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Alleviating Managerial Dilemmas In Human-Capital-Intensive Firms Through Incentives: Evidence From M&A Legal Advisors

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**ALLEVIATING MANAGERIAL DILEMMAS IN HUMAN-CAPITAL-INTENSIVE
FIRMS THROUGH INCENTIVES: EVIDENCE FROM M&A LEGAL ADVISORS**

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ABSTRACT

We examine how human-capital-intensive firms deploy their human assets and how firm-specific human capital interacts with incentives to influence this deployment. Our empirical context is the UK M&A legal market, where micro-data enable us to observe the allocation of lawyers to M&A mandates under different incentive regimes. We find that law firms actively equalize the workload among their lawyers to seek efficiency gains while ‘stretching’ lawyers with high firm-specific capital to a greater extent. However, lawyers with high firm-specific capital also appear to influence the staffing process in their favor, leading to unbalanced allocations and less sharing of projects and clients. Paradoxically, law firms may adopt a seniority-based rent-sharing system that weakens individual incentives to mitigate the impact of incentive conflicts on resource deployment.

[124 words]

Key words: Human-Capital-Intensive Firms; Human Capital; Managerial Dilemmas; Incentives; Capabilities; Micro-foundations; Mergers and Acquisitions; Law firms

INTRODUCTION

Human-capital-intensive firms, such as law firms, consulting firms, accounting firms, investment banks, advertising firms and hospitals, play a large role in modern economies and as such are the subject of an emerging literature that focuses on the management of their most crucial resource – human assets (Blyler and Coff, 2003; Campbell, Coff, and Kryscynski, 2012; Chadwick and Dabu, 2009; Coff, 1997; Ethiraj and Garg, 2012; Ployhart and Moliterno, 2011).

While the human assets on which these firms rely are a critical resource for sustaining their competitive advantage (Adner and Helfat, 2003; Coff, 1997), their management also presents a major challenge (Coff, 1997), particularly as human-capital-intensive firms rely on organizational members who have substantial bargaining power and a preference for autonomy (Ethiraj and Garg, 2012; Greenwood and Empson, 2003; Teece, 2003; von Nordenflycht, 2010). As a result, ‘cat herding’ – a term used to describe the management and direction of individuals who value their autonomy and the pursuit of their own interests (Anand et al., 2007; Lowendahl, 2000) – is one of the most pressing dilemmas. Understanding how dilemmas rooted in human assets affect firms’ ability to create rents and how firms resolve such dilemmas is crucial to strategic management (Castanias and Helfat, 1991; Coff, 1997), particularly in developed economies where firms increasingly depend on human capital for competitive advantage.

Yet we know relatively little about how human-capital-intensive firms deal with the dilemmas arising from their human assets. Organizational design is an important lever used by human-capital-intensive firms to mitigate such dilemmas. As one of the most important dimensions of organizational design, incentives may offer an appropriate organizational response to such dilemmas, particularly in response to the bargaining power of human assets (Coff, 1997; Gilson and Mnookin, 1983; von Nordenflycht, 2010). However, incentives can also create additional problems, particularly for individuals with greater *firm-specific* human capital, who may use their unique position to game incentive systems (Frank and Obloj, 2013; Obloj and Sengul, 2012). The differentiated use of incentives to mitigate such problems therefore needs to be better understood.

In this paper, we address this gap by examining how the managerial dilemma of cat-herding arises in human-capital-intensive firms and how firms can mitigate such problems through their rent-sharing system. We focus on one important domain in which cat herding manifests itself, and where human-capital-intensive firms actively manage the phenomenon

through incentive systems: human asset allocation, i.e., deciding which organization member should work on which project.

While human-capital-intensive firms seek efficiency in the allocation of human assets to incoming projects, human assets have their own interests with respect to which projects to work on, and may try to influence project allocation to their advantage, even to the detriment of the firm (Milgrom and Roberts, 1988) – a classic manifestation of the cat-herding problem. Ironically, this adverse effect may be precipitated by greater levels of *firm-specific* human capital – a resource seen as highly desirable and crucial in shaping competitive advantage in human asset-intensive firms (Campbell, Coff, and Kryscynski, 2012) – as an intricate knowledge of the firm’s inner working associated with firm-specific capital may also enable individuals to manipulate internal processes to their advantage. In this regard, deviation from the optimal allocation for the firm will more severely affect firms where scarce human assets are a pivotal resource and where their optimal use is critical to competitive advantage. Knowledge of how the opposing effects of efficiency and influence shape the allocation of human assets to projects in firms, and what role human capital and incentives play in shaping these forces, would not only improve our understanding of how firms can mitigate some of the management dilemmas prevalent in human-capital-intensive firms through certain incentive structures (Coff, 1997; von Nordenflycht, 2010), but also shed light on the intricacies of resource allocation in firms in general, and ultimately how different incentive regimes enable firms to generate rents from human assets (Castanias and Helfat, 1991).

Our empirical setting is the assignment of senior lawyers (partners) in UK law firms to new M&A advisory mandates. Law firms provide a particularly good setting for our study, as they are the classic human-capital-intensive firm in which problems such as cat-herding are particularly magnified and exposed. Moreover, the deployment of human capital in such firms (Kor and Leblebici, 2005) and how it is assembled in teams (Haas, 2006) has been shown to matter to their strategy and performance. Our dataset comprises the population of partners of the top UK law firms and all M&As where at least one party – acquirer, seller or target – was based in the UK between 2003 and 2005, including detailed data on which partner was working on which deal for which party, as well as the characteristics of partners, firms and mandates. These fine-grained data allow us to observe the pattern of allocation of lawyers to new M&A advisory

mandates¹, specifically whether it is consistent with the notion that lawyers with greater levels of firm-specific human capital try to influence the allocation process to their own advantage, and how different incentive systems moderate the effect of such influence.

We find, first, that firms divert new projects away from heavily utilized human assets and towards comparatively less utilized ones, consistent with efficiency considerations. Building on this baseline, we find that lawyers with greater firm-specific human capital are stretched across more mandates, consistent with the efficient leveraging of one of the firm's most valuable resource (firm-specific human capital). However, our results also suggest that such lawyers, lacking leverage to appropriate value by exploiting outside opportunities due to the very firm-specificity of their human capital, instead use their intricate firm-specific knowledge and influence to game the incentive system to ensure their assignment to more mandates, gaining private benefits in the process. This leads to human assets being stretched beyond what could be considered an efficient allocation for the firm,² given the set of projects at hand, and to a lack of sharing of clients among specialized lawyers, both of which are potentially inefficient and harmful to the firm.

Paradoxically, our results reveal that weaker individual-level incentives can be beneficial because they actually reduce the severity of allocation-related incentive conflicts among lawyers. For instance, a compensation system purely based on firm performance, and which apportions rents based on seniority, may encourage greater sharing of clients and projects among lawyers, allowing for more efficient use of specialization (Garicano and Hubbard, 2009; Garicano and Santos, 2004), freeing up resource capacity, and enabling a more efficient allocation of human assets from the perspective of the firm.

This paper builds on a number of seminal papers in the field that have called for further research on how firms manage the managerial dilemmas inherent in human assets (Coff, 1997; von Nordenflycht, 2010). It sheds light on how the managerial dilemmas inherent to these firms affect the allocation of the firm's human assets to incoming projects, and how these firms mitigate these dilemmas through incentive systems. Our paper also extends the stream of

¹ M&A advisory services provide a good setting to study these issues. M&As are economically important, carrying high stakes for the actors involved. Legal work is also representative of the high value service work that takes a prominent role in modern economies.

² This is based on the assumption that the number of projects the firm is working on stays constant. We find a clear tradeoff between high-powered incentives and the quality of the allocation of partners to projects but we are not ruling out that a firm may be overall better off if high-powered incentives allow for more projects to be attracted to the firm.

literature on strategic human capital by revealing that the allocation of human assets is fraught with specific trade-offs that add to the core challenges of attracting, training and motivating them, as emphasized by Campbell, Coff and Kryscynski (2012). In this regard we also offer insight into how firms manage and allocate their most valuable human assets, and thereby broaden the understanding of how the fine-grained process of human asset allocation impacts the firm's efficiency and ultimately its performance.

Secondly, this paper enriches the literature on incentives in strategic management, notably an emerging stream of research that shows how and when low-powered incentives are superior to high-powered incentives (Zenger and Marshall, 2000) by highlighting how group-performance-based incentives can alleviate the gaming of incentives in human-capital-intensive firms (Frank and Obloj, 2013; Obloj and Sengul, 2012). In this regards, we show how incentives contextualize the often opposing effects of efficiency and influence in the allocation of resources to client projects. Building on the literature on incentives in strategy which conceptualizes firms as an interplay of incentives, ownership and formal authority (Coff and Makadok, 2009; Holmström and Milgrom, 1991), we provide insights how incentives can shape firm outcomes in situations where agents have high autonomy and where there is no formal authority.

Thirdly, this paper contributes to the emerging literature on the micro-foundations of firm performance (e.g. Barney, Ketchen and Wright, 2011; Foss, 2011; Teece, 2007) by offering insights into how the fine-grained process of human asset allocation unfolds in firms and ultimately contributes to heterogeneity in firm performance, how individuals with greater human capital exert influence over the resource allocation outcome and how firms mitigate such influence through incentives.

CONCEPTUAL DEVELOPMENT

Efficient allocation of constrained human assets: “Load Equalization”

To better understand the human asset allocation process and how it is affected by individuals' rent-seeking behavior we start by forming a baseline regarding the allocation of individuals to tasks, i.e., the patterns we should observe if the allocation is aligned with the objective of firm profit maximization. This baseline will be later modified in light of the type of incentives used by the firm and the specificity and rent-generation potential of the human assets allocated.

While the term ‘allocation’ suggests a top-down process whereby resources are passive

and directed to opportunities from a central authority, we make no specific assumptions regarding the details of the allocation process. At its most abstract, human resource allocation takes as input the opportunities that need to be addressed and the existing current set of resources as well as their availability, and returns as output a matching of resources to opportunities, i.e., the allocation outcome. Such a process may be centralized (e.g., with a central committee making decisions), decentralized (e.g., human assets collect opportunities and decide to deal with them on their own or to pass them on to someone else) or, more realistically, a mixture of the two. An in-depth study of a US corporate law firm by Lazega (2001), for example, found that what was supposed to be a top-down process of project allocation (a committee appointing partners to project according to whether they were the best fit for the project) was in practice sometimes ignored or even contested by some partners. Independently of the process leading to allocation decisions, if this process seeks to achieve a measure of economic efficiency it will lead to decisions exhibiting consistent empirical patterns, as explored below.³

Keeping the level of human capital of human assets constant, value is maximized when human assets are equally utilized so that marginal productivity is equalized. Individuals involved in managerial work face diminishing returns to their efforts as the total number of hours they can work effectively is limited. In particular, when an individual is assigned to work on another project in addition to those he or she is already working on, two effects operate simultaneously: the workload (in number of hours) is increased but so is the ‘multitasking’ required. Both point to a decline in the marginal productivity of their work. ‘Congestion’ effects due to multitasking across multiple projects have been found to be associated with decreasing performance outcomes among information workers (Aral, Brynjolfsson and Van Alstyne, 2012) and judges (Coviello, Ichino, Persico, 2010). Congestion is what makes human assets not ‘scale-free’, to use Levinthal and Wu’s (2010) terminology, in contrast to other strategic resources such as intellectual property and brands, which are scale-free (i.e., the opportunity cost of deployment is zero).

The implication is that as an individual’s workload increases, their ability to take on more work decreases. To take on more work would mean either having to increase the number of hours worked (which has a ceiling), or reducing the quality of all work done, or both. Therefore the firm as a whole will produce output of higher quality only if the workload is equally

³ A very inefficient allocation process would likely lead to the break up of a firm as lawyers would be better off leaving the firm and better allocate projects among themselves creating more value. A basic level of efficiency is thus a prerequisite for the stability of such firms.

distributed across human assets. Such will be the case for any allocation process that seeks to achieve an economically efficient outcome.

If projects arrive over a period of time, we can assume that at any point in time some individuals will have higher workloads than others. Whenever a new project is added to the list of tasks the firm must complete, it should be allocated to an individual whose current load is low rather than those whose current load is high. An individual's workload can be measured by the number of projects the worker is involved with. Therefore our baseline hypothesis can be stated as follows:

***Baseline [“Load Equalization”]:** Ceteris paribus, the more utilized an individual-level resource currently is, the less likely its allocation to a new project.*

Stretching more productive resources

Following the principle of load equalization would suffice if the level of human capital among individuals were homogenous. However, individuals whose human capital and thus marginal productivity is higher for a given workload attain the optimum workload for the firm at a higher level than less productive individuals.

In this regard, individuals with greater knowledge and skill exhibit greater marginal productivity, hence firms can extract greater managerial rents from them (Becker, 1964; Castanias and Helfat, 1991; Grant, 1996). It is particularly the firm-specific knowledge and skills⁴ which make these assets valuable for the individual and the firm (Campbell, Coff, and Kryscynski 2012; Helfat, 1994; Wang et al., 2009) and are therefore crucial to superior performance (Barney, 1991; Coff, 1997). For instance, Groysberg, Lee and Nanda (2008) found that star equity analysts who left a firm experienced a large loss in productivity, as firm-specific human capital is not easily transferable across firm boundaries.

In the context of a professional service organization, this points to the value of knowing how to get things done in a particular firm, maintaining a personal network and exchanging favors with colleagues, and being able to mobilize resources within a firm such as having access

⁴ Firm specific knowledge and skills includes intricate knowledge of firm-specific intellectual property and the ability to use it, knowledge about existing projects and customer in the firm, knowledge of firm-specific terminology, knowledge about firm-internal processes, the ability to use these processes efficiently to achieve goals, the ability to work together with longstanding colleagues etc.

to the most appropriate associates (Lazega, 2001). This makes human assets with high firm-specific human capital better able to execute smoothly a project and better able to successfully coordinate multiple projects simultaneously in these types of firms. Such firm-specific knowledge and skills take time to develop, and, unlike general human capital, cannot be simply hired on external labor markets. Consequently, in human-capital-intensive firms, those human assets with the greatest levels of firm-specific human capital are often among the most valuable resources controlled by the firm – yet, it is exactly those human assets that are likely to be in short supply (Winter, 1995).

This paradox highlights the importance of the judicious allocation of primarily those human assets with the greatest amount of firm-specific human capital rather than general human capital, which can be hired externally if needed. In order to make the most efficient use of these most valuable yet scarce resources, firms will leverage their human assets with greater firm-specific human capital across more projects and limit their involvement to those discrete tasks which only they can perform to the desired standard, and substitute their involvement in the remaining tasks with that of less skilled human assets as much as possible. As a result, human assets with greater levels of firm-specific human capital will be stretched across more projects as they are selectively applied to the harder part of each project. This implies that they will work on more projects, even if they spend less time on each project on average, thereby attenuating the effect of the load equalization strategy.

Insert Figure 1 here

Figure 1 explicates this graphically: the efficient or optimal point of maximizing the value of stretching to the firm is greater for human assets with higher levels of firm-specific human capital than for those with lower levels of firm-specific human capital ($P_H^* > P_L^*$). There is, of course, a trade-off: the human assets are still subject to congestion, but the point at which congestion becomes problematic will be reached at a higher level of utilization due to the higher marginal productivity of lawyers with higher firm-specific human capital.

***Hypothesis 1 [“Selective Stretching”]:** Ceteris paribus, the negative effect of an individual’s utilization on the likelihood of being allocated to an additional project is weaker for human assets that possess greater levels of firm-specific human capital.*

Managerial dilemmas, the allocation of human assets and rent-sharing systems

Yet efficiency considerations are not alone in shaping the process of human asset allocation process and its outcome, particularly in human-capital-intensive firms whose members have a strong preference for autonomy as well as significant bargaining power (Greenwood and Empson, 2003; Teece, 2003; von Nordenflycht, 2010). Such individuals also create significant managerial dilemmas for these firms (Coff, 1997), especially that of ‘cat herding’ (Anand et al., 2007; Lowendahl, 2000).

Such managerial dilemmas arises from the following properties which distinguish human assets from physical assets: human assets retain ownership of their human capital (Becker, 1964), have free will (Chadwick and Dabu, 2009), and have their own interests with regards to the appropriation of the rents they help generate.

These dilemmas are exacerbated in the context of high levels of firm-specific human capital. In general, individuals with superior firm-specific human capital will use it to create additional rents if they can appropriate the value of their efforts, thereby mitigating agency problems (Castanias and Helfat, 1991, 2001). However, we argue that firm-specific human capital presents an additional dilemma, notably that the very firm-specificity of human capital leaves individuals vulnerable while bargaining vis-à-vis the firm since that type of capital is of little value outside the firm. Furthermore, since firm-specific human capital is associated with an increased ability to influence firm internal processes, an individual may find it more advantageous to use his/her firm-specific human capital to capture value for themselves at the expense of creating value for the firm.

We argue that this dilemma will bear on the allocation of human assets within the firm to incoming projects, human assets will influence the allocation process to pursue their own interests – at the detriment of the firm – by attempting to appropriate a larger share of rents. In human-capital-intensive firms, such human assets have an interest in being allocated to *more* opportunities than may be efficient for the firm, as this can enhance the personal payoff, their bargaining power and relative worth within the firm. This results in a pattern of stretching that is more intensive than is efficient for the firm as whole for a given set of projects. The resulting supplemental stretching is no longer efficient given the set of projects, in part due to the non-cooperative use of firm-specific human capital.

In the case of human-capital-intensive firms, we argue that firm-specific knowledge, networks of personal relationships, and the ability to mobilize internal resources can be used to influence the firm’s internal processes in the same manner as firm-specific human capital can enable individuals to game incentive systems to their advantage (Frank and Obloj, 2013). For instance, an M&A partner in a law firm could refrain from informing colleagues about the full extent of the needs of a client, thereby preventing colleagues getting involved in the deal, or use his/her ability to mobilize associates in order to increase their involvement in multiple projects. Higher firm-specific capital can also help an individual to get away with bending some internal rules. The motivation for doing so has to do with the private benefits that accrue from taking on more (rather than fewer) projects, such as increases in performance-based compensation and opportunities to cultivate client relationships at a personal level, which has the potential to improve the bargaining position of the individual vis-à-vis the firm as well as their reputation (relative to that of the firm), potentially resulting in a greater payoff for the individual.

An individual’s influence on the allocation process and its outcome can be detrimental to the firm as it distorts the optimal or efficient allocation of human assets which the firm would use to maximize value creation, and may hinder the efficient sharing of clients among experts to exploit specialization (Garicano and Hubbard, 2009; Garicano and Santos, 2004).

The individual’s motivation to take on more opportunities than necessary is illustrated in Figure 2. Panel (a) shows that the value for an individual of being allocated on an additional project is greater than that for the firm. This is because the payoff for the firm takes into account negative externalities while that for the individual does not. Hence the optimal point of project staffing for individuals – because of the private benefits received – is greater than for the firm ($\hat{P} > P^*$), leading to stretching beyond the level efficient for the firm. The negative consequences of this for the firm are explicated in panel (b) where, due to additional stretching ($\hat{P} - P^*$) induced by the non-cooperative equilibrium, the firm loses value ($V^* - \hat{V}$).

 Insert Figure 2 here

This problem is particularly acute in human-capital-intensive firms where performance and competitive advantage are directly linked to human assets. Scholars have suggested that incentives could be an appropriate solution to such dilemmas (Coff, 1997; Gilson and Mnookin, 1983; von Nordenflycht, 2010), yet the differentiated use of incentives to mitigate such problems

needs to be better understood (Frank and Obloj, 2013; Obloj and Sengul, 2012).

The nature of a rent-sharing system can alleviate some of these problems. Non-cooperative stretching happens because human assets enjoy private returns from being linked to more opportunities than would be best for the firm. We argue that some rent-sharing systems will make non-cooperative stretching less prevalent by reducing the benefits of being associated with more opportunities.

Using a partnership to distribute rents can provide superior incentives for professional work (Greenwood and Empson, 2003; Starbuck, 1993), although it is not immune to agency problems as the methods of rent distribution is not innocuous. The two most common rent-sharing systems among professional service firms are firm-performance-based and individual-performance-based rent-sharing systems. In the former, rents are shared among individuals according to a predetermined formula, as in a group-performance-based compensation system (Zenger and Marshall, 2000) where the reference group encompasses the whole firm. If firm rents increase, the individual's share of rent increases, irrespective of individual performance. Such a compensation system is consistent with the goal of creating an integrated firm (Maister, 1993) that rewards teamwork and de-emphasizes stardom. It also minimizes the cost of haggling within the firm, as in the public accounting firm studied by Coff (1997).

In the second system, rents generated at the firm level are shared with individuals based on the individual's performance. Firms that use this system rely on different criteria, such as the commercial performance of an individual, which is often directly observable, or the number of projects an individual was involved in, including the commercial value of these projects to the firm. One issue with this system is that it may be more open to manipulation by insiders (e.g., as in Obloj and Sengul, 2012).

We posit that these two rent-sharing systems provide different incentives for individuals to exert an influence on the firm's allocation of human assets. In particular, they provide different incentives for individuals to share new projects from their personal client relationships with others, since when a project is shared the client relationship is at risk of being transferred to the colleague (Garicano and Santos, 2004). In this regard, Garicano and Santos (2004) and Garicano and Hubbard (2009) found that rent-sharing systems where shared rents were based on seniority rather than individual performance promoted 'referrals' and the sharing of projects/clients among partners in a law firm. Generally speaking, stronger incentives to share

projects will raise the probability that the relationship holder will not insist on having exclusive responsibility for a project and will allow other (less ‘congested’) individuals to take responsibility for part of the project, while the holder will still be staffed on the project to manage the relationship. The overall outcome is that the average number of projects an individual is linked to is higher, but also that each individual spends less time on average on each project. By implication we should observe more frequent staffing of everyone at a given level of congestion thanks to the sharing of projects among partners.

***Hypothesis 2:** Ceteris paribus, in firm-performance-based rent-sharing systems the baseline load equalization effect will be weaker than in individual-performance-based rent-sharing systems.*

The nature of the rent-sharing system will also directly influence the extent to which human assets with greater levels of firm-specific human capital within the firm will influence the human asset allocation process and outcomes to their advantage in order to be associated with more projects. Undertaking more tasks will benefit such human assets at the expense of the firm as it enables managers to control more client relationships. The additional external visibility that managers gain may bring more outside options, enhancing their ability to negotiate with the firm for pecuniary and non-pecuniary advantages.

An individual-performance-based rent sharing system thus strengthens the incentive for human assets with greater firm-specific human capital to pursue private benefit (Holmström and Milgrom, 1991; Larkin, 2014) and manoeuvre within the firm to be staffed on more projects. In addition to magnifying the advantages mentioned above and making those benefits more relevant to the individual, the direct pecuniary payoff will depend on their specific project involvement; hence they have an even greater incentive to be assigned to as many new projects as possible, and to not share their existing clients with others. Given their greater firm-specific human capital, such human assets possess greater power and legitimacy as well as greater firm-specific knowledge about how to manipulate internal processes to their advantage, and hence are even more likely to achieve greater levels of project staffing and client ownership. This results in additional stretching of human assets with greater firm-specific human capital, further deviating from the most efficient or optimal level of stretching for the firm.

Insert Figure 3 here

Conversely, a firm-performance-based rent sharing system will weaken the incentive for individuals with greater firm-specific human capital to be staffed on as many projects as possible, leading to greater sharing of clients among human assets within the firm, which enhances the rents earned by the firm (Garicano and Hubbard, 2009; Garicano and Santos, 2004). Similarly, in a firm-performance-based rent-sharing system, such human assets will feel less threatened by less experienced colleagues as they also benefit from their colleagues cultivating valuable relationships. Hence there will be less incentive to make use of specialization within the firm or to share clients among human assets within the firm in pursuit of private gain.

Such a rationale in favor of sharing profits on the basis of seniority is for instance voiced by one of the partners in Lazega's (2001: 68) study of a corporate law firm, who notes that such a way of sharing profits "eliminates a lot of back-stabbing", and avoids the "hoarding of cases and associates". This was corroborated via our informal conversations with corporate partners in the UK, who argued that seniority-based compensation and values of teamwork were mutually reinforcing.

As a consequence of the increased willingness to make referrals within the firm and to share clients with colleagues, a firm-performance-based rent-sharing system will lead to an attenuation of the excessive stretching of those human assets which possess greater firm-specific human capital ($\hat{P} - \hat{P}$), and bring the firm closer to a globally efficient degree of selective stretching P^* , enabling the firm to create more value ($\hat{V} - \hat{V}$), as illustrated in Figure 3.⁵ Hence we hypothesize:

Hypothesis 3: *Ceteris paribus, in firm-performance-based rent sharing systems the total selective stretching effect will be smaller than in individual-performance-based rent-sharing systems.*

⁵ From a formal game theoretical standpoint, this reasoning is based on the assumption that a partner's marginal benefit from trying to take on more projects is decreasing in the aggregate efforts the other partners make to take on more projects themselves. Such property is sufficient to guarantee that at a non-cooperative equilibrium all partners are putting more effort than what is optimal to maximize the sum of their individual value captures. Moreover, this property ensures that weaker personal incentives make the equilibrium move closer to the collective optimum. For general results on the comparative statics of such game, see Acemoglu and Jensen (2013).

DATA AND METHODS

Data

The empirical context of this study is the UK legal M&A advisory market from 2003 to 2005. The 2004 edition of the *Lawyer 100* annual supplement provides data on the type of compensation system used by law firms. The year 2004 is the only one where such information was provided. We checked in trade journals (especially *The Lawyer*) for reports of changes in these compensation systems in 2003 and 2005, but did not find any. We thus focus on the 2003-2005 window to ensure that we have reliable information on this variable.

In order to have a census of all partners of the top corporate law firms, we collected data from Waterlow's *Solicitors' and Barristers' Directory*, a list of all law firms in England and Wales, compiled every year since 1884, which comes as close as possible to an exhaustive census of the population of law firm partners. It lists includes details on partners working for the law firms, including name, partner status and date of qualification as solicitor. To complement this census of partners with data on their general human capital, we relied on data from Chambers and Partner's *Client's Guide to the UK Legal Profession*, an annual ranking of law firms and partners for each of 60 legal areas, divided into subcategories, which lists recommended corporate law firms and partners in as many as six tiers, within each of which firms and partners are deemed to be of a comparable level of expertise.⁶

We then combined the two files at the level of the partner-year observation. As the partner names and affiliations were not standardized across the two data sources, we standardized the law firm names across the two databases and matched the partner names manually. Partners that only appeared in Waterlow but were not ranked by Chambers were assumed not to be ranked partners, and therefore to possess lower levels of human capital.

Data on mergers and acquisitions was taken from *mergermarket*. This database is widely used among investment banks and other professional service firms due to the richness of its data. In particular, *mergermarket* includes information not available in more commonly used databases such as SDC Platinum, notably data on which law firm advised an acquisition party on

⁶ The rankings reflect the partner's and law firm's "technical legal ability, professional conduct, client service, commercial astuteness, diligence, commitment, and other qualities most valued by the client". The rankings are based on annual surveys conducted by Chambers and Partners which target general counsels of firms included among the top 250 largest market capitalizations in the London Stock Exchange, law firms, as well as other industry professionals.

a specific acquisition, including which individual partner in the law firm was staffed on the transaction. Data from *mergermarket* are routinely used to create league tables of law firms in the M&A business. This data are central for our analysis as they allow us to link the partner and law firm data (i.e. data on resources) to the advisory mandates (i.e. data on projects). *Mergermarket* obtains this information through firms directly reporting to them and through the financial press. Note that law firms have incentives to ensure those data are accurate since *mergermarket* publicly broadcasts who worked on what deal. A client may not appreciate credit being attributed to a partner who has not worked on a deal. Conversely, a partner who actually worked on a deal has an incentive to make sure that this is accurately known, both internally and externally to the law firm.

Our *mergermarket* database contained data on acquisitions in which at least one UK party (acquirer, seller, or target) was involved between 2003 and 2005, and for which data on which partners were working on which transaction was available; overall, there were 1,298 transactions with an average size of \$352m per transaction. We subsequently merged the data on partners and law firms from Waterlow and Chambers with the data on acquisitions and partner staffing from *mergermarket*. Data on transaction show substantial variation in M&A volume across the 2003 to 2005 period. Figure 4 shows the number of M&A announced per month in our data set.

Insert Figure 4 here

In order to test our hypotheses we needed to identify a risk set of partners who could realistically be staffed on a specific transaction. We directly observed every partner that was staffed on an M&A deal, and included them in the risk set starting from their first participation to a deal. In order to identify non-staffed partners who could have been staffed on a specific transaction, we followed the following procedure: For every transaction, we first considered all non-staffed partners who worked for the law firm that has been mandated for the specific transaction in the relevant year as listed in the Chambers and the Waterlow data. In a second step, to only include these partners with a realistic chance of staffing, we used as a criteria whether the partner has been staffed at least once on a corporate acquisition mandate going as far back as 1997, and included any such partner in the risk set starting from their first participation in a deal. Thus, in addition to all staffed partners, we also include any non-staffed partners working for the mandated law firm who had been staffed at least once on a corporate acquisition

mandate during 1997-2005 in our sample, from the moment they were listed as partner in the Waterlow guide.

As we are using partner-firm fixed effect and limiting our analysis to the years 2003-2005, partners who were never staffed on a deal in that period were dropped from the analysis, even if they were staffed on at least one M&A deal before 2003. The unit of observation for our analysis is the individual partner-project dyad, which represents a staffing opportunity. The final main sample consists of 1,298 merger and acquisition deals, involving 1,097 partners from 56 law firms. This results in 68,726 partner-staffing observations across 1,860 projects.

Variables

Dependent Variable. We analyze the determinants of a partner's probability of being selected to work on a project (i.e., to be "staffed"). As the unit of analysis is a partner-project pair, the dependent variable is therefore an indicator variable that takes a value of 1 if the partner has been staffed on the project and 0 otherwise.⁷

Independent Variables. To test the baseline effect of utilization constraint, we count the number of mandates a particular partner has been staffed on in the past 180 days as the partner's current utilization of capacity constraint. We do not observe when the mandate begins but only when it ends, i.e. when the acquisition is announced. This introduces measurement error as project length may vary, but this would not necessarily bias results in our favor as such measurement errors would lead to an attenuation of the coefficients towards 0 (Aigner, 1973). To test Hypothesis 1, we interact our variable measuring the level of utilization in the past 180 days with the partner's level of firm-specific human capital. The partner's level of firm-specific human capital is captured through tenure at the respective law firm in question which is consistent with how the extant literature has defined or measured firm-specific human capital (Lazear, 2009; Hitt et al., 2001; Pennings, Lee, and Witteloostuijn, 1998; Mincer, 1974). Specifically, firm-specific capital is defined as how long a partner's has been partner at the respective law firm minus the average time the partners of the firm have been partner at the respective law firm in the sample⁸. We also include as a control the un-interacted partner firm-

⁷ Ideal data would directly measure time utilization at the level of the individual, for instance by leveraging time sheet and billing reports. Those data are typically confidential and unfortunately not available across multiple firms.

⁸ We adjust for the average time the partners of the firm have been partner at the respective law firm in the sample as this allows us to capture the relative difference in firm-specific human capital among the partners which are at risk of being staffed since staffing decisions are made based on a select group of individuals and therefore based on

specific human capital variable. In this set of analyses, we center interacted continuous variables at their mean. We also conduct robustness checks based on a measure of general human capital to corroborate that our results are indeed driven by firm-specific rather than general human capital.

To test Hypothesis 2, we interact the utilization of a partner with the dummy variable that takes a value of 1 when a firm uses a firm-performance-based compensation system which shares law firm's profits based on the seniority of the partner (Lockstep system) and 0 if it is using a merit-based compensation system. Firms do not change compensations systems during the period of our study, but thanks to the variation in utilization at the level of the individual, we can nevertheless identify how utilization has a different impact between firms using firm-performance-based versus individual-performance-based compensation systems. We also include as control the un-interacted dummy variable whether a firm has a firm-performance-based compensation system.

To test Hypothesis 3, we include the triple interaction of partner utilization, partner firm-specific human capital, and the indicator variable for a firm-performance-based compensation system. We also include as a control the two-way interaction of partner firm-specific human capital and firm compensation system.

Control Variables

We include several control variables at the partner, law firm, and acquisition mandate level. At the partner level, we control for their general human capital as captured by external recognition expressed in the Chambers rankings. Specifically, we include a dummy variable that measures whether a partner is ranked in an M&A relevant field⁹ to denote their general human capital that is transferable when they move across firms. We also control for the actual ranking in the M&A relevant field or a ranking in another law field. This enables us to capture further information about the partner's specialization and general human capital not captured by the binary variable indicating whether a partner is ranked in an acquisition relevant law field, such as the specific quality level in an acquisition relevant field or high quality in a different law field (e.g. environmental law). In this regard, we include a variable whether the partner appears in any

relative differences in firm-specific human capital between the partners rather than the absolute levels of firm-specific human capital of the partners.

⁹ Based on the fields used in Chambers and partners ranking, the law fields relevant for M&A advisors are corporate finance and private equity.

ranking, a continuous variable for the normalized rank (% of the maximum rank).¹⁰ We control for the experience of the partner since qualifying for the law profession. We also include individual partner-firm fixed effects in our specifications to control for other non-time-varying individual partner-level characteristics.

At the law firm level, we include variables that capture the size of the law firm (measured by number of partners), as well as a measure for law firm quality (as captured by the normalized rank in the overall Chambers and Partner law firm ranking). Further, as we only have partners that are partners at the law firms in our main database, we control for the associate-partner ratio in the firm in a given year (leverage ratio) to capture changes in the general policy law firms follow to substitute partners with associates.

Acquisition mandate level control variables include deal-value dummies (we use three categories¹¹: high value (>\$1bn, approximately 8% of deals); medium (\$50m to \$1bn, approximately 47% of deals), and low (<\$50m, approximately 45% of deals)), a cross-border acquisition dummy to capture the complexity of the mandate, an indicator variable which is 1 if the client is a new M&A client of the law firm, and 0 otherwise, and an indicator variable which is 1 if the client is an acquirer (a potential future client), and 0 otherwise. Further, we also include year fixed effects, and missing value dummies. Table 1 provides a descriptive overview of the variables used in our analysis.

Insert Table 1 here

Econometric models

As our dependent variable is a binary variable, we use logit models for our analysis. Controlling for individual unobserved heterogeneity is crucial as our analyses may be confounded if staffing decisions are correlated with unobserved yet relevant partner characteristics such as personal ability, talent or role not captured by our measure of external reputation. For instance some partners may be specialized in originating deals (“rainmakers”) and may have a higher base probability of being linked to a deal. Others may only occasionally

¹⁰ We also experimented with using indicator variables for the law field and sub-law-field where the partner is ranked. This led to convergence problems of the conditional logic in some specifications. However, the results in the models that converged were substantially similar to those presented in the paper.

¹¹ Our results are robust if we use a more refined measure of different categories, such as quintiles; we chose these three categories for their intuitive cutoffs and to simplify presentation.

work on M&A deals and have a lower base rate of deal participation. To control for this we use fixed-effect conditional logit models with groups defined at the partner-firm level. The partner-firm fixed-effects give to each partner a different intercept and thus a different rate of staffing. Given partner-firm fixed-effects, variation in the data comes from variation of a partner's current workload at the time of a new staffing decision and from variation across project characteristics. The analysis thus compares the staffing probability of the same individual at the same firms under different conditions of congestion and of project type. We account for potential correlations of errors terms by clustering standard errors at the level of the individual-firm.

Since there are several difficulties involved in understanding and interpreting interaction effects in logit, and in particular, conditional logit models (Ai and Norton, 2003; Greene, 2010; Karaca-Mandic, Norton, and Dowd, 2012), we also rely on graphical analysis to further probe and interpret the interaction effects, and also use a Linear Probability Model (fixed-effects OLS model) as an alternative specification to check the robustness of our results.

RESULTS

Table 2 presents the results for our main regression analysis to test our baseline hypothesis and Hypotheses 1 to 3. Model 1 includes only the control variables. In model 2 we include the individual's utilization constraint variable. This variable is negative and highly significant at the 1% level, consistent with our baseline hypothesis. The effect is also economically significant: for each project staffed in the last six month, a partner's odds of being staffed on an incoming deal are reduced by 26.5%. This variable is kept in all specifications and remains very significant. Its magnitude only changes when interactions with it are introduced. Consistent with our baseline hypothesis, we see that the workload tends to be equalized between resources, with busier resources less likely to be deployed to an incoming opportunity.

Insert Table 2 here

In model 3 we add the interaction between partner firm-specific capital and individual's utilization constraint. The coefficient is positive, representing an increase in 13% of odds, and significant at the 1% level. Adding the main effect and the interaction effect shows that the staffing likelihood of ranked partners is still negatively and significantly affected by the partner's utilization constraint. Consistent with Hypothesis 1, partners with greater firm-specific human

capital are less negatively affected by their current workload as they are more likely to be stretched across more projects.

In model 4 we introduce the interaction of lockstep and individual constraint in the list of regressors. The coefficient on this variable is positive and strongly significant. At the same time, the main effect of individual constraint becomes even more negative and the sum of the two coefficients also remains negative and significant. Taken together, these imply that in firms with a lockstep compensation system, partners are less negatively affected by their current load than in firms without such a compensation system. This is consistent with Hypothesis 2. One way to understand this result is that there is more project sharing between partners in firms that have a lockstep compensation system. We further probe this interpretation in the robustness check section. The other coefficients of interest remain stable.

In model 5 we add the triple interaction of lockstep, partner firm-specific human capital and individual constraint as well as the set of their lower order interactions. The coefficient for the triple interaction is negative and highly significant, consistent with Hypothesis 3. This implies that in firms with a lockstep compensation system, partners with greater levels of firm-specific human capital are less likely to be on a deal given their workload, consistent with the explanation given that in firms with a lockstep compensation system the firm's most valuable partners are less likely to 'grab' incoming mandates and clients, and are more likely to engage in referrals and/or sharing of mandates and clients with more junior colleagues.

Robustness checks

We conducted a set of robustness checks to confirm the reliability of these analyses and gathered additional evidence for our theoretical mechanism. One possible concern is that some partners are chiefly engaged in generating new mandates exploiting their reputation and extensive client contacts ('rainmakers'), and that while such partners are officially staffed on deals to appease clients, they do not actually work on these deals in substance. Although the use of partner-firm fixed effects should control for partners who are systematically involved in many projects, including rainmakers, we use a measure of external reputation to double check that our results are not reflecting such behavior. We reasoned that partners who are acting as rainmakers should have high external reputation to attract clients and be ranked in the Chambers guide. We thus excluded any lawyer who was ranked in an acquisition relevant field and reran our analysis (model 1 in table 3) and found that our main results were confirmed.

This corroborates the idea, suggested to us by members of the industry, that a partner having minimum involvement in projects would ultimately damage his reputation as clients can typically infer a partner’s involvement through frequent contact and discussion of the mandate’s substantial matter thus keeping in check the tendency to specialize in attracting business without involvement in the delivery of the service.

Further, our theoretical propositions and empirical tests are based on firm-specific rather than general human capital. We conducted a robustness check in which we included the respective interactions that replaced firm-specific human capital with general human capital in our tests for Hypothesis 1 and 3 (model 2 in table 3). General human capital in this was captured empirically through a dummy variable of whether a lawyer was ranked in an M&A relevant field in the Chamber rankings lawyer (an indicator of external recognition that is generally transferable when lawyers move across firms). The results of this robustness check show that indeed our findings are mainly driven by firm-specific human capital, as the interactions based on general human capital are not significant, although they are consistent with the direction of the hypotheses effects.

Our empirical test of Hypothesis 3 in our main analysis is based on triple interactions. Instead of relying on triple interactions of variables, we also ran a robustness check in which we split the sample between lockstep and non-lockstep firms and tested whether the coefficients were significantly different (Table 3, models 3 and 4). Again, the results mirrored those of the main analysis.

Insert Table 3 here

In Figure 5 we use three different illustrations to depict the impact of the triple interaction on probabilities of being staffed as these are typically difficult to interpret in non-linear models (Ai and Norton, 2003; Greene, 2010; Karaca-Mandic, Norton, and Dowd, 2012). Due to the peculiarities of the estimation of the conditional logit model (fixed effects are not calculated), these probabilities were derived using a random effect logit model¹² and the margins command in Stata 13. The effect of the negative triple interaction (H3) is to change the relationship between relative seniority and the compensation system at the firms as a partner’s current

¹² The detailed results of the random effect available in Table A.1 of the Appendix. For all hypothesized interactions the model yields coefficients similar in signs, significance and relative magnitude to those of the main analysis.

workload increases. At low levels of workload (Figure 5, panel (a)), higher relative seniority is negatively related to the probability of being on a deal, for both types of compensation system. As the workload increases, this relationship becomes positive, and shows a higher slope in firms with an individual-performance-based compensation system (Figure 5, panel (c)). The interpretation is that when compensation is more based on individual performance and partners are already busy, partners with higher relative seniority are *more* successful at securing opportunities for themselves while partners with lower relative seniority are *less* successful. Panel (c) of Figure 5 makes this comparison clear as at very low levels of relative seniority, younger partners in firms with individual-performance-based compensation are less likely to be staffed to a project than partners in seniority-based compensation firm. However, for high levels of relative seniority, the order is reversed: more senior partners at firms with individual-performance-based compensation are more likely to be working on another deal, even if they are already quite busy.

To further alleviate such concerns, we also used a linear probability model (OLS with individual-firm fixed effects and clustered standard errors) and obtained similar results (Table 3, model 5). Only 6.4% of the predicted probabilities of the linear probability were out of the 0-1 range in the fully specified model. These analyses confirm that our results are driven neither by the specifics of the estimation procedures nor by the use of high order interactions.

Insert Figure 5 here

Law firms belonging to the “Magic Circle” represent a large share of our sample and are the undisputed market leaders, all using a lockstep compensation system. As we are concerned that we might be confounding the effect of lockstep with a Magic Circle effect, we excluded these firms from the sample and still found similar results in unreported analyses.

We also sought to corroborate our main theoretical mechanism, which posits more sharing of projects among partners in firms that do not use individual-level incentives. More sharing can occur in two ways. The first is a transfer of projects between partners whereby a partner gives up the option of working on a project to let someone else take over the project, or more frequently and easily let colleagues work on a project. While we cannot directly see if partners are passing control of projects to colleagues, we can nevertheless see if there are systematic differences in how these projects are allocated. Firms where sharing is done more

easily should also exhibit a more equal allocation of projects across partners. The other type of sharing is to have multiple partners working on a deal and split tasks in smaller pieces, allowing partners to work concurrently on more projects.

To test this reasoning we take as unit of analysis each firm-project observation. We first create a variable taking the Herfindhal index of the share of all projects in the past six month (including the current one) among partners. As key independent variables we include the lockstep variable and, to measure the constraint at the level of the firm, a variable taking the average of the number of projects per partner in the past six months. We control for law firm size and project characteristics. Secondly, