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RESEARCH ARTICLE

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Bargaining your way to success: The effect of Machiavellian chief executive officers on firm costs

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Abstract

Research Summary: This study builds on insights from the upper echelons tradition in strategy to examine the effects of chief executive officer (CEO) Machiavellianism on relevant firm costs. While Machiavellianism has been usually construed as a purely negative trait, we argue that the pragmatic focus on the outcomes of exchanges and psychological obsession with winning in transactions that Machiavellian CEOs infuse in their organizations can have important effects on firm cost, a fundamental but frequently understudied driver of financial performance in strategic management research. In line with our arguments, we find that CEO Machiavellianism has negative effects on production costs, financing costs, and acquisition premiums. We find support for our ideas with a sample of S&P 500 CEOs, operationalizing CEO Machiavellianism using a videometric approach

Managerial Summary: In this study, we investigate the effect of CEO Machiavellianism on firms' costs. We show that firms with more Machiavellian CEOs will have lower costs than other firms in the market. Rather counterintuitively, this study suggests an explanation for why a personal characteristic that is usually seen as problematic for organizations is rather common in

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their upper ranks. Ultimately, the study demonstrates the value of the bargaining attitude that Machiavellian CEOs bring to their organizations and suggests this value should be weighed against their risks or acknowledged to manage the risks this common personal characteristic implies.

KEYWORDS

acquisitions, CEO characteristics, firm costs, Machiavellianism, upper echelons

1 | INTRODUCTION

Researchers in organizational theory and strategic management have produced significant theory and evidence about how the characteristics of top executives, and in particular chief executive officers (CEOs), affect organizational decisions, leadership behaviors, and performance outcomes (Chatterjee & Hambrick, 2007, 2011; Finkelstein, Hambrick, & Cannella, 2009; Hambrick & Mason, 1984; Petrenko, Aime, Ridge, & Hill, 2016). An important focus of empirical research in this upper echelons tradition has been to examine how relevant CEO characteristics (e.g., CEO hubris, CEO narcissism, CEO humility) have important effects on firm outcomes such as patents (Wu, Levitas, & Priem, 2005), innovation (Tang, Li, & Yang, 2015; Zhang, Ou, Tsui, & Wang, 2017), acquisition premiums (Chatterjee & Hambrick, 2011; Hayward & Hambrick, 1997), entrepreneurial orientation (Engelen, Kaulfersch, & Schmidt, 2016), CSR investments (Petrenko et al., 2016), and performance (Chatterjee & Hambrick, 2007; Engelen et al., 2016).

While research in the upper echelons tradition has produced important contributions regarding how executives' characteristics influence firm outcomes, it has had little to say about one of the most important and controllable determinants of performance for organizations: how CEOs' strong and persistent bargaining focus can affect firm acquisition and operational costs. The lack of research on this topic is surprising given that concerns about cost, while usually unaddressed in strategy research, are a central defining feature of core strategy theories like transaction cost economics (Williamson, 1991), dynamic capabilities (Teece, 1986), and the resource-based view (RBV) (Peteraf, 1993), and that the CEO focus on organizational bargaining with suppliers for resources determines "the cost to the firm of acquiring those resources" with downstream implications for competitive advantage (Brandenburger & Stuart, 1996, p. 10). In fact, looking at the strategic management literature of the last 20 years, firm costs are widely understudied financial performance outcome. In line with insights from upper echelons theorizing about how the characteristics of CEOs affect firm outcomes, we argue in this paper that, because Machiavellian individuals are pragmatic, strategic, and have a strong, almost obsessive, bargaining focus (McHoskey, 1999; Wiggins & Broughton, 1985), Machiavellian CEOs will infuse their organizations with a drive to search for favorable deals and extract value from their negotiations for resources, resulting in lower resource acquisition costs for their organizations (i.e., lower acquisition premiums, production costs, and financing costs).

Negotiating important firm costs—from essential organizational resources, like for example, Disney's premiums to acquire Lucasfilm, to the actual access to critical resources, like in

Amazon's multi-year publishing deal with HarperCollins—is a fundamental, often headline-making activity with significant impact on organizations. It is axiomatic that, all other things equal, the lower the costs of important resources for an organization, the higher the performance of the organization, increasing its CEO's potential for income and status. Therefore, CEOs often play crucial roles in negotiating important firm acquisitions and establishing a bargaining culture throughout their organizations. It should, then, not come as a surprise that popular press articles like the *Los Angeles Times'* "How Bob Iger's 'fearless' deal-making transformed Disney" (Miller, 2015) or *The Atlantic*'s "The Steve Jobs emails that show how to win a hard-nosed negotiation" (Seward, 2013) frequently highlight the role of CEOs' focus on negotiation as exemplary for achieving lower costs within their firms.

Upper echelons theory starts with the premise that firm strategic choices and outcomes are influenced by the underlying characteristics of the organization's top managers, particularly their CEO (Hambrick, 2007; Hambrick & Mason, 1984). Beyond being a central decision maker in acquisition processes (Chatterjee & Hambrick, 2007; Haspeslagh & Jemison, 1991; Hayward & Hambrick, 1997), in virtually every organization, the CEO is arguably the most influential individual within the firm (Finkelstein et al., 2009). CEOs not only play a central role in both the formulation and implementation of a firm's strategic actions (Chandler, 1962) but also create a context through which other organizational members promote CEOs' agendas. Therefore, not only executives affect their organizations through their own strategic decisions (Bower, 1970). Others in the organization, following the directives and values of the CEO, allocate attention to particular aspects of the business by putting forth effort in those areas (e.g., in bargaining or looking for alternatives) and making specific choices with significant effects on firm outcomes (Bower, 1970; Finkelstein et al., 2009).

Despite the important role that CEOs may play in affecting their organization's resource and acquisition costs, only a few studies have focused on the effect of CEO characteristics on cost outcomes (Chatterjee & Hambrick, 2011; Hayward & Hambrick, 1997). These studies have highlighted how two aspects of CEO personality—hubris and narcissism—blind CEOs in negotiations, resulting in higher firm acquisition costs. In this paper, we focus on how, while usually seen as a negative characteristic due to its moral ambiguity (Smith, Hill, Wallace, Recendes, & Judge, 2018), Machiavellianism may be an advantageous CEO characteristic. We theorize and show that organizations with more Machiavellian CEOs pay lower acquisition premiums, spend less to secure and service their debt, and have lower costs for the goods they sell.

While Machiavellianism has been traditionally construed as a negative trait (Brown & Treviño, 2006; O'Boyle Jr., Forsyth, Banks, & McDaniel, 2012), at its core, Machiavellianism characterizes individuals with a pragmatic focus on ends that minimizes emotional, affective, and general concerns about others in an exchange and a relentless commitment to win in exchanges (Wilson, Near, & Miller, 1996). Machiavellians tend to manipulate and exert influence on others to achieve their own goals and win in exchanges (McHoskey, 1999; Wiggins & Broughton, 1985) with a focus on the appropriation of value in exchanges and are, therefore, successful negotiators (Judge, Piccolo, & Kosalka, 2009). That is why the Machiavellian trait is seen as advantageous in evolutionary terms and known as "Machiavellian intelligence" in the field of evolutionary psychology (Dawkins & Krebs, 1978; Whiten & Byrne, 1988). Organizations with Machiavellian CEOs can, therefore, have the advantage of a bargaining focus that can result in lower costs.

We hope to make four distinct contributions with this paper. First, we aim to extend research in the upper echelons tradition. We focus on an unexplored but common psychological trait of executives and show how more Machiavellian CEOs can be advantageous for organizations by reducing important firm costs. Thus, we show that Machiavellianism is an important

dimension of CEO personality that deserves further consideration in upper echelons theorizing (Smith et al., 2018) and adds an alternative explanation to our understanding of the determinants of organizational resources' ex-ante costs (Peteraf, 1993).

A second and related contribution we intend to make is to highlight the need for focusing on cost in strategy research. By shifting the focus to cost reduction, we place a spotlight on the usually acknowledged but often overlooked impact of costs on organizations. It is surprising to note that while the organizational attitude toward bargaining for resources—"how 'tough' a bargainer each player is" (Brandenburger & Stuart, 1996, p. 11)—determines, in part, "the cost to the firm of acquiring those resources" (Brandenburger & Stuart, 1996, p. 10), the CEO characteristics that can create and support that attitude have not been studied in the strategy literature. One reason for this may be that, while equally or more impactful on firm outcomes, costs are less dashing and not as inspiring or trendy as top-line drivers of performance like growth or innovation. Another reason is that, following economic traditions, the antecedents to costs tend to be assumed away. For example, in the RBV ex-ante costs for resources depend on limited competition for resources before being acquired—that is, "the foresight or good fortune to acquire it in the absence of competition" (Peteraf, 1993, p. 185). Otherwise, all advantages will be eroded by competition for the resource. The idea that all opportunities for bargaining will be eliminated is part of the assumption of "unrestricted bargaining" (Brandenburger & Stuart, 1996) that states that all deals are going to be identified and sought out. But market failures are the norm, and high levels of uncertainty and information differences provide ample opportunities for reducing costs through bargaining, and cost advantages are available to those motivated in seeking opportunities for cost reduction (Brandenburger & Stuart, 1996, p. 11).

