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Individual Performance and Taking on Firm-Specific Roles: The Case of Business School Associate Deans

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Who Should Become a Business School Associate Dean? Individual Performance and Taking on Firm-Specific Roles

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Abstract

The firm-specific human capital dilemma suggests that firms generally want employees to make firm-specific investments but that employees prefer not to make them. We suggest that individual performance may moderate this dilemma such that the dilemma increases as individual performance increases – i.e. firms may prefer high performers in firm-specific roles while high performers may resist these roles more than their lower performing counterparts. We examine our extended firm-specific human capital theory in a context where the classic firm-specific human capital dilemma likely exists: business academia. Using a unique dataset of 4,164 business school professors from 39 of the top 100 US business schools, we examine how research performance affects propensity to become an Associate Dean and their compensation increases when taking on these roles. Even though AD roles come with a significant pay increase, we find that higher performing individuals are less likely to become ADs. Surprisingly, we find that lower performers receive higher pay increases when taking on these roles. We conduct exploratory interviews to understand this surprising finding and discuss implications and opportunities for future research.

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Who Should Become a Business School Associate Dean?
Individual Performance and Taking on Firm-Specific Roles

Strategy theory implicitly assumes that firms want *all* employees to make firm-specific investments and that *all* individuals resist making firm-specific investments (Hoskisson, Gambeta, Green, & Li, 2017; Mahoney & Kor, 2015; Wang & Barney, 2006). This classic firm-specific human capital dilemma may be particularly acute in firms where taking on firm-specific roles represents a trade-off to making general investments that might increase one's external marketability (Løwendahl, Revang, & Fosstenløkken, 2001; Gubler & Sax, 2019). However, we know that employees vary widely in quality and contribution (Lepak & Snell, 1999). Considering performance heterogeneity, would we expect this dilemma to be uniformly salient for all employees? What if there are contexts where the classic firm-specific human capital dilemma becomes more pronounced for high performing individuals?

On the firm side, managers may prefer high performers for firm-specific roles because their high performance on professional tasks signals that the individual will likely perform well in a firm-specific role (Hatch & Dyer, 2004; Lee et al., 2004; Nyberg, 2010). On the individual side, high performers may be more resistant to taking on firm-specific roles because of the higher expected payoffs from general investments as opposed to firm-specific investments (Morris, Alvarez, & Barney, 2020). If so, then in some contexts individual performance on general human capital related tasks may moderate individual resistance to making firm-specific investments and taking on firm-specific roles. Unfortunately, we lack both explicit theory and empirical research examining the extent to which individual performance affects this dilemma.

In this paper we examine the relationship between individual performance and the likelihood that an individual will take on a firm-specific role in the context of business school associate deans. We theorize that business schools generally prefer faculty with higher research

productivity in associate dean roles (with some potential exceptions we will discuss in detail), but that these same faculty will resist these roles more than their lower performing colleagues. Thus, we theorize that the classic firm-specific human capital dilemma increases with individual research productivity in academia. To test our theory, we examine a unique data set of 4,164 business school professors from 39 of the top 100 US business schools and examine who is most likely to take on the role of Associate Dean (AD) – our operationalization of a firm-specific role. Consistent with our expectations, we find that individuals with high research productivity are less likely to become ADs and faculty are paid a salary premium to take on these roles. Inconsistent with our expectations, however, we find that highly productive research faculty receive smaller compensation increases when becoming ADs than their average research productivity AD peers.

To better understand this unexpected result, we conducted qualitative exploratory interviews with a sample of current and former ADs and deans. The qualitative responses suggest that a university's formal compensation structure and/or informal equity pressures may constrain AD pay such that high performing (and earning) faculty have a smaller pay increase moving into AD roles than lower performing (and earning) peers. These qualitative results regarding our second hypothesis shed additional light on our first hypothesis – i.e. the relatively smaller financial rewards for high performing faculty to become ADs may partially explain the lower likelihood of high performers becoming ADs. We explore the implications of our findings in detail in our discussion section and provide a rich discussion of when the idiosyncrasies of academia may (and may not) generalize to other human capital-intensive contexts.

ACADEMIA AND THE FIRM-SPECIFIC MANAGERIAL DILEMMA

Classic firm-specific human capital theory predicts that employees resist firm-specific investments because they cannot take these investments to other firms, making firm-specific investments inherently risky (Hoskisson et al., 2017; Mahoney & Kor, 2015; Wang & Barney, 2006; Wang, He, & Mahoney, 2009). If employees want to change jobs (e.g., to be closer to family, to avoid being mistreated by an employer, etc.), they must leave their firm-specific investments behind. General human capital, in contrast, has almost no risk for employees because they can take and apply it anywhere. Thus, according to the firm-specific human capital tradition in strategy research, employees tend to prefer general over firm-specific investments.

While strategy scholars have recently called into question the extent to which such a dilemma may exist in practice given the extreme assumptions (Campbell, Coff, & Kryscynski, 2012; Coff & Raffiee, 2015; Morris, Alvarez, Barney, & Molloy, 2017), Kryscynski and Ulrich (2015) suggest that academia may be one of the contexts in which the core economic assumptions of firm-specific human capital theory may hold: "Ironically, in all of our combined work we find only one context where [the core economic assumptions] seem to hold in any consistent way: business school faculty" (page 362). While we suspect that there are other important contexts that also match the theoretical assumptions of traditional firm-specific human capital theory, we agree that business academia (and academia in general) fits the core boundary conditions quite nicely. Table 1 illustrates some of these classic assumptions and their matching to academia.

[INSERT TABLE 1 ABOUT HERE]

Within academia, there seems to be a clear tradeoff between research tasks that increase a faculty member's external market value and institution-specific tasks that may or may not increase internal promotion opportunities but rarely increase external marketability. Accordingly,

individual faculty may benefit more from investing in their research productivity than taking on roles that require firm-specific investments that detract from research.

The challenge, of course, is that just as firms require firm-specific investments to support their underlying competitive capabilities (Kor, 2003; Mahoney & Kor, 2015), academic institutions need faculty to make firm-specific investments to support their institution-specific programs. Mahoney and Kor (2015) identify three key types of firm-specific human capital that are likely important for academia as well as industry. First, the experiential knowledge of the firm's idiosyncratic resources and capabilities. In academia this may include understanding the nuances of educational programs, how they operate, and the critical elements of success for those programs. This may also include understanding the complex and often non-intuitive bureaucratic processes that underlie approvals and decisions. A second type of firm-specific investment involves the collective shared knowledge of employees and their strengths and shortcomings. This may include knowing the personalities and tendencies of idiosyncratic and highly opinionated faculty and knowing how to engage the right political processes to build coalitions for initiatives. Third, the explicit and tacit knowledge of the firm's key stakeholders may be particularly important in academia because of the heavy reliance on donors. Deans and associate deans need to know which stakeholders to please in order to ensure consistent fundraising success and financial viability for academic programs.

Thus, there are a host of firm-specific investments that universities need faculty to make in order to achieve their organizational objectives while faculty may generally resist these investments. This makes academia a highly appropriate context when testing and extending classic theory regarding firm-specific human capital dilemma. In other words, academia allows us to test whether our *extended* firm-specific human capital dilemma theory holds in a context

where the classic firm-specific human capital dilemma is likely to occur. We explore later the extent to which evidence from this context may generalize to other contexts and, therefore, the extent to which our work implies a general theory of performance as a moderator of the classic firm-specific human capital dilemma.

WHY THE DILEMMA INCREASES FOR PRODUCTIVE FACULTY

Applying classic firm-specific human capital theory to academia implies that institutions want faculty to make firm-specific investments that faculty prefer to avoid, ceteris paribus. This conclusion from extant theory is illustrated as the dashed lines in Figure 1 below – i.e. there is a gap between the firm's desire for individuals to make firm-specific investments and the individual's willingness to make these investments. Much of the research on the firm-specific human capital dilemma has focused on ways that firms can close this gap and motivate employees to make these firm-specific investments (Wang & Barney, 2006; Wang et al., 2009; Wang, Zhao, & Chen, 2017; Wang, Zhao, & He, 2016). But perhaps not all employees are equally resistant. The managerial dilemma described above may be particularly pronounced for the most productive research faculty (high performers) because universities may prefer to have high performers take on firm-specific roles and because high performers may be more resistant to making these investments (see Figure 1).

