV_{i,t} * COMPSIM_{i,t}) + \sum \beta_j CONTROLS_{i,t} + t_t + \eta_i + \varepsilon_{i,t}.
 \end{aligned}$$

Besides our dependent and independent variables, the remaining items in Equations I–VI are a vector that includes the selected control variables ($CONTROLS$), the intercept (β_0), year-fixed effects (t_t), the individual firm effects (η_i), and the standard error term ($\varepsilon_{i,t}$).²⁰ All continuous variables linked to interaction terms are mean-centered (CEO_PROM and CFO_PREV) or standardized ($COMPSIM$).

4. Results

4.1. Descriptive results

In Table 2, we display the means, standard deviations (SDs) and values for the 25th and 75th percentiles of all our regression variables. To avoid problems with outliers, we winsorize continuous financial variables at the 1st and 99th percentiles. The descriptive statistics are generally consistent with the prior literature. The regulatory focus scores are relatively comparable across CEOs and CFOs. Moreover, CEOs tend to be older and have greater overconfidence than CFOs, while CFOs have a higher educational level than CEOs.²¹

Table 3 reports the Spearman correlations. The correlations do not exceed critical thresholds, which may cause multicollinearity issues. We observe negative correlations of -0.15 (and -0.14) between the regulatory foci of CEOs (and CFOs), which is very similar to prior RFT studies (Gamache et al., 2020; Mount & Baer, 2022). In line with prior studies (Zou et al., 2014), promotion focus and overconfidence are also positively correlated. However, the correlations are rather small (0.07 for CEOs and CFOs), clearly suggesting that the constructs are distinct.

4.2. Main regression results

4.2.1. Baseline expectation—CEO promotion focus, investment spending, and firm performance

Table 4 displays the results for our baseline expectations, as well as Hypotheses 1a and 1b. In Model 1, we run a firm-fixed effects regression with CEO promotion focus (CEO_PROM) as the independent variable and investment ($INVEST$) as the dependent variable, while Model 3 considers

²⁰ We also test alternative regression models. Employing random effects, population average, and pooled OLS models, our results remain similar (Table IA.16 of the Internet Appendix).

²¹ We also compared the level of the individual compensation components for high and low compensation similarity. Contracts with high similarity have a higher variable pay and a higher sensitivity to share prices (volatility) (Table IA.23 of the Internet Appendix). Our main model controls for the pay-for-performance sensitivity of CEOs and CFOs and thus for differences in the types of compensation contracts. We further conducted a test in which we controlled for the level of all compensation components that differed significantly between the high and low groups and found similar results (Table IA.24 of the Internet Appendix).

Table 2
Descriptive statistics.

Variables	N	Mean	SD	Q1	Q3
<i>INVEST</i> ^{a,f}	11,310	0.02	0.08	-0.02	0.05
<i>CEO_PROM</i>	11,310	0.63	0.20	0.49	0.74
<i>CEO_PREV</i>	11,310	0.09	0.08	0.05	0.11
<i>CFO_PROM</i>	11,310	0.65	0.26	0.48	0.80
<i>CFO_PREV</i>	11,310	0.11	0.10	0.04	0.14
<i>COMPSIM</i>	11,310	0.56	0.19	0.54	0.68
<i>CEO_AGE</i> ^b	11,310	55.88	6.52	51.00	60.00
<i>CFO_AGE</i> ^b	11,310	51.10	6.15	47.00	55.00
<i>CEO_EDU</i> ^d	11,310	0.57	0.58	0.00	1.00
<i>CFO_EDU</i> ^d	11,310	0.92	0.63	1.00	1.00
<i>CEO_OVCONF</i> ^d	11,310	1.05	0.79	0.00	2.00
<i>CFO_OVCONF</i> ^d	11,310	0.84	0.81	0.00	1.00
<i>CEO_DELTA</i> ^c	11,310	5.72	1.36	4.94	6.52
<i>CFO_DELTA</i> ^c	11,310	4.02	1.21	3.36	4.76
<i>CFOtoCEO_power</i> ^d	11,310	0.88	0.77	0.00	1.00
<i>CG</i> ^e	11,310	0.17	1.67	-0.85	1.15
<i>FRQ</i>	11,310	0.00	1.00	-0.19	0.07
<i>SIZE</i> ^e	11,310	8.15	1.38	7.24	9.04
<i>MTB</i> ^a	11,310	3.42	5.78	1.63	4.07
<i>LEVERAGE</i> ^a	11,310	0.45	1.17	0.08	0.46
<i>OPCYCLE</i> ^a	11,310	3.05	2.29	2.49	4.52
<i>QCASHFLOW</i> ^a	11,310	0.04	0.03	0.02	0.05
<i>QINVEST</i> ^a	11,310	0.05	0.04	0.02	0.07
<i>QSALES</i> ^a	11,310	0.20	0.18	0.08	0.26
<i>CASHFLOW</i> ^a	11,310	0.11	0.07	0.07	0.15
<i>CASH</i> ^a	11,310	0.14	0.14	0.03	0.20
<i>CAPINTS</i> ^a	11,310	0.28	0.24	0.09	0.43
<i>FINEXP</i>	11,310	0.09	0.10	0.00	0.14
<i>FIRMAGE</i> ^b	11,310	31.18	19.38	15.00	50.00
<i>Firm performance</i>					
<i>ROA2Y</i> ^a	10,981	0.09	0.13	-0.04	0.15

Notes: This table presents the descriptive statistics for all regression variables. a: winsorized at the 1st and 99th percentile; b: displayed as full years for the sake of illustration, but logarithmized in regressions; c: logarithm; d: composite measure based on dummy variables; e: composite measure based on z-scores; f: industry-median adjusted. Appendix 2 provides a detailed description of all variables.

future firm performance ($ROA2Y$) as the dependent variable. The results in Model 1 display the anticipated positive and significant coefficient for CEO_PROM ($\beta = 0.015$, $p < 0.01$). This result suggests that a change in CEO_PROM from low to high (2SDs) is associated with a 7.6 percent increase in the investment level compared with the median investment level in our sample. In Model 3, we further observe a positive and significant coefficient for CEO_PROM ($\beta = 0.035$, $p < 0.01$), which translates into a 15.8 percent increase in $ROA2Y$ for an increase in CEO_PROM from low to high. Consequently, the results support our baseline expectations.

4.2.2. Hypothesis 1—Does a CFO’s prevention focus complement a CEO’s promotion focus?

Hypothesis 1a predicts that prevention-focused CFOs weaken the association between promotion-focused CEOs and investment, while Hypothesis 1b predicts that the combination of promotion-focused CEOs and prevention-focused CFOs relates to superior firm performance. Model 2 of Table 4 displays the results of a firm-fixed effects regression estimating $INVEST$, including an interaction term between CEO promotion focus and CFO prevention focus ($CEO_PROM * CFO_PREV$). We find the anticipated negative and significant coefficient for the interaction term ($\beta = -0.102$, $p < 0.05$). This suggests that, compared to its average influence, the influence of CEO_PROM on $INVEST$ is 70.7 percent lower if CFO_PREV is high (1SD above the mean), thus moving from an increase of 7.6 percent to 2.2 percent. Model 4 of Table 4 displays the results of a firm-fixed effects regression estimating $ROA2Y$, including the interaction term $CEO_PROM * CFO_PREV$. We find a positive and significant coefficient for $CEO_PROM * CFO_PREV$ ($\beta = 0.295$, $p < 0.05$). The results indicate that the effect of a change in CEO_PROM from low to high on a firm’s future performance is 87.6 percent stronger

Table 4
The interplay between CEO promotion focus and CFO prevention focus.

Model Dependent variable	Model 1		Model 2		Model 3		Model 4	
	INVEST		INVEST		ROA2Y		ROA2Y	
	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value
CEO_PROM	0.015***	0.009	0.015***	0.010	0.035***	0.001	0.036***	0.000
CFO_PREV	-0.008	0.422	-0.013	0.198	-0.013	0.682	-0.001	0.963
CEO_PROM*CFO_PREV			-0.102**	0.022			0.295**	0.016
CEO_PREV	0.001	0.934	0.001	0.931	-0.016	0.588	-0.016	0.583
CFO_PROM	0.005	0.181	0.005	0.201	0.033***	0.000	0.034***	0.000
CEO_AGE	-0.022**	0.012	-0.022**	0.011	0.014	0.476	0.014	0.473
CFO_AGE	-0.013	0.168	-0.013	0.170	0.039**	0.022	0.039**	0.022
CEO_EDU	0.001	0.615	0.001	0.610	0.001	0.719	0.001	0.717
CFO_EDU	0.002	0.331	0.002	0.346	-0.002	0.540	-0.002	0.565
CEO_OVCONF	0.002*	0.050	0.002*	0.055	0.005**	0.040	0.005**	0.033
CFO_OVCONF	0.001	0.384	0.001	0.415	0.009***	0.000	0.009***	0.000
CEO_DELTA	0.001*	0.081	0.001*	0.071	0.003**	0.048	0.003*	0.059
CFO_DELTA	0.001	0.516	0.001	0.554	0.004**	0.018	0.004**	0.013
CFtoCEO.power	-0.001	0.231	-0.001	0.219	-0.003*	0.099	-0.003	0.109
CG	0.000	0.377	0.000	0.368	-0.001	0.448	-0.001	0.464
FRQ	-0.002*	0.056	-0.002*	0.061	0.008*	0.052	0.008*	0.053
SIZE	-0.010***	0.001	-0.010***	0.001	-0.024***	0.004	-0.025***	0.002
MTB	0.000*	0.069	0.000*	0.072	0.002***	0.000	0.002***	0.000
LEVERAGE	-0.004***	0.000	-0.004***	0.000	0.000	0.838	0.000	0.831
OPCYCLE	-0.003	0.200	-0.003	0.218	0.007	0.370	0.006	0.399
QCASHFLOW	-0.036	0.440	-0.032	0.495	0.076	0.413	0.063	0.490
QINVEST	-0.201***	0.000	-0.203***	0.000	-0.035	0.460	-0.031	0.511
QSALES	0.022***	0.001	0.022***	0.001	0.035**	0.024	0.033**	0.029
CASHFLOW	0.107***	0.000	0.107***	0.000	0.680***	0.000	0.678***	0.000
CASH	0.134***	0.000	0.134***	0.000	0.036	0.161	0.035	0.174
CAPINTS	0.065***	0.000	0.065***	0.000	-0.134***	0.001	-0.134***	0.001
FINEXP	-0.012	0.348	-0.012	0.348	0.004	0.856	0.004	0.858
FIRMAGE	0.012	0.101	0.012*	0.097	0.014	0.314	0.013	0.327
INTERCEPT	0.037	0.631	0.045	0.559	0.245	0.191	0.271	0.149
Year fixed effects?	yes		yes		yes		yes	
Firm fixed effects?	yes		yes		yes		yes	
N	11,310		11,310		10,981		10,981	
Adjusted R2	0.395		0.395		0.517		0.519	

Notes: This table presents the results for regressing firms' investment level and performance on CEO promotion focus and its interaction with CFO prevention focus. In all models, we run firm-fixed effects regressions. *INVEST* is forwarded by one year and *ROA* refers to the next two years. All variables included in interaction terms are mean-centered. The *p*-values are based on robust firm fixed effects estimator using Huber/White/sandwich standard error correction. Two-tailed (one-tailed) tests are presented for nondirectional (hypothesized directional) expectations. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively. Appendix 2 provides a detailed description of all variables.

if *CFO_PREV* is high (1SD above the mean) compared to being at its mean, resulting in an increased shift from 15.8 percent to 29.6 percent. Consequently, the interpretation of the results suggests that CFO prevention focus weakens the positive association between CEO promotion focus and investment spending, while it strengthens the positive association between CEO promotion focus and firm performance. The results thus support Hypotheses 1a and 1b.

4.2.3. Hypothesis 2—The moderating influence of compensation similarity

Hypotheses 2a and 2b predict that the influence of CFO prevention focus on the relation between CEO promotion focus and firm investment and performance, respectively, is strengthened under a higher compensation similarity in the CEO–CFO dyad. Model 1 of Table 5 displays the results of a firm-fixed effects regression estimating *INVEST*, including an interaction term between CEO promotion focus, CFO prevention focus, and compensation similarity (*CEO_PROM*CFO_PREV*COMPSIM*). We find the anticipated negative and significant coefficient for the interaction term ($\beta = -0.322, p < 0.05$). Compared to the average, this suggests that the weakening influence of *CFO_PREV* on the relation between *CEO_PROM* and *INVEST* increases by 61.5 percent when *COMPSIM* moves from the mean to 1SD above the mean. Model 2 displays the results of a firm-fixed effects regression estimating *ROA2Y*, including the interaction term *CEO_PROM*CFO_PREV*COMPSIM*. We find a positive and significant coefficient ($\beta = 0.582, p < 0.05$). Again, compared to the average, the results indicate that the strengthening

effect of *CFO_PREV* on the relation between *CEO_PROM* and *ROA2Y* increases by 37.2 percent when *COMPSIM* shifts from the mean to 1SD above the mean. The results suggest that a higher compensation similarity between CEOs and CFOs reinforces the complementary relation between a high CEO promotion focus and a high CFO prevention focus. The results thus support Hypotheses 2a and 2b.

4.3. Robustness tests

4.3.1. Abnormal-, over- and underinvestment

In our main regression, we focus on investment spending, but do not capture whether the spending is at an abnormal or inefficient level. Hence, we follow the literature on investment efficiency (e.g., Biddle et al., 2009; García Lara et al., 2016) and run several tests with investment efficiency-related variables, such as abnormal investment, the absolute deviation from the expected investment level, as well as over- and underinvestment. We follow the approach of Biddle et al. (2009) and use sales growth to estimate the expected firm-specific level of investment. We use the resulting residual as our measure for abnormal investment (*ABINVEST*), the absolute value of it as our measure for the deviation from the expected investment level (*DEVINVEST*), the positive values of it as our measure for overinvestment (*OVERINVEST*), and the reversed negative values as our measure for underinvestment (*UNDERINVEST*). Table 6 shows the results. We find that our results are similar to our main results when using *ABINVEST*, *DEVINVEST*, and

Table 5
The role of compensation similarity.

Model	Model 1		Model 2	
	INVEST		ROA2Y	
	Coeff.	p-value	Coeff.	p-value
CEO_PROM	0.015***	0.010	0.037***	0.000
CFO_PREV	-0.013	0.205	-0.001	0.975
CEO_PROM*CFO_PREV	-0.101**	0.020	0.299**	0.014
COMPSIM	0.004	0.245	-0.005	0.446
CEO_PROM*COMPSIM	-0.012	0.451	0.081**	0.030
CFO_PREV*COMPSIM	0.034	0.274	-0.051	0.437
CEO_PROM*CFO_PREV*COMPSIM	-0.322**	0.016	0.582**	0.037
Control variables?	yes		yes	
Year fixed effects?	yes		yes	
Firm fixed effects?	yes		yes	
N	11,310		10,981	
Adjusted R2	0.396		0.520	

Notes: This table presents the results for regressing firms' investment level and performance on the interaction of CEO promotion focus, CFO prevention focus, and compensation similarity. In all models, we run firm-fixed effects regressions. *INVEST* is forwarded by one year and *ROA* refers to the next two years. All variables included in interaction terms are mean-centered. The *p*-values are based on robust firm fixed effects estimator using Huber/White/sandwich standard error correction. Two-tailed (one-tailed) tests are presented for nondirectional (hypothesized directional) expectations. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively. Appendix 2 provides a detailed description of all variables.

OVERINVEST. Regarding *UNDERINVEST*, we do not find significant associations. The results suggest that prevention-focused CFOs mitigate the tendency of promotion-focused CEOs to engage in overinvestment, thereby increasing the efficiency of investments. Compensation similarity supports the influence of prevention-focused CFOs. However, we find no clear evidence that the influence of prevention-focused CFOs leads to inefficiencies in the form of underinvestment.²²

4.3.2. Alternative regulatory focus specification

We run several tests with alternative specifications of our regulatory focus measure. First, we follow recent studies that have validated their results by considering the relative dominance of an individual's promotion or prevention focus (e.g., Mount & Baer, 2022). We construct proxies for the predominant regulatory foci that capture CEOs' net promotion focus (i.e., dominance of promotion focus over prevention focus) and CFOs' net prevention focus (i.e., dominance of prevention focus over promotion focus). We then rerun our main analyses with CEOs' net promotion focus and CFOs' net prevention focus. Second, instead of scoring regulatory focus based on CEOs' and CFOs' speech in conference call transcripts over the last 5 years, we use only the respective year, the last 3 years, or all historical conference calls. Third, we broaden the regulatory focus dictionary by considering all related word classes of the words in the dictionary.²³ Finally, we consider only the presentation section or only the Q&A section of the conference call to construct the regulatory focus measures. Across all alternative specifications, our results for the regulatory focus measures remain robust (Table IA4–6 of the Internet Appendix).

²² To better understand in which phases of investment projects the joint impact of CEO promotion focus and CFO prevention focus unfolds, we turn to M&As and divestitures (Table IA.3 of the Internet Appendix). We find significant positive relations between CEO promotion focus and M&A activity, the risk in target selection and financing decisions. Regarding all three M&A outcomes, we find negative and significant interactions with CFO prevention focus. For divestiture activity, we find no significant coefficients.

²³ For example, for the word "expand," we also include the noun "expansion" and the adjective "expansive." We already consider alternative tenses (Gamache et al., 2015). The word "expand" thus captures "expands" or "expanded."

4.3.3. Alternative compensation similarity specification

We perform multiple robustness tests that focus on compensation similarity. First, we test alternative specifications of compensation similarity by varying the calculation logic and the considered compensation elements. For the calculation logic, we alter our use of a continuous variable to a variable categorized into terciles and a dummy variable indicating a score in the highest tercile. In terms of the compensation components, we alter our measure by adding the component of other compensation, aggregating the components of options, stock and non-equity incentives, and only keeping the fixed component, delta, vega, and bonus. Across all specifications, the results remain qualitatively and quantitatively similar (Table IA.7–8 of the Internet Appendix). Second, we focus on the similarity of the types of metrics (e.g., EBIT) in the compensation plans of the CEO and CFO. Sharing metrics likely increases the perceived goal-relatedness between them. Using ISS Incentive Lab data, we are able to obtain these insights for a subset of our sample. For this subset, we calculate the overlap in employed metrics in the compensation plans between the CEO and CFO (Guay et al., 2019). Using this variable instead of our ExecuComp-based measure for compensation similarity, we rerun our main analysis and find similar results (Table IA.10 of the Internet Appendix). Third, scholars have noted a trend of standardized compensation plans (Cabezón, 2024), which could drive our measure of similarity. Thus, we control for the degree of standardization in the CEO's and CFO's compensation plans (Table IA.20 of the Internet Appendix) and find robust results. Fourth, we follow the approach by Bushman et al. (2016) and investigate deviations from expected levels in compensation similarity. We find that contracts moving from similarity below the expected level toward the expected level strengthen the influence of CFO prevention focus on the relationships between CEO promotion and both investment spending and firm performance, while we find positive and non-significant relations for contracts above the expected level (Table IA.13 of the Internet Appendix). These results indicate the benefits of higher compensation similarity, particularly for firms with high CEO promotion focus, high CFO prevention focus, and a lower than expected compensation similarity.

4.3.4. Market-based measures of performance

In addition to our accounting-based performance measure of ROA, we also investigate market-based measures of performance. We employ the commonly used measures of total shareholder return (TSR) and Tobin's Q. Using these alternative dependent variables, we again find support for our main hypotheses (Table IA.14 of the Internet Appendix).

4.4. Endogeneity concerns

4.4.1. CEO–CFO selection concerns

Firms endogenously select certain CEO–CFO combinations. Similar to prior research (e.g., Abernethy et al., 2019), we follow the Heckman two-stage procedure (Heckman, 1979; Shaver, 1998) to address self-selection concerns. In the first stage, we estimate the probability of selecting a dyad with a promotion-focused CEO and a prevention-focused CFO. This model should include an exclusion criterion correlated with choosing such a CEO–CFO combination, but should not be correlated with our dependent variables. We consider the pervasiveness of a combination of a promotion-focused CEO and a prevention-focused CFO in a firm's industry peers. Firms are likely to imitate their peers when selecting executives (e.g., Shi et al., 2018). Industry peers' choice of a CEO–CFO combination, however, should not directly influence firms' investment and performance. From the first-stage probit model, we calculate the inverse Mills ratio (*IMR*) and add it as a correction factor to the second-stage analysis that estimates investment and firm performance. Panel A of Table IA.17 in the Internet Appendix reports the first-stage results, and Panel B shows the second-stage results, which again supports our main findings.

Table 6
Investment-efficiency related variables as alternative dependent variables.

Model Dependent variable	Model 1		Model 2		Model 3		Model 4	
	ABINVEST		DEVINVEST		OVERINVEST		UNDERINVEST	
	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value
CEO_PROM	0.014**	0.014	0.009*	0.078	0.012*	0.059	-0.004*	0.052
CFO_PREV	-0.013	0.218	-0.013	0.184	-0.014	0.266	0.000	0.945
CEO_PROM*CFO_PREV	-0.105**	0.024	-0.076*	0.062	-0.090*	0.063	0.021	0.156
COMPSIM	0.004	0.272	0.001	0.777	0.001	0.905	-0.003*	0.061
CEO_PROM*COMPSIM	-0.015	0.343	-0.003	0.819	0.005	0.761	0.014*	0.095
CFO_PREV*COMPSIM	0.022	0.496	0.010	0.739	0.029	0.504	-0.004	0.699
CEO_PROM*CFO_PREV*COMPSIM	-0.316**	0.020	-0.241*	0.053	-0.340**	0.039	0.063	0.164
Control variables?	yes		yes		yes		yes	
Year fixed effects?	yes		yes		yes		yes	
Firm fixed effects?	yes		yes		yes		yes	
N	11,295		11,295		8147		3153	
Adjusted R2	0.475		0.427		0.447		0.418	

Notes: This table presents the results for regressing different specifications of firms' investment behavior on the interaction of CEO promotion focus, CFO prevention focus, and compensation similarity. In all models, we run firm-fixed effects regressions and follow the approach by Biddle et al. (2009) to determine the expected level of investment. In Model 1, we examine the deviation from the expected investment in form of a residual to capture abnormal investment. In Model 2, we examine the absolute value of the deviation from the expected investment. In Model 3, we examine deviations with positive values (overinvestment). In Model 4, we examine deviations with negative values (underinvestment), which we reverse to positive values. For the three-way interactions, we predict a negative sign in Model 1, 2, and 3 as well as a positive sign in Model 4. All variables included in interaction terms are mean-centered. The p-values are based on robust firm fixed effects estimator using Huber/White/sandwich standard error correction. Two-tailed (one-tailed) tests are presented for nondirectional (hypothesized directional) expectations. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively. Appendix 2 provides a detailed description of all variables.

Table 7
Residual regulatory foci, investment spending and firm performance under consideration of compensation similarity.

Model Dependent variable	Model 1		Model 2		Model 3		Model 4	
	INVEST		INVEST		ROA2Y		ROA2Y	
	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value
RCEO_PROM	0.016***	0.006	0.016***	0.006	0.037***	0.001	0.037***	0.001
RCFO_PREV	-0.005	0.681	-0.007	0.562	0.006	0.845	0.008	0.792
RCEO_PROM*RCFO_PREV	-0.107**	0.017	-0.094**	0.025	0.301**	0.034	0.280**	0.015
COMPSIM			0.005	0.214			-0.005	0.395
RCEO_PROM*COMPSIM			-0.015	0.374			0.079**	0.013
RCFO_PREV*COMPSIM			-0.003	0.937			-0.069	0.309
RCEO_PROM*RCEO_PREV*COMPSIM			-0.502***	0.002			0.546*	0.059
Control variables?	yes		yes		yes		yes	
Year fixed effects?	yes		yes		yes		yes	
Firm fixed effects?	yes		yes		yes		yes	
N	11,017		11,017		10,689		10,689	
Adjusted R2	0.394		0.394		0.523		0.524	

Notes: This table presents the results for regressing firms' investment level and performance on CEO promotion focus and its interaction with CFO prevention focus as well as its interaction with CFO prevention focus and compensation similarity. For CEO promotion focus and CFO prevention focus, we test residual scores resulting from the first-stage regressions reported in Table IA.18 in the Internet Appendix. In all models, we run firm-fixed effects regressions. INVEST is forwarded by one year and ROA refers to the next two years. All variables included in interaction terms are mean-centered. The p-values are based on robust firm fixed effects estimator using Huber/White/sandwich standard error correction. Two-tailed (one-tailed) tests are presented for nondirectional (hypothesized directional) expectations. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively. Appendix 2 provides a detailed description of all variables.

4.4.2. Controlling for determinants of regulatory focus in conference calls

Next, we construct regulatory focus measures that are independent from the influence of firm fundamentals and firm-fixed effects because specific firm fundamentals might drive the word choices of CEOs and CFOs in conference calls (e.g., Davis et al., 2015). While we find that our regulatory focus measures are far more consistent for individual managers than for firms, we also see indications for firm-specific components in our regulatory focus scores (see Appendix 3). We follow the approach by Green et al. (2019) to predict a textual measure based on firm

fundamentals and use the residuals. Specifically, in the first stage, we separately estimate CEOs' and CFOs' regulatory foci at the conference call level. Apart from the time-variant firm fundamentals, we also include firm-fixed effects.²⁴ Table IA.18 in the Internet Appendix displays the results of our first-stage regressions. Table 7 reports the second-stage regressions. The results indicate that our findings are not driven by time-variant or time-invariant firm attributes.

²⁴ We follow Green et al. (2019) and include firm fundamentals (LOSS, ROA, SIZE, MTB, LEVERAGE, TSR3Y, and CASH) and manager characteristics (AGE and EDU) as determinants. In unreported tests, we also include the counterpart's speech as a determinant in the first stage, and find that our results in the second stage hold.

Table 8
Controlling for the Big 5 personality traits of CEOs and CFOs.

Model Dependent variable	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	INVEST		INVEST		INVEST		ROA2Y		ROA2Y		ROA2Y	
	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value
CEO_PROM	0.014**	0.012	0.014**	0.012	0.014**	0.014	0.036***	0.000	0.035***	0.001	0.036***	0.000
CFO_PREV	-0.013	0.199	-0.012	0.221	-0.012	0.229	-0.003	0.912	-0.001	0.970	-0.002	0.937
CEO_PROM*CFO_PREV	-0.100**	0.021	-0.105**	0.017	-0.104**	0.018	0.293**	0.013	0.289**	0.015	0.299**	0.012
COMPSIM	0.004	0.223	0.004	0.249	0.004	0.235	-0.004	0.516	-0.003	0.658	-0.003	0.602
CEO_PROM*COMPSIM	-0.010	0.536	-0.012	0.451	-0.010	0.509	0.074**	0.030	0.073**	0.033	0.074**	0.029
CFO_PREV*COMPSIM	0.033	0.299	0.032	0.310	0.030	0.334	-0.066	0.309	-0.066	0.315	-0.062	0.343
CEO_PROM*CFO_PREV* COMPSIM	-0.331**	0.013	-0.329**	0.013	-0.340***	0.010	0.612**	0.028	0.638**	0.022	0.608**	0.028
Big 5 traits												
CEO_EXTRA	0.005	0.149			0.005	0.148	-0.007	0.467			-0.007	0.504
CEO_OPEN	-0.006	0.477			-0.006	0.481	0.040*	0.056			0.040*	0.060
CEO_CONSC	-0.014**	0.038			-0.013**	0.040	-0.022	0.114			-0.020	0.148
CEO_NEURO	0.005	0.313			0.004	0.374	0.015	0.161			0.014	0.201
CEO_AGREE	0.009*	0.058			0.009*	0.073	-0.004	0.691			-0.005	0.650
CFO_EXTRA			0.002	0.320	0.003	0.289			-0.007	0.141	-0.007	0.170
CFO_OPEN			0.007*	0.085	0.007*	0.099			-0.012	0.122	-0.012	0.116
CFO_CONSC			-0.004	0.345	-0.004	0.393			-0.002	0.823	-0.001	0.880
CFO_NEURO			0.007**	0.040	0.006*	0.057			0.011	0.110	0.010	0.131
CFO_AGREE			-0.002	0.518	-0.002	0.492			0.009	0.125	0.009	0.145
Control variables?	yes		yes		yes		yes		yes		yes	
Year fixed effects?	yes		yes		yes		yes		yes		yes	
Firm fixed effects?	yes		yes		yes		yes		yes		yes	
N	11,262		11,262		11,262		10,934		10,934		10,934	
Adjusted R2	0.396		0.396		0.396		0.521		0.521		0.521	

Notes: This table presents the results for regressing firms' investment level and performance on the interaction of CEO promotion focus, CFO prevention focus, and compensation similarity including additional controls for CEOs' and CFOs' Big 5 traits. In all models, we run firm-fixed effects regressions. The additional controls are *CEO_EXTRA*, *CEO_OPEN*, *CEO_CONSC*, *CEO_NEURO*, *CEO_AGREE*, *CFO_EXTRA*, *CFO_OPEN*, *CFO_CONSC*, *CFO_NEURO*, and *CFO_AGREE*. *INVEST* is forwarded by one year and *ROA* refers to the next two years. All variables included in interaction terms are mean-centered. The *p*-values are based on robust firm fixed effects estimator using Huber/White/sandwich standard error correction. Two-tailed (one-tailed) tests are presented for nondirectional (hypothesized directional) expectations. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. Appendix 2 provides a detailed description of all variables.

4.4.3. Controlling for the big 5 personality traits of CEOs and CFOs

We also test whether our results remain stable when controlling for other personality attributes of CEOs and CFOs.²⁵ We focus on the Big 5 personality traits (i.e., agreeableness, conscientiousness, extraversion, neuroticism, and openness), as they are considered to be “the dominant taxonomy for understanding individuals’ broad set of personality traits” (Harrison et al., 2019, p. 1317). Moreover, recent research has provided validated machine-learning algorithms to derive Big 5 personality traits based on conference call text (Harrison et al., 2019). While regulatory foci are distinct from the Big 5 personality traits (Lanaj et al., 2012), individuals with specific traits may be more likely to have a promotion or prevention focus. Recent management studies also link Big 5 personality traits to strategic decision-making (Harrison et al., 2019; Malhotra et al., 2018). Hence, we run regressions that include CEOs’ and CFOs’ Big 5 personality traits. Table 8 displays the results, which remain stable after including the additional personality variables.

²⁵ In another test, we consider various other attributes of conference call texts. Specifically, we control for the tone of CEOs and CFOs, the temporal orientation of the text spoken by CEOs and CFOs, the self-reference (i.e., the use of first-person pronouns) of CEOs and CFOs, and the certainty in the language of CEOs and CFOs. As can be seen in Table IA.19 in the Internet Appendix, when we rerun our main regressions including these additional control variables, we find that the results remain similar.

5. Additional tests

5.1. CFO power as a mechanism to incorporate critical advice into investment decisions

We emphasize that compensation similarity between the CEO and CFO could make promotion-focused CEOs more amenable to the critical advice from prevention-focused CFOs. An alternative and even more coercive instrument to make the CFO’s advice heard is to reduce the relative power difference between CFOs and CEOs. This may help, as CEOs are more likely to ignore the advice of relatively “weak” CFOs (Chen et al., 2022; Florackis & Sainani, 2018). Moreover, “weak” CFOs may have stronger concerns about confronting or acting against powerful CEOs (Dikolli et al., 2021). To test the influence of relative CFO power, we use our prior control variable *CFOtoCEO_power*, which consists of two individual measures capturing the pay difference between the CFO and CEO and whether the CFO has a higher tenure than the CEO. We include a three-way interaction to check whether CFOs’ relative power promotes the influence of CFO prevention focus on the association between CEO promotion focus and investment, as well as firm performance. Table 9 reports the results. In Model 1, regressing *INVEST*, we find the expected negative and significant coefficient for the three-way interaction consistent with the interpretation that the critical advice from powerful CFOs is more likely to be considered by CEOs. In Model 2, regressing *ROA2Y*, we find a positive and insignificant coefficient for the three-way interaction. This result suggests that while it might be beneficial to strengthen the CFO’s role in certain decisions, it also implies some more general downsides, such as CFOs overpowering CEOs, thereby depriving promotion-focused CEOs of their discretion in more creative tasks.

Table 9

CFO power and the interplay between CEO promotion focus and CFO prevention focus.