Third, we contribute to the literature on the dark aspects of personality by answering calls to examine the potential upside of dark personality traits (Judge et al., 2009; Smith et al., 2018) and to study Machiavellianism beyond the lab and in top organizational leadership positions (Dahling, Whitaker, & Levy, 2009). Finally, we contribute to methods in upper echelons research by utilizing a videometric approach (Petrenko et al., 2016) for measuring executives' Machiavellianism. As discussed later in the manuscript, this video-based psychometric approach to the measurement of Machiavellianism helps address the specific problems regarding self-reported measurements of "negative" personality traits and the complexity implicit in the measurement of difficult-to-access individuals (e.g., CEOs) that has traditionally limited the psychometrically valid measurement of CEO characteristics for strategy researchers (Chatterjee & Hambrick, 2007, 2011).

2 | THEORY AND HYPOTHESES

2.1 | The concept of Machiavellianism

The concept of Machiavellianism, as introduced by Christie and Geis (1970a), refers to a personality trait that exhibits the main behavioral patterns espoused by Niccolò Machiavelli's *The Prince* (Machiavelli, 1981): mistrust in others, opportunism, emotional detachment in interpersonal relationships, lack of conventional morality, and a strong motivation to "win" in interpersonal transactions or situations. It is, therefore, a deeply socially concerned trait (Whiten & Byrne, 1988) that propels individuals who are higher on the Machiavellianism scale ("high Machs") to maintain interpersonal control. To do so, high Machs exhaustively explore transactional opportunities out of their deep distrust of readily available information and others and

use their resources to willingly manipulate others to accumulate self-interested rewards and social status (Dahling et al., 2009). Essentially, high Machs construe interpersonal social interactions as games, which they desire to "win" by controlling the interaction to yield outcomes in their favor (Hurley, 2005). Because interpersonal interactions are viewed as social games, high Machs also view the other party as an opponent they must influence in order to "win." To influence the other party, high Machs use a variety of social influence tactics ranging from comprehensive social information gathering, bargaining, and coalition building to effectively manipulating the other to "win" in their interactions (Wilson et al., 1996). High Machs have even been found to engage in helping behaviors toward others (Bratton & Kacmar, 2004) to achieve self-interested goals (Smith, Wallace, & Jordan, 2016). Therefore, high Machs are relentless and effective in their pursuit of personal goals by any means necessary (Christie & Geis, 1970b; Jakobwitz & Egan, 2006), a trait that evolutionary psychology research has been found to provide evolutionary advantages due to the fitness value accrued by social actors that can successfully manipulate the behavior of others (Dawkins & Krebs, 1978; Whiten & Byrne, 1988).

It is crucial to note here that although high Machs are highly goal-oriented without regard for the means they use to accomplish their goals (Paulhus, 2014), they do not regularly engage in highly negative social behaviors (Christie & Geis, 1970a; Shepperd & Socherman, 1997). Rather, high Machs are strategic as they deliberately plan ahead. They successfully build alliances, are flexible in their use of both short- and long-term social strategies, and do their best to maintain a positive reputation (Jones & Paulhus, 2009, 2011, 2014). While the early behavioral studies suggested that high Machs were more effective and interested in short-term interactions (e.g., Fehr, Samson, & Paulhus, 1992 for a review; Wilson et al., 1996), as the construct got better specified and developed, most recent research finds that high Machs are also successful in long-term interactions (Czibor & Bereczkei, 2012) because they are strategic and able to change tactics when needed and monitoring others (Czibor & Bereczkei, 2012; Jones & Paulhus, 2009). Within the dark triad, while narcissism and psychopathy are associated with short-term behaviors, Machiavellianism is associated with strategic and flexible interaction behaviors (Curtis et al., 2021; Jones & Paulhus, 2011). Further, high Machs avoid using harsh manipulative tactics when it may not benefit them in long-term relations (Barber, 1998) or damage their reputation (Shepperd & Socherman, 1997). Thus, high Machs are generally not nefarious individuals who constantly exploit others for short-term gain and are strongly disliked (Ferris & King, 1996; Wilson et al., 1996) but are rather perceived as high-performing, effective, persuasive, and confident individuals (Deluga, 2001; Drory & Gluskinos, 1980; Huber & Neale, 1986) whose lack of emotional attachment, explorative distrust of others, focus on personal goals, and manipulative efforts allow them to thrive in social transactions and interactions (Christie & Geis, 1970a; Jones & Paulhus, 2009, 2011, 2014).

While we highlight the "bright" side of Machiavellian CEOs in the form of cost-cutting outcomes, and some authors defer to a certain wisdom of Machiavellianism for modern leaders who want to succeed (Ledeen, 1999), it is important to note that their lack of conventional morality may also have "dark" side implications (for a review, see Smith et al., 2018). High Machs have been found to be more prone to pay illegal kickbacks in laboratory studies (Hegarty & Sims, 1978) and are more willing to lie (Ross & Robertson, 2000). A meta-analytic investigation of six decades of studies also suggests that Machiavellianism is positively associated with counterproductive work behaviors like theft and excessive politicking (O'Boyle Jr. et al., 2012). Machs tend to be highly driven to succeed (Ledeen, 1999), which may not only lead them to engage in questionable behaviors when necessary to get ahead but also to create

contexts that undermine ethical behavior (Belschak, Den Hartog, & De Hoogh, 2018; Sendjaya, Pekerti, Härtel, Hirst, & Butarbutar, 2016). Moreover, Machiavellianism is associated with making unethical decisions across an organization (Kish-Gephart, Harrison, & Treviño, 2010).

It is also important to distinguish Machiavellianism from its most closely related trait, narcissism, which overlaps in terms of being a highly self-interested trait but differs in terms of motivation and outcomes. Whereas Machiavellians are motivated by instrumental gain, narcissists are motivated by ego reinforcement, resulting in markedly different behavior. Narcissists engage in ego-promoting and -reinforcing behavior, such as attention and admiration seeking through CSR investments (Petrenko et al., 2016) or risk taking (Chatterjee & Hambrick, 2007), and are also self-deceptive to the point of having poor insight (Paulhus & Williams, 2002; Raskin, Novacek, & Hogan, 1991). In contrast, high Machs engage in strategic scheming behavior (Furnham, Richards, & Paulhus, 2013; Jones & Paulhus, 2009), are extremely grounded with a realistic view of themselves and their abilities (Paulhus & Williams, 2002), and seek to control social interactions through flexible use of social strategies while doing their best to maintain a positive reputation (Jones & Paulhus, 2009, 2011).

It is not surprising, then, that high Machs have been found to be effective negotiators and succeed in both directly and indirectly achieving their goals. Extant literature has found that high Machs consistently excel in situations that are highly stressful, uncertain, unstructured, and have high degrees of face-to-face interaction—characteristics typical of both the CEO position and high-level negotiations (Christie & Geis, 1970a, 1970b). In highly stressful, emotionally charged negotiation situations, emotional arousal may hinder an individual's ability to effectively negotiate. Because high Machs have both an inherent distrust (Dahling et al., 2009) and lack of empathy for others (Barnett & Thompson, 1985; Wolfson, 1981), they can emotionally detach in situations that would be emotionally arousing for others. This ability to emotionally detach in highly charged situations provides high Machs with an advantage as they can stay focused on accomplishing their goal while exuding confidence even in uncertain situations in which they lack the relevant information (Jameson, 1945; Martin & Sims, 1956; Pfiffner, 1951). Further, due to their distrust of others, high Machs tend to overweigh the potential for losses and, thus, are prudent bargainers who avoid making deals that are not in their economic favor (Dahling et al., 2009) and using social strategies that may harm their chances of "winning" the negotiation in question (Paulhus, 2014).

Research also shows that high Machs outperform others in unstructured situations (Schultz, 1993). In unstructured and uncertain situations, high Machs' natural propensity to manipulate (Fehr et al., 1992) and control social situations (Christie & Geis, 1970a, 1970b) makes them ideally suited to deal with situations characterized by minimal structure and lack of hard and fast rules. High Machs have a more diverse set of long- and short-term social strategies combining the use of non-verbal and verbal tactics while managing their emotional arousal (Fry, 1985). They are, also, more willing and able to utilize their wide-ranging repertoire of social strategies—including persuasion, ingratiation, self-disclosure, detachment, social information gathering, coalitions, and flattery—to manipulate others to achieve their self-interested goals (Christie & Geis, 1970b; Fehr et al., 1992). Thus, they excel at bargaining and negotiations.

2.2 | Effect of CEO Machiavellianism on acquisition premiums

Acquisitions have a prominent place in the strategic leadership literature, dating back to Roll's (1986) work relating executive hubris to acquisition size. Scholars have highlighted not

only the central role of CEOs in the acquisition process (Chatterjee & Hambrick, 2007; Haleblian, Devers, McNamara, Carpenter, & Davison, 2009) but also that CEO characteristics have important effects on acquisition decisions and premiums (Brown & Sarma, 2007; Chatterjee & Hambrick, 2007, 2011; Elnahas & Kim, 2017; Hayward & Hambrick, 1997; Malmendier & Tate, 2008). For example, Hayward and Hambrick (1997) explored the relationship between CEO hubris and acquisition premiums, and Chatterjee and Hambrick (2011) explored the relationship between CEO narcissism and acquisition premiums.

We argue that CEO Machiavellianism will have an effect on acquisition premiums through their direct and indirect effects on organizational bargaining efforts. Acquisitions are a complex process with several different stages involving many different parties (Haspeslagh & Jemison, 1991; Jemison & Sitkin, 1986) apart from the CEO. But, of those players, the CEO plays an outsized role. This is consistent with the core argument of upper echelons theory that CEOs not only play a central role in strategic actions directly (Chandler, 1962) but also create a context in which other actors make specific choices that affect acquisition premiums and other firm outcomes (Bower, 1970; Finkelstein et al., 2009). CEOs' presence can be felt at each step of the acquisition process—from selecting which target(s) to pursue, presenting the proposal to the board, hiring, assigning, and consulting with other participants of the acquisition process (e.g., advisors, employees, consultants, attorneys) to negotiating and finalizing the deal—through both direct (often in person but not always) and indirect interaction with various parties during the process. For instance, while potential targets may be identified by other executives, the CEO typically finalizes the selection and accepts bringing the acquisition proposal to the board, thus initiating the process (Bower, 1970). Further, it is the CEO who is pivotal in finalizing and approving the acquisition price (Hayward & Hambrick, 1997). Premiums are important to CEOs because bigger premiums make it difficult for acquisitions to perform (Allen & Lueck, 1995), and there is evidence of the strain on acquirers after paying large acquisition premiums (Haunschild, 1994; Kaplan, 1989).

Therefore, a high Mach CEO may not only directly negotiate (although many times they do as suggested by qualitative evidence) but also set the agenda for negotiations and even affect the valuation of acquisitions. Consistent with this logic, the business press highlights the key role that CEOs play in the process (Carey, 2000; Miller, 2015). For example, Disney's CEO Bob Iger was involved throughout the process of Disney's wave of acquisitions, which began with the notable acquisition of Pixar. Shortly after taking office in 2005, Iger proposed his idea of acquiring Pixar to Disney's board of directors, personally put together a group of trusted advisors to perform due diligence, and played a central role in negotiating with Pixar's CEO (Miller, 2015). Similarly, David Simon, CEO of Simon Properties, played an active role in acquisition negotiations with General Growth Properties (GGP), personally crafting emails to apply direct pressure to GGP's top executives (Schouten, 2010).

CEO Machiavellianism can be expected to affect acquisition premiums by motivating efforts to seek bargaining opportunities and successfully bargaining for those opportunities. High Machs can reduce the emotional attachment of CEOs to the components and parties involved in a negotiation (Barnett & Thompson, 1985; Wolfson, 1981), helping them maintain a sharp focus on opportunities and outcomes while reducing the emotional arousal and stressing effects of these charged negotiation situations that may hinder others' ability to effectively negotiate (Christie & Geis, 1970a, 1970b). Also, Machiavellianism can be expected to drive CEOs to gather relevant bargaining information because their inherent distrust for others, utilization of social interactions and coalitions, and ability to manipulate others allow them to win when transacting for important firm investments and outlays

(Christie & Geis, 1970b; Dahling et al., 2009; Jakobwitz & Egan, 2006; Jameson, 1945; Martin & Sims, 1956; Pfiffner, 1951) like acquisitions.

CEOs not only can have contact with all the different parties in the acquisition process but also consolidate and interpret the information from the various parties throughout the process so they can negotiate and finalize the best deal for their firms (Jemison & Sitkin, 1986). It is typically the CEO, with advisement from these different principal parities, who selects the target to pursue and determines the final price paid for acquisitions, especially large ones (Haspeslagh & Jemison, 1991; Hayward & Hambrick, 1997). While the actual price paid is subject to final approval from the board of directors, boards rely heavily on the opinions of their CEOs (Mace, 1971). Thus, high Mach CEOs' strategic focus, alliance building, and interest in bargaining for low costs can secure lower premiums in acquisitions. Therefore, we expect high Mach CEOs to pay lower acquisition premiums.

Hypothesis 1. *There will be a negative relationship between CEO Machiavellianism and acquisition premiums.*

2.3 | Effect of CEO Machiavellianism on production and debt financing costs

Because CEOs have considerable influence on how their firms operate within the larger social sphere (Chandler, 1962; Finkelstein et al., 2009), the Machiavellian tendencies of the CEO will influence organizational activities by establishing bargain searches, cost targets, and general bargaining styles for the organization. Therefore, we argue that organizations led by more Machiavellian CEOs will achieve better cost positions in important firm outlays like production costs and debt financing. Because a more Machiavellian CEO has a personal investment in bargaining and a focus on cost efficiency but cannot be directly involved in all negotiations for firm outlays, we expect more Machiavellian CEOs to affect the firm costs by "setting the tone at the top" (Dyreng, Hanlon, & Maydew, 2010) and infusing their organizations with a great deal of their traits through their agenda, initial decisions, and leadership behaviors (Carpenter, Geletkanycz, & Sanders, 2004; Finkelstein et al., 2009).

We expect that CEO Machiavellianism creates a context that effectively "sets the tone at the top," infusing the CEO's bargaining focus and negotiation-winning agenda throughout the organization and influencing cost negotiations at every level (Christensen, Dhaliwal, Boivie, & Graffin, 2015; Dyreng et al., 2010; Yukl, 2008) by establishing a perception that costs are important for the organization, deciding on the organization's strategic direction to achieve cost goals, determining what to emphasize (e.g., a bargaining focus, cost-cutting initiatives), designing incentive systems that support it, and deciding on the staffing of critical positions (e.g., CFO, COO, consultants, etc.) (Bower, 1970; Burgelman, 2002; Christensen et al., 2015; Dyreng et al., 2010; Yukl, 2008). For example, former AT&T CEO Randall Stephenson once said, "We will be very assertive as we go through the course of this year to control the spend on content costs" (Farrell, 2019). This assertive approach to controlling content costs is illustrated in AT&T's recent approach to renegotiations with their content providers, leading the CEO of A&E Networks Group, one of their prominent content providers, to state, "While I have respect for them and our long-standing relationship, AT&T has not demonstrated a willingness to negotiate reasonably" (Vlessing, 2019). Similarly, when Boeing CEO Dennis Muilenburg took office, he infused Boeing with a bargaining focus for negotiations with suppliers and insisted on price

cuts from suppliers in a cost-cutting initiative called "Partnering for Success" (Johnsson & Robison, 2018). This emphasis on cutting supply costs has evidently trickled down to lower levels of management, with Boeing's VP of supply chain management, Kent Fisher, telling its suppliers at a convention in 2016, "There's a tremendous opportunity to do more and take costs out of our products" (Wilhelm, 2016).

In essence, due to their need for control (Dahling et al., 2009), high Mach CEOs are likely to institute organizational initiatives that promote their agendas, which tend to focus on bargaining and cost minimization. For example, in 2010, Jeff Fettig, then CEO of Whirlpool, instituted a cost-reduction program that significantly affected bargaining with suppliers of goods and services and updated employees on the progress every quarter as 50% of all employees' bonus was based on Whirlpool hitting its cost-reduction goals (Boston Consulting Group, 2010). High Machs' desire for control, distrust for others, and willingness to pursue bargaining at all costs, therefore, drives not only their direct but also organizational efforts to negotiate for lower costs. Therefore, we expect organizations with more Machiavellian CEOs to experience lower costs.

Hypothesis 2. *There will be a negative relationship between CEO Machiavellianism and production costs.*

Hypothesis 3. *There will be a negative relationship between CEO Machiavellianism and debt financing costs.*

3 | METHODS

3.1 | Sample and data collection

Our acquisition premium data were collected from Thomson Reuter's SDC database, while our annual financial and corporate data were obtained from Standard & Poor's COMPUSTAT industrial databases, CRSP, Capital IQ, and BoardEx. Our data on CEO characteristics were collected using video survey methods (Petrenko et al., 2016). Our initial population consisted of all S&P 500 firms between the years 2000 to 2011. Our final sample for the study includes 198 CEOs for a total of 1,354 firm-year observations and 186 acquisition events. Following prior research, we excluded 24 private firms due to the lack of publicly available financial data for those firms. Then, we identified the CEO for every remaining firm in the data in 2007 and included all firm years in this timeframe for which they were CEOs of their respective firms. Second, we omitted 15 CEOs who held interim appointments because research has indicated that such CEOs have different effects on their firms compared to permanent CEOs (Ballinger & Marcel, 2010). Third, we omitted CEOs about whom we were unable to acquire adequate publicly available video data as our videometric measurement of Machiavellianism relies on the use of video data (Petrenko et al., 2016). We were able to collect video data for 236 CEOs for whom adequate video data were available on the internet as of 2010 (Petrenko et al., 2016). We then filtered out any CEOs for whom firm-level data for our variables of interest was not fully available for the years of the study, including in the year prior to the CEO taking office. These data were used for our treatment effect to address endogeneity, resulting in a final working sample of 198 CEOs and 1,354 firm-year observations, which is consistent with the sample sizes obtained by similar studies in the upper echelons literature (Chatterjee & Hambrick, 2007; Petrenko, Aime, Recendes, & Chandler, 2019).

3.2 | Dependent variables

Acquisition premiums reflects the amount a firm overpays for another firm in the acquisition process. Following Hayward and Hambrick (1997), we operationalized acquisition premium as the market-adjusted premium paid for each transaction. First, we identified the pre-takeover price by taking the stock price 30 days prior to the date of announcement. Then, we calculated the acquisition premium by taking the purchase price minus the pre-takeover price divided by the pre-takeover price. Finally, we adjusted the premium for market movement within the Standard & Poor 500 Index. *Production costs* reflects the costs associated with the general operations and production of the firm's products. Because costs of goods sold includes all the costs of producing the firm's products (e.g., materials), we operationalize production costs as the ratio of cost of goods sold over sales (Datta, Iskandar-Datta, & Singh, 2013). This ratio represents the cost component of the gross margin ratio and provides a scaled measure of the direct costs of the organization's goods and services. *Financing costs* reflects firms' costs for securing and servicing debt. We measure *Financing costs* in two ways: first, as the ratio of interest expense to liabilities; second, as some of the components of debt may be less negotiable and controllable, we used data from the Capital IQ database to produce a more restricted measure, *Non-bond interest rate*, which excludes debt in the form of bonds and notes. In essence, both variables provide a measure for what the firm pays to secure and service their debt—one for total financial liabilities and the other for the interest rate of only the most clearly controllable component of liabilities by excluding bonds and notes.

As a robustness test of the potential for CEOs to have effects on the dependent variables we theoretically chose for our study, we proceeded to empirically explore the extent to which variance for each of the panel outcome variables we studied resides at the CEO level of analysis. Consistent with prior studies that examine the CEO effect on firm-level outcomes (Crossland & Hambrick, 2007; Quigley & Graffin, 2017), we used multilevel modeling as a variance partitioning method to calculate the CEO effect on our specific variables of interest. Conceptually, this method isolates the effects of contextual factors such as year effect (time-specific macro-economic trends), industry effect (industry-specific trends), and firm effect (firm-specific trajectory), then estimates the CEO effect (i.e., explanation of the outcome provided by the CEO-specific component after including all other contextual components). At each level, an R^2 is calculated, and any incremental gain in explanation at that given level is attributed to that factor (Quigley & Graffin, 2017). To construct our sample for this analysis, we began with all CEOs in the Execucomp database from the years 1992 to 2017. Then, consistent with prior research (Quigley & Graffin, 2017), we imposed five filters and excluded financial institutions as well as any government and unclassified industries, any firms with only one CEO over the entire sample, firms with less than 20 million in assets, any interim CEOs (served only 1 year), and any firm years in which ROA was above or below the 99th percentile of the sample. We then proceeded to run multilevel models using the PROC MIXED command in SAS on this dataset and calculate the CEO effect for each of our panel outcome variables. Results for these analyses indicate a considerable CEO effect on all our variables, with a 32.3% CEO effect on production costs, a 22.3 and 13.9% for CEO effect on financing costs measured as interest paid over all financial liabilities or interest rate excluding bonds and notes respectively. These results empirically support our choice of variables and are included in Table 9 of Appendix S1.

3.3 | Independent variable

To measure CEO Machiavellianism, we followed the videometric approach of Petrenko et al. (2016) for measuring characteristics of difficult-to-access individuals (e.g., CEOs) through third-party ratings using the widely utilized and validated Machiavellian Personality Scale (MPS) (Dahling et al., 2009). This approach has numerous benefits. First, it provides an unobtrusive and direct way to measure the personal characteristics of a difficult-to-access sample, as CEOs are reluctant to participate in survey research (Chatterjee & Hambrick, 2007, 2011). Second, extant research has demonstrated that third-party ratings of personality traits are more operationally valid than self-reported data (Oh, Wang, & Mount, 2011) because third-party ratings are not subjected to the inflation bias of self-report data (Connelly & Hulsheger, 2012; Van Iddekinge, Raymark, & Roth, 2005). Third, it allows us to measure the sample with previously validated psychometric scales (MPS) without concerns over the loss of responses based on the sensitivity of the traits being measured (Chatterjee & Hambrick, 2007). Fourth, it avoids the criticism directed at self-reported measures of Machiavellianism based on the implication that Machiavellianism cannot be appropriately measured using self-reports (O'Boyle Jr. et al., 2012; Smith et al., 2018).

Specifically, we used publicly available videos drawn from internet sources that showcase the CEOs in our population within interview and public speech settings for our measurement. In accordance with the procedures validated by Petrenko et al. (2016), we first edited each video to remove any identifying information (i.e., name, title, company name, logo) that could potentially bias raters' evaluations. We then edited the length of the videos to approximately 2.5 min, as Petrenko et al. (2016) established that this time duration is the most efficient for measuring CEO characteristics and allows for reliable measures without causing rater fatigue, with variation only to avoid cutting off a CEO in mid-sentence (Gupta & Misangyi, 2018; Hill, Petrenko, Ridge, & Aime, 2019). To ensure that raters were not influenced by confounding aspects such as firm performance, reputation, or potentially stigmatic events (e.g., product recalls, environmental disasters, politics, job layoffs), we also edited the video clips to remove such discussions. Doctoral students in clinical psychology with experience in personality assessment served as coders and received monetary compensation. These coders assessed each focal CEO and independently rated them on the MPS, the prevailing instrument to measure Machiavellianism. Each CEO was rated using the items of the MPS using a seven-point Likert scale by three expert raters who were blind to the study hypotheses. This instrument demonstrated high coefficient alpha reliability ($\alpha = .93$) (Nunnally, 1978) and expert raters demonstrated significant agreement, ICC (1, 3) = .48, $p < .001$, $r_{wg} = .81$ (Bliese, 2000).

We took two additional steps to ensure our ratings were robust for the media effects (setting) and timing of the video sample. First, we created a random subsample of CEOs, for 22 of which we were able to collect multiple adequate video samples across two different settings from public sources. These videos were rated for Machiavellianism in the same way as the core sample videos, and we proceeded to analyze mean differences between different videos for the same CEO. There were no significant differences in the Machiavellianism measure ($p = .16$) between different videos of the same CEOs, showing that the approach is generally consistent across video samples. Second, to assess the temporal nature of the ratings of CEO Machiavellianism, we proceeded to collect additional videos from at least 2 years after the collection of the original video for a random subsample of CEOs. For 48 of the latter, we were able to collect adequate videos for analysis. These videos were rated for Machiavellianism in a manner consistent with core sample videos. We then analyzed mean differences between videos of the same

CEOs from different time periods. There were no significant differences in the Machiavellianism measure ($p = .19$) between videos of the same CEOs taken at different points in time. The results of these additional tests provide a robustness test for our measurement and give us further confidence in the internal consistency of our measure as they indicate that our methodological approach to measuring CEO Machiavellianism is generally consistent across both time and media settings. The results for these findings are included in Appendix S1.

Finally, we evaluated the ability of the scale to distinguish Machiavellianism from narcissism as expected within the measurement approach. First, we measured narcissism for our sample following the videometric approach utilizing the NPI-16 scale for narcissism (Petrenko et al., 2016). Next, we explored the potential for overlap between the narcissism and Machiavellianism measures by running a factor analysis and by looking at the correlation between the measures. Our exploratory factor analysis yielded a two-factor solution. Then, we ran confirmatory factor analysis, which showed no significant cross-loadings (cross-loadings were below 0.25) between the two factors, meaning that Machiavellianism and narcissism are two distinct measures, thus confirming the intuitions of the psychology literature. The fit indices for the CFA are as follows: CFI = 0.908; SRMR = 0.037; RMSEA = 0.057. In terms of correlation, the measures had a small positive correlation $r = .10$, as the prior psychology literature also found (Lee & Ashton, 2005; Paulhus & Williams, 2002). The results of these analyses give us further confidence that our measurement approach can distinguish between Machiavellianism and narcissism.

3.4 | Control variables

We take several steps to control for confounding influences at the CEO, firm, and industry levels. At the industry level, we include dummy variables for each two-digit SIC industry code as reported in the COMPUSTAT. To control for any year-specific effects on our dependent variable, we included a *Year* dummy variable in the models. We also include a lag of the focal variable of interest in our models. At the firm level, firm size, financial leverage, and performance are factors that may influence costs (Haleblian et al., 2009). Thus, we control for *firm size* using the logarithm of revenue, *financial leverage* using the ratio of debt to equity, and *industry-adjusted ROA* as a control for performance. To account for the influence of the board of directors on strategic decisions, we include a control for *board independence*, operationalized as the ratio of independent outside directors to total directors. In the model where financial interest costs are our focal dependent variable, we also include a control for the firm's credit rating, as this rating would likely directly impact the firm's interest expense. A firm's *credit rating* was operationalized using an indicator variable for the firm's yearly average credit rating.

At the CEO level, we control for several factors that may impact our variables of interest. We control for both *CEO tenure*, measured as the number of years an executive has been CEO of the focal firm as tenure has been shown to influence a CEO's influence on organizational decisions and outcomes (e.g., Simsek, 2007). Additionally, we control for several indicators of CEO power, such as CEO duality and board independence, as these factors impact the CEO's ability and motivation for taking strategic risks and increasing a firm's costs (Core, Holthausen, & Larcker, 1999; Finkelstein & D'Aveni, 1994; Finkelstein & Hambrick, 1989). *CEO duality* is operationalized as a dummy dichotomous variable yielding 1 if the focal CEO was also the chairman of the board. CEO incentive compensation components have also been shown to influence corporate outlay decisions such as acquisition activity (Haleblian

et al., 2009). Therefore, we controlled for both a CEO's long-term and short-term incentive components. *Long-term pay focus* was operationalized as the ratio of the dollar value of restricted stock and stock options to total compensation (Deckop, Merriman, & Gupta, 2006), while *short-term pay focus* was operationalized as the ratio of the dollar value of bonuses earned by the executive in the given year to total compensation. Additionally, powerful chief financial officers (CFOs) may affect a firm's operational and financial costs. To control for the influence of powerful CFOs on firm costs, we added two controls for CFO power: *CFO tenure*, operationalized as the number of years the CFO has held that position within the firm, and *CFO pay relative to CEO*, operationalized as the ratio of CFO total compensation to that of the CEO.

Following Chatterjee and Hambrick (2007, 2011), we also address endogeneity as certain firms or situations may attract high Mach CEOs, thus affecting our results. To address endogeneity, we first regressed CEO Machiavellianism against an array of antecedent and contemporaneous variables in a first-stage model. We proceeded to look at the data of firms that select more Machiavellian CEOs as well as the literature on CEO selection to identify potentially relevant predictors (both at the firm and industry levels). At the industry level, we identified the industry mean of CEO compensation, ROA, and absorbed and unabsorbed slack as potentially relevant predictors. The four-digit SIC code industry mean of these variables was calculated from the population of all firms in the COMPUSTAT database (EXECUCOMP for CEO compensation) with adequate financial information to calculate each variable. The industry mean (excluding the focal firm) of the variables in a given year was calculated, and SICs with less than three firms in the given year were excluded from this analysis. We then proceeded to add these industry averages as predictors in our first-stage model. Our final first-stage model also included a set of antecedent and contemporaneous variables. The antecedent variables are intended to reflect the CEO's entry conditions and were measured in the year prior to the CEO taking office. These variables included: firm sales ($p = .07$), ROA ($p = .36$), and ROA change within the CEO first year in office ($p = .03$). The contemporaneous variables were measured in the year the CEO took office and include firm sales ($p = .05$), capital intensity ($p = .04$), CEO duality ($p = .99$), industry mean ROA ($p = .25$), industry mean CEO compensation ($p = .00$), industry mean absorbed slack ($p = .22$), industry mean unabsorbed slack ($p = .06$), and strategic dynamism ($p = .29$). The overall regression model for CEO Machiavellianism was strongly significant ($p = .00$). Then, based on this model, we created a predicted Machiavellianism score and included it as an *endogeneity treatment* in our models. We include the predicted value because the first step is not a selection model (binary or hazard). Therefore, the predicted value is the adequate parameter.

In our acquisition models, we control for specific factors that have been shown to affect the size of acquisition premiums. In the literature, acquisition premiums may be influenced by the number of potential transactions, acquirer, and target-level factors. We control for acquisition-level factors such as competing bidders, payment method, and relative size of the acquisition in question. *Competing bids* was measured by an indicator variable equal to 1 if there were competing bids. *Cash payment method* was operationalized with an indicator variable equal to 1 if the acquisition was funded with cash and 0 if otherwise. *Stock payment* was operationalized with an indicator variable equal to 1 if the acquisition was funded with stock and 0 if otherwise. *Relative size of acquisition* was computed as revenues of the target divided by revenues of the acquirer in the year preceding the acquisition. We controlled for several target-level factors such as target board holdings, the smallness of outside director holdings, target financial synergies, and target anti-takeover measures (Hayward & Hambrick, 1997). We controlled for *outside director holdings operationalized* as the percentage of stock owned by the target firm's outside

directors. Low holdings can indicate little room for performance improvement; thus, premiums may be small. The *target's recent performance* may also impact acquisition premiums; therefore, we control for the target's ROA relative to the industry average in the year prior to the acquisition. Anti-takeover measures such as poison pills may considerably influence acquisition cost (Malatesta & Walkling, 1988). Thus, we control for *poison pills* by including a dummy variable equal to 1 if the target firm has a poison pill and 0 if not. We also control for any *financial synergies*, measured as the debt-to-equity ratio of the target less that same ratio of the acquirer in the year prior to the acquisition (Hayward & Hambrick, 1997), which may exist between the acquirer and the target. To control for high-performing firms' ability and willingness to pay acquisition premiums, we included a measure of *acquirer's slack* operationalized as current assets to current liabilities as well as *acquirer's industry-adjusted ROA*.

3.5 | Model and estimation

The data for our firm cost variables were structured as an unbalanced panel with multiple observations per executive. Consistent with prior research regarding the effects of invariant characteristics, as is the case with CEO Mach, we used generalized estimating equations (Liang & Zeger, 1986) with an endogeneity treatment to estimate our models (Chatterjee & Hambrick, 2007, 2011; Petrenko et al., 2016). This technique generates maximum likelihood estimates while accounting for non-independence of observations and intertemporal correlations (Liang & Zeger, 1986). The models were specified with both an exchangeable correlation structure and robust variance estimates. We chose the exchangeable correlation structure because it best fits our data according to the smallest QIC (Cui & Qian, 2007; Gupta & Misangyi, 2018; Pan, 2001). The acquisition premium data was transaction-level event data. Because not all firms engage in an acquisition in a focal year, there are only 186 firm-year acquisitions over the sample period. To analyze the effect of CEO Mach on the payment of acquisition premiums, we follow Chatterjee and Hambrick (2011) and utilize OLS regression.

Finally, using the videometric measurement approach carries the potential that particular characteristics of firms or CEOs (i.e., large firms, high-performing firms, or high-tenure or powerful executives) will increase the likelihood that a CEO will appear on video-recorded interviews and, therefore, in our sample (Gupta & Misangyi, 2018). To account for this concern, we ran a first-stage Probit model to predict whether a given CEO would be more likely to be included in our analyses using data on all the S&P 500 firms within our time frame (e.g., Certo, Busenbark, Woo, & Semadeni, 2016; Gupta & Misangyi, 2018). Following previous implementations of the procedure in the literature, we included a variety of firm (size, return on assets) and CEO-level (tenure, age, ownership) variables that could predict the inclusion/exclusion of CEOs in our sample. This model was significant ($p = .00$) with several of the variables being significant predictors of inclusion within our sample (firm size [$p = .00$], firm performance [$p = .07$], CEO age [$p = .00$], CEO tenure [$p = .00$], and CEO ownership [$p = .08$]). We then computed an inverse Mills ratio from the first-stage model and added it to the main, second-stage models (Leung & Yu, 1996). CEO age and ownership served as our exclusion restrictions in our modeling as they may predict inclusion in our sample and were included in the first-stage models but excluded from our second-stage models (Angrist, 2001). We chose those exclusion restrictions on substantive grounds (Bushway, Johnson, & Slocum, 2007) as these characteristics increase the likelihood that these CEOs may be showcased in a quality

video-recorded interview. We further verified their strength by finding low, nonsignificant correlations between the inverse Mills ratio and our independent variable of interest, CEO Machiavellianism (r = .03) (Bushway et al., 2007; Certo et al., 2016; Gupta & Misangyi, 2018). This correlation is well below |.3|, which is the threshold at which efficacy of the approach begins to decline (Certo et al., 2016).

4 | RESULTS

Descriptive statistics and correlations for our acquisition premiums models are presented in Table A1. The coefficient estimates for our OLS models on acquisition premiums are displayed in Table A2; Model 1 includes control variables while Model 2 adds in our hypothesized effect.

The results presented in Table A2 provide support for Hypothesis 1, which hypothesized that CEO Machiavellianism is negatively associated with acquisition premiums. As shown in Model 2, CEO Machiavellianism is negatively related to the payment of acquisition premiums ($\beta = -.083$; $se = 0.039$; $p = .034$). This finding demonstrates that firms with Machiavellian CEOs will pay significantly less premium for their acquisitions. Our result has practical significance because it indicates that, ceteris paribus, acquisition premiums paid over the value of the firm before the acquisition will go down from an average of 37 to 32.52%, a reduction of 12.11% of the acquisition premium. Given that the mean deal size in our sample is 4,404 million dollars and the median deal size is 1,393 million dollars, this shift amounts to saving 157 million dollars for the average acquisition or 50 million for the median acquisition, both of which represent about 3.6% of the value of the overall deal for firms with CEOs that are one standard deviation above the mean of Machiavellianism. This result suggests that Machiavellian CEOs can utilize their social influence propensity and skills, focusing on bargaining to achieve favorable terms for their firms in acquisition contexts.

Descriptive statistics and correlations for our other cost models are presented in Table A3. The coefficient estimates for the other cost models are displayed in Table A4; odd-numbered models include control variables while even-numbered models include our hypothesized effects.

Results presented in Table A4 support our hypotheses regarding the influence of more Machiavellian CEOs on a firm's cost structure. As presented in Models 4 and 6, the results show that CEO Machiavellianism is negatively related to both production costs ($\beta = -.005$; $se = 0.002$; $p = .032$) and debt financing costs ($\beta = -.001$; $se = 0.000$; $p = .000$). The results presented in Model 8 provide further support to our hypotheses that CEO Machiavellianism is negatively related to debt financing as CEO Machiavellianism is negatively related to interest rate on non-bond interest debt ($\beta = -.173$; $se = 0.068$; $p = .011$). These findings indicate that firms with more Machiavellian CEOs have a lower cost structure. Our result has practical significance as it indicates that for the average firm in our sample, ceteris paribus, the cost of goods sold will go down by $101.19 million dollars (or 5% of the total net income for the average firm in our sample), the interest paid on debt will go down by $35.8 million dollars (or about 1.6% of the firm's total net income), and the interest rate for non-bond debt will go down about 2.6% for firms with CEOs who are one standard deviation above the mean of Machiavellianism. These findings imply that more Machiavellian CEOs may be able to effectively capitalize on their social influence and manipulation skills to lower cost structures for their firms.

4.1 | Post-hoc analyses

We investigated the potential alternative explanation for our results that Machiavellian CEOs pick better deals with less competition and, therefore, pay lower premiums. We investigated whether the presence of competing bidders made Machiavellian CEOs overpay more in their acquisitions. Specifically, we interacted CEO Mach with the presence of competing bids, and the interaction was not significant ($\beta = .049$; $se = 0.296$, $p = .868$; see Appendix S2). This finding makes theoretical sense because Machs are supposed to be "cool-headed negotiators" who refuse to let the emotions of competing bidders cloud their goal of walking away with the best deal (i.e., not overpaying as much).

Second, we evaluated whether Machiavellian CEOs were more likely to withdraw from acquisition processes as a potential indication that deal selection rather than negotiation was at play in our results. Machiavellian CEOs were not more likely to withdraw ($\beta = -.008$; $se = 0.022$; $p = .723$), thus invalidating this explanation (see Appendix S2).

Finally, we evaluated whether there was a trend in the effect of Machiavellian CEOs on costs throughout their tenure by running a linear growth curve model (Lungeanu & Weber, 2021) to assess whether time in office affected the effect of CEO Machiavellianism on costs. The results were not significant (Production costs: $\beta = -.000$; $se = 0.001$; $p = .922$; Financing costs: $\beta = -.000$; $se = 0.000$; $p = .752$; non-bond interest rate: $\beta = -.013$; $se = 0.022$; $p = .563$), showing that the impact of CEO Machiavellianism on how their organization strives to reduce firm costs is probably imprinted when CEOs set up their agendas and policies for the organization and remains rather stable over time.

5 | DISCUSSION

Looking at the effect of CEO Machiavellianism on firm costs, we sought to understand how this institutionally problematic but ubiquitous characteristic of CEOs may add value to their organizations. In this paper, we argue and find that CEO Machiavellianism helps reduce acquisition premiums, production, and financing costs. Therefore, our first contribution to the firm performance and upper echelons theoreticals tradition in strategy is that, by focusing on an unexplored but common psychological trait of executives—Machiavellianism—and showing it can be advantageous for organizations by reducing important firm costs, we shed light on why this problematic characteristic of CEOs is ubiquitous and may have value for organizations. While we argue that high Mach CEOs may positively affect their firms by lowering firm costs, there are also downsides to having a high Mach CEO. Machiavellianism is associated with counterproductive behaviors (O'Boyle Jr. et al., 2012) and unethical leadership (Brown & Treviño, 2006)—like wading into "gray" areas that cause concern for organizations such as questionable accounting practices, willingness to pay illegal kickbacks (Hegarty & Sims, 1978), or efforts to manipulate directors to secure more power or pay.

An implication of this theme is that the less Machiavellian and more ethical leaders may be ultimately setting their firms up for higher costs due to their reduced focus on bargaining. In many ways, our findings suggest that Machiavellian CEOs or a Machiavellian-like focus on bargaining may have value for organizations. These findings contribute to the executive leadership literature by increasing our understanding of the role that leader characteristics play as determinants of organizational resources' *ex-ante* costs.

The above findings have significant implications for practice. Our study indicates the importance for organizations to be able to understand the pros and cons of having a CEO who exhibits such traits so that they may structure other resources and procedures to balance the implications of the level of Machiavellianism of their CEO. For example, while organizations with less Machiavellian CEOs may want to add additional negotiating structures and opportunity-seeking resources to support the costs of their resource acquisitions, organizations with higher Mach CEOs may, instead, strive to constrain their potential internal agency behaviors. Further, organizations may want to make actions by their Machiavellian CEOs visible because visibility moderates the negative aspects of their behavior (Belschak et al., 2018; Szabó, Czibor, Restás, & Bereczkei, 2018; Webster & Smith, 2019).

Second, we direct attention to the important but usually less-studied dimension of firm costs. By shifting the focus to the cost side of the profit equation rather than the revenue-generating side, we signal the importance of producing more research explaining antecedents to this often acknowledged but overlooked aspect of firm performance. While strategy research has produced many insights about what drives organizational risk taking, innovation, revenue, and overall performance, costs are clearly overlooked, leaving a gap in our empirical understanding of this important driver of firm performance.

Third, to scholars particularly interested in Machiavellianism, we offer an alternative logic for why Machiavellianism may be a successful trait for individuals in general. Strong bargaining can affect results with implications regarding how more or less Machiavellian individuals are rewarded or ultimately evaluated in their personal or working lives. It would be interesting to see whether an equivalent process to the one suggested by our paper operates at lower levels in the organization. It may be that Machiavellian individuals at lower organizational levels are able to reduce costs in their activities and advance in their organizations.

Fourth, we answer calls to examine the potential upside of dark personality traits (Judge et al., 2009; Smith et al., 2018) and to study Machiavellianism beyond the lab and in top organizational leadership positions (Dahling et al., 2009). In essence, our study highlights a particular characteristic that is generally seen as negative but has been shown to have important advantages in evolutionary psychology. While the levels of Machiavellianism in the CEO population are larger than those in the general population, differences between them are still significantly predictive of organizational bargaining outcomes. Beyond the theoretical contribution, this study offers a novel methodological approach—the videometric approach (Petrenko et al., 2016)—for measuring executives' Machiavellianism for the measurement of executive Machiavellianism to strategy and organizational researchers.

5.1 | Limitations and future research

One important limitation of our study design is its exclusive focus on CEOs of large publicly held firms. Although this was a logical choice given our effort at quality measurement of the Machiavellian trait and our interest in Mach influences on observable outcomes of high-level negotiations like acquisitions, this process may unfold differently in the context of smaller, entrepreneurial, or privately held firms, where the influence of CEO characteristics may be significantly larger or smaller. Entrepreneurial ventures may provide an interesting setting in which to examine the direct impact of CEO Machiavellianism on negotiations by looking at their negotiations for ownership in the process of funding their ventures.

Another implication of that choice is that, in this study, we are limited to focus on the black box that exists, as in most upper echelons-related work, between CEO characteristics and their decisions and behaviors (Lawrence, 1997), and between those and their organizational effects (Chandler, 1962; Mintzberg, 1978). This data is doubtlessly difficult to obtain, though appropriate simulations may be one avenue (Hambrick, 2007) while case and grounded qualitative studies may also prove insightful (Eisenhardt, 1989) to understand how CEOs affect their organizations' bargaining focus and capabilities.

Future research may also want to look at how CEO Machiavellianism may aid not only the organizational bargaining for outcomes but also CEOs themselves in their appropriation of such outcomes. Consistent with the bargaining arguments of this study and of basic psychological research about CEOs, CEO Machs may also have the ability to affect a variety of internal negotiations. Future studies could investigate the impact that Machiavellian CEOs have on negotiable outcomes within firms, including settling-up and negotiations for their own compensation because high Machs' actions derive from their personal agenda and financial needs (Gond, El Akremi, Swaen, & Babu, 2017; Zettler, Friedrich, & Hilbig, 2011), which may be interesting for research and practice. Finally, while our study focuses on the somewhat counterintuitive value of a negatively charged personal characteristic, the "bright side" of CEO Machiavellianism, CEO Machiavellianism implies a dark side. Therefore, future research could enrich the picture by illuminating negative outcomes for organizations of having a more Machiavellian CEO. High Machs have a propensity for large scandals that are typically uncommon (e.g., Schnatterly, Gangloff, & Tuschke, 2018) with potential implications for firm valuation.

5.2 | Conclusion

In this study, we show that high Mach CEOs influence important firm costs. By examining how such CEOs can impact organizations through their bargaining focus, we contribute to the upper echelons theoretical tradition and add an important explanation of the otherwise uncontrollable ex-ante resource costs of organizations.

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DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request. The data are not publicly available due to privacy or ethical restrictions.

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SUPPORTING INFORMATION

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APPENDIX A

TABLE A1 Descriptive statistics and correlations for acquisition premium models

Variables	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1. Acquisition premiums	0.37	0.28																							
2. Industry-adjusted ROA	3.63	14.84	0.02																						
3. Relatedness	2.82	0.96	−0.08	0.03																					
4. Target's relative perf.	0.89	10.06	−0.10	0.01	0.07																				
5. Target's financial synergies	0.33	0.67	0.12	0.02	0.03	0.10																			
6. Target poison pill	0.01	0.07	0.01	−0.02	0.01	0.00	0.00																		
7. Acquirer liquidity	1.77	0.99	0.22	0.02	−0.08	0.00	0.14	0.01																	
8. Target board holdings	0.15	0.19	0.09	−0.02	−0.16	0.04	0.08	−0.05	0.06																
9. Competing bidders	0.05	0.21	0.07	0.13	0.02	0.07	−0.15	−0.02	−0.06	0.12															
10. Target's relative size	0.92	0.27	0.11	0.04	−0.11	−0.03	0.19	0.02	0.11	0.04	0.07														
11. Cash payment method	0.60	0.49	0.08	0.03	−0.09	0.04	0.15	0.06	0.10	0.16	0.03	0.19													
12. Stock payment method	0.16	0.37	−0.02	0.04	−0.11	−0.10	−0.15	−0.03	−0.11	−0.04	−0.01	0.00	−0.54												
13. Insider director holdings	0.27	0.45	−0.09	−0.04	0.04	−0.10	−0.07	−0.03	−0.08	−0.06	0.02	−0.28	0.13	−0.07											
14. Outside director holdings	10.16	4.29	0.09	0.08	0.02	0.18	0.00	0.02	0.13	−0.03	−0.05	0.21	0.17	−0.14	−0.44										
15. CFO pay relative to CEO	0.34	0.10	0.13	−0.06	0.02	0.05	0.09	−0.03	0.15	0.07	0.06	0.06	0.07	0.02	0.00	0.11									
16. CFO tenure	3.43	1.60	−0.08	0.00	−0.11	0.04	−0.01	0.03	−0.10	−0.05	0.03	0.01	0.04	−0.06	0.02	−0.03	−0.04								
17. CEO tenure	7.59	8.38	−0.18	−0.05	0.08	0.05	0.05	0.00	0.08	−0.12	−0.10	0.20	0.17	−0.09	−0.03	0.20	0.00	0.04							
18. CEO age	56.79	5.94	−0.27	0.00	0.12	0.12	−0.03	0.05	0.07	−0.16	−0.11	−0.01	0.05	0.05	0.23	0.06	−0.02	0.12	0.39						
19. CEO duality	0.76	0.43	0.09	−0.01	0.05	−0.05	0.10	0.04	−0.03	−0.11	0.01	0.30	0.09	−0.05	0.10	−0.03	−0.09	−0.01	0.11	0.11					
20.	0.20	0.32	0.03	−0.05	−0.11	−0.15	−0.04	−0.04	−0.12	0.18	0.08	−0.10	−0.07	0.00	0.02	−0.10	0.06	0.06	−0.04	−0.18	−0.09				

TABLE A1 (Continued)

Variables	*M*	*SD*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*	*19*	*20*	*21*	*22*	*23*
CEO long-term pay focus																									
21. CEO short-term pay focus	0.10	0.16	0.06	−0.08	−0.09	0.03	−0.06	−0.05	−0.15	0.07	0.22	0.01	−0.13	0.14	−0.09	0.02	0.15	0.10	−0.11	−0.17	0.03	0.23			
22. CEO narcissism	4.53	0.80	0.03	−0.06	−0.03	0.04	−0.09	−0.09	0.07	−0.07	−0.03	0.06	0.03	0.03	−0.12	0.25	0.11	−0.12	0.23	0.07	−0.07	−0.02	0.05		
23. Endogeneity treatment	4.02	0.14	−0.14	−0.27	−0.07	−0.02	0.09	0.00	−0.20	0.03	0.01	0.02	−0.02	0.08	0.00	−0.12	−0.04	0.01	0.01	0.03	0.06	0.11	0.05	0.11	
24. CEO Machiavellianism	4.13	0.54	−0.13	−0.06	0.09	−0.11	0.01	−0.03	0.00	−0.08	0.09	0.30	0.01	0.04	0.11	−0.02	−0.01	−0.11	0.29	0.13	0.30	−0.08	−0.08	0.10	0.31

Note: $n = 186$ acquisitions. Correlations greater than |.14| significant at $p < .05$.

TABLE A2 Effects of CEO Machiavellianism on acquisition premiums (OLS)

	Model 1		Model 2	
	ß	*p*-value	*ß*	*p*-value
Industry-adjusted ROA	.000	[.950]	.000	[.992]
	(.003)		(.003)	
Relatedness	−.021	[.346]	−.018	[.423]
	(.023)		(.023)	
Target's relative performance	−.002	[.420]	−.002	[.255]
	(.002)		(.002)	
Target's relative financial synergies	.046	[.132]	.041	[.173]
	(.030)		(.030)	
Target's poison pill	.049	[.664]	.045	[.689]
	(.113)		(.113)	
Acquirer liquidity	.053	[.000]	.055	[.000]
	(.015)		(.015)	
Target board holdings	.040	[.742]	.040	[.742]
	(.121)		(.120)	
Competing bids	.098	[.487]	.123	[.364]
	(.140)		(.135)	
Relative size of target	−.026	[.721]	.017	[.820]
	(.074)		(.073)	
Cash payment method	.039	[.449]	.028	[.582]
	(.052)		(.051)	
Stock payment method	.093	[.176]	.096	[.167]
	(.069)		(.069)	
Insider director holdings	−.017	[.832]	.001	[.987]
	(.080)		(.080)	
Outside director holdings	.004	[.399]	.004	[.396]
	(.005)		(.005)	
CFO pay relative to CEO pay	.243	[.458]	.258	[.436]
	(.327)		(.330)	
CFO tenure	−.008	[.552]	−.011	[.419]
	(.014)		(.014)	
CEO tenure	−.005	[.034]	−.003	[.171]
	(.002)		(.002)	
CEO age	−.011	[.017]	−.011	[.013]
	(.004)		(.004)	
CEO duality	.129	[.007]	.147	[.003]
	(.047)		(.049)	
CEO long-term pay focus	.040	[.741]	.036	[.756]
	(.121)		(.116)	

TABLE A2 (Continued)

	Model 1		Model 2	
	ß	*p*-value	*ß*	*p*-value
CEO short-term pay focus	.028	[.887]	.010	[.959]
	(.198)		(.191)	
CEO narcissism	.017	[.618]	.017	[.597]
	(.033)		(.033)	
Endogeneity treatment	−.025	[.446]	−.026	[.444]
	(.033)		(.034)	
Inverse Mills	−.258	[.232]	−.150	[.492]
	(.215)		(.218)	
CEO Machiavellianism			−.083	[.034]
			(.039)	
Constant	1.568	[.069]	1.408	[.100]
	(.856)		(.850)	
Observations	186		186	
F-statistic	1.53		1.61	

TABLE A3 Descriptive statistics and correlations for cost and performance models

	Variables	*M*	*SD*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*
1.	Production costs	0.66	0.22																
2.	Financing costs	0.02	0.01	−0.06															
3.	Non-bond interest rate	4.80	2.66	0.05	0.16														
4.	Industry-adjusted ROA	1.26	14.70	−0.08	−0.01	0.01													
5.	Firm size	9.55	1.06	0.15	−0.25	−0.14	0.02												
6.	Firm leverage	1.10	2.96	−0.01	0.30	0.04	−0.01	−0.06											
7.	Board independence	0.78	0.22	0.01	0.00	−0.09	−0.07	0.20	0.06										
8.	CFO pay relative to CEO	0.26	0.24	−0.06	−0.02	−0.13	−0.02	0.20	0.00	0.17									
9.	CFO tenure	2.28	2.42	−0.01	−0.03	−0.22	−0.01	0.14	0.02	0.22	0.53								
10.	CEO tenure	5.31	5.39	0.02	−0.13	−0.08	−0.02	0.05	−0.07	−0.05	0.13	0.35							
11.	CEO age	54.92	5.79	0.05	−0.11	−0.10	−0.04	0.20	−0.03	0.08	0.15	0.27	0.44						
12.	CEO duality	0.68	0.47	0.04	−0.10	−0.14	−0.01	0.12	−0.11	0.06	−0.03	0.10	0.21	0.25					
13.	CEO short-term pay focus	0.23	0.21	0.06	−0.05	0.01	0.02	0.03	−0.02	−0.08	−0.14	−0.32	−0.09	−0.13	−0.05				
14.	CEO long-term pay focus	0.16	0.27	−0.03	−0.04	0.14	0.02	−0.12	−0.03	−0.18	−0.49	−0.43	−0.12	−0.17	−0.09	0.06			
15.	CEO narcissism	4.27	0.87	0.16	−0.02	0.03	0.00	0.06	−0.05	0.12	−0.03	−0.02	−0.02	0.01	0.06	−0.02	0.03		
16.	Endogeneity treatment	4.03	0.15	0.09	−0.04	−0.12	−0.03	0.20	−0.05	−0.09	0.09	0.03	−0.12	−0.03	0.10	0.00	−0.03	0.05	
17.	CEO Machiavellianism	4.03	0.60	0.05	−0.03	−0.08	−0.02	0.10	−0.09	0.02	−0.01	0.02	−0.06	0.04	0.05	0.01	−0.02	0.23	0.22

Note: $n = 1{,}354$ CEO-year observations for cost and performance variables; $n = 1{,}055$ CEO year-observations for non-bond interest rate variable; correlations greater than |0.05| significant at $p < 0.05$.

TABLE A4 Effects of CEO Machiavellianism on firm costs (GEE)

	Model 3 Production costs		Model 4		Model 5 Financing costs		Model 6		Model 7 Non-bond interest rate		Model 8	
	ß	*p*-value	*ß*	*p*-value	*ß*	*p*-value	*ß*	*p*-value	*ß*	*p*-value	*ß*	*p*-value
Lagged DV	.945	[.000]	.945	[.000]	.861	[.000]	.879	[.000]	.816	[.000]	.824	[.000]
	(.017)		(.017)		(.019)		(.016)		(.041)		(.038)	
Industry-adjusted ROA	−.000	[.551]	−.000	[.534]	−.000	[.010]	−.000	[.002]	−.001	[.361]	−.001	[.270]
	(.000)		(.000)		(.000)		(.000)		(.001)		(.001)	
Firm size	.011	[.004]	.012	[.001]	−.001	[.000]	−.001	[.000]	.039	[.708]	.075	[.435]
	(.004)		(.004)		(.000)		(.000)		(.103)		(.096)	
Firm leverage	.000	[.843]	−.000	[.928]	.000	[.402]	.000	[.663]	−.006	[.570]	−.009	[.343]
	(.000)		(.000)		(.000)		(.000)		(.010)		(.010)	
Board independence	−.006	[.547]	−.005	[.571]	−.000	[.526]	−.000	[.616]	−.101	[.601]	−.083	[.661]
	(.010)		(.009)		(.001)		(.000)		(.194)		(.188)	
CFO pay relative to CEO	.000	[.974]	−.001	[.934]	−.002	[.087]	−.002	[.033]	−.128	[.597]	−.160	[.505]
	(.009)		(.009)		(.001)		(.001)		(.243)		(.240)	
CFO tenure	.001	[.424]	.001	[.306]	.000	[.080]	.000	[.012]	−.002	[.930]	−.001	[.978]
	(.001)		(.001)		(.000)		(.000)		(.026)		(.025)	
CEO tenure	.000	[.527]	.000	[.638]	−.000	[.574]	−.000	[.183]	−.003	[.761]	.000	[.980]
	(.000)		(.000)		(.000)		(.000)		(.009)		(.009)	
CEO age	−.001	[.011]	−.001	[.006]	.000	[.191]	.000	[.214]	−.005	[.689]	−.008	[.521]
	(.000)		(.000)		(.000)		(.000)		(.013)		(.012)	
CEO duality	.002	[.571]	.002	[.460]	−.000	[.106]	−.000	[.016]	.003	[.981]	.002	[.982]
	(.003)		(.003)		(.000)		(.000)		(.111)		(.106)	
CEO short-term pay	−.006	[.443]	−.006	[.471]	.001	[.104]	.001	[.027]	.060	[.824]	.040	[.882]
	(.008)		(.008)		(.001)		(.001)		(.271)		(.272)	

TABLE A4 (Continued)

	Model 3 Production costs		Model 4		Model 5 Financing costs		Model 6		Model 7 Non-bond interest rate		Model 8	
	ß	*p*-value	*ß*	*p*-value	*ß*	*p*-value	*ß*	*p*-value	*ß*	*p*-value	*ß*	*p*-value
CEO long-term pay	−.005	[.486]	−.005	[.419]	−.001	[.147]	−.001	[.103]	.465	[.135]	.453	[.140]
	(.007)		(.006)		(.001)		(.001)		(.311)		(.306)	
CEO narcissism	.001	[.705]	.001	[.395]	.000	[.995]	.000	[.594]	.011	[.791]	.035	[.414]
	(.001)		(.001)		(.000)		(.000)		(.041)		(.043)	
Endogeneity treatment	−.008	[.541]	−.004	[.716]	.001	[.542]	.001	[.273]	−.474	[.214]	−.395	[.270]
	(.012)		(.012)		(.001)		(.001)		(.381)		(.358)	
Inverse mills	−.013	[.010]	−.014	[.004]	.001	[.003]	.001	[.005]	.061	[.640]	.038	[.757]
	(.005)		(.005)		(.000)		(.000)		(.130)		(.123)	
CEO Machiavellianism			−.005	[.032]			−.001	[.000]			−.173	[.011]
			(.002)				(.000)				(.068)	
Constant	.018	[.730]	.020	[.700]	.009	[.045]	.007	[.062]	2.652	[.199]	2.766	[.166]
	(.053)		(.052)		(.004)		(.004)		(2.066)		(1.996)	
Observations	1,354		1,354		1,354		1,354		1,055		1,055	
Wald Chi^2	33,910		34,684		26,158		83,191		4,630		5,126	