INSERT FIGURE 1 ABOUT HERE

Universities Want Research Productive Faculty to take on Firm-Specific Roles

Research on high performers, and notably individuals with strong general human capital, suggests at least three reasons why organizations typically want high performers to make firm-specific investments. First, organizational decision makers likely fall prey to "halo effects" in their human capital decision making – i.e. decision makers may assume that those who

demonstrate competence in one professional domain may also be competent in new domains (Sorcher & Brant, 2002). Their assessments might be correct in this case because high performance in general human capital tasks usually provides the "aptitudes, attitudes, and skills that contribute to the stock of firm-specific human capital that serves the specialized needs of the company" (Hatch & Dyer, 2004: 1173). Regardless of whether or not individual skills may actually transfer across domains, decision makers may still *believe* that they do and, accordingly, may have strong preferences for high performers in one domain to take on new roles in new domains. In academia this may manifest itself as deans consider highly research productive faculty as being smart, capable, hard working and competent and, therefore, strong candidates for associate dean positions.

Second, organizations may identify high performing knowledge workers as experienced and successful professionals to whom others can turn for help and advice (Olroyd & Morris, 2012) and, accordingly, organizations may want these individuals in leadership roles where they can model success and mentor others to achieve similar successes. This may be particularly relevant in academia where faculty are rewarded for becoming thought leaders in their fields. Universities may benefit from having experienced and successful thought leaders in firm-specific roles such as department chairs and associate deans because they can model success for others and can presumably secure needed resources for other faculty to become more successful.

Third, the organization typically expects that it will get more value from a high performer than a low performer from a firm-specific investment (Morris, Alvarez, Barney, & Molloy, 2017). This is because a high performer who has high levels of general human capital is likely to be more efficient at learning, and therefore contributing, in a firm-specific role (Ployhart,

Iddekinge, & Mackenzie, 2011). Thus, decision makers may expect a faster adjustment cost when high performers on general human capital related tasks take on these firm-specific roles.

Of course, there may be some exceptions. Some highly productive faculty may also be highly caustic individuals or may not have the patience to focus on administrative tasks. These individuals may simply lack the human or social capital required for administrative roles. Additionally, research stars may be so valuable to the university in their research roles that deans prefer to protect them from administrative roles. While these exceptions certainly exist, we suspect they are indeed the exception rather than the rule.

In general, if firms believe that they will benefit more by having high performers in these firm-specific roles, then the firm's desire to put someone in one of these roles likely increases with individual performance. This is shown as the upward sloping firm line in Figure 1, and notably departs from the classic expectations in firm-specific human capital theory. Inasmuch as universities, like other human capital-intensive firms, find that their high performers generally perform well on multiple dimensions, they may want their more productive research faculty to take on firm-specific administrative roles. Accordingly, the university is more likely to select faculty who are high performers on research to take on firm-specific roles.

Research Productive Faculty Resist Making Firm-Specific Investments

But while a university may benefit more from higher performing faculty taking on firm-specific roles, faculty resistance to these roles may also increase with productivity. There are at least two reasons why high performers may resist firm-specific investments more than their lower performing counterparts: (1) they have higher potential payoffs from their research investments and (2) they have higher mobility risks. We discuss each in turn.

High performers generally have higher opportunity costs than lower performers when taking on firm-specific roles. The most productive faculty members may produce multiple top tier publications per year. In contrast, lower performing faculty may have no top tier publications. Thus, the ratio of top tier publication to research effort is likely much higher for the high performing faculty. When taking on a firm-specific role, such as becoming an associate dean, faculty sacrifice large chunks of research time to focus on new administrative tasks. This means that, all else equal, high performing faculty sacrifice more publications to take on these roles than their lower performing colleagues. Since research productivity is often the most important indicator of a faculty member's value to the university (and is often linked to compensation), faculty will avoid activities that detract from research productivity. If so, then high performing faculty sacrifice more in both publications and in future potential earnings by taking on firm-specific roles.

High performers also likely have lower probabilities of realizing the potential payoffs from firm-specific investments because they have higher mobility risk than low performers. Since these are high performers on highly transferrable tasks, they are highly visible to the external labor market (Aguinis, Suárez-González, Lannelongue, & Joo, 2012). This is true for similar professions with highly visible performance such as star analysts (Groysberg & Lee, 2009), star professional athletes (Chen & Garg, 2018; Ethiraj & Garg, 2012), star scientists (Hess & Rothaermel, 2011, Tzabbar & Kehoe, 2014), and so forth. In academia, high performers are likely to get more solicited and unsolicited job offers from other universities than low performers. Thus, high performers are generally more aware of their mobility than low performers (Groysberg, Lee, & Nanda, 2008) and more likely to leave than their lower performing counterparts (Kang, Oldroyd, Morris, & Kim, 2018).

These arguments suggest that high performers may be more resistant to taking on firm-specific administrative roles than their more average performing peers. This is illustrated as the downward sloping employee willingness to make firm-specific investments line in Figure 1. Given this relationship, we expect that the likelihood of taking on an AD role generally decreases with increasing research productivity. This implies the following formal hypothesis:

Hypothesis 1: A faculty member's probability of taking on a firm-specific administrative role is negatively related to that individual's research productivity.

Our logic so far suggests that the firm-specific human capital dilemma is more pronounced for high performers. As illustrated in Figure 1, the gap between the university's desire for individuals to make firm-specific investments and individual willingness to make these investments increases as performance increases. If so, then universities may seek to persuade high performers to take on firm-specific roles through some additional compensation or inducements (Andersson, Freedman, Haltiwanger, Lane, & Shaw, 2009). As pointed out by Nyberg, Fulmer, Gerhart and Carpenter (2010), pay increases are important in motivating employee behavior. This is especially relevant to high performers, as they tend to be more satisfied with a strong performance-pay link than their lower performing peers (Nyberg, 2010). For instance, increased pay offers greater vindication for the high performer's sacrifice in making firm-specific investments and provides justification for their potentially high levels of future performance (Nyberg, Pieper, & Trevor, 2016). While increased pay for becoming an associate dean may not be the same as paying someone for a specific measure of performance, it represents a monetary reward for a new position that a person has "earned" or will likely earn in the future (Shaw & Gupta, 2007). Hence, increased compensation may be a way of validating what may be seen as a potentially difficult investment decision for a high performing professor who is creating value through research publications.

Moreover, the classic human capital literature identifies several ways that firms may persuade individuals to make firm-specific investments such as relational governance (Wang et al., 2009), increased job security (Wang et al., 2017), takeover protections (Wang et al., 2016) and even diversification (Wang & Barney, 2006). In the university setting, administrative roles may offer both financial and non-financial forms of compensation. Assuming universities can fluidly adjust their inducements based on their human capital needs, they are likely to offer greater total inducements to their high performers to persuade them to make firm-specific investments and take on firm-specific roles.

Hypothesis 2: High productive faculty receive higher total compensation increases when taking on firm-specific administrative roles than lower research productive faculty.

METHODS

We study faculty taking on firm-specific roles by examining associate deans in business schools. We obtained individual level data on salaries, tenure, and administrative positions from the records departments, HR departments and/or online public databases for 4,162 professors from 39 of the top 100 U.S. business schools (as ranked by U.S. News and World Report in 2016) for a total of 37,206 professor-year observations (roughly nine years of salary observations for each professor, on average).[1] Our sample roughly covers 1990-2017. We removed assistant professors and professors with no salary data, or inaccurate salary data (the main results use a cutoff of $30k in total compensation to preserve as much data as possible, but our findings are robust to using $50k, $75k and $100k cutoffs as well). We supplemented the salary data through several additional data harvesting efforts involving research assistants and redundant simple assignments for Mechanical Turk workers to find details such as PhD completion year, the department of the professor, etc. We classified professors as being part of one of the following

[1] For all universities, this public data is available for all academics to access. While some of the data is widely published online, other data is a bit more difficult to obtain and needs to be requested by the individuals.

departments: accounting (14%), economics (9%), finance (14%), information systems (8%), management (31%), marketing (17%), and operations (7%). We also collected publication data from SCOPUS and Web of Science. We queried all publications for each professor and retained only peer-reviewed publications for analysis. After data cleaning we end up with a final sample of 1,639 professors for 14,651 professor-years in the final sample.