Model	Model 1		Model 2	
	INVEST		ROA2Y	
	Coeff.	p-value	Coeff.	p-value
CEO_PROM	0.015***	0.010	0.034***	0.001
CFO_PREV	-0.012	0.203	-0.001	0.966
CEO_PROM* <i>CFO_PREV</i>	-0.094**	0.027	0.289**	0.015
<i>CFO</i> toCEO_power	-0.002	0.160	-0.003	0.127
CEO_PROM* <i>CFO</i> toCEO_power	-0.001	0.786	0.012	0.136
<i>CFO_PREV</i> * <i>CFO</i> toCEO_power	-0.007	0.560	0.006	0.810
CEO_PROM* <i>CFO_PREV</i> * <i>CFO</i> toCEO_power	-0.133***	0.007	0.093	0.230
Control variables?	yes		yes	
Year fixed effects?	yes		yes	
Firm fixed effects?	yes		yes	
N	11,310		10,981	
Adjusted R2	0.396		0.519	

Notes: This table presents the results for regressing firms' investment level and performance on the interaction of CEO promotion focus, CFO prevention focus, and CFO power. *INVEST* is forwarded by one year and *ROA* refers to the next two years. For the three-way interactions, we predict a negative sign in Model 1 and a positive sign in Model 2. All variables included in interaction terms are mean-centered. The *p*-values are based on robust firm fixed effects estimator using Huber/White/sandwich standard error correction. Two-tailed (one-tailed) tests are presented for nondirectional (hypothesized directional) expectations.***, Standard errors are clustered at the firm-level. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. Appendix 2 provides a detailed description of all variables.

5.2. CEO–CFO regulatory focus combinations and performance

Next, we provide a more comprehensive picture of the influence of different regulatory foci combinations in CEO–CFO dyads on firm performance. Thus, we create four binary indicators for the possible combinations in CEO–CFO dyads. For example, for the combination of CEOs with a high promotion focus and CFOs with a high prevention focus, we create the variable *CEO_PROM_CFO_PREV* and assign a value of one if both foci are in the highest quartile of our sample and zero otherwise. Panel A of Table 10 reports the results using firm-fixed effects regressions, while in Panel B, we employ regressions in which we only consider changes in CEO–CFO dyads (i.e., CEO or CFO leaving). In Model 1 in both panels, we separately test the influence of *CEO_PROM_CFO_PREV* on *ROA2Y*. We find that this combination is significantly and positively related to *ROA2Y* (estimated against the base category of all other combinations). In Model 2 of both panels, we include the other combinations and find that the influence of the combination of CEOs with a high promotion focus and CFOs with a high prevention focus on firm performance is significantly stronger than any other CEO–CFO combination.

5.3. The role of industry context

Considering the contextual demands for certain control choices (e.g., Grabner & Moers, 2013) the interplay between promotion-focused CEOs and prevention-focused CFOs may not unfaillingly prove to be beneficial. Situations that might reveal the shortcomings of the intense interactions could be high degrees of dynamism, which require higher decision speed (e.g., Baum & Wally, 2003) and could favor promotion-focused CEOs' sole decision-making. Thus, we consider industry contexts with varying degrees of dynamism. We measure whether a firm belongs to an industry with a high level of product fluidity (*IND_CHANGE*), capital intensity (*IND_CAPINT*), and intangibles (*IND_INTANG*). We then estimate the effect of the interaction terms of CEO promotion focus, CFO prevention focus, and the individual industry contexts on future firm performance.

Table 10

CEO–CFO dyads with different regulatory foci combinations and firm performance.

Panel A: Panel regressions				
Model	Model 1		Model 2	
	ROA2Y		ROA2Y	
	Coeff.	p-value	Coeff.	p-value
β1: <i>CEO_PROM_CFO_PREV</i>	0.023***	0.001	0.023***	0.001
β2: <i>CEO_PROM_CFO_PROM</i>			0.012**	0.013
β3: <i>CEO_PREV_CFO_PROM</i>			0.010	0.125
β4: <i>CEO_PREV_CFO_PREV</i>			-0.007	0.248
Control variables?	yes		yes	
Year fixed effects?	yes		yes	
Firm fixed effects?	yes		yes	
N (firm-years)	10,981		10,981	
Adjusted R2	0.515		0.516	
β1 > β2			χ2 (1) = 1.72*	p = 0.096
β1 > β3			χ2 (1) = 2.23*	p = 0.068
β1 > β4			χ2 (1) = 9.51***	p = 0.001

Panel B: Change regressions				
Model	Model 1		Model 2	
	ROA2Y_d		ROA2Y_d	
	Coeff.	p-value	Coeff.	p-value
β1: <i>CEO_PROM_CFO_PREV_d</i>	0.020**	0.025	0.020**	0.027
β2: <i>CEO_PROM_CFO_PROM_d</i>			0.003	0.429
β3: <i>CEO_PREV_CFO_PROM_d</i>			0.002	0.845
β4: <i>CEO_PREV_CFO_PREV_d</i>			-0.002	0.776
Control variables?	yes		yes	
Year fixed effects?	yes		yes	
Firm fixed effects?	no		no	
N (CEO or CFO changes)	2296		2296	
Adjusted R2	0.120		0.121	
β1 > β2			χ2 (1) = 1.96*	p = 0.081
β1 > β3			χ2 (1) = 1.98*	p = 0.080
β1 > β4			χ2 (1) = 2.92**	p = 0.044

Notes: This table presents the results for regressing firms' performance on the different CEO–CFO combinations. For the CEO–CFO combinations, we create four dummy variables, which we assign a value of one if both CEO and CFO belong to the highest quartile in the respective regulatory focus in our sample and zero otherwise. Panel A reports firm-fixed effects regressions based on panel data and *ROA* refers to the next two years. Panel B reports change regressions, in which we only consider years with turnovers in the CEO or CFO position. All variables are coded as changes from the previous to the current period. We use a one-tailed coefficient difference test to assess whether the coefficient for *CEO_PROM_CFO_PREV* (*CEO_PROM_CFO_PREV_d*) is significantly higher than for the other combinations. The *p*-values are based on Huber/White/sandwich standard error correction. Two-tailed (one-tailed) tests are presented for nondirectional (hypothesized directional) expectations. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively. Appendix 2 provides a detailed description of all variables.

Table 11 reports the results. In Model 1 (3), we find a negative and significant coefficient for the interaction including *IND_CHANGE* (*IND_INTANG*), suggesting a weaker effect of the *CEO_PROM* and *CFO_PREV* combination for *ROA2Y* in industries that tend to require faster decision-making. In Model 2, we find a positive and significant coefficient for the interaction including *IND_CAPINT*, indicating stronger complementarity in capital-intensive industries, which display higher stability over time and likely require economically sound investment decisions.

Table 11
Industry contexts with varying degrees of dynamism and the relation between regulatory foci and firm performance.

Model	Model 1		Model 2		Model 3	
Dependent variable	ROA2Y		ROA2Y		ROA2Y	
Industry context (IC)	IND_CHANGE		IND_CAPINT		IND_INTANG	
	Coeff.	p-value	Coeff.	p-value	Coeff.	p-value
CEO_PROM	0.034***	0.001	0.034***	0.001	0.036***	0.001
CFO_PREV	0.006	0.851	0.005	0.862	-0.004	0.905
CEO_PROM*CFO_PREV	0.265**	0.018	0.235**	0.023	0.275**	0.013
IC	0.010***	0.002	-0.016**	0.011	-0.006	0.205
CEO_PROM*IC	0.002	0.893	0.005	0.798	-0.019	0.266
CFO_PREV*IC	0.027	0.492	-0.083	0.137	0.072*	0.085
CEO_PROM*CFO_PREV*IC	-0.375**	0.029	0.387*	0.097	-0.388**	0.032
Control variables?	yes		yes		yes	
Year fixed effects?	yes		yes		yes	
Firm fixed effects?	yes		yes		yes	
N	10,981		10,981		10,981	
Adjusted R2	0.520		0.521		0.520	

Notes: This table presents the results for regressing firms' performance on interactions of CEO promotion focus, CFO prevention focus, and specific industry characteristics. In Model 1, we examine industry change based on the product fluidity measure by [Hoberg et al. \(2014\)](#). In Model 2, we examine the capital intensity of an industry. In Model 3, we examine the intensity of intangibles and R&D. ROA refers to the next two years. For the three-way interactions, we predict a negative sign in Model 1 and 3 as well as a positive sign in Model 2. All variables included in interaction terms are mean-centered. The *p*-values are based on robust firm fixed effects estimator using Huber/White/sandwich standard error correction. Two-tailed (one-tailed) tests are presented for nondirectional (hypothesized directional) expectations. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. [Appendix 2](#) provides a detailed description of all variables.

5.4. Interdependence of choosing CEO–CFO regulatory focus and compensation similarity

In our main tests, we use a performance function approach (see also, [Grabner et al., 2022](#); [Speckbacher & Wabnegg, 2020](#)) to test the interdependence between two control choices at the CEO–CFO level: the composition of regulatory focus in the CEO–CFO dyad and the level of similarity between their compensation plans. This approach assumes that not all firms (directors) consider the interdependence between selecting a CEO–CFO dyad with a high CEO promotion focus and a high CFO prevention focus and a high similarity in compensation plans. While both the hiring of executives and the design of compensation plans are part of directors' responsibilities, it is plausible that some directors are not aware of the interactions at the CEO–CFO level that lead to the interdependence between these design choices. As a result, when designing compensation contracts, directors may focus on individual executives, instead of considering the dyad level. Moreover, even if directors are aware of the interdependence, they may in some way be constrained in achieving it. For example, directors need to account for several interest groups (e.g., CEO, CFO and investors) when designing compensation contracts ([Edmans et al., 2023](#)), complicating the coordination between compensation design and regulatory focus in the CEO–CFO dyad. Furthermore, some directors may simply lack information on the regulatory focus of executives, or the labor market may not provide suitable candidates.

Nevertheless, it is important to note that some directors may possess the awareness and the means to interdependently choose the composition of the regulatory focus and the compensation design in the CEO–CFO dyad. Specifically, firms regularly employ executive search firms ([Clune et al., 2014](#); [Hamori, 2010](#)), which gather information on competencies and personal characteristics ([Kaplan et al., 2012](#); [Kaplan & Sorensen, 2021](#)) as part of hiring and retention processes. This may provide directors with the means to assess the regulatory focus of CEOs and CFOs (as well as potential candidates). Recent studies further suggest that directors partly consider interactions among executives when designing compensation plans ([Guay et al., 2019](#)). Therefore, to test whether firms consider the interdependence in the choice of a CEO–CFO dyad as well as their level of compensation similarity, we conduct a demand specification test as suggested by [Masschelein and Moers \(2020\)](#). The test examines whether the two proposed control choices are

more likely to be adapted jointly. First, we separately estimate OLS regressions predicting a dyad consisting of high CEO promotion focus as well as high CFO prevention focus (*CEO_PROM_CFO_PREV*) and compensation similarity (*COMPSIM*) on our standard set of control variables. Second, we correlate the residuals from the two regressions. [Table 12](#) displays the results. The positive and significant correlation suggests that firms partly choose the level of CEO promotion focus and CFO prevention focus in the CEO–CFO dyad, as well as their compensation similarity interdependently.²⁶ Nevertheless, we acknowledge that the correlation is small and marginally significant. This means that it is most likely that not all firms seize on the interdependence between a CEO–CFO dyad consisting of promotion-focused CEOs and prevention-focused CFOs and high compensation plan similarity.

6. Conclusion

In our study, we draw on RFT and propose a complementary functioning of promotion-focused CEOs and prevention-focused CFOs that is reinforced by similar compensation plans. Firms can benefit from such a CEO–CFO dyad, as promotion-focused individuals exhibit creativity, speed and eagerness to advancement, whereas prevention-focused individuals tend to be vigilant and help to keep promotion-focused individuals grounded. Considering that this complementary relationship likely depends on CEOs being amenable to CFOs' critical advice, we highlight that similar incentive compensation structures—to foreground common objectives—make promotion-focused CEOs more receptive to advice from prevention-focused CFOs.

We use text-based measures for the regulatory foci of CEOs and CFOs and test their association with investment spending and firm performance in a longitudinal sample covering more than 10,000 firm years between 2003 and 2018. Our results show that a high prevention focus of CFOs decreases the positive association between CEOs' promotion focus and investment spending, while it increases the positive

²⁶ We conducted the same test with the CEO–CFO performance metric similarity measure derived from ISS Incentive Lab. We find that firms interdependently opt for a CEO–CFO dyad with a high CEO promotion focus and a high CFO prevention focus and high CEO–CFO performance metric similarity ($r = 0.03$, $p = 0.059$). The results are reported in [Table IA.11](#) of the Internet Appendix.

Table 12
Analysis of interdependence using the demand function.

Model Dependent variable	Model 1		Model 2	
	CEO_PROM_CFO_PREV		COMPSIM	
	Coeff.	p-value	Coeff.	p-value
CEO_AGE	0.031	0.156	-0.023***	0.000
CFO_AGE	0.071***	0.000	0.021***	0.000
CEO_EDU	-0.009**	0.012	0.003***	0.009
CFO_EDU	-0.001	0.776	0.001	0.369
CEO_OVCONF	0.008***	0.003	0.004***	0.000
CFO_OVCONF	-0.017***	0.000	0.003***	0.000
CEO_DELTA	0.004**	0.046	-0.006***	0.000
CFO_DELTA	-0.014***	0.000	0.007***	0.000
CFOtoCEO_power	0.005*	0.077	-0.001	0.235
CG	-0.001	0.499	-0.001	0.104
FRQ	0.000	0.940	0.001	0.325
SIZE	-0.009***	0.000	-0.004***	0.000
MTB	0.000	0.123	0.000	0.407
LEVERAGE	0.003	0.249	-0.002**	0.011
OPCYCLE	-0.005***	0.000	-0.002***	0.000
QCASHFLOW	-0.067	0.377	-0.053**	0.040
QINVEST	-0.054	0.308	0.015	0.315
QSALES	0.073***	0.000	-0.005	0.315
CASHFLOW	-0.220***	0.000	-0.005	0.654
CASH	0.022	0.283	-0.038***	0.000
CAPINTS	0.020*	0.063	0.000	0.953
FINEXP	-0.020	0.340	-0.008	0.213
FIRMAGE	0.014***	0.000	0.006***	0.000
INTERCEPT	-0.275*	0.085	1.028***	0.000
Residuals correlations				
CEO_PROM_CFO_PREV	1			
COMPSIM	0.02* [p = 0.078]		1	
Year fixed effects?	yes		yes	
Industry fixed effects?	yes		yes	
N	11,310		11,310	
Adjusted R2	0.031		0.054	

Notes: This table presents the results for the interdependence analysis for *CEO_PROM_CFO_PREV* and *COMPSIM*. In Model 1 and 2, we regress the two control choices (*CEO_PROM_CFO_PREV* and *COMPSIM*) on our set of control variables. Industry fixed effects are based on one-digit standard industrial classification. For the resulting residuals, we then perform a correlation analysis. The *p*-values are based on robust firm fixed effects estimator using Huber/White/sandwich standard error correction. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. Appendix 2 provides a detailed description of all variables.

association between CEOs' promotion focus and firm performance. Similar compensation plans for CEOs and CFOs further strengthen the moderating influence of CFOs' prevention focus on both investment spending and firm performance. The results are in line with our expectation that promotion-focused CEOs stimulate valuable investments, but also that their tendency to overlook potential threats entails some drawbacks for firms. In this regard, prevention-focused CFOs are particularly effective in preventing the potentially value-destroying investment plans of promotion-focused CEOs, which is crucial for firms to fully exploit the benefits of such CEOs. Furthermore, our results support the idea that similar compensation plans make promotion-focused CEOs more receptive to the critical advice from prevention-focused CFOs, thereby strengthening the functioning of such CEO-CFO dyads. In addition, we find marginal evidence that firms tend to jointly choose such CEO-CFO dyads and a high compensation similarity. This indicates that firms make at least to some extent use of the interdependence between a CEO-CFO dyad consisting of a high CEO promotion focus and a high CFO prevention focus and concerted compensation plans.

Several limitations of our study warrant discussion. First, we use text-based measures for the regulatory foci of CEOs and CFOs. Several

studies have documented that language in conference calls is a valid proxy for executives' personal characteristics (Gow et al., 2016; Green et al., 2019; Harrison et al., 2019). However, we cannot entirely rule out that the language of CEOs and CFOs deviates to some extent from their personalities. Second, individuals striving for a CEO or CFO position may differ in their personality attributes (Kaplan & Sorensen, 2021). For example, it may be that individuals with a high prevention focus prefer the CFO position. Studies on CEOs and CFOs, however, indicate large heterogeneity in the personality attributes of executives (e.g., Gow et al., 2016; Ham et al., 2017), which suggests variations in the regulatory foci of both CEOs and CFOs. We further address potential self-selection issues by including a correction factor and several other personality attributes that may simultaneously and systematically differ between CEOs and CFOs (e.g., extraversion, Green et al., 2019). Third, we focus on the similarity of key incentive compensation components and control for characteristics of the compensation plan, yet do not differentiate between types of compensation plans. Future research may thus zoom in on whether the effect of similar compensation plans varies with different kinds of plans.

Despite its potential limitations, our study yields relevant empirical evidence on how both personality attributes and structural mechanisms enable complementarity in the CEO-CFO dyad that enhances corporate decision-making. Thereby, our study addresses the tension between the need for opposing views as well as collaborative decision-making in the CEO-CFO dyad. Our study suggests that a combination of a role-specific selection of individuals and a concerted compensation design enhances firm-level outcomes, exemplifying the interdependence of different control choices on the level of executive teams. While firms have the means to assess the personality of (prospective) CEOs and CFOs and also tend to partly consider this interdependence when designing the CEO-CFO dyad and their compensation, not all realize this interdependence. Thus, our findings not only provide insights for academics interested in the influence of executives on corporate decision-making but also for directors and investors concerned with the complementary functioning of CEO-CFO dyads. We hope to encourage a more comprehensive consideration of the interplay between executives' personalities in the CEO-CFO dyad and the complementary role of a concerted compensation design.

Data availability

All data is collected from publicly available sources.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.aos.2024.101563>.

Appendix 1. Regulatory focus words based on Gamache et al., 2015

Promotion words	Prevention words
<i>Accomplish, Achieve, Advancement, Aspiration, Aspire, Attain, Desire, Earn, Expand, Gain, Grow, Hope, Hoping, Ideal, Improve, Increase, Momentum, Obtain, Optimistic, Progress, Promoting, Promotion, Speed, Swift, Toward, Velocity, Wish</i>	<i>Accuracy, Afraid, Anxious, Avoid, Careful, Conservative, Defend, Duty, Escape, Escaping, Evade, Fail, Fear, Loss, Obligation, Ought, Pain, Prevent, Protect, Responsible, Risk, Safety, Security, Threat, Vigilance</i>

Note: The dictionary also captures alternative tenses of the words listed above.

Appendix 2 Variable overview, descriptions and data sources

Variable	Description/Calculation	Source
Dependent Variables:		
INVEST	Firms' aggregate investment is calculated according to Biddle et al. (2009) as the sum of capital expenditures (capx), R&D expenditures (xrd) and acquisitions (aqc) minus the sale of property, plant and equipment (spe). The resulting net spending is then divided by firms' total assets (at). Finally, we subtract the yearly industry median (Fama French 48). Measured in t+1.	Compustat
ROA2Y	The income before extraordinary items (ib) divided by lagged total assets (at). Measured as average of t+1 and t+2.	Compustat
Independent and moderator variable:		
CEO_PROM	The number of promotion-oriented words (see Appendix A and Gamache et al., 2015) divided by the total number of words spoken by the CEO in conference calls over the last 5 years. Finally, the ratio was multiplied by 100.	Thomson Reuters Street Events & LexisNexis
CFO_PREV	The number of prevention-oriented words (see Appendix A and Gamache et al., 2015) divided by the total number of words spoken by the CFO in conference calls over the last 5 years. Finally, the ratio was multiplied by 100.	Thomson Reuters Street Events & LexisNexis
COMPSIM	Cosine similarity between CEOs' and CFOs' compensation plan elements reflecting their incentive profiles. The cosine similarity is based on the standardized compensation components: options, stock, delta, vega, non-equity incentive, fixed component, and bonus. Delta and vega are obtained from Lalitha Naveen's website (http://sites.temple.edu/lnaveen/data/) and are calculated as in Coles et al. (2006) .	ExecuComp
Control variables:		
CEO_PREV	The number of prevention-oriented words (see Appendix A and Gamache et al., 2015) divided by the total number of words spoken by the CEO in conference calls over the last 5 years. Finally, the ratio was multiplied by 100.	Thomson Reuters Street Events & LexisNexis
CFO_PROM	The number of prevention-oriented words (see Appendix A and Gamache et al., 2015) divided by the total number of words spoken by the CFO in conference calls over the last 5 years. Finally, the ratio was multiplied by 100.	Thomson Reuters Street Events & LexisNexis
CEO_AGE	Age of the CEO measured as the natural logarithm of years.	BoardEx & ExecuComp & hand-collected
CFO_AGE	Age of the CFO measured as the natural logarithm of years.	BoardEx & ExecuComp & hand-collected
CEO_EDU	Education of the CEO measured as an index ranging from 0 to 3 consisting of individual dummy variables for MBA, CPA, and PhD.	BoardEx & ExecuComp & hand-collected
CFO_EDU	Education of the CFO measured as an index ranging from 0 to 3 consisting of individual dummy variables for MBA, CPA, and PhD.	BoardEx & ExecuComp & hand-collected
CEO_OVCONF	A composite measure consisting of the sum of three dummy variables. The individual dummy variables are the CEO's Holder67 measure and over-optimism as well as over-certainty in the CEO's language in the conference calls from the last five years. Regarding over-optimism and over-certainty, we assign a value of one if the score is in the top quartile and zero otherwise. To derive over-optimism, we use positive and negative word lists by Loughran and McDonald (2011) and for over-certainty, we use the respective LIWC dictionary.	ExecuComp, Thomson Reuters Street Events & LexisNexis
CFO_OVCONF	A composite measure consisting of the sum of three dummy variables. The individual dummy variables are the CFO's Holder67 measure and over-optimism as well as over-certainty in the CFO's language in the conference calls from the last five years. Regarding over-optimism and over-certainty, we assign a value of one if the score is in the top quartile and zero otherwise. To derive over-optimism, we use positive and negative word lists by Loughran and McDonald (2011) and for over-certainty, we use the respective LIWC dictionary.	ExecuComp, Thomson Reuters Street Events & LexisNexis
CEO_DELTA	Pay for performance sensitivity of the CEO measured by the natural logarithm of 1 plus CEO delta retrieved from Coles et al. (2006) .	Coles et al. (2006)
CFO_DELTA	Pay for performance sensitivity of the CFO measured by the natural logarithm of 1 plus CFO delta retrieved from Coles et al. (2006) .	Coles et al. (2006)
CFOtoCEO_power	The power of the CFO relative to the CEO is measured through 2 dummy variables, which we sum up as a composite measure. The individual dummy variables are whether the ratio of the CFO's to CEO's pay is above the sample median and whether the CFO has a higher tenure.	ExecuComp, BoardEx & hand-collected
CG	A composite measure based on 5 dimensions with its value increasing with the quality of corporate governance. Specifically, we create z-scores of the individual dimensions (board size, percentage of	BoardEx & Thomson One Banker

(continued on next page)

(continued)

Variable	Description/Calculation	Source
FRQ	institutional ownership, largest blockholder ownership, independent directors, and busy directors) and sum them up. Absolute discretionary accruals following the performance-adjusted discretionary accruals model by Kim et al. (2017) . The regression for obtaining the discretionary accruals are based on each Fama and French 48 industry with at least 20 observations in a given year. The results are multiplied by -1, and standardized to obtain a measure of financial reporting quality.	Compustat
SIZE	Natural logarithm of net sales (sale).	Compustat
MTB	A ratio of market value (prcc_f * csho) divided by book value of equity (ceq).	Compustat
LEVERAGE	The ratio of total debt (dlc + dltd) to equity (prcc_f * csho).	Compustat
OPCYCLE	The log of receivables to sales (rect/sale) plus inventory to COGS (invl/cogs) multiplied by 360.	Compustat
QCASHFLOW	Standard deviation of CASHFLOW deflated by average total assets (at) from the last 5 years.	Compustat
QINVEST	Standard deviation of INVEST from the last 5 years.	Compustat
QSALES	Standard deviation of sales (sale) deflated by average total assets (at) from the last 5 years.	Compustat
CASHFLOW	Net cash flow from operations (oancf) divided by lagged total assets (at).	Compustat
CASH	The ratio of cash and cash equivalents (che) to total assets (at).	Compustat
CAPINTS	Property plant and equipment (ppent) divided by total assets (at).	Compustat
FINEXP	Percentage of financial experts on the board of directors.	BoardEx
FIRMAGE	The natural logarithm of 1 plus firm age in years based on first appearance in Compustat.	Compustat
Additional variables		
<i>Alternative dependent variables</i>		
ABINVEST	A firm's abnormal investment estimated as the residual from an expected investment level, where investment equals INVEST. The expected level of investment is estimated according to Biddle et al. (2009) using sales growth as the determinant. Measured in t+1.	Compustat
DEVINVEST	The deviation from the expected investment level measured as the absolute value of ABINVEST. Measured in t+1.	Compustat
OVERINVEST	The level of overinvestment based on the expected investment level where positive values of ABINVEST remain the same and negative values are set to 0. Measured in t+1.	Compustat
UNDERINVEST	The level of underinvestment based on the expected investment level where positive values of ABINVEST are set to 0 and negative values are reversed to positive. Measured in t+1.	Compustat
<i>Residual regulatory focus</i>		
RCEOPROM	Residual value of the CEO's promotion focus extracted from a regression relating the CEO's promotion focus to firm variables and firm-fixed effects.	Own calculation
RCFOPREV	Residual value of the CFO's prevention focus extracted from a regression relating the CFO's prevention focus to firm variables and firm-fixed effects.	Own calculation
<i>Big 5 personality traits</i>		
CEO_EXTRA, OPEN, CONSC, NEURO, AGREE	The degree of a CEO's extraversion, openness, conscientiousness, neuroticism, and agreeableness personality traits using the machine-learning algorithms developed by Harrison et al. (2019) . The machine-learning algorithms is based on conference call text. The resultant scores reflect are on a 7-point scale similar to the trainings data.	Harrison et al., 2019 & own calculation
CFO_EXTRA, OPEN, CONSC, NEURO, AGREE	The degree of a CFO's extraversion, openness, conscientiousness, neuroticism, and agreeableness personality traits using the machine-learning algorithms developed by Harrison et al. (2019) . The machine-learning algorithms is based on conference call text. The resultant scores reflect are on a 7-point scale similar to the trainings data.	Harrison et al., 2019 & own calculation
<i>CEO-CFO combinations</i>		
CEO_PROM_CFO_PREV	An indicator variable that takes the value of one if the CEO promotion focus and the CFO prevention focus are both in the highest quartile of our sample.	Thomson Reuters Street Events & LexisNexis
CEO_PREV_CFO_PROM	An indicator variable that takes the value of one if the CEO prevention focus and the CFO promotion focus are both in the highest quartile of our sample.	Thomson Reuters Street Events & LexisNexis
CEO_PROM_CFO_PROM	An indicator variable that takes the value of one if the CEO promotion focus and the CFO promotion focus are both in the highest quartile of our sample.	Thomson Reuters Street Events & LexisNexis
CEO_PREV_CFO_PREV	An indicator variable that takes the value of one if the CEO prevention focus and the CFO prevention focus are both in the highest quartile of our sample.	Thomson Reuters Street Events & LexisNexis
<i>Cross-sectional tests</i>		
IND_CHANGE	An indicator variable that takes the value of one if the firm based on its products belongs to an industry with a fluidity that is above the sample median and zero otherwise.	Hoberg et al. (2014)
IND_CAPINT	An indicator variable that takes the value of one if the firm belongs to an industry with a capital intensity that is above the sample median and zero otherwise.	Compustat
IND_INTANG	An indicator variable that takes the value of one if the firm belongs to an industry with a combined intensity of intangibles and R&D that is above the sample median and zero otherwise.	Compustat

Appendix 3. Regulatory focus measure validity

Table A3.1
Consistency between text sources and within managers (vs. firms)

Panel A: Consistency between regulatory focus measured via conference calls and letter to shareholder		
Variable	CEO year level correlation	CEO overall correlation
CEO_PROM	0.57	0.59
CEO_PREV	0.60	0.71

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Table A3.1 (continued)

Panel A: Consistency between regulatory focus measured via conference calls and letter to shareholder				
Variable	CEO year level correlation		CEO overall correlation	
N	1723		375	
Panel B: Consistency of regulatory focus within managers and within firms				
Variable	ICC		Correlation	
	within manager	within firm	same manager, same firm	different manager, same firm
<i>CXO_PROM</i>	0.66	0.29	0.77	0.36
<i>CXO_PREV</i>	0.71	0.38	0.69	0.42
N	22,624	22,624	1183	1253
Panel C: Consistency of regulatory foci within managers changing positions				
Sample	Manager was CFO & CEO		Manager was CFO & CEO	
Variable	ICC within manager		Correlation between CEO & CFO	
<i>CXO_PROM</i>	0.63		0.58	
<i>CXO_PREV</i>	0.72		0.74	
N	807		96	

Notes: This table presents information on validity tests regarding the regulatory focus measures. Panel A shows correlations between regulatory focus measured via conference calls and letter to shareholder. Based on a subsample of letter to shareholders of S&P 500 firm between 2013 and 2018, we derive regulatory focus measures for CEOs. We use the CEO year level and the CEO overall level as aggregations. We then compare the scores derived from the letter to shareholder against those derived from conference calls and report the correlation coefficients. We obtain similar results when we aggregate the measures at the CEO five-year level. Panel B reports intra-class-correlation (ICC) and correlations focusing on the consistency of the regulatory foci within managers and with firms. First, based on conference call text of CEOs and CFOs (i.e., CXO) from our sample, we calculate ICCs within individual managers and within firms. Second, we follow a procedure similar to Green et al. (2019) and conduct a correlation analysis across different time periods. We split our conference call sample into three 5-year periods (2004–2008, 2009–2013, and 2014–2018) and calculate separate regulatory foci scores for each time period. We further distinguish between firms that do not experience a change in the respective position (same CEO or CFO; same manager, same firm) and firms that do experience a change in the respective position (different CEO or CFO; different manager, same firm). We then compare correlations of managers' promotion and prevention focus scores across two adjacent five-year periods. Panel C reports results regarding the consistency of regulatory foci within managers that change their position and, thus, were both CEO and CFO in our sample period. First, we calculate ICCs within individual managers across their positions as CEOs and CFOs. We base this analysis on conference calls from which we derive yearly regulatory foci scores. Second, we calculate one set of regulatory foci scores for the same of managers while being a CEO and one set of regulatory foci scores while being a CFO. We then perform a correlation analysis between the sets of regulatory foci scores (once as CEO and once as CFO).

Table A3.2
Additional predictive validity tests

Panel A: CEO promotion focus and strategic newness as well as strategic repertoire				
Model	Model 1		Model 2	
	<i>NEW_STRAT</i>		<i>STRAT_REP</i>	
	Coeff.	p-value	Coeff.	p-value
<i>CEO_PROM</i>	0.090***	0.004	0.050**	0.042
Control variables?	yes		yes	
Year fixed effects?	yes		yes	
Firm fixed effects?	yes		yes	
N	9152		8351	
Adjusted R2	0.455		0.532	
Panel B: CFO prevention focus and cash holdings as well as financial reporting quality				
Model	Model 1		Model 2	
	<i>CASH</i>		<i>FRQ</i>	
	Coeff.	p-value	Coeff.	p-value
<i>CFO_PREV</i>	0.032***	0.003	0.168**	0.020
Control variables?	yes		yes	
Year fixed effects?	yes		yes	
Firm fixed effects?	yes		yes	
N	11,310		11,310	
Adjusted R2	0.851		0.284	

Notes: This table presents the results of tests providing additional predictive validity for the regulatory focus measures. Panel A presents the results of the impact of CEO promotion focus on new strategic actions (*NEW_STRAT*) and strategic repertoire (*STRAT_REP*). *NEW_STRAT* is the industry-adjusted number of new strategic actions measured as an average over the current and the next year. *STRAT_REP* is the industry-adjusted strategic repertoire measured as an average over the current and the next year and consisting of the diversity, change, and newness of strategic actions. *NEW_STRAT* and *STRAT_REP* are based on the Ravenpack database and in line with the

approach used by Connelly et al. (2017). Panel B presents the results of the impact of CFO prevention focus on cash holdings (CASH) and financial reporting quality (FRQ). Both CASH and FRQ are measured as an average of the current and the next year. To avoid multicollinearity, we excluded the control variable CASH from Model 1. Standard errors are clustered at the firm-level. ***, **, and * indicate significance at the 1%, 5%, and 10% level (one-tailed), respectively. Appendix 2 provides a detailed description of the main variables.

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