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Once a Founder, Always a Founder? The Role of External Former Founders in Corporate Boards

Hendrik Terbeck[a], Verena Rieger[a], Niels Van Quaquebeke[b,c] and Andreas Engelen[a]

[a] *Heinrich-Heine-University Düsseldorf;* [b] *Kühne Logistics University;* [c] *University of Exeter*

ABSTRACT Public corporations often appoint external former founders to their boards in hope that they will encourage a (re-)focus on creating future new business. Seeking to investigate this common practice, we integrate upper echelons theory with imprinting theory, arguing that founding a company indeed represents a formative experience that will leave an imprint on founders and their subsequent board decision-making. Subsequent to their founding experience, however, some founders may be subjected to likewise formative but public corporate experiences, for instance, by taking their own business public or by assuming CEO positions in other corporations, that will lead to a decay of the original founding imprint and its effect. We find support for our reasoning across corporate boards in S&P1500 firms ranging from 2000 to 2012.

Keywords: board of directors, entrepreneurial experience, founding experience, imprinting, upper echelons theory

INTRODUCTION

The staffing of corporate boards is done with considerable care (Croci, 2018), the reasoning for which echoes in upper echelons theory, which argues that the make-up of corporate boards influences corporate decision-making and shifts in companies' strategic trajectories (Hambrick and Mason, 1984; Haynes and Hillman, 2010). One of the major strategic shifts that many companies seek to make is increasing the focus on future new business creation (Barringer and Bluedorn, 1999; Eshima and Anderson, 2017). Maybe unsurprisingly then, our analysis shows that 21 percent of the appointed board members in S&P 1500 firms between 2000 and 2012 had founded at least one other company

Address for reprints: Verena Rieger, Chair of Management, Heinrich-Heine-University Düsseldorf, Universitätsstraße 1, 40225 Düsseldorf, Germany (Verena.rieger@hhu.de).

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before joining a corporation's board. Against that background, what is more surprising is that research has not examined whether these external former founders on corporate boards actually push a focus on future new business creation.

Generally, the management literature indicates that corporate boards' monitoring and advice-giving affect corporations' strategic resource allocations and prioritization of financial objectives (Adams, 2017; Croci, 2018; Desender et al., 2013; Haynes and Hillman, 2010). However, whether appointing external former founders to public corporations' boards actually results in these corporations' pursuing strategic choices that reflect engagement in future new business creation remains in question. It is certain that former founders are uniquely experienced and embody the creation of new businesses (Fauchart and Gruber, 2011; Gartner, 1989; Ireland et al., 2003; Stevenson and Jarillo, 1990), but some have also been subjected to the grindstone of public corporate experience, whether after their own ventures were taken public or in subsequent CEO positions in other public corporations. For example, Gordon Moore co-founded Intel and built the business through its early days but also led Intel to its IPO in 1971 and through its transformation into a corporate world player. Other former founders have assumed CEO positions in other public corporations prior to joining a corporate board, such as Visa Health Corp's founder Ronald Williams, who served as CEO of Aetna Inc. before joining Boeing's board. Possibly, such subsequent corporate exposure can overwrite the formative script of founding experience (Dokko et al., 2009). Therefore, the question concerning whether former founders will exert a unique impact on boards or will have already adapted so much to a corporate logic as a result of subsequent corporate experience that their influence is indiscernible from that of other board members remains unanswered.

To theorize about the role of external former founders on public corporate boards, we first build on upper echelons theory (Hambrick, 2007; Hambrick and Mason, 1984) and its notion that board members' decisions are shaped by their past experience (e.g., Kroll et al., 2008; Whitler et al., 2018). As such, we argue for an association between the share of external former founders and the accentuation of a corporation's future new business creation. We test this argument from two complementary perspectives: by looking at corporations' increased discretionary investments in plant and equipment as a signal of forward-looking resource allocation (Fahlenbrach, 2009) and by considering firm value as a measure of future development and growth opportunities as assessed by the market (Loderer et al., 2017).

In an extension of upper echelons theorizing, we turn to imprinting theory to provide nuance in how founders' specific experiences shape their decision behaviour later. Imprinting theory suggests that brief, sensitive periods of transition can be highly formative and can persist in subsequent settings (Marquis and Tilcsik, 2013; Simsek et al., 2015). Against this background, we establish that, while founding experience qualifies as an imprint (Marquis and Tilcsik, 2013), subsequent formative corporate experiences, such as taking one's company public or assuming a CEO position in another public company, can overwrite the initial founding imprint, which we hypothesize would weaken the association between board members' founding experience and the corporations' focus on future new business creation. To test our hypotheses empirically, we generated a longitudinal multi-source data set of up to 34,266 individuals from 2,650 S&P 1500 firms between 2000 and 2012. Our sample

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matches input from BoardEx, Compustat, and ExecuComp to generate a unique and reliable representation of board characteristics, including details about corporate board members' founding and corporate career history.

Our study contributes to research in three major ways: First, we consider and integrate the upper echelons literature with the imprinting literature to develop and test a research model that investigates the widespread but under-researched impact of external former founders on public corporations' boards. In doing so, we accommodate the heterogeneity of corporate board members' founding experience and exposure to the corporate world, which allows us to determine how the imprints in a corporate board member's career can interact in determining his or her subsequent decision-making on the board. As such, we highlight the need to understand corporate board members' career experiences holistically instead of focusing on specific demographics or singular experiences in isolation, as has often been the case in the upper echelons literature (Finkelstein et al., 2009; Johnson et al., 2013).

Second, we contribute to the imprinting literature, as Marquis and Tilcsik (2013) called for 'exploring the interplay between leaders' critical experiences in the past and the context in which they operate in the present [to] provide new explanations for the success and failure of […] organizations' (p. 223). We heed this call by going significantly beyond the extant research that either examines the effects of founders' structural imprinting effects and their decisions on their organizations (Beckman and Burton, 2008; Burton and Beckman, 2007) or the effects an early career imprint may have on an individual's general career development (McEvily et al., 2012; Schoar and Zuo, 2017; Tilcsik, 2012). Instead, our study addresses Marquis and Tilcsik's (2013) call by theorizing about and providing empirical support for the notion the founding imprint may echo in later corporate environments, suggesting that the imprint is deep and can transfer to other work circumstances.

Third, we address Marquis and Tilcsik's (2013) call to examine the tensions between multiple imprints over time. While the extant imprinting literature has focused on imprints from early-career positions and experiences (Bourmault and Anteby, 2020; Higgins, 2005; McEvily et al., 2012), we scrutinize the effects of additional, possibly divergent imprints from subsequent positions, which the literature has not examined (Simsek et al., 2015). In investigating iterations of imprints, we provide theoretical arguments and an empirical examination of when founding imprints persist and when they may decay as a result of subsequent corporate imprints.

THEORETICAL BACKGROUND AND HYPOTHESES

External Former Founders on Public Corporate Boards and Strategic Outcomes

As a firm's highest decision-making body, the board of directors monitors the top management team's (TMT's) decisions and provides advice, especially on strategic resource allocations. As Stiles and Taylor (2001) summarize: 'how resources are to be allocated around the organization, is in the domain of the board' (p. 39). The board also approves

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how financial objectives are prioritized and advises the TMT on strategy by serving as a gatekeeper for the TMT's strategic proposals (Adams et al., 2005; Croci, 2018). Since boards are not involved in the day-to-day business but are more the 'guardians' of corporations' long-term perspectives, boards influence major strategic firm-level outcomes, a notion captured in upper echelons theory and substantiated empirically in many studies (Bommaraju et al., 2019; Haynes and Hillman, 2010; Johnson et al., 2013; Zahra et al., 2009).

According to the upper echelons theory, a company's strategic decision-making is rooted in the cognitive base and values of its upper echelon members (Hambrick and Mason, 1984). Their cognition is formed through the individual experiences, which then shape their strategic decisions through an information-filtering process that guides how upper echelon members perceive and interpret the decisions they face (Finkelstein et al., 2009). Specifically, it is a major tenet of upper echelons theory that strategic choices and key firm-level outcomes are driven by board members' experiences and by the frame these experiences provide for members' decision-making (Finkelstein et al., 2009; Hambrick, 2007).

Upper echelons research has investigated the effects of many kinds of experiences on TMTs and boards (Carpenter et al., 2004; Croci, 2018; Stiles and Taylor, 2001; Veltrop et al., 2017). However, the experience of founding a firm, defined as the responsibility for creating a future new business from scratch (Nelson, 2003), has not been examined as a key experience of board members or upper echelon members (Finkelstein et al., 2009; Johnson et al., 2013). That a founding experience, with its specific challenges, objectives, and stakeholders, may clash with the established corporate world and create an unusually stark challenge (Hoang and Gimeno, 2010) poses the question concerning whether founding experience can affect corporate decision-making when former founders are board members.

Founders start from scratch in creating a business (Roberts, 1991; Robinson, 1999), so future growth is at the core of the founding experience and is what makes a founding experience unique compared to other professional experiences (Fahlenbrach, 2009; Ireland et al., 2003). While new ventures and their growth potential might differ (e.g., because of a specific industry's growth potential), at their inception, all new ventures provide a setting for their founders in which investments of time and other resources are necessary to create a thriving new business (Ireland et al., 2003). The focus on future new business creation and growth is the dominant narrative.

Such a focus on the future, we argue, will be particularly reflected in resource allocations to new plant and equipment (Finkelstein and Hambrick, 1990; Haynes and Hillman, 2010; Jiang et al., 2021), which fall into the categories of 'major expenditures' and 'acquisition of major assets' and require the board's approval (American Bar Association Committee on Corporate Laws, 2007, p. 11). As Woolridge and Snow (1990) emphasize, for all types of public corporations, pronounced plant and equipment upgrades indicate at the strategic level that the firm is engaging in generating future values, opportunities, and competitiveness (Liao et al., 2016). Because such resource allocations resonate well with the situations former founders have experienced, we argue that the presence of former founders on a public corporation's board will result in an increase of such strategic

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resource allocations to plants and equipment as discretionary expenditures to 'embrace an expanded investment opportunity set' (Fahlenbrach, 2009, p. 463).

In addition to strategic resource allocations, corporate boards influence financial targets and priorities (Bommaraju et al., 2019; Oehmichen et al., 2017). We expect that firm value is the strategic outcome variable that former founders on the board will influence positively. In the context of our study, firm value refers to a company's current market capitalization and liabilities (i.e., market value) in relation to its actual assets (i.e., book value) (Loderer et al., 2017). As such, a firm's value increases when its market value rises disproportionately to its book value as a result of investors' growth opportunity projections (Li and Chi, 2013). Because new ventures in their early stages have little value (Timmons, 1994), founders focus on the future value of their businesses as the mission-critical yardstick. Founders start from scratch, and their businesses are often irrelevant in the marketplace, so they require growth to become and later remain relevant, competitive, and visible (Kazanjian, 1988). Such experiences are likely to make former founders on corporations' boards favour decisions and activities that take the same perspective: facilitating growth and future development opportunities that translate into increased firm value (Loderer et al., 2017).

This long-term, future orientation in terms of a focus on resource allocations to new plant and equipment and firm value collides with the corporate world's mindset and priorities more often than not (Stevenson and Jarillo, 1990). That is, leading a corporate is closely associated with managing existing businesses and creating short-term earnings (Christensen and van Bever, 2014; Johnson and Suskewicz, 2020; Saboo et al., 2016). In this vein, Graham et al. (2005) find that more than 80 per cent of companies decrease discretionary expenses to meet short-term capital market expectations, giving up growth opportunities and long-term potential for short-term advantages (Hendricks et al., 2019), which is the opposite of what the founding experience triggers in former founders. Based on these upper echelon theory-based considerations, it follows that corporate boards with a high share of former founders accentuate future new business creation more than corporate boards without former founders do. Therefore:

Hypothesis 1 The share of former external founders on a public corporation's board is positively related to the corporation's (a) strategic resource allocations to future new business creation and (b) firm value.

Additional Experiences of External Former Founders on Public Corporate Boards

To accommodate that many external former founders are substantially exposed to the corporate world after their founding experiences and before joining corporate boards, we now investigate whether the founding experience will be affected by subsequent experiences. To put the founding experience in the broader context of a corporate board member's career prior to joining the focal board, we integrate insights from imprinting theory into our investigation. Building on Stinchcombe's (1965) seminal work, Marquis and Tilcsik (2013) defined imprinting as 'a process whereby, during a brief period of susceptibility, a focal entity develops characteristics that reflect prominent features of the

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environment, and these characteristics continue to persist despite significant environmental changes in subsequent periods' (p. 199), adding that such periods of susceptibility occur in transition periods that are marked by high levels of uncertainty.

Founding a business qualifies as such a sensitive period because founders undergo a transition from being employees or students to being self-employed founders. As such, extreme changes like those such an uncertain transition entails make founders more sensitive to learning and external influences (Hoang and Gimeno, 2010). Founding one's own business, especially in the first stages, is unlike most other steps in a career because the exposure to novelty, ambiguity, diversity, and volatility is so profound (Fisher et al., 2020; Morris et al., 2012). Founding a business is a roller-coaster of despair and jubilation, uncertainty, and anxiety about the chances of survival coupled with high aspirations and hopes (Mathias et al., 2015; Morris et al., 2012).

Research has shown that the volatile environment of the new-venture context triggers imprinting mechanisms that have long-lasting effects on the venture's strategy, structure, and performance (e.g., Hsu and Lim, 2014; Johnson, 2007; Leung et al., 2013; Mathias et al., 2015; Mathias and Williams, 2018). While these studies have found the imprinting from a new venture's early stages has subsequent effects on it, we extend their reasoning by suggesting that the founding experience causes deep imprinting (Collewaert et al., 2016; Snihur and Zott, 2020) that builds a strong and persistent frame of reference about what objectives and stakeholders are relevant to the business's success (Fauchart and Gruber, 2011). In the absence of past or current businesses or assets (e.g., patents, customer relationships, contracts) during this sensitive, formative transition period, new ventures' founders create future value by investing time and other resources in building their businesses. Thus, founders are imprinted with what it means to lead and build a business. True imprints consolidate in heuristics and can guide decision-making for a person's entire lifetime (Alvarez and Busenitz, 2001; Fern et al., 2012). Building on Busenitz and Barney (1997), who showed that founders are particularly extensive users of heuristics, we argue that the founding imprint can extend even to later positions with public corporations. In other words, such heuristics steer board members' decision-making that takes place in the upper echelons theory's 'black box' by mediating between their experience and their strategic choices (Hambrick, 2007).

As Marquis and Tilcsik (2013) pointed out, existing imprinting research has assumed early imprints can persist (e.g., McEvily et al., 2012), but the question concerning whether this persistence continues when the former founder is exposed to such divergent imprints as those that come from corporate experiences is unanswered. Marquis and Qiao (2020) observed that '(w)e know little about how imprints may change over time' (p. 2), but related research on socialized values has informed us that, despite the persistence of imprints (Tilcsik, 2012), values and mindsets gained through formative experiences and 'socialization' in adulthood can decay in response to new formative imprints (Marquis and Qiao, 2020; Parks and Guay, 2009). In this vein, Dokko et al. (2009) pointed out that new imprints might lead to challenging existing cognitive models and replacing them 'with scripts and schema that are more congruent with the new environment' (p. 55). Since founding imprints and imprints from the corporate world concern two largely divergent spheres (Barringer and Bluedorn, 1999), the holder of a founding imprint is likely to have values and mindsets that are not in line with imprints from exposure to the

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corporate world, triggering a rearrangement of his or her values and mindset (Marquis and Qiao, 2020). Two kinds of corporate imprints are particularly salient in this context: those from taking a venture public, which requires more 'corporate' thinking and results in exposure to pressures from stakeholders and shareholders from the corporate world, and those from assuming CEO positions in (other) public corporations after their founding experiences.

Development of the new venture into a public firm. Leading a new venture as it transitions into a public company (Kazanjian, 1988) represents a major transition for the founder, as it brings with it new periods of uncertainty and susceptibility. Both Gordon Moore and Scott Cook founded ventures that they led to IPOs in 1971 (Intel) and 1998 (Intuit), respectively. While founders of new ventures experience a variety of events over time, going public stands out as a potential imprinting period since stakeholders, shareholders, public attention, and performance metrics change within a relatively short period (Certo, 2003; Lowry and Schwert, 2004; Xiong and Bharadwaj, 2011). Marquis and Tilcsik (2013) list going public as a major developmental stage of imprinting for those who lead the process, that is, the founders.

The experience of guiding a company through an IPO contains many of the criteria that characterize an imprint, as it is a brief, sensitive period of transition (Certo, 2003) that involves significant uncertainty as external stakeholders evaluate and scrutinize the company even more than previous funding rounds required (Hanley and Hoberg, 2010). In particular, financial investors and analysts put the company and its leaders under pressure to achieve a successful IPO, for which most of the responsibility lies in the hands of the founder(s) when they still are on board (Gao and Jain, 2011). The IPO also imposes a rigorous corporate governance structure on the new venture, thus reducing the founder's latitude (Hendricks et al., 2019; Luo, 2008). Therefore, we argue that managing founders in these situations are exposed to 'cognitive unfreezing' and new imprinting (Marquis and Tilcsik, 2013), causing their subsequent mindsets and values to reflect the stamp of this exposure to the corporate world.

As the founder undergoes this 'cognitive unfreezing', he or she becomes highly vulnerable to new mindsets (Marquis and Tilcsik, 2013); in particular, founders are exposed to their new ventures' entry into the world of public corporations, which are characterized by publication requirements and pressure from investors with short-term objectives (Hendricks et al., 2019; Saboo et al., 2016). The focus is now less on developing a business from scratch and more on presenting a profitable business that can be a legitimate player in the corporate world (Jain et al., 2008). The necessity of becoming a profitable player is already salient in the period leading to the IPO, making it evident to the founder that the mindset and values associated with founding a business are not congruent with the new requirements. Firms were once required to have demonstrated several years – or at least quarters – of profitability to become successful candidates for an IPO (Jain et al., 2008), but recent developments in the capital markets have reduced the need for such long records of profitability. Even so, research has indicated that pre-IPO profitability – or at least rapid short-term profitability after an IPO – is a major success factor (Saboo et al., 2016), a notion to which the (in this period) vulnerable founder should be open,

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causing his or her subsequent behaviour to bear the stamp of this exposure to the capital market.

In line with Marquis and Tilcsik's (2013) understanding of an imprint, we expect strong persistence of the founding imprint when the founder has no such corporate exposure, as when a new venture does not develop into a public company, its founder does not experience the sensitive period of transition in which the founding imprint becomes incongruent with the new conditions. Even though other challenges will emerge, other development paths do not entail the same type of exposure to corporate thinking. In particular, there is no brief, sensitive period that matches the unique and intense IPO experience.

It follows that former founders with IPO experience have been exposed to a corporate world imprint that will lead to the initial founding imprint's decay but that this decay does not apply to former founders who have no such IPO experience. Therefore, corporate boards with a large share of 'IPO-imprinted' former founders make decisions that are less future-oriented than do corporate boards that have a large share of 'undiluted' former founders – that is, former founders with no IPO imprint. Therefore,

Hypothesis 2 The relationships between the share of external former founders on a public corporation's board and (a) strategic resource allocations to future new business creation and (b) firm value are stronger for former founders with no IPO experience than they are for former founders with IPO experience in their own ventures.

CEO experience in public corporations. Former founders differ in terms of the experience they collect in serving as CEOs of public corporations (other than their own ventures) between founding their new ventures and joining a board. For example, Scott Kriens founded Stratacom in 1986 and subsequently assumed CEO positions (with Juniper Networks from 1996 to 2008 and Buzzsaw.com from 1999 to 2001) before he joined Verisign's corporate board in 2001 and Equinix's board in 2000.

We argue that the transition from founder to corporate CEO also fulfils many of the criteria for creating an imprint (Marquis and Tilcsik, 2013). The vast literature on CEO succession and its effects on the corporation and the CEO has indicated that CEO succession is a critical period for the organization, but also for the new CEO as an individual. Berns and Klarner (2017) observed that financial analysts closely monitor the new CEO's performance in public corporations, as do such other stakeholders as employees, customers, and suppliers. Especially powerful stakeholders' acceptance of the new CEO tends to be only tentative before the new CEO starts to meet expectations (Shen and Cannella, 2002; Zhang and Rajagopalan, 2010). Fast improvements in firm performance are often expected during the first 100 days of a CEO's tenure. Busenbark et al. (2016) added that this attention from stakeholders 'may be the most noticeable way in which CEOs are unique as organizational participants' (p. 256). Based on practical observations, Porter et al. (2004) observed that 'nothing in a leader's background […] prepares [the leader] to be a CEO' (p. 1) and that newly appointed CEOs, especially in big companies, will face several big surprises, particularly during the first 100 days (Karaevli and Zajac, 2012). It follows that taking over a CEO position, especially in public corporations, exposes the

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newly appointed CEO to a temporally limited, remarkable personal transition phase of uncertainty and new role requirements, suggesting 'cognitive unfreezing' and, thus, imprinting.

As newly appointed CEOs must be receptive to cues from the public corporation's environment in this formative transition phase (Shen, 2003), they start to adopt the mindset and values of the corporate world as a new frame of reference, realizing that the practices, mindsets, and values they learned as founder may not work in their new jobs. Particularly incongruent with the CEO's founding imprint is the pressure to generate short-term financial results for an existing business (Hendricks et al., 2019), so the new arrival at the helm of a public corporation can show his or her suitability for the job (Berns and Klarner, 2017).

We expect that external former founders on boards who have no such experience as CEOs in public corporations have not been exposed to this type of intense transition. Former founders may consult players in the corporate world, but they do not experience such a brief, intense phase of transition into a new role that, on top of everything else, comes with a spotlight and high expectations (Berns and Klarner, 2017). Even other executive jobs at corporations are unlikely to have the same 'imprinting power' since these jobs do not imply the unique transition into being in the first row of responsibility and media coverage (Busenbark et al., 2016).

Thus, external former founders who subsequently assumed CEO positions in public corporations are exposed to imprinting by the corporate world that we expect to decay their initial founding imprint, while such is not the case for former founders who did not assume such CEO positions. It follows that corporate boards with a large share of former founders without subsequent CEO experience will inject more future-oriented decision-making into the corporation than will boards with large shares of former founders that have such experience as CEOs:

Hypothesis 3 The relationships between the share of external former founders on boards of public corporations and (a) strategic resource allocations to future new business creation and (b) firm value are stronger for former founders with no experience as CEOs of other corporations than they are for former founders with who have experience as CEOs of other corporations.

METHODS

Sample and Data Sources

We test our hypotheses using financial data of large US corporations and biographic information about their board members. We rely on the Compustat's North American Index Constituents database to generate a list of 2,868 S&P 1500 firms that belonged to the S&P LargeCap 500, the S&P MidCap 400, or the S&P SmallCap 600 indices for at least one year during the 2000–12 period. We limit the time frame to these years because they are years of both economic decline and economic advancement. Also, the preceding years produced sufficient numbers of former founders that were of a suitable age to be appointed to corporate boards.

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To obtain information about corporate board members, we used the BoardEx database (e.g., Andrus et al., 2019). BoardEx provides manually verified biographic data of directors that is free of self-reporting bias and that covers the education and employment of these board members. Using these data enables us to capture even founding experience that dates far into the past and that was only a brief episode in a board member's career.

We took four steps to identify the upper echelon members (boards for our main variables, TMT members for controls) of the firms in our sample. First, we manually matched the 2,868 S&P 1500 companies from Compustat with their equivalents in the BoardEx universe. Then we identified all individuals in the BoardEx universe who worked for these 2,868 firms during the 2000–12 period. BoardEx is primarily a collection of the biographic data of 138,401 individuals, including their educational and employment history going back to 1926. Hence, we list all individuals related to our company sample by filtering for both our 2,868 companies and for the 13 years of our time frame in these individuals' CV data. We identified 34,266 unique individuals on BoardEx who had worked for the sample of S&P 1500 firms for at least one year in our sample period. We identified 27,830 founders among the 138,401 individuals on BoardEx, who founded a total of 38,082 firms (an average of 1.37 firms per founder). Next, we clustered these individuals into three categories – members of boards of directors, TMT members, and remaining staff – for every firm in our sample and for each year in our period of interest. We relied on role and job title data as well as (executive) director status. Our definition of a board of directors member includes both executive and non-executive directors following recent literature (Adams, 2017; Croci, 2018), where the latter are outsiders who are more independent and often sit on multiple boards simultaneously. In this step, we removed 218 firms for which we could not identify the upper echelon members. Finally, we aggregated the individual data to firm-year-level data. Our final longitudinal sample consists of 2,650 unique firms and 28,069 firm-year observations. As BoardEx's corporate-board-related data is more comprehensive than its TMT data, we complemented the TMT composition information from BoardEx with ExecuComp to fill in missing individual data.

Measures

Independent variables. Our main independent variable, *Share of External Founders on the Board*, is a ratio of the number of former founders in the corporate board relative to the number of members of the corporate board. We took only former founders of companies other than the focal corporation into account (i.e., only 'external founders'). Based on the extensive biographic information on the corporate board members that BoardEx provides (particularly BoardEx's 'role' and 'company type' variables), we defined a founder as a person who founded or co-founded a firm (Nelson, 2003).

To test H2 and H3, we compared the share of former founders on boards who have experience with an IPO with the share of those who do not (H2) and the share of former founders on boards who have CEO experience in a public corporation with the share of those who do not (H3). Therefore, in line with extant research that has investigated various groups in corporate boards (e.g., Boeker and Wiltbank, 2005), we build 'sub-shares'

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of the founder share variable.[[1]] Hence, all sub-shares are measured as the number of former founders on the board who have experience with an IPO versus those who do not and as the number of former founders on the board who have CEO experience in a public corporation versus those who do not, divided by the total number of board members, which is consistent with our measurement of the main independent variable. Specifically, we defined the *Share of External Founders on the Board with IPO* as the ratio of the number of former founders with IPO experience with their own ventures relative to the number of members of the corporate board and defined the *Share of External Founders on the Board without IPO* as the ratio of the number of former founders without IPO experience relative to the total number of members. We used BoardEx's 'company type' variable to obtain the firms' public or private status and cross-checked 100 of the companies BoardEx marked as public with Compustat's Index Constituents data and web research and found a 100 percent match between the data sources.

The *Share of External Founders on the Board with CEO Experience* is computed as the ratio of the number of former founders with CEO experience in public corporations (other than their own venture or the focal corporate) relative to the total number of members. Again, we used BoardEx's 'role' and 'company type' variables. The *Share of External Founders on the Board without CEO Experience* is the ratio of founders without such CEO experience relative to the number of all board members.

Dependent variables. To measure resource allocations to the creation of future new business opportunities, we adopted Finkelstein and Hambrick's (1990) measure and calculated *Plant & Equipment Upgrades* as the ratio of new plant and equipment relative to gross plant and equipment. (See also Haynes and Hillman (2010) and Zhang and Rajagopalan (2010).)

To measure firm value, we use *Tobin's Q*, which is a forward-looking measure that incorporates future growth opportunities derived from the stock market, so it reflects the capital market's valuation of a firm (Loderer et al., 2017). Tobin's Q is calculated as the firm's market value divided by its book value (Tobin, 1969). This ratio calculates the premium that the capital market would pay above the current replacement costs of a firm's assets, so Q values higher than 1.00 express the firm's incremental value in the form of anticipated future abnormal returns. Tobin's Q can also be used across industries, as there are no issues related to accounting conventions (Chakravarthy, 1986). Following Fracassi (2017), we operationalized Tobin's Q as:

$$Q = \frac{\text{total assets} + (\text{common shares outstanding} * \text{price at end of fiscal year}) - \text{stockholders}' \text{ equity}}{\text{total assets}}$$

Control variables. Our study controls for factors that can influence the board's dynamics and decision-making on the industry level, the firm level, and the board level. At the industry level, we controlled for *Industry Performance*, which is measured as the median ROA of firms with the same two-digit SIC code. As in many governance studies, we do not include SIC code dummies as a control because our fixed effects model would omit such a variable without variance. We calculated *Competitive Intensity* using the Herfindahl

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index of revenue market shares on a two-digit SIC code level (i.e., the sum of squared market shares), so a value of 1 indicates a perfect monopoly. We subtracted the Herfindahl index from 1 so higher competitive intensity corresponds to a higher value.

At the firm level, we included *Firm Size* as the logged value of total assets. We also included *Tobin's Q* and *Return on Assets (ROA)* in the models with *Plant & Equipment Upgrades* as the dependent variable to control for various financial constraints that may influence firm-level investment in new businesses (Liang et al., 2018). In addition, we controlled for *Share of External Founders in TMT*, which might both influence the presence of founders in boards and firm outcomes.

At the board level, we included *Board Size* as the sum of the number of executive and non-executive board directors. To control for board independence, we calculated the *Share of Outsiders on the Board*, measured as the proportion of non-executive directors on the board (following the definition of outsiders as non-managerial board members by Dalton et al. (1998)). The extant literature has shown that the presence of a firm's founder on the board or the TMT can affect strategy and compensation (Li and Srinivasan, 2011). Hendricks et al. (2019) found that upper echelon members have less influence on corporate performance when firms are led by their initial founders, which emphasizes the impact that a focal firm's founder(s) can have on its strategy, even when the start-up has grown into a large public firm. For this reason, we included *Share of Focal Firm Founders on the Board* in our list of controls, calculated as the number of the focal firm's founders that are on the board divided by the number of board members. We also proxied for CEO power by controlling for *Duality*, which is an indicator variable for CEOs who are also chairpersons of their boards. We measured *Average Board Member Tenure* as the average tenure of the board members at the firm to account for firm-specific experience, and *Average Board Member Age* as the average age of board members to capture their general experience and career expectations. To capture formal education in the corporate board, we employed the *Share of Board Members with MBA*, which captures the percentage of MBA holders on the board.

Finally, we included year dummies to account for any external shocks that influenced all firms.

Analysis. We tested our hypotheses empirically using longitudinal panel data, that is, repeated observations on the same set of cross-sectional items (Hsiao, 2014). Supported by the Hausman test, we applied fixed effects regressions to all models to control for the unobserved firm-level heterogeneity (Wooldridge, 2013) and used robust standard errors clustered on the firm level. We excluded outlier firms with firm sizes (total assets) in the 1st and 99th percentiles of observations to mitigate the risk of these extreme values' improperly increasing significance levels (following recommendations by, for example, Chakravarty and Grewal (2016)). Consistent with existing research (Daily and Johnson, 1997), we ran all analyses on dependent variables measured in the same year as the independent variables and controls (t) and the following year (t + 1). While market reactions (i.e., Tobin's Q) can likely be observed the same year in which founders join the board, changes on the board level might need some time to be reflected in firm-level investment decisions (i.e., plant and equipment upgrades).

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RESULTS

Descriptive Analyses

Table I presents the descriptive statistics of and the correlations among the independent variables and moderators. The average size of these firms' corporate boards is 9.39 members, among whom an average of 1.97 board members are external former founders. Thus, 21 per cent of corporate board members have founded at least one company before joining the board of another company. Founders of corporations on whose boards they serve make up only 4 per cent of board members, a number that seems reasonable given the high age of many corporations, but it also makes clear that external founders are much more common on corporate boards than internal founders are. Fourteen per cent of these external former founders accomplished an IPO with their own ventures, and 29 per cent assumed CEO positions in public corporations between their founding experience and joining another corporation's board, both of which indicates the heterogeneity of external former founders' subsequent exposures to the corporate world.

Results of Hypotheses Testing

Tables II and III present the findings of our regression analyses, both with dependent variables measured in the same year and in t + 1. We first focus on contemporaneous effects using regressions with dependent variables that are measured in the same year as the independent variables and controls. We also discuss findings with regard to lagged effects when the dependent variable is measured at t + 1 at the end of this section (Daily and Johnson, 1997). The findings indicate that the *Share of External Founders on Corporate Boards* is significantly and positively related to *Plant & Equipment Upgrades* (0.05, $p < 0.001$; Table II) and to *Firm Value* (0.27, $p = 0.044$; Table III), lending support to both H1a and H1b.

In practical terms, the coefficient of 0.05 that links the *Share of External Founders on Boards* with *Plant & Equipment Upgrades* means that, when this independent variable grows from 0 to 1, the dependent variable increases by 0.05, which is sufficient to move it from the 40th to the 50th percentile in terms of *Plant & Equipment Upgrades*. Assuming that a firm reports gross plant & equipment of 420 million US$, the median value in our sample, and holding this value constant, an increase of 0.05 from *Plant & Equipment Upgrades* – from 0.50 to 0.55 – corresponds to an increase in net plant & equipment from 210 million US$ to 231 million US$. The coefficient of 0.27 that links our *Share of External Founders on Boards* with *Tobin's Q* means that, when the independent variable grows from 0 to 1, the *Tobin's Q* increases by 0.27, an increase that is, for example, sufficient for it to grow from the 30th to the 50th percentile in terms of firm value. Since a *Tobin's Q* below 1 indicates undervaluation, while a *Tobin's Q* above 1 indicates overvaluation, such an increase can carry a firm from undervaluation into overvaluation. Assuming that a firm reports total assets of 1,600 million US$, the median value in our sample, and stockholders' equity of 570 million US$, also the median value in our sample, and holding these values constant, an increase of 0.27 from a *Tobin's Q* of 0.90 to 1.17 corresponds to an increase in the market value of equity from 410 million US$ to 842 million US$.

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Table I. Descriptives and correlations

	Mean	*SD*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*
1. Tobin's Q	1.98	1.38																		
2. Plant & Equipment Upgrades	0.51	0.17	−0.03																	
3. Share of External Founders on the Board	0.21	0.16	0.10	−0.01																
4. Share of External Founders on the Board with IPO	0.03	0.06	0.13	0.00	0.39															
5. Share of External Founders on the Board without IPO	0.18	0.15	0.06	0.00	0.92	0.00														
6. Share of External Founders on the Board with CEO Experience	0.06	0.09	0.07	−0.02	0.60	0.30	0.52													
7. Share of External Founders on the Board without CEO Experience	0.15	0.13	0.08	0.01	0.82	0.28	0.77	0.02												
8. Firm Size	7.19	0.72	−0.22	0.23	−0.15	−0.09	−0.12	−0.07	−0.14											
9. Board Size	9.39	3.13	−0.12	0.05	−0.07	−0.07	−0.05	−0.10	−0.02	0.54										
10. Share of Focal Firm Founders on the Board	0.04	0.09	0.18	0.04	0.02	0.07	−0.01	−0.05	0.06	−0.24	−0.27									
11. Share of Outsiders on the Board	0.79	0.16	−0.06	−0.09	0.07	0.00	0.08	−0.03	0.11	0.16	0.47	−0.29								
12. Duality Flag	0.63	0.48	−0.01	0.07	−0.03	−0.03	−0.03	−0.03	−0.02	0.11	0.08	0.02	0.02							
13. Average Board Member Tenure	8.77	4.15	−0.04	−0.07	−0.12	−0.04	−0.11	−0.12	−0.07	−0.02	−0.01	0.18	−0.04	0.07						
14. Average Board Member Age	59.50	4.73	−0.15	−0.06	−0.20	−0.11	−0.17	−0.13	−0.15	0.24	0.24	−0.17	0.27	0.05	0.46					
15. Share of Board Members with MBA	0.31	0.19	0.02	−0.09	0.06	0.02	0.05	0.04	0.04	0.05	0.05	−0.09	0.13	−0.04	−0.19	−0.16				
16. Share of External Founders in TMT	0.08	0.23	0.04	0.00	0.38	0.15	0.35	0.47	0.13	−0.09	−0.06	−0.03	−0.03	0.00	−0.09	−0.10	−0.02			
17. Industry Performance	0.05	0.03	0.17	−0.05	0.00	0.02	−0.01	0.01	−0.01	−0.12	−0.04	0.03	0.00	0.00	0.04	0.02	0.02	−0.01		
18. Competitive Intensity	0.97	0.03	0.02	0.04	0.05	0.03	0.04	0.03	0.04	0.12	0.14	−0.02	0.14	0.01	−0.05	0.00	0.01	0.02	−0.02	
19. ROA	−0.01	0.19	0.15	0.06	−0.06	−0.04	−0.04	−0.06	−0.03	0.08	0.03	−0.02	0.00	0.01	0.06	0.06	−0.02	−0.06	0.04	−0.02

n = 21,189.

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Table II. Fixed-effects regression analysis with plant & equipment upgrades as the dependent variable

	Dependent variable: Plant & equipment upgrades											
	Model 1		*Model 2*		*Model 3*		*Model 4*		*Model 5*		*Model 6*	
	t		*t + 1*		*t*		*t + 1*		*t*		*t + 1*	
	Coefficient (Robust SE)	*p-value*	*Coefficient (Robust SE)*	*p-value*	*Coefficient (Robust SE)*	*p-value*	*Coefficient (Robust SE)*	*p-value*	*Coefficient (Robust SE)*	*p-value*	*Coefficient (Robust SE)*	*p-value*
Share of External Founders on the Board	**0.05 (0.01)**	**0.000**	**0.04 (0.01)**	**0.010**								
Share of External Founders on the Board with IPO					**0.10 (0.03)**	**0.000**	**0.06 (0.03)**	**0.023**				
Share of External Founders on the Board without IPO					**0.04 (0.01)**	**0.003**	**0.03 (0.01)**	**0.037**				
Share of External Founders on the Board with CEO Experience									0.02 (0.02)	0.320	0.01 (0.02)	0.484
Share of External Founders on the Board without CEO Experience									**0.07 (0.02)**	**0.000**	**0.05 (0.02)**	**0.004**
Firm Size	**0.19 (0.01)**	**0.000**	**0.14 (0.01)**	**0.000**	**0.19 (0.01)**	**0.000**	**0.14 (0.01)**	**0.000**	**0.19 (0.01)**	**0.000**	**0.15 (0.01)**	**0.000**
Board Size	−0.00 (0.00)	0.873	−0.00 (0.00)	0.191	−0.00 (0.00)	0.892	−0.00 (0.00)	0.196	−0.00 (0.00)	0.820	−0.00 (0.00)	0.171
Share of Focal Firm Founders on the Board	**0.17 (0.03)**	**0.000**	**0.13 (0.02)**	**0.000**	**0.17 (0.03)**	**0.000**	**0.13 (0.02)**	**0.000**	**0.17 (0.03)**	**0.000**	**0.13 (0.02)**	**0.000**
Share of Outsiders on the Board	−0.02 (0.01)	0.053	−0.02 (0.01)	0.061	−0.02 (0.01)	0.058	−0.02 (0.01)	0.064	**−0.03 (0.01)**	**0.026**	**−0.02 (0.01)**	**0.036**
Duality	**0.01 (0.00)**	**0.009**	0.01 (0.00)	0.057	**0.01 (0.00)**	**0.009**	0.01 (0.00)	0.054	**0.01 (0.00)**	**0.011**	0.01 (0.00)	0.062
Average Board Member Tenure	**−0.00 (0.00)**	**0.013**	−0.00 (0.00)	0.075	**−0.00 (0.00)**	**0.012**	−0.00 (0.00)	0.074	**−0.00 (0.00)**	**0.011**	−0.00 (0.00)	0.067
Average Board Member Age	**−0.00 (0.00)**	**0.001**	−0.00 (0.00)	0.052	**−0.00 (0.00)**	**0.001**	−0.00 (0.00)	0.053	**−0.00 (0.00)**	**0.002**	−0.00 (0.00)	0.057
Share of Board Members with MBA	0.00 (0.01)	0.798	0.00 (0.01)	0.976	0.00 (0.01)	0.778	0.00 (0.01)	0.962	0.00 (0.01)	0.757	0.00 (0.01)	0.943
Share of External Founders in TMT	−0.01 (0.01)	0.578	−0.01 (0.01)	0.496	−0.01 (0.01)	0.575	−0.01 (0.01)	0.497	−0.00 (0.01)	0.834	−0.00 (0.01)	0.645
Tobin's Q	**0.00 (0.00)**	**0.001**	**0.01 (0.00)**	**0.000**	**0.00 (0.00)**	**0.001**	**0.01 (0.00)**	**0.000**	**0.00 (0.00)**	**0.001**	**0.01 (0.00)**	**0.000**
ROA	−0.00 (0.01)	0.933	**0.02 (0.01)**	**0.000**	−0.00 (0.01)	0.953	**0.02 (0.01)**	**0.000**	−0.00 (0.01)	0.946	**0.02 (0.01)**	**0.000**
Industry Performance	0.03 (0.04)	0.526	**0.14 (0.05)**	**0.005**	0.03 (0.04)	0.497	**0.15 (0.05)**	**0.005**	0.03 (0.04)	0.519	**0.14 (0.05)**	**0.005**
Competitive Intensity	0.03 (0.06)	0.632	0.04 (0.06)	0.481	0.03 (0.06)	0.616	0.04 (0.06)	0.474	0.03 (0.06)	0.638	0.04 (0.06)	0.486
Year fixed-effects	Included		Included		Included		Included		Included		Included	
R-squared (within)	0.26		0.19		0.26		0.19		0.26		0.19	
Observations	21,189		19,105		21,189		19,105		21,189		19,105	
Number of Firms	2,207		2,145		2,207		2,145		2,207		2,145	

Firm fixed effects are included. Robust standard errors are clustered on firm-level. Coefficients that are significant with at least $p < 0.05$ are printed in bold.

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Table III. Fixed-effects regression analysis with Tobin's q as the dependent variable

	Dependent variable: Tobin's Q											
	Model 7		*Model 8*		*Model 9*		*Model 10*		*Model 11*		*Model 12*	
	t		*t + 1*		*t*		*t + 1*		*t*		*t + 1*	
	Coefficient (Robust SE)	*p-value*	*Coefficient (Robust SE)*	*p-value*	*Coefficient (Robust SE)*	*p-value*	*Coefficient (Robust SE)*	*p-value*	*Coefficient (Robust SE)*	*p-value*	*Coefficient (Robust SE)*	*p-value*
Share of External Founders on the Board	**0.27 (0.14)**	**0.044**	0.18 (0.11)	0.091								
Share of External Founders on the Board with IPO					0.03 (0.33)	0.931	0.11 (0.28)	0.699				
Share of External Founders on the Board without IPO					**0.32 (0.14)**	**0.022**	0.20 (0.11)	0.072				
Share of External Founders on the Board with CEO Experience									0.08 (0.18)	0.648	0.08 (0.14)	0.554
Share of External Founders on the Board without CEO Experience									**0.39 (0.17)**	**0.022**	0.25 (0.14)	0.075
Firm Size	**−0.93 (0.08)**	**0.000**	**−1.09 (0.07)**	**0.000**	**−0.93 (0.08)**	**0.000**	**−1.09 (0.07)**	**0.000**	**−0.93 (0.08)**	**0.000**	**−1.09 (0.07)**	**0.000**
Board Size	**−0.02 (0.00)**	**0.000**	−0.00 (0.00)	0.304	**−0.02 (0.00)**	**0.000**	−0.00 (0.00)	0.302	**−0.02 (0.00)**	**0.000**	−0.00 (0.00)	0.283
Share of Focal Firm Founders on the Board	**0.96 (0.37)**	**0.010**	0.18 (0.22)	0.431	**0.95 (0.37)**	**0.010**	0.18 (0.22)	0.434	**0.95 (0.37)**	**0.010**	0.17 (0.22)	0.436
Share of Outsiders on the Board	0.14 (0.10)	0.129	0.06 (0.07)	0.340	0.14 (0.10)	0.132	0.06 (0.07)	0.342	0.12 (0.10)	0.209	0.05 (0.07)	0.462
Duality	0.05 (0.03)	0.072	0.03 (0.03)	0.266	0.05 (0.03)	0.074	0.03 (0.03)	0.266	0.05 (0.03)	0.077	0.03 (0.03)	0.277
Average Board Member Tenure	−0.00 (0.01)	0.933	**0.01 (0.00)**	**0.045**	−0.00 (0.01)	0.950	**0.01 (0.00)**	**0.044**	−0.00 (0.01)	0.899	**0.01 (0.00)**	**0.048**
Average Board Member Age	−0.01 (0.01)	0.192	**−0.01 (0.00)**	**0.037**	−0.01 (0.01)	0.186	**−0.01 (0.00)**	**0.036**	−0.01 (0.01)	0.206	**−0.01 (0.00)**	**0.040**
Share of Board Members with MBA	−0.05 (0.09)	0.597	−0.08 (0.08)	0.302	−0.05 (0.09)	0.588	−0.08 (0.08)	0.300	−0.05 (0.09)	0.625	−0.08 (0.08)	0.316
Share of External Founders in TMT	0.06 (0.09)	0.481	0.01 (0.08)	0.872	0.06 (0.09)	0.477	0.01 (0.08)	0.871	0.08 (0.09)	0.353	0.02 (0.08)	0.775
Industry Performance	**1.19 (0.31)**	**0.000**	−0.13 (0.25)	0.606	**1.19 (0.31)**	**0.000**	−0.13 (0.25)	0.600	**1.20 (0.31)**	**0.000**	−0.13 (0.25)	0.619
Competitive Intensity	0.45 (0.41)	0.273	0.21 (0.32)	0.512	0.45 (0.41)	0.277	0.21 (0.32)	0.516	0.45 (0.41)	0.272	0.21 (0.32)	0.511
Year fixed-effects	Included		Included		Included		Included		Included		Included	
R-squared (within)	0.12		0.15		0.12		0.15		0.12		0.15	
Observations	24,830		22,511		24,830		22,511		24,830		22,511	
Number of Firms	2,530		2,463		2,530		2,463		2,530		2,463	

Firm fixed effects are included. Robust standard errors are clustered on firm-level. Coefficients that are significant with at least $p < 0.05$ are printed in bold.

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Overall, then, we conclude that the effect sizes are practically relevant, which is in line with the assessment of such effect sizes for other upper echelons-related variables in the literature (Li and Srinivasan, 2011).

We compared these effect sizes with the effects of some of our corporate board-level controls that have been investigated in the literature. The control that captures whether the firms' original founders are still on the board (*Share of Focal Firm Founders on the Board*) is positively related to *Tobin's Q* with a coefficient of 0.96 ($p = 0.010$), which is three times stronger than our core independent variable's effect. The *Share of Outsiders on the Board* is also positively related to *Tobin's Q*, and an increase from 0 to 1 in this variable leads to a 0.14 ($p > 0.10$) increase in *Tobin's Q*, indicating that our core variable has an effect on *Tobin's Q* that is about twice as high as the effect of *Share of Outsiders on the Board*. With regard to *Plant & Equipment Upgrades*, the coefficient of *Share of Focal Firm Founders on the Board* is also about three times stronger (0.17, $p < 0.001$) than our focal independent variable's effect (0.05, $p < 0.001$), which is similar to the results for *Tobin's Q*. With a coefficient of −0.02 ($p = 0.053$), the effect of *Share of Outsiders on the Board* on *Plant & Equipment Upgrades* is also smaller than the effect of our independent variable.

Next, we investigated the individual regression coefficients and conducted a dominance analysis to determine whether the one or another subgroup's effect is more closely related to the respective dependent variable to test H2 and H3. Because regression coefficients account only for the incremental contribution of a predictor variable while holding all other predictors constant, they do not capture the predictor's unique contribution (Johnson and LeBreton, 2004), an issue dominance analysis addresses (Azen and Budescu, 2003; Azen and Traxel, 2009). We employed the *domin* package in STATA to test H2 and H3 formally (Luchman, 2013). (For applications of this method, see, for instance, Judge and Zapata (2015), Kluemper et al. (2011), and Scott et al. (2014).)

Table II indicates that both the *Share of External Founders on the Board without IPO* (0.04, $p = 0.003$) and the *Share of External Founders on the Board with IPO* (0.10, $p < 0.001$) are significantly and positively related to *Plant & Equipment Upgrades*. Dominance analysis indicates that the effect on *Plant & Equipment Upgrades* of *Share of External Founders on the Board without IPO* does not dominate the effect of external former founders with such experience, leading us to reject H2a. The *Share of External Founders on the Board without IPO* is positively related to *Tobin's Q* (0.32, $p = 0.022$), while the *Share of External Founders on the Board with IPO* is not (0.03, $p = 0.931$) (Table III). Further, the first effect completely dominates the second (0.0082 versus 0.0012), lending support to H2b.[[2]] We analysed the relevance by comparing the effects of the share of former founders with and without IPO experience (Hendricks et al., 2019) and found that replacing non-founders on the board with external founders without IPO experience increases firm value at a rate that is 10.7-times the increase that results from replacing non-founders with external founders with IPO experience.

As Table II shows, the *Share of External Founders on the Board without CEO Experience* is significantly and positively related to *Plant & Equipment Upgrades* (0.07, $p < 0.001$), while there is no significant association between *Share of External Founders on the Board with CEO Experience* and *Plant & Equipment Upgrades* (0.02, $p = 0.320$). In addition, the first effect generally dominates the second (0.0072 versus 0.0022). Therefore, H3a is supported. Replacing non-founders on the board with external founders without CEO experience

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increases *Plant & Equipment Upgrades* at a rate that is 3.5 times the increase from replacing non-founders with external founders with CEO experience. Finally, as Table III shows, the *Share of External Founders on the Board without CEO Experience* is significantly and positively related to *Tobin's Q* (0.39, p = 0.022), while the *Share of External Founders on the Board with CEO Experience* is not (0.08, p = 0.648). Since the first effect completely dominates the second effect (0.0081 versus 0.0020), H3b is also supported. Replacing non-founders on the board with external founders without CEO experience increases firm value at a rate that is 4.9 times the increase from replacing non-founders with external founders with CEO experience.

While we focus on the regression findings with dependent variables measured in the same year as the independent variables and controls, Tables II and III also present the findings with dependent variables measured at t + 1 and indicate consistency in terms of coefficients' direction and significance. However, the effect of external former founders on the respective year's Tobin's Q is stronger than that of the following year. Apparently, the capital market incorporates board appointment decisions (and expectations about its future relevance) in the same year. As our empirical results regarding investment decisions suggest, there is a relevant effect in the focal year in which the external former founders are appointed, suggesting that the corporate board can already make a difference in the same year. However, some investment decisions might take some time to be implemented, especially since corporate board members are not integrated into the firm's strategic activities on a daily basis and since investments decisions, even when promoted by a corporate board, might need internal investigation and planning. Therefore, that the effect extends to the following year (only slightly weaker than in the investment's year) is understandable.

Additional Analyses

Correcting for endogeneity. To mitigate endogeneity concerns, we relied on fixed-effects panel regression, including firm fixed-effects and year fixed-effects, both of which account for time-invariant heterogeneity and shocks that affect all firms in our sample (Antonakis et al., 2010). In addition, we carefully selected a set of controls to account for time-variant heterogeneity and showed their effects on our dependent variables in both the same year (t) and the following year (t + 1). Lagging all independent variables and controls by one year ensures that the independent variables are measured before the dependent variable to avoid simultaneity bias (Weng and Lin, 2014). However, there still might be reverse causality that is due to former founders' anticipating which corporations are most likely to invest heavily in new business and choosing to join these firms as board members. Boards themselves may also anticipate the need for a stronger focus on creating new business and asking people with founding experience to join them. Additional time-variant variables may also drive both the share of external founders on boards and the dependent variables.

To test whether additional controls change our results, we ran several robustness tests that included various sets of controls. The CEO has not only a strong impact on firm outcomes but might also influence board composition by attracting certain types of board members. Hence, we entered four controls into our core models, based on

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Wang et al. (2016): *CEO Tenure*, *CEO Age*, *CEO Formal Education* (measured as MBA), and *CEO Prior Career Experience*. The results are unaffected by the inclusion of these additional controls. The CEO's or board chair's external founding experience may also influence whether former founders join the board and affect the dependent variables, so we entered *CEO's External Founding Experience* into our core model as an additional control. The effect of *Share of External Founders on the Board* on *Tobin's Q* (0.27, $p = 0.042$) and *Plant & Equipment Upgrades* (0.05, $p < 0.001$) remains highly consistent with our main analyses, while there is no significant effect of *CEO's External Founding Experience* on these dependent variables ($p > 0.10$). Next, we entered *Chairman's External Founding Experience* into our core model as a control and found that the effects of *Share of External Founders on the Board* on *Tobin's Q* (0.29, $p = 0.032$) and *Plant & Equipment Upgrades* (0.05, $p < 0.001$) remain consistent with our main analysis, while there is no significant effect of *Chairman's External Founding Experience* on these dependent variables ($p > 0.10$).

To rule out both omitted variable bias and reverse causality, we applied an instrumental variable approach using two instruments (Papies et al., 2017): First, we used *External Founder Share in Boards Among Peer Firms* in the same two-digit SIC code in the same year. This instrument is based on the idea that external founders are more common on boards in some industries than they are in others, and that other firms in the same industry collectively cannot directly influence other firms' firm-level outcomes (Fu et al., 2020; Germann et al., 2015; Rawley et al., 2018). Second, we use *State-level Entrepreneurial Activity*, relying on the variable 'employer business newness', which is available as part of the Kauffman indicators of entrepreneurship (Fairlie, 2009). We averaged the indicator from 2006–12 per US state (earlier data were not available) to generate an indicator of state-level entrepreneurial activity, an approach that is comparable to previous research that has relied on state-level information for instruments (e.g., Nahata, 2019). This instrument is based on the idea that more entrepreneurs are available to be recruited to serve on boards in states that have higher entrepreneurial activity and that new business on the state level collectively cannot directly influence large corporations' firm-level outcomes. Taken together, the instruments are relevant predictors of *Share of External Founders on the Board* based on the Kleibergen-Paap LM statistic ($p < 0.001$).

Since our measure of business activity is an average of activity in the years from 2006 to 2012 (so it does not vary over time), we applied a random-effects instrumental panel model using the Stata command *xtivreg*. We tested the effect of *Share of External Founders on the Board* on *Tobin's Q* using this approach and found that, consistent with our core models, the effect of *Share of External Founders on the Board* on *Tobin's Q* is significant and positive (2.87, $p < 0.001$). Then we applied this method to *Plant & Equipment Upgrades* and again found that the effect is significant and positive (0.28, $p = 0.055$), which is in line with our core results.

Finally, to reduce outliers, our core analysis excluded observations whose asset size was in the 1st or 99th percentile. To rule out sample-selection bias, we also ran our core analyses on the overall sample; results remain consistent, indicating that sample selection bias is not likely to be an issue.

Temporal distance of founding imprint. Our theoretical argumentation relies on the idea that the founding imprint's effect is independent of the amount of time since the founding

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experience. To test this argument empirically, we reran our main models with newly defined *Share of External Founders on the Board* variables in which we successively include only board members with founding experience that occurred no more than ten years ago, no more than twenty years ago, no more than thirty years ago, and no more than forty years ago. All results are consistent with our main analyses, suggesting that when the board members' founding imprint(s) occurred does not matter. Specifically, the effect on *Tobin's Q* is positive and significant, with *p*-values ranging from 0.024 to 0.087, and the effect on *Plant & Equipment Upgrades* is positive and significant, with *p*-values ranging from < 0.001 to 0.003.

Nonlinearity. While we assume a linear relationship between *Share of External Founders on the Board* and our dependent variables, there might be an optimal share of external founders. We tested for potential nonlinearity by including a squared term of *Share of External Founders on the Board* in our regression analysis after mean-centring the variable. The squared term was not significant (p > 0.10) in any regression analyses, further supporting the linear effects identified in our core analyses.

Alternative regression models. Since *Plant & Equipment Upgrades* is measured as a fraction, we check for robustness of our findings using a fractional regression model including firm fixed effects and robust standard errors clustered on firm level. Results are highly consistent to our core analyses.

Alternative independent variables. While we investigated the *Share of External Founders on Boards*, one might argue that just one external founder on a board is sufficient to trigger decisions related to new business creation. To account for this option, we estimated our regression models with dummy variables for our independent variables. Results are shown in Table IV.

A *Dummy for External Founders on the Board* (which takes the value of 1 when there is at least one such founder, and 0 otherwise) has a positive and significant relationship with *Tobin's Q* (0.10, p = 0.010) and *Plant & Equipment Upgrades* (0.01, p = 0.021). A *Dummy for External Founders on the Board with IPO* has no significant relationship with *Tobin's Q* (−0.01, p = 0.908), while a *Dummy for External Founders on the Board without IPO* is positively and significantly related to *Tobin's Q* (0.10, p = 0.004). A *Dummy for External Founders on the Board with CEO Experience* is weakly negatively related to *Tobin's Q* (−0.06, p = 0.086), while a *Dummy for External Founders on the Board without CEO Experience* is positively and significantly related to *Tobin's Q* (0.09, p = 0.007). In addition, a *Dummy for External Founders on the Board with IPO* has no significant relationship with *Plant & Equipment Upgrades* (0.01, p = 0.148), while a *Dummy for External Founders on the Board without IPO* is positively and significantly related to *Plant & Equipment Upgrades* (0.01, p = 0.020). A *Dummy for External Founders on the Board with CEO Experience* is not significantly related to *Plant & Equipment Upgrades* (−0.00, p = 0.241), while a *Dummy for External Founders on the Board without CEO Experience* is positively and significantly related to *Plant & Equipment Upgrades* (0.01, p = 0.009). While these coefficients are largely in line with our core findings, the associations tend to be weaker, which is to be expected since these dummies are less precise than the share of board members with such experience. Therefore, we conclude that the presence of at least one

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Table IV. Robustness analysis: dummy variables

	Dependent Variable: Tobin's Q_(t)						*Dependent Variable: Plant & Equipment Upgrades (t)*					
	Coefficient (Robust SE)	*p-value*	*Coefficient (Robust SE)*	*p-value*	*Coefficient (Robust SE)*	*p-value*	*Coefficient (Robust SE)*	*p-value*	*Coefficient (Robust SE)*	*p-value*	*Coefficient (Robust SE)*	*p-value*
Dummy External Founders on the Board	**0.10 (0.04)**	**0.010**					**0.01 (0.00)**	**0.021**				
Dummy External Founders on the Board with IPO			−0.01 (0.05)	0.908					0.01 (0.00)	0.148		
Dummy External Founders on the Board without IPO			**0.10 (0.03)**	**0.004**					**0.01 (0.00)**	**0.020**		
Dummy External Founders on the Board with CEO Experience					−0.06 (0.04)	0.086					−0.00 (0.00)	0.241
Dummy External Founders on the Board without CEO Experience					**0.09 (0.03)**	**0.007**					**0.01 (0.00)**	**0.009**
Firm Size	**−0.93 (0.08)**	**0.000**	**−0.93 (0.08)**	**0.000**	**−0.93 (0.08)**	**0.000**	**0.19 (0.01)**	**0.000**	**0.19 (0.01)**	**0.000**	**0.19 (0.01)**	**0.000**
Board Size	**−0.02 (0.01)**	**0.000**	**−0.02 (0.01)**	**0.000**	**−0.02 (0.01)**	**0.000**	−0.00 (0.00)	0.537	−0.00 (0.00)	0.436	−0.00 (0.00)	0.636
Share of Focal Firm Founders on the Board	**0.94 (0.37)**	**0.012**	**0.93 (0.37)**	**0.012**	**0.92 (0.37)**	**0.014**	**0.16 (0.03)**	**0.000**	**0.16 (0.03)**	**0.000**	**0.16 (0.03)**	**0.000**
Share of Outsiders on the Board	0.14 (0.10)	0.163	0.14 (0.10)	0.155	0.14 (0.10)	0.137	−0.02 (0.01)	0.081	−0.02 (0.01)	0.076	−0.02 (0.01)	0.081
Duality	0.05 (0.03)	0.076	0.05 (0.03)	0.080	0.05 (0.03)	0.084	**0.01 (0.00)**	**0.011**	**0.01 (0.00)**	**0.011**	**0.01 (0.00)**	**0.012**
Average Board Member Tenure	−0.00 (0.01)	0.977	0.00 (0.01)	0.990	−0.00 (0.01)	0.983	**−0.00 (0.00)**	**0.018**	**−0.00 (0.00)**	**0.017**	**−0.00 (0.00)**	**0.016**
Average Board Member Age	−0.01 (0.01)	0.177	−0.01 (0.01)	0.165	−0.01 (0.01)	0.164	**−0.00 (0.00)**	**0.001**	**−0.00 (0.00)**	**0.001**	**−0.00 (0.00)**	**0.001**
Share of Board Members with MBA	−0.04 (0.09)	0.669	−0.04 (0.09)	0.660	−0.04 (0.09)	0.702	0.01 (0.01)	0.665	0.00 (0.01)	0.672	0.01 (0.01)	0.649
Share of External Founders in TMT	0.09 (0.08)	0.304	0.09 (0.08)	0.307	0.13 (0.09)	0.136	0.00 (0.01)	0.927	0.00 (0.01)	0.997	0.00 (0.01)	0.641
Tobin's Q							**0.00 (0.00)**	**0.001**	**0.00 (0.00)**	**0.001**	**0.00 (0.00)**	**0.001**
ROA							−0.00 (0.01)	0.913	−0.00 (0.01)	0.926	−0.00 (0.01)	0.927
Industry Performance	**1.18 (0.31)**	**0.000**	**1.18 (0.31)**	**0.000**	**1.18 (0.31)**	**0.000**	0.02 (0.04)	0.579	0.03 (0.04)	0.546	0.02 (0.04)	0.582
Competitive Intensity	0.46 (0.41)	0.254	0.46 (0.41)	0.255	0.47 (0.41)	0.252	0.03 (0.06)	0.598	0.03 (0.06)	0.599	0.03 (0.06)	0.613
Constant	**8.72 (0.76)**	**0.000**	**8.73 (0.76)**	**0.000**	**8.75 (0.77)**	**0.000**	**−0.65 (0.09)**	**0.000**	**−0.65 (0.09)**	**0.000**	**−0.64 (0.09)**	**0.000**
Year fixed-effects	Included		Included		Included		Included		Included		Included	
R-squared (within)	0.12		0.12		0.12		0.26		0.26		0.26	
Observations	24,830		24,830		24,830		21,189		21,189		21,189	

Firm fixed effects are included. Robust standard errors are clustered on firm-level. Coefficients that are significant with at least $p < 0.05$ are printed in bold.

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external founder can already make a difference, but the share tends to affect which decisions are pushed at the corporate board level.

Alternative dependent variable. While our dependent variable of *Plant & Equipment Upgrades* is widely used in the literature to capture the pursuit of new business opportunities, the creation of future new business opportunities might also be driven by real growth opportunities. To accommodate this observation, we applied Biddle et al.'s (2009) approach to cover a corporation's broader over- and underinvestment decisions that are not related to a firm's growth opportunities. Therefore, we calculated a model in which we regressed *Total Net Investment in Plants & Equipment* (i.e., the numerator of our dependent variable *Plant & Equipment Upgrades*) on *Sales Growth* (t−1). We took the natural logarithm of *Net Investment in Plants & Equipment* to accommodate the variable's skewness. We saved the residuals and divided them along the quantiles into three groups (Biddle et al., 2009). The top quartile corresponds to overinvestment that is not related to firm's growth opportunities, while the bottom quartile corresponds to underinvestment, and the two middle quantiles constitute the comparison group which neither underinvests nor overinvests. Then we used the same independent variables and controls as in our model 1 and added the natural logarithm of gross plant and equipment upgrades as a control variable. In line with Biddle et al. (2009), we then ran a multinomial regression with robust clustered standard errors. Our findings indicate that firms overinvest in firm-years that feature a high share of external former founders on the board. Results are shown in Table V. Specifically, the share of external founders on the board has a positive effect on the likelihood that a firm-year is in the top (overinvestment) quartile relative to the middle group (0.81, $p < 0.001$). The bottom group (underinvestment) and the middle group (0.24, $p = 0.229$) are not significantly different. Since we hypothesize that external founders drive firm investment, these results are consistent with our main results.

Further, in line with our core results, the *Share of External Founders on the Board with IPO* (1.49, $p = 0.001$) and without IPO (0.69, $p = 0.002$) are positively related to the likelihood that a firm-year is in the top (overinvestment) group relative to the middle group. The bottom group (underinvestment) and the middle group (0.45, $p = 0.312$ and 0.22, $p = 0.314$) are not significantly different. Regarding CEO experience, the *Share of External Founders on the Board without CEO experience* is positively related to the likelihood that a firm-year is in the top (overinvestment) group relative to the middle group (0.93, $p < 0.001$). The top and medium group for founders with CEO experience (0.50, $p = 0.155$) are not significantly different, nor are the middle and low groups for either variable (0.25, $p = 0.465$ and 0.24, $p = 0.316$), indicating that former external founders do not avoid underinvestment.

DISCUSSION

External former founders are often appointed to board positions of public corporations, but strategy research has ignored their impact. To address this gap in the research, this study establishes theoretically and finds empirically confirmed that, under certain conditions, such external former founders influence corporate boards' strategic decision-making in favour of future new business creation. However, the former founders'

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Table V. Multinomial regression analysis

	Over-Investment		*Under-Investment*		*Over-Investment*		*Under-Investment*		*Over-Investment*		*Under-Investment*	
	Coefficient (Robust SE)	*p-value*	*Coefficient (Robust SE)*	*p-value*	*Coefficient (Robust SE)*	*p-value*	*Coefficient (Robust SE)*	*p-value*	*Coefficient (Robust SE)*	*p-value*	*Coefficient (Robust SE)*	*p-value*
Share of External Founders on the Board	**0.81 (0.21)**	**0.000**	0.24 (0.20)	0.229								
Share of External Founders on the Board with IPO					**1.49 (0.46)**	**0.001**	0.45 (0.44)	0.312				
Share of External Founders on the Board without IPO					**0.69 (0.23)**	**0.002**	0.22 (0.22)	0.314				
Share of External Founders on the Board with CEO Experience									0.50 (0.35)	0.155	0.25 (0.34)	0.465
Share of External Founders on the Board without CEO Experience									**0.93 (0.25)**	**0.000**	0.24 (0.24)	0.316
Firm Size	**0.53 (0.09)**	**0.000**	−0.18 (0.09)	0.057	**0.53 (0.09)**	**0.000**	−0.18 (0.09)	0.056	**0.53 (0.09)**	**0.000**	−0.18 (0.09)	0.057
Board Size	**−0.05 (0.01)**	**0.000**	0.02 (0.01)	0.159	**−0.05 (0.01)**	**0.000**	0.02 (0.01)	0.161	**−0.05 (0.01)**	**0.000**	0.02 (0.01)	0.159
Share of Focal Firm Founders on the Board	**2.28 (0.39)**	**0.000**	**1.17 (0.39)**	**0.003**	**2.25 (0.39)**	**0.000**	**1.16 (0.39)**	**0.003**	**2.24 (0.39)**	**0.000**	**1.17 (0.39)**	**0.003**
Share of Outsiders on the Board	0.04 (0.23)	0.874	**0.46 (0.21)**	**0.031**	0.03 (0.23)	0.884	**0.46 (0.21)**	**0.031**	0.02 (0.23)	0.926	**0.46 (0.21)**	**0.030**
Duality	0.07 (0.06)	0.275	−0.02 (0.06)	0.801	0.07 (0.06)	0.262	−0.02 (0.06)	0.805	0.07 (0.06)	0.281	−0.02 (0.06)	0.801
Average Board Member Tenure	−0.01 (0.01)	0.555	**−0.03 (0.01)**	**0.000**	−0.01 (0.01)	0.550	**−0.03 (0.01)**	**0.000**	−0.01 (0.01)	0.538	**−0.03 (0.01)**	**0.000**
Average Board Member Age	−0.01 (0.01)	0.284	−0.01 (0.01)	0.086	−0.01 (0.01)	0.292	−0.01 (0.01)	0.087	−0.01 (0.01)	0.287	−0.01 (0.01)	0.084
Share of Board Members with MBA	**−0.46 (0.17)**	**0.006**	**−0.42 (0.16)**	**0.010**	**−0.45 (0.17)**	**0.006**	**−0.42 (0.16)**	**0.009**	**−0.45 (0.17)**	**0.007**	**−0.42 (0.16)**	**0.010**
Share of External Founders in TMT	0.20 (0.14)	0.156	−0.11 (0.14)	0.421	0.20 (0.14)	0.159	−0.11 (0.14)	0.416	0.25 (0.15)	0.093	−0.11 (0.14)	0.427
Tobin's Q	−0.01 (0.03)	0.716	**0.11 (0.02)**	**0.000**	−0.01 (0.03)	0.616	**0.11 (0.02)**	**0.000**	−0.01 (0.03)	0.733	**0.11 (0.02)**	**0.000**
ROA	**−0.42 (0.15)**	**0.004**	0.24 (0.16)	0.141	**−0.41 (0.15)**	**0.005**	0.24 (0.16)	0.138	**−0.43 (0.15)**	**0.004**	0.24 (0.16)	0.143
Gross Plant & Equipment	**−0.17 (0.03)**	**0.000**	**−0.22 (0.03)**	**0.000**	**−0.17 (0.03)**	**0.000**	**−0.22 (0.03)**	**0.000**	**−0.17 (0.03)**	**0.000**	**−0.22 (0.03)**	**0.000**
Industry Performance	−0.02 (1.10)	0.989	**−3.29 (1.15)**	**0.004**	−0.07 (1.10)	0.952	**−3.30 (1.15)**	**0.004**	0.03 (1.10)	0.976	**−3.29 (1.15)**	**0.004**
Competitive Intensity	−0.00 (1.09)	0.999	0.83 (0.81)	0.309	−0.02 (1.10)	0.984	0.82 (0.81)	0.312	0.00 (1.09)	0.999	0.82 (0.81)	0.309
Constant	−0.94 (1.18)	0.422	**5.01 (0.94)**	**0.000**	−0.92 (1.18)	0.436	**5.01 (0.94)**	**0.000**	−0.96 (1.17)	0.413	**5.01 (0.94)**	**0.000**
Year fixed-effects	Included		Included		Included		Included		Included		Included	
Observations	19,101		19,101		19,101		19,101		19,101		19,101	

Robust standard errors are clustered on firm-level. Multinomial regression model with middle group (neither underinvestment nor overinvestment) as baseline. Coefficients that are significant with at least $p < 0.05$ are printed in bold.

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post-founding exposures to the corporate world make a critical difference, as only when they did not take their companies public and did not assume corporate CEO positions in other public corporations do they appear to retain their founding imprint and influence corporate boards' decision-making accordingly. In line with imprinting theory, corporations that seek to inject the 'founding spirit' into their boards profit more from appointing 'undiluted' external founders who have no subsequent (even highly successful) exposure to the corporate world. It follows, then, that not only does it matter *whether* a corporate board has a former founder but it also matters *what type* of additional formative experiences these individuals have undergone.

Research Implications

These findings contribute to upper echelons research and the literature on imprinting theory in three major ways. First, our theoretical arguments and empirical findings highlight the potential of integrating upper echelons and imprinting considerations into explanations of how corporate board members' career experiences translate into corporate decision-making. More specifically, our research indicates that corporate board members' formative transition periods – even those that took place long ago – can inject certain perspectives (in our case, from the founding exposure) into decision-making in the corporate world (Kish-Gephart and Campbell, 2015). While upper echelons research has often focused on upper echelon members' 'major' (years-long) experiences (e.g., industry experiences) (Carpenter et al., 2004; Finkelstein et al., 2009), our imprinting perspective highlights that shorter but decisive experiences also help to explain corporate-level decision-making. While the performance and investments of large corporations are, of course, determined by many factors, our effect sizes indicate that nuances in the corporate board members' careers can lead to relevant differences in firm-level outcomes that fall in the range of other, more prominently investigated upper echelon variables (e.g., ranging between the effect sizes of *Outsider Share on Boards* and *Share of Focal Firm Founders on the Board*). Thus, the imprinting perspective encourages upper echelons scholars to focus on sensitive transition periods, not on 'the vague totality of historical conditions' (Marquis and Tilcsik, 2013, p. 230).

In response to Marquis and Tilcsik's (2013) notion that multiple imprints over time are possible, we develop arguments that corporate board members' initial imprints (in our case, the founding imprint) can decay when subsequent transition phases expose the imprint holder to situations in which the frame of reference provided by the initial imprint is not congruent with new requirements. In these situations, 'cognitive unfreezing' leads to a rearrangement of mindsets and values to the extent that the initial imprint can be replaced by a new one. While the common practice in upper echelons research is to focus on individual demographics or upper echelons members' singular experiences (Hambrick, 2007; Johnson et al., 2013), our results indicate that it is necessary to develop a more holistic and complex perspective of what makes corporate board members 'tick', that is, their career histories.

More specifically, this account at the interface of the upper echelons and imprinting perspectives indicates that appointing external former founders to corporate boards is a way to ensure that corporate boards perform one of their most important duties: taking a

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long-term perspective and acting as a guardian of the corporation's future (Croci, 2018), a duty many corporate boards struggle to fulfil (e.g., Johnson and Suskewicz, (2020). Our findings emphasize the value of appointing (some types of) external former founders to corporate boards and these former founders' usefulness in upper echelons research in general.

Second, we contribute to imprinting theory by arguing theoretically (and supporting empirically) that the founding imprint can affect founders' decision-making in their subsequent careers, even in other organizations. Thus, we address a gap in the imprinting literature (Marquis and Tilcsik, 2013; Mathias et al., 2015; Simsek et al., 2015), as our findings emphasize the possible persistence and transferability of (founding) imprints to other organizations. The extant imprinting literature has focused on either investigating how founders and their decisions influence their ventures at later stages or on how early-stage career imprints affect individuals themselves in later stages (Bianchi, 2013; McEvily et al., 2012). However, our insight offers a new perspective, as it presents a first step toward unveiling so far hidden influences on corporate phenomena by revealing that even brief periods in an organization member's history can determine how the organization operates.

Third, we also contribute to the imprinting literature by addressing calls to investigate how multiple imprints on individuals interact over time. Marquis and Tilcsik (2013) argued that 'untangling the influence of multiple sensitive periods represents a promising future direction into largely uncharted territory' (p. 222), as empirical imprinting research has typically focused on one imprinting event only (mostly at the beginning of individual's career or organization's existence) (Bianchi, 2013; McEvily et al., 2012). Marquis and Tilcsik's (2013) conceptualization of imprints as brief, sensitive periods of transition suggests that multiple imprints are likely, raising the question concerning how multiple, divergent imprints that people gain over time interact. Our theorizing and findings indicate that imprints, which are typically gathered at the beginning of a career, can persist and determine their holders' behaviour in subsequent positions, even over decades as indicated by our additional analysis. However, we also show that imprint decay can occur, especially when the imprint holder is confronted with sensitive transition phases in which the original imprint's mindsets and values are incongruent with the transition's requirements. In such cases, the new imprint appears to overwrite the script of the initial imprint. This perspective suggests that imprints should not be investigated in isolation but in concert with other (especially divergent) subsequent imprints.

Limitations and Avenues for Future Research

Naturally, our research has some limitations that suggest topics for future research. First, as a first effort to investigate former founders in light of their subsequent experiences on corporate boards, our study focused its theorizing and empirical study on generalized occurrences of these career positions and experiences. Future research could build on our findings to determine whether the age at which a former founder takes a CEO position makes a difference in how new imprints are assumed and old ones are overwritten.

Another limitation is our reliance on two major types of post-founding exposure to the corporate world. Future research could extend this perspective to determine whether

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imprints that are not related to the corporate world can also affect the founding imprint. For example, engagement as an investor or as a philanthrope may affect the initial founding imprint, and private conditions and transition periods may play a role.

A third limitation lies in our focus on strategic resource allocations and firm value as natural outcomes of corporate boards' decisions. However, one might also argue that former founders on corporate boards might affect their immediate environment in the corporate board. For instance, former founders might clash with their colleagues, especially when they have been highly successful as entrepreneurs. As the dismissal of the CEO is part of the board's responsibilities, a founding imprint may affect a former founder's support or lack of support for a CEO in various circumstances.

Fourth, our investigation is limited to two outcomes of strategic decision-making. Our additional analysis indicates that firms' investment decisions are more complex than single measures can capture. The additional analysis that was based on Biddle et al.'s (2009) over- and underinvestment rationale indicated that firms that have former external founders on their boards not only invest more in some instances but also do not reduce underinvestment, so they do not always push for more future business creation. Future research could delve more deeply into this insight and add nuance to our findings by analysing the types of investments former founders trigger as corporate board members.

A final limitation relates to our measurement of imprinting's decay. While our findings are consistent with our arguments regarding the possible decay of the initial imprint, our measurement approach does not allow us to exclude the possibility that the decay is not due to new experiences (e.g., an IPO subsequent to a founding experience), as we hypothesize, but to the personality of former founders that deliberately choose this career path. While our method aims to exclude some of these alternative explications (e.g., by means of controls), we cannot definitively exclude such alternative explanations. That said, an alternative explanation would have to involve some deeper subset of personality because personality has been found to be largely stable. Therefore, explaining our result in terms of differences in personality would mean that, for instance, there is a significant personality difference between founders that made it into corporate boards without having taken their prior venture to an IPO versus those that did, and that the former founders then additionally make significantly different corporate investment decisions than those who are not former founders. In our view, imprinting theory provides a more parsimonious account.

Practical Implications

Our findings are relevant to practice since a change in our independent variable can render an increase in the market value of equity of 432 million US$ and net plant and equipment upgrades of 21 million US$ (holding gross plant & equipment, total assets, and stockholders' equity at the sample median). Therefore, our findings have several implications for those who are responsible for composing a corporate board. First, our findings inform these decision-makers that appointing external former founders can be a way to inject the 'founding spirit' that can shift the board's focus to new business creation, although they should avoid external former founders with IPO experience or subsequent CEO positions at other corporations. While intuition might suggest that these former founders were successful and are particularly able to deal with the rigidities of

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the corporate world, our findings indicate that they are likely to have lost their founding spirit and are likely to act more like 'regular' corporate world representatives. Former founders without such IPO exposure and the entrepreneurial imprints of those who have not held CEO positions are 'undiluted,' so these founders can inject the founding spirit into the corporate board. As anecdotal evidence has indicated, corporations often appoint former 'star founders' – that is, those who led their ventures through highly successful IPOs – in hopes of increasing future-oriented business creation (Johnson and Suskewicz, 2020). However, our findings question this practice, suggesting that external former founders without IPO experience or experience as CEOs are much better suited to triggering future new business creation. No matter how successful the former founder, IPO experience and CEO positions in corporations are warning signs that the former founder may be no different than any other corporate world representative.

More generally, our findings indicate that corporations should understand board candidates' career histories holistically, rather than focusing on one kind of experience. Even when one past position in the candidate's CV appears to be highly salient, corporations should not ignore other experiences and should parse all potentially formative transitions to derive a more complete picture of the candidates' possible contributions to the corporate board's decision-making. That said, when divergent experiences are present, the most recent one appears to be the most powerful in guiding the candidate's behaviour.

CONCLUSION

External former founders are about one in five appointed corporate board members, but whether they make a difference as board members is not well-understood. In an effort to shed light on this issue, we integrated theorizing on upper echelons and imprinting theory with an empirical investigation, finding that public corporate boards that include external former founders increase the boards' focus on future new business creation. However, former founders' subsequent experience in the corporate world exposures (from their own IPO's and from holding corporate CEO positions) can decay the founding imprint and its effects. Thus, 'less successful' (in some respects) former founders (i.e., those without IPO experience or subsequent CEO positions) may be more appropriate to the goal of injecting the founding spirit into corporate boards.

NOTES

[1] Alternatively, one might consider interactions to capture whether there is, for example, IPO experience among the external former founders (i.e., building an interaction term of 'Share of External Founders on the Board' × 'IPO Experience on the Board'). However, interaction modelling requires that all possible combinations of the respective variables are possible (e.g., founder share high and low; IPO experience high and low). In our case, a combination of 'founder share=low' and 'IPO experience=high' is not possible, so we opted to present regression models with two independent variables for founder shares (e.g., founder share with IPO experience and founder share without IPO experience) and to interpret both these coefficients as well as their difference. For a similar procedure, see, for example, Dushnitsky and Lenox (2006).

[2] As Tonidandel and LeBreton (2011) pointed out, dominance analysis evaluates only the relative contribution of each predictor to the overall variance, regardless of whether a particular predictor is statistically significant.

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