Empirical Approach

We test hypothesis 1 using a logit model predicting whether an individual was an AD in a given year using an interacted school-year fixed effect. In this case we wanted to model between person comparisons within the unique school-year combinations in the sample. We test hypothesis 2 using OLS with fixed effects for individual and year. For these models we wanted to examine the within individual effect of becoming an AD on salary. The individual fixed effect accounts for any time invariant individual level unobservables that might affect the relationship between becoming an AD and compensation. For example, individuals who aspire to be ADs or full Deans may be less resistant to taking AD positions. If professor career aspirations are stable through the observation period then the individual fixed effect should account for these unobservable differences in individual motivations to accept AD positions. The year fixed effect similarly accounts for any unusual annual trends.

Measures

Firm-specific Administrative Role. The key proxy for a firm-specific administrative role is whether the individual is an associate dean, *AD,* in any given year. This variable takes on a value of one in any year where the individual serves as an AD and a value of zero otherwise. We hand collected data on all Associate Deans from all the schools in our sample and used their CVs to identify and code their years of service in AD positions. Like many firm-specific

administrative roles, becoming an AD requires that the person engage in new tasks that involve an investment in firm-specific knowledge. While some of the AD role includes general human capital, we have several reasons to believe many aspects of the AD position make it a highly firm-specific role.

First, ADs themselves report that becoming an AD is an example of a highly firm specific investment. We interviewed 10 ADs as part of an exploratory research effort and all but one explicitly described their AD work as university-specific service and unlikely to increase their mobility or general marketability. They described investing in understanding bureaucratic processes at their universities which are often highly idiosyncratic, learning who knows what within the university (e.g. knowing who manages different centers and programs on campus), learning the specifics of how their academic programs meet accreditation standards, learning who the relevant outside stakeholders are and how to appease them, and so forth. Thus, ADs describe the acquisition of firm-specific knowledge as a critical part of their AD role.

Second, there is a clear tradeoff between research productivity and the AD role. ADs frequently reported that they were at least temporarily sacrificing their own research productivity in order to serve the school. Indeed, we tested these assertions by examining the forward research productivity of ADs for several time windows after becoming ADs. These results (see Table OA1-1 in Online Appendix 1) indicate that ADs have significantly lower forward research productivity.

Third, we see no evidence in these data that becoming an AD increases mobility. We examined a linear probability model predicting mobility to another school using an individual's prior service as an AD as the key predictor (see Table OA1-2 in Online Appendix 1). Results

show that individuals who have served as ADs are significantly *less likely* to move schools: AD investments do not increase mobility.

Fourth, becoming an AD does not seem to be purely about an administrative career choice. Only 9 of the 111 ADs in our sample ever became full Deans and only 13% overall stayed in administrative roles after serving as ADs. While these data imply that some people become ADs with the hope of pursuing a dean position, they also show that a small percentage of these ADs end up becoming deans. Moreover, as we discuss below with our qualitative work, ADs generally report that they prefer not to take on these roles or stay in these roles.

Compensation. For hypothesis 2 the main dependent variable is *log of annual salary,* measured as the natural log of the professor's annual financial compensation. Across all years, the mean salary is $176K with a minimum of $32K and a maximum of $631K. Consistent with prior research, salaries are logged to adjust for any skew in the distribution. Most universities report a nine-month base salary, but a few report total annual compensation (including summer support), which we address through a school fixed effect.

Performance. We proxy for performance on general human capital tasks using a cumulative count of a professor's Financial Times 50 (FT50) publications. In general, individuals with more FT50 publications will be viewed as high research performers within their institutions. Since FT50 publications affect overall business school rankings, business schools generally tend to incentivize publications in these outlets and consider them top tier publications.

Controls. In addition to "individual", "school" and "year" fixed effects (fixed effects used differ depending on the model) we include a number of controls. *Leaving in Next Year* is a dichotomous variable that captures whether this is the individual's last year in that institution. In other words, if the person will leave our data for this institution in the following year this

variable is coded a one, but zero otherwise. *Experience* represents the years of experience since the professor completed the PhD. *Full Professor* is a categorical variable indicated as a 1 for a professor being a full professor in that year and a 0 otherwise. We include dummy controls for *Administrator* which is coded as 1 for any professor serving as a department- or program-level role such as program director or area chair in the prior year (higher level admins such as provosts, chancellors, etc. are excluded because they are not typically at risk of becoming ADs). *Department* is a categorical variable which captures the professor's department membership.

RESULTS

Variable means and correlations are shown in Table 2.

[INSERT TABLE 2 ABOUT HERE]

Table 3 presents the results related to hypothesis 1. Models 1-3 use a logit model. Model 1 is a controls-only baseline model. Model 2 includes our professor performance measure and suggests that as performance increases the likelihood of becoming an AD decreases. Model 3 is a stripped-down model verifying that the results are not likely driven by overfitting. The interpretation of Model 2 is that a one unit increase in performance (or one additional FT50 publication) decreases the odds of becoming an AD by 6.2% ($e^{-0.064}$). Models 4-6 are constructed in the same format (controls only, full model, no controls) using OLS. Both the logit and LPM models are consistent with the predictions of Hypothesis 1.

Table 4 contains the main results for hypothesis 2. Model 1 is a controls-only model. Model 2 adds the dummy variable for whether the individual is an AD in that year. Model 2 shows a positive and significant relationship between being an AD and salary, generally supporting the core economic logic of Wang and Barney (2006) – i.e. universities seem to pay people to take on firm-specific roles. Model 3 adds a control for the performance level of the professor to ensure

that our AD finding is not artificially driven by professor research performance. The coefficient on our AD variable remains positive and significant. The interpretation in this fully specified model is that an individual, on average, has a 21.7% ($e^{0.196}$) higher salary when an AD than when not an AD. This corresponds to approximately $38.1K in annual salary on average. Note also that the coefficient on performance is positive and significant, suggesting that higher research productivity correlates with higher compensation. Importantly, the coefficient translates to approximately $1.7K in compensation increase per FT50 publication per year at the margin. In other words, this means that becoming an AD is approximately 22 times more financially beneficial to an AD, on average, than publishing one more FT50 article. Since the typical AD only loses around one publication during their AD service (see online appendix tables) this means that the AD compensation increase is multiplicatively more than would be required to compensate for lost research productivity.

Model 5 shows a stripped-down model to examine overfitting concerns. The coefficient estimate for *AD* is positive and statistically significant suggesting that the core finding is not a result of overfitting in this context. The controls reduce rather than create the positive relationship in the main model. These results are consistent with our theoretical expectation that individuals will receive higher compensation when taking on firm-specific roles.

Model 4 adds the interaction between professor performance and serving as an AD. The coefficient is negative and statistically significant. Our hypothesis predicted a positive and significant interaction, meaning that as performance increases the salary bump for becoming an AD would also increase. This result is exactly the opposite. As performance increases the salary bump for being an AD *decreases*. Model 6 is a stripped-down model that affirms that this is not due to overfitting in this context. The gap between AD and non-AD is greatest at the lowest end

of the performance range and smallest (and no longer statistically different) at the highest end of the performance range (See Figure 2). To put this in perspective, the average salary increase for becoming an AD at the 25th percentile of performance is $34.4K and the average salary increase for becoming an AD at the 75th percentile of performance is $31.4K. Thus, the pay increase associated with becoming an AD at the 25th percentile is 9.6% higher than the pay increase associated with becoming an AD at the 75th percentile. This finding is opposite our theoretical prediction that higher performers will receive higher compensation for making firm-specific investments.

[INSERT FIGURE 2 AND TABLES 3 and 4 ABOUT HERE]

Robustness Checks

Matching Models. One might be concerned that those who become ADs systematically differ from those who never become ADs, so we used nearest neighbor matching to create a matched sample to our ADs. Results are consistent with our main findings and are included in the online Appendix in Tables OA1-3 and OA1-4.

Alternative Performance Measures. While we believe the FT50 cumulative count is a strong proxy for research productivity, we acknowledge that publication counts may not appropriately account for research impact. Thus, we constructed a composite performance measure that incorporates both publication count and impact through citations. Results are consistent with our main findings and are included in Table OA1-5 in Online Appendix I.

Fixed Effects Specifications. Our main models include school and year fixed effects for hypothesis 1 and person and year fixed effects for hypothesis 2. We wanted to be sure that our results were not arbitrarily driven by our choice of fixed effects, so we also tested a person-school interaction as a fixed effect and a school-year interaction as a fixed effect for hypothesis

2. These allow us to control for person specific trends unique to a specific school and school specific annual trends. Results are substantively identical to our main results. Tables for these additional results are shown in Online Appendix I Tables OA1-6 and OA1-7.

Compensation Measure Reporting. We used total compensation reported in the salary databases provided by the universities. As described previously we address any time-invariant differences in how schools report through school fixed effects. However, we were also concerned with the possibility that firms use different reporting for different individuals. It is possible that schools may report nine-month base salary for normal faculty but report total compensation for ADs. If so, then any increase in compensation associated with becoming an AD could be a mechanical artifact of a school changing how they report compensation rather than a substantive change in compensation. There are two reasons to reject this possibility. First, the largest compensation increases occur for the lowest performing faculty, who are also the least likely to receive summer support. Moreover, since summer support is typically distributed in ninths of base salary a ninth for a high performer is larger than a ninth for a low performer. Thus, if this were the case we would observe a mechanical increase for all professors and that increase would get larger as performance, and base compensation, increases. Second, if the increase were mechanical we would see a precipitous drop in compensation when professors shift out of the AD role back into normal faculty positions. We replicated our main results for when individuals step out of AD roles and find no significant change in total compensation when individuals leave AD roles and return to the faculty. These results are available in Online Appendix I Table OA1-8.

Do High Performers Really Resist More? We cannot observe actual resistance in our secondary data analysis. We took several steps, however, to verify resistance as a core

underlying mechanism for our findings. First, we examined whether high performers experience a larger decrease in research productivity than low performers when serving as ADs. We recreated our forward-looking performance analysis using a split sample for the high and low performers (shown in Online Appendix I in Table OA1-9 and Table OA1-10). Not surprisingly, the top performers sacrifice significantly more research productivity than low performers. This supports our logic leading up to H1 that high performers likely sacrifice more when taking on firm-specific roles.

Second, as part of additional exploratory analysis (described in more detail below), we interviewed a sample of current and former ADs and deans. These ADs and deans reported both general resistance to taking on the AD positions and a higher level of resistance by high performers. One notable quotation from a dean illustrates this well: "In terms of the individual's willingness to accept the role, research productivity mattered a great deal. I found, in general, a strong negative correlation between research productivity and willingness to accept the role." Overall, the qualitative responses from deans and ADs support the idea that higher performers are more likely to resist firm-specific roles. While we are cautious about overgeneralizing from a small sample, we note that individual resistance to AD roles was a very strong theme even in these small numbers. Thus, our interviews lend support for "resistance" as the core mechanism driving our results.

Is this More About Opportunity or Resistance? While we argue above that there is clear evidence for resistance as a central mechanism in our story, we also interviewed 14 former or current deans from top 100 U.S. business schools to better understand the university's perspective. Several deans indicated that in some circumstances they purposefully excluded individuals from the AD pool based on their performance (quotations shown in Table OA2-1 in

Online Appendix II). This response is inconsistent with the logic we used when developing our predictions, so we explored the extent to which it threatens our findings in two ways.

First, nine out of 14 deans (64%) reject the notion that they exclude faculty from AD consideration due to their research productivity. These deans frequently mentioned that their pools of quality AD candidates were small and they preferred to let the person say "no" rather than exclude them. Additionally, 13 of the deans (~93%) indicated resistance and/or getting turned down when inviting faculty to take on AD roles. Thus, data from this sample suggests that individual resistance is a more dominant explanation for our results than deans purposefully excluding high performers from the candidate pool.

Second, those who did mention excluding individuals based on performance noted that this was "rare" and only applied to unusually high performers. Thus, we explored in our secondary data whether accounting for the small percentage of disproportional performers in each year changed our core results. We thus coded stars in each year by identifying the top 90^{th}, 95^{th} and 99^{th} percentile faculty on research productivity. We then repeated all of our analyses by both removing and controlling for stars. Results (included in Online Appendix I Tables OA1-11 and OA1-12) are consistent with the results presented in the main analysis. Thus, it appears our results are not primarily driven by deans excluding unusually high performers.

Exploratory Analysis

We noted previously the surprising finding that ADs with lower research productivity receive larger pay bumps than higher research productive ADs. To better understand the reasons for this finding we: (1) conducted semi-structured in-person interviews with 10 ADs/deans, (2) surveyed 20 different ADs/deans about our findings, and (3) surveyed 10 of the 20 ADs/deans above with a follow-up question about non-financial incentives for ADs.

First, we conducted semi-structured, exploratory interviews with a convenience sample of 10 individuals who were serving, or who had previously served, as associate deans (See Figure OA2-1 in Online Appendix II for our interview protocol). We conducted the interviews using a grounded theory methodology (Glasser & Strauss, 1967), specifically using the constant comparative method as described by (Browning, Beyer, & Shetler, 1995) to extract categories and themes from the interviews. We recorded and transcribed our interviews in order to facilitate the extraction of categories and themes. We discontinued the exploratory interviews when a level of saturation was reached (Glasser & Strauss, 1967; Burgelman, 1994).

The interviewees suggested three explanations for the surprising results—compensation salary bands, equity theory and opportunity costs (several suggested that multiple mechanisms may be at play simultaneously). After the explanations were drawn from the exploratory interviews, we briefly described the top three responses in an email (Figure OA2-2 in Online Appendix II) that was sent to a list of associate deans/deans who were identified as people the authors knew from a list of the top 100 business schools. We emailed 36 current Deans and ADs and shared our unanticipated finding and asked them to select, and rank order, those explanations that they felt best explained the findings, or choose an "other" option with explanation. We received 20 responses, which included two dominant potential explanations.

Consistent with our exploratory interviews, the most frequently mentioned explanation was that universities have a set salary band (and typically an upper limit) for the associate dean position. High performing faculty members are already in or near the limit of that salary band. In contrast, low performers typically have lower compensation when asked to be an AD so their salary must be raised by a greater amount to get within the AD salary band. This logic is consistent with findings in the compensation literature (e.g., Newman, Gerhart, & Milkovich,

2016). Thus, universities with salary bands for ADs may mechanically depress the upside for high performing researchers who become ADs while magnifying the upside for low performing researchers. This was the most mentioned explanation (16 out of 20).

Second, some of our interviewees indicated an equity theory logic for this finding. When someone becomes an AD they are one of several ADs. Equity theory suggests that these ADs likely require similar salaries given their relatively similar job roles and title. If one AD is paid unusually more or less than the others, then there could be social comparison concerns leading to internal coordination costs (Nickerson & Zenger, 2008). This could happen at any university but may be especially salient in public institutions where salary information is made public by law. This makes social comparison relatively easy. Moreover, since ADs typically work together and since they all have the same position title within an internal labor market, it seems equitable to minimize the variance in their compensation (Adams, 1963). Equity theory argues that perceptions of inequity cause employees to take actions to restore equity (Gerhart, Minkoff, & Olsen, 1995). As one dean put it, "Some of it is just an equity thing among your associate deans. When you bring somebody in, you don't want them to be so far behind... they all know what they're making." One of our ADs noted that he had influence over the raises and consistently recommended that he receive one of the lowest raises in order to preserve equity comparisons across the team of associate deans. This explanation was supported by 12 out of 20 deans.

While only two of 20 associate deans indicated the possibility that universities may be compensating highly productive faculty in different ways than the low productivity faculty when becoming ADs, we felt it worth exploring whether non-monetary awards varied significantly for associate deans. So we sent emails back to the 20 deans who responded to our survey and asked them whether ADs at their university typically received standard packages in terms of reduced

teaching load or increased research funds or whether these packages tended to be customized to each AD (see Online Appendix II: Figure OA2-3 for the email sent out). We received responses from 10 deans with 9 responding that non-monetary compensation such as teaching loads (e.g., zero or one course for all ADs) for associate deans were largely standard. Thus, while it seems likely that there are some cases where productive associate deans may receive more non-salary compensation, this does not seem to be a prevalent practice.

DISCUSSION

Our main results and additional exploratory analysis in this context are consistent with our broader theory that the firm-specific human capital dilemma increases with individual performance. In addition to our theory that the dilemma increases with performance, however, our theory also implies a zone of misaligned incentives. Figure 1 shows a vertical dashed line indicating the performance level at which firm desires for individuals to make firm-specific investments and individual willingness to make these investments intersect. To the right of this point the dilemma increases (zone of increasing dilemma). To the left of this point, however, a different problem increases – i.e. individual willingness to take on these roles outpaces firm desires for those individuals to take them on (zone of misaligned incentives). While we did not explicitly test predictions associated with this zone of misaligned incentives, we note it as a logical conclusion from the theory. Future research might explicitly test this assertion.

We believe our findings provide useful insights with regard to the firm-specific human capital dilemma within academia, a large $671 billion industry (NCES, 2020) with over 1.4 million faculty in the United States alone (NCES, 2019). From the individual perspective, our results suggest that lower performing faculty should seek to become ADs because they will receive compensation that far exceeds what they could have achieved through their research

productivity. High performing faculty also receive inducements to become ADs but at the cost of reduced productivity. From the university perspective, deans face a tradeoff with regard to selecting associate deans: high performers might perform better in the role but with a greater cost of lost research productivity while low performers might not perform as well in an AD role (in part because they may have less respect from peers and external stakeholders) but with a lower cost of lost research productivity. Finding lower performing faculty who can be effective in an AD role seems to be a potentially optimal approach.

While our results in academia are consistent with our core theory, it is important to examine the extent to which our theory may generalize to other contexts. At a high level it seems that several aspects of academia are similar to the human capital contexts in other professional service firms. Prior research has categorized universities and academic institutions as professional service firms (PSFs) along with health care firms (healthcare R&D and service firms), management consulting firms, financial service firms, accounting firms and law firms because their human capital structure is distinct from other types of firms (Hinings & Leblebici, 2003; Hitt, Bierman, Uhlenbruck, & Shimizu, 2006; Malos & Campion, 2000; Swart & Kinnie, 2010). This distinction comes because: (1) the firms' core or frontline workers (not just management) are human capital intensive, (2) the firms' production does not involve significant amounts of non-human assets, (3) the core workers are professionals with explicit professional norms (including generally accepted measures of performance) that define appropriate behaviors (von Nordenflycht, 2014), and (4) core workers possess significant autonomy in how they utilize resources and invest in their own skills to generate performance outcomes (Barley & Tolbert, 1991; Greenwood et al., 2006; Malhotra, Hall, Shaw, & Oppenhiem, 2006). PSFs are also similar in that the professionals who do the core work distinguish themselves on tasks requiring

general human capital, yet these firms also have firm-specific administrative tasks that are done by professionals who must take on firm-specific roles (see Table 5 for examples of general human capital tasks and firm-specific roles in different types of professional service firms).

[INSERT TABLE 5 ABOUT HERE]

Despite these similarities, however, there are several highly distinct aspects of academia that could limit the generalizability of our findings to other professional service firms: (1) job security, (2) the visibility and transparency of performance, (3) the relative value of general vs. firm-specific investments and (4) organizational mission (See Table 6). These may reflect boundary conditions to the applicability of our theory and findings. Accordingly, we discuss each of these, and their implications for generalizability in how and why firms and their employees make decisions.

[INSERT TABLE 6 ABOUT HERE]

Job Security

First, academia is unique in the widespread use of the tenure system, which provides an unusually high level of job security to professionals. While high levels of job security are provided in certain firms and contexts—for example, Japanese firms have long been known to offer lifetime employment—this unusually high level of job security may limit generalizability of our findings to PSFs and other firms.

The overall effect of job stability on an individual's willingness to make firm-specific investments is somewhat unclear. High job security may decrease employee resistance to making firm-specific investments because it prevents the firm from behaving opportunistically after an employee has made firm-specific investments. The underlying logic of individual resistance in firm-specific human capital theory is that individuals face career risk when making firm-specific

investments. If, for any reason, individuals need to seek employment at another firm they lose the value of their firm-specific investments. High job security shifts the risk profile. While the university could still take advantage of a faculty member after a firm-specific investment by increasing teaching loads, lowering salary, etc., the downside risk is capped because the university cannot easily terminate the faculty member. With limited downside risk, individuals may be less resistant to make firm-specific investments. This is consistent with the findings of Wang and colleagues (2017, 2016) who found that when firms increase various forms of executive job security the overall level of firm-specific knowledge increased.

However, since the university cannot easily fire a faculty member, that faculty member has significant bargaining power in the employment relationship. Accordingly, a faculty member can easily turn down invitations to take on administrative roles without fear of job loss. A consultant or lawyer who refuses to take on a service role might be labeled as not being a "team player" and this label could prevent her from realizing subsequent promotions and/or could lead to termination of employment. If so, then the baseline resistance to making firm-specific investments could be higher in academia, despite the fact that high job security should reduce the risks of taking on firm-specific roles. Given these contrasting views on the effects of job security on individual resistance, it is difficult to predict whether our findings are generalizable to employees working in contexts with low job security. Future research is necessary to determine generalizability to low job security environments.

Visibility and Transparency of Individual Performance Outcomes

Another factor that may influence generalizability is the ability to accurately measure individual employee productivity or what Ouchi (1979) referred to as the availability of "output controls." Output controls refer to the ability of management to measure employee performance

primarily based on outputs which means that the value creation process need not be known but a reliable and valid measure of the desired outputs is available.

When an employee and the firm can easily measure employee productivity, the employee has greater bargaining power to capture the value she creates (Coff, 1999). Under these conditions a high performing employee may be *less* likely to take on a firm-specific role which has a clearly measurable (negative) impact on the employee's performance on core work tasks. For exceptionally high performers this information may also create a disincentive for the firm to ask high performers to take on firm-specific roles because the employee's lost productivity is readily apparent to both parties. Outcomes are highly visible and relatively easy to see and assess in academia. Business schools can measure a professor's research publications and citations with a high level of precision and while there is some interdependent team production with co-authors, the team is typically quite small (two or three individuals).

PSFs differ to some extent on the availability of precise individual output controls due in part to the extent of team production (co-production) of interdependent work and causal ambiguity in measuring performance outcomes. Similar to academia, lawyers and doctors/surgeons' performance can be measured through billings (or cases won or positive surgical outcomes) which may be easily attributable to individuals in cases where there is little team production. The same could be said for financial analysts who recommend particular investments and the performance (ROI) of those investments can be readily measured (note, however, that Groysberg, Healy, & Maber (2011) found that star analysts' performance is influenced somewhat by team production). The ability to measure individual performance appears to be much more difficult in large law, consulting, and financial service firms where teams of 4-8 individuals typically work on a project for a client. Performance is the result of greater team production and

is typically measured as "client satisfaction" which is a less objective measure than a faculty publication, analyst ROI return, or lawyer or doctor billings. Moreover, consider an attorney working on a complex case with a team of attorneys. Not only do you have the problem of team production, but you also have a problem associated with causal ambiguity because many factors influence the outcome of the case. It is never quite clear whether the outcome is determined more by the facts of the case or the skill of the attorneys.

Individual output controls are readily available in business schools which suggests that our results are more likely to be generalizable to PSFs with similar output controls. Future research may benefit from explicitly varying the level of clarity and visibility in outcome measures to explore the extent to which it affects individual willingness to accept firm-specific roles.

The Relative Value of Firm-Specific vs. General Investments

Another important factor that may be unique to academia is the relative value of firm-specific vs. general investments. While faculty publications are important for university ratings and overall performance, the overall research productivity of the faculty within a college or university is typically more important than the sustained research productivity of any one faculty member. This means that asking faculty to sacrifice their own research to serve in administrative roles that may boost total faculty research productivity may be a relatively easy productivity tradeoff decision. Our results show that ADs only sacrifice around 1 publication during the five years following their AD appointment. From the university perspective, this relatively small sacrifice may be well worth the benefits of getting a capable and competent administrator.

There may be limits to this, however. We noted that some of our deans indicated rare situations in which individuals were so research productive and had so much external visibility that they created more value for the university by NOT serving in administrative roles. This is

likely a star effect, such that universities generally want more productive scholars to take on firm-specific roles up to a certain point, but then their desires drop off precipitously. In other words, in the range of normal performers, universities may prefer the high performers to low performers. But unusually high performing stars may contribute more by continuing to generate impactful research rather than becoming distracted by administrative duties. If so, then we may need to amend our firm desire line in Figure 1 to show an increasing firm desire with productivity up to a point where productivity reaches star level, then a vertical drop to zero above that productivity level (shown in Figure 3 below). We suspect that our theory holds if the firm's perceived value from firm-specific investments is higher than their perceived value from that individual's continued investment in general human capital tasks. Once this condition fails, the firm may no longer desire individuals to take on these roles. We would expect a similar star effect in other professional service firms, but future research might look explicitly at whether star performers in other contexts are also excluded from taking on firm specific roles.

[INSERT FIGURE 3 ABOUT HERE]

Organizational Mission

Lastly, universities are rarely profit maximizing firms. Most universities, and all the universities in our study, are educational institutions with distinct non-profit missions related to knowledge creation and education. Profit incentives (e.g., non-profit vs. for profit firms) differ among professional service firms and may influence employee, and firm, decisions about taking on firm-specific roles. For example, business schools may be more willing to compensate for firm-specific investments because they are typically "non-profit" firms pursuing an educational mission. Since non-profit universities do not have the same financial pressures as "for profit" firms they may be less inclined to be opportunistic and attempt to take advantage of employees

who have made firm-specific investments. This may explain why universities pay an ongoing premium to employees that take on firm-specific roles. For-profit firms might provide an initial financial inducement to convince an employee to take on a firm-specific role and then may opportunistically pay less over time because employees in firm-specific roles are less mobile. Thus, among PSFs, our findings may be more generalizable to non-profit healthcare service firms which are more like universities with regard to a non-profit organizational mission.

CONCLUSION

Our theory extends prior research on the firm-specific human capital dilemma by suggesting that the dilemma increases with individual performance. Our findings suggest that while firms want employees to take on firm-specific roles and employees generally resist taking on these roles, there is heterogeneity among employees and firms. Some employees (e.g., those with weaker GHC skills) are better off by taking on firm specific roles and some firms (e.g., perhaps larger, more prestigious firms with more employees) prefer that some high performing employees not take on firm-specific roles. Our work suggests a key research question *is not whether individuals resist firm-specific investments, but under what conditions individuals resist these investments.* Thus, it seems important to examine the conditions under which individuals may be more, or less, likely to resist making firm-specific investments. We believe that human capital theory will benefit from future research that explicitly examines other factors that may moderate individual resistance to making firm-specific investments. Finally, while our results in academia are consistent with our proposed theory, we identified several factors that may limit the generalizability of our findings and invite future research to explore our theory in different contexts.

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Table 1: Mapping Traditional Economic Assumptions to Academia

Assumption	**Match to Business Academia**
Individuals seek utility and make employment and investment decisions in order to increase their personal utility	Faculty generally choose service assignments, teaching assignments and research activities in ways that increase their personal utility
Individuals are generally able to assess the relative payoffs of different investment options and choose the investment options that benefit them the most	Faculty are generally aware of the relative personal returns to service assignments vs. research productivity.
Individuals have a reasonable level of discretion over which investments they make	Tenured faculty can say no to service assignments with very little formal recourse.
Individuals have scarce resources of time and effort such that any investment choice requires a tradeoff – i.e. there is no employee slack energy or effort	Research faculty rarely have "slack" resources sitting on the sidelines that allow them to take on new responsibilities without sacrificing some other task or work
Individuals are generally risk averse in their decision making	Tenured faculty members are known to be risk averse – as evidenced by their choice to choose a profession where they can never get fired. This reveals a significant risk aversion preference for those who select into tenure.

Note: these typical economic assumptions are embedded in the logical setup for Becker's (1964) classic firm-specific human capital theory and Wang and Barney's (2006) modern interpretation of the firm-specific human capital dilemma.

Table 2: Descriptive Statistics and Correlations

	Mean	SD	Min	Max	1	2	3	4	5	6	7
1 Year	2008.36	6.06	1990.00	2017.00							
2 AD	0.02	0.15	0.00	1.00	0.06***						
3 Log of Annual Salary	12.00	0.39	10.40	13.40	0.67***	0.13***					
4 GHC Performance	5.15	5.86	0.00	83.00	0.33***	0.01	0.42***				
5 Years of Experience	18.78	8.81	0.00	51.00	0.26***	0.06***	0.33***	0.02**			
6 Leaving in Next Year	0.04	0.02	0.00	1.00	0.03***	-0.01	0.00	0.01	0.02***		
7 Full Prof	0.59	0.49	0.00	1.00	0.04***	0.08***	0.38***	0.16***	0.56***	0.00	
8 Administrator	0.03	0.18	0.00	1.00	-0.02**	-0.03***	0.08***	0.02***	0.09***	-0.02***	0.10***

*** $p < 0.01$; **$p < 0.05$; *$p < 0.1$. Number of observations 14,651

Table 3: Predicting the Probability of Being an Associate Dean using a linear probability and logit model

	DV = Serving as AD					
	Logit			OLS		
	(1)	(2)	(3)	(4)	(5)	(6)
GHC Performance		-0.065***	-0.019*		-0.002***	-0.001**
		(0.011)	(0.010)		(0.000)	(0.000)
Log of Annual Salary	4.646***	5.119***		0.102***	0.116***	
	(0.344)	(0.354)		(0.008)	(0.009)	
Leaving in Next Year	-0.346	-0.408		-0.005	-0.003	
	(0.381)	(0.394)		(0.006)	(0.006)	
Full Prof	-0.044	-0.003		-0.006	-0.004	
	(0.202)	(0.203)		(0.004)	(0.004)	
Years of Experience	0.007	-0.001		0.000*	0.000	
	(0.008)	(0.008)		(0.000)	(0.000)	
Administrator in Previous Year	-1.427***	-1.393***		-0.037***	-0.037***	
	(0.402)	(0.399)		(0.008)	(0.008)	
Constant				-1.204***	-1.363***	0.028***
				(0.103)	(0.114)	(0.001)
Department Controls	Yes	Yes	No	Yes	Yes	No
Observations	6,215	6,215	6,215	13,012	13,012	13,012
R-squared				0.023	0.028	0.000
Number of school_year groups	219	219	219	635	635	635

Note: Fixed effects for school*year. Robust standard errors clustered at school-year level in parentheses.

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

Table 4: Predicting Log Salary using OLS with Person, Year Fixed Effects

OLS with Fixed Effects for Person & Year

	DV = Log of Annual Salary					
	(1)	(2)	(3)	(4)	(5)	(6)
AD		0.157***	0.161***	0.196***	0.365***	0.399***
		(0.017)	(0.017)	(0.025)	(0.033)	(0.040)
GHC Performance			0.010***	0.010***		0.056***
			(0.001)	(0.001)		(0.004)
GHC Performance * AD				-0.006***		-0.017***
				(0.002)		(0.004)
Leaving in Next Year	-0.038***	-0.036***	-0.037***	-0.037***		
	(0.006)	(0.006)	(0.006)	(0.006)		
Full Prof	0.141***	0.137***	0.120***	0.120***		
	(0.008)	(0.008)	(0.007)	(0.007)		
Years of Experience	0.001	0.001	-0.001	-0.001		
	(0.001)	(0.001)	(0.001)	(0.001)		
Administrator	0.097***	0.113***	0.110***	0.110***		
	(0.020)	(0.020)	(0.019)	(0.019)		
Year Controls	Yes	Yes	Yes	Yes	No	No
School Controls	Yes	Yes	Yes	Yes	No	No
Department Controls	Yes	Yes	Yes	Yes	No	No
Observations	14,651	14,651	14,651	14,651	14,651	14,651
Adjusted R^2	0.819	0.825	0.832	0.832	-0.090	0.290

Note: *p<0.1; **p<0.05; ***p<0.01

Robust standard errors clustered at the individual level in parentheses

Table 5: Applications of our Theory to Other Contexts

Industry	**Position**	**General Human Capital Tasks**	**Firm-Specific Human Capital Tasks**	**Supporting Research**
Academia	Professor	Research skills—including theory development, data analysis, grant acquisition, writing	University-specific administration—including program development, policy implementation, onboarding and training, relationships with alumni donors, knowledge of key stakeholders, knowledge of faculty members	Toole & Czarnitzki, 2009; Zucker, Darby, & Armstrong, 2002
Consulting	Management Consultant	Client problem solving—including structured problem solving, data analysis, client relationships, presentations	Firm-specific administration—including training on firm consulting processes and tools, resource allocation and acquisition, culture and internal best practice development	Mayer, Somaya, & Williamson, 2012;(Morris et al., 2019)
Financial Services	Financial Analyst	Merger and acquisition analysis—including financial analysis and deal completion	Firm-specific administration—including training financial analysts to use proprietary software, tracking analyst performance, developing knowledge of analyst strengths and weaknesses to determine client project assignments	(Groysberg et al., 2011; Groysberg, Lee, et al., 2008)
Legal Services	Lawyer	Legal research—including analysis and argumentation to win cases	Firm-specific administration—including developing relationships with partners and associates, training associates on internal firm policies, managing internal support staff	Hitt, Bierman, Shimizu, & Kochhar, 2001; Lazear, 2009; Sherer, 1995
Health Care	Physician	Diagnose and treat injuries or illnesses—including examining patients, tracking medical histories, prescribing medications, and counseling patients	Health care administration—including managing and retaining patients, learning hospital policies and procedures, using hospital patient care information systems, training physicians on hospital policy	Brown, Gianiodis, & Santoro, 2015; Prendergast, 1993; (Brown et al., 2015)

Table 6: Boundary conditions of firm-specific investment dilemma

Industry	**Job security**	**Visibility & transparency of performance**	**Value of firm-specific vs. general investments**	**Organizational mission**
Academia	High security—firm-specific investments come with lower risk of firm opportunism because of tenure	High visibility—general human capital performance outcomes are highly visible because of the publication model and present increased loss of mobility for making firm-specific investments	Medium value difference—relative value of making a firm-specific investment vs. a general investment is low until high performers become stars	Low profit maximizing—firms may be more likely to compensate people for firm-specific investments because they tend not to operate under a for-profit model
Consulting	Low security—firm-specific investments come with higher risk of firm opportunism as employees are part of an up or out system	Medium visibility—general human capital performance outcomes are highly visible, but it is difficult to disentangle individual contribution from team production	Medium value difference—relative value of making a firm-specific investment vs. a general investment is low until high performers become stars	High profit maximizing—firms may be less likely to compensate people after making firm-specific investments, as such employees become less marketable as a result of their investment behaviors
Financial Services	Low security—firm-specific investments come with higher risk of firm opportunism as employees are part of an up or out system	Medium visibility—general human capital performance outcomes are highly visible, but it is difficult to disentangle individual contribution from team production	Medium value difference—relative value of making a firm-specific investment vs. a general investment is low until high performers become stars	High profit maximizing—firms may be less likely to compensate people after making firm-specific investments, as such employees become less marketable as a result of their investment behaviors
Legal Services	Low security—firm-specific investments come with higher risk of firm opportunism as employees are part of an up or out system	Medium visibility—general human capital performance outcomes are highly visible, but it is difficult to disentangle individual contribution from team production	Medium value difference—relative value of making a firm-specific investment vs. a general investment is low until high performers become stars	High profit maximizing—firms may be less likely to compensate people after making firm-specific investments, as such employees become less marketable as a result of their investment behaviors
Health Care	Medium security—firm-specific investments may not be as risky as more profit-driven organizations, but still require continued performance	High visibility—general human capital performance outcomes are highly visible because of the production model and present increased loss of mobility for making firm-specific investments	Medium value difference—relative value of making a firm-specific investment vs. a general investment is low until high performers become stars	Low profit maximizing—firms may be more likely to compensate people for firm-specific investments because they tend not to operate under a for-profit model

Figure 1: Illustrating Expanded Theory of the Firm-Specific Human Capital Dilemma that Incorporates Individual Performance

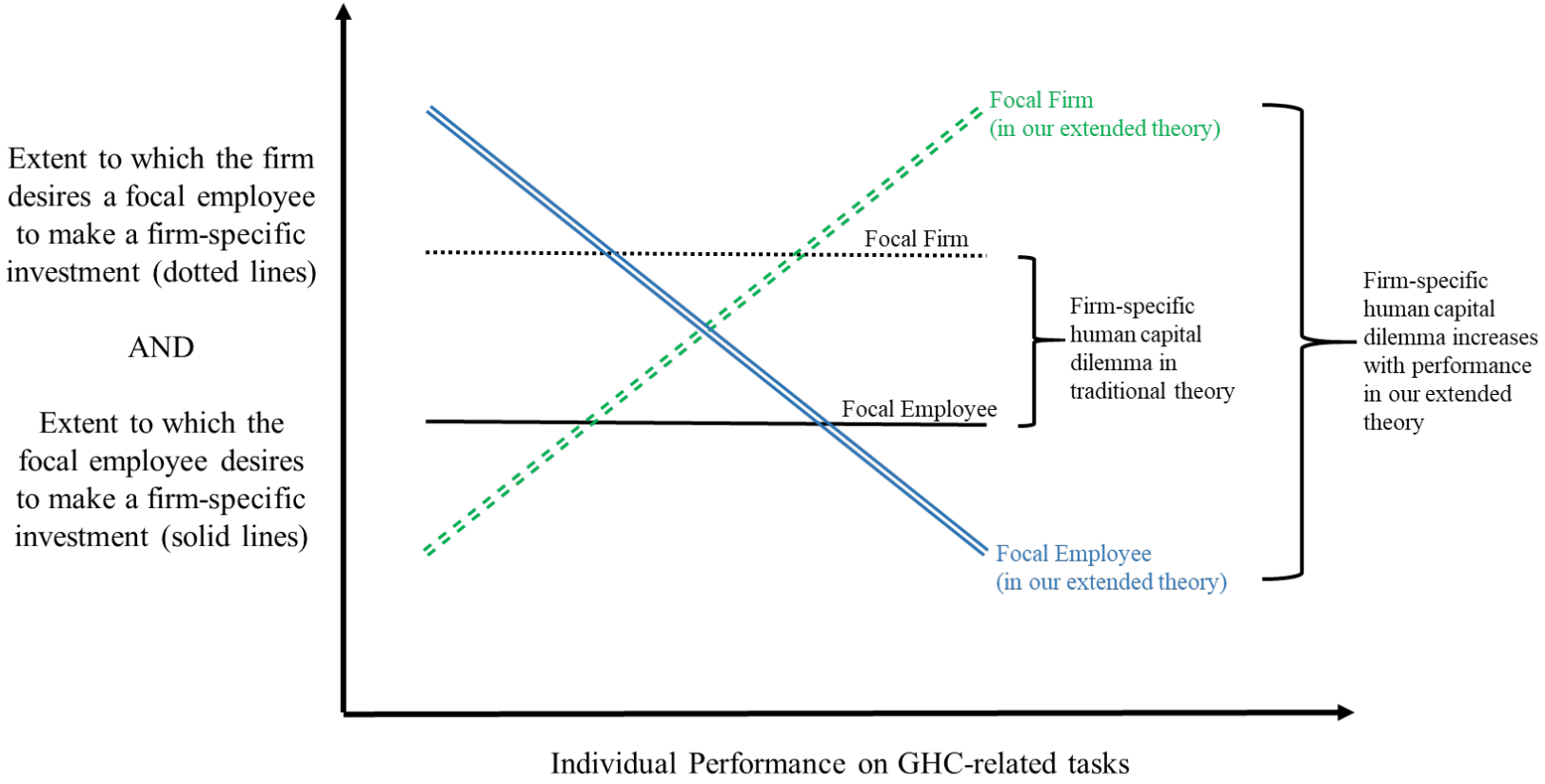


Figure 2: Predicted Salary based on Performance Level by AD and non-AD (Visualization of the H2 Interaction)

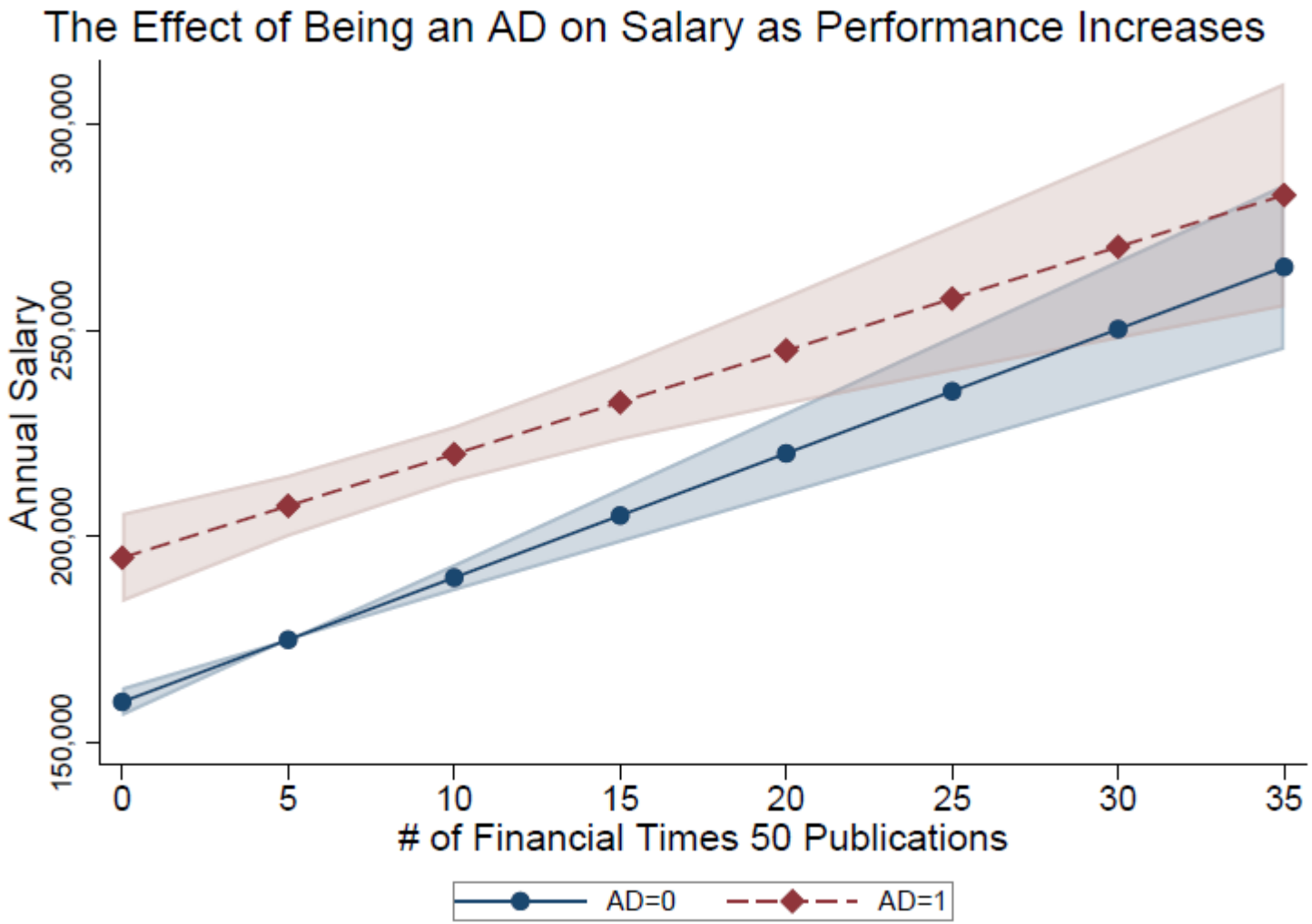
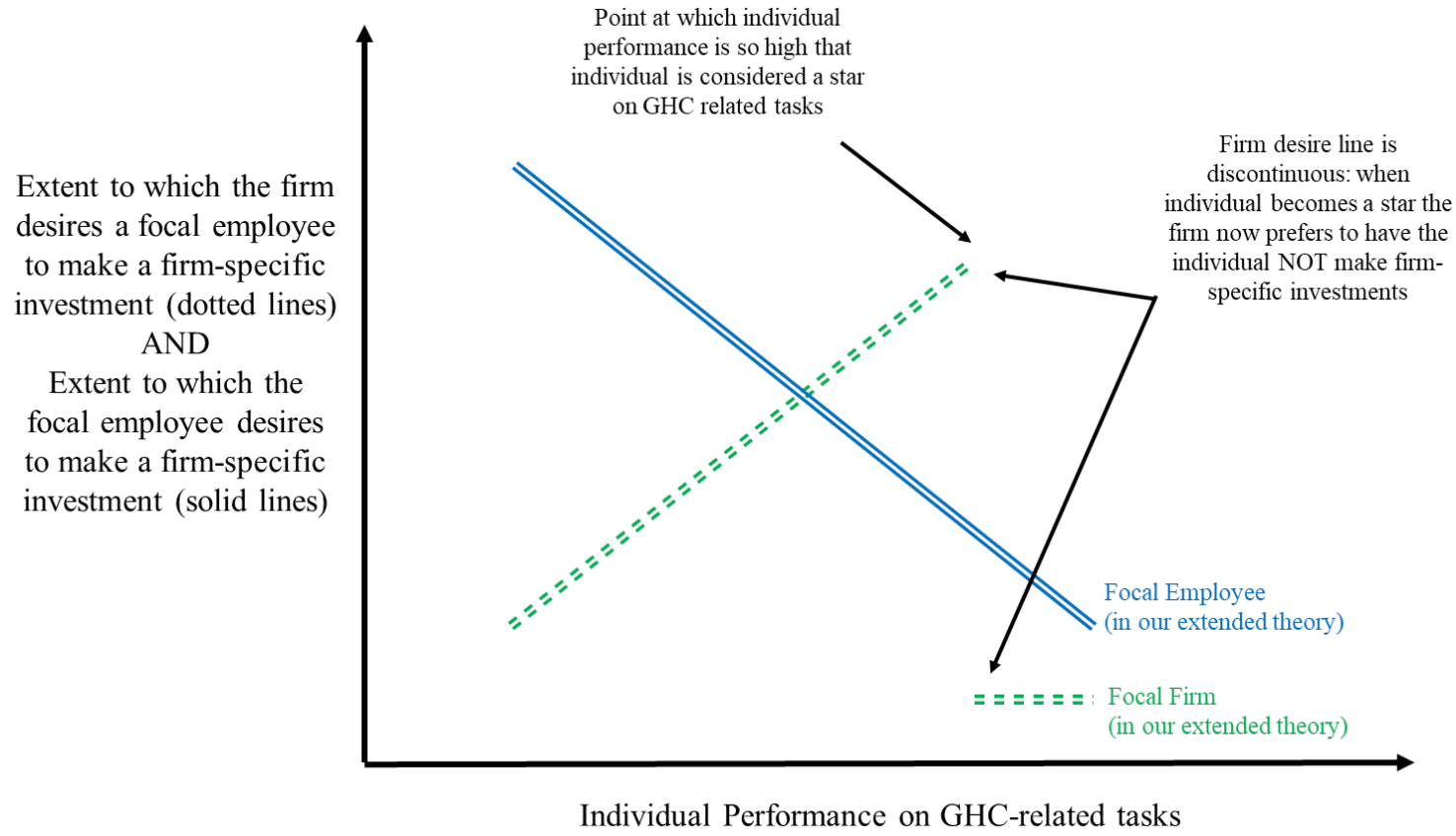


Figure 3: Illustrating Potential Star Effect in Expanded Theory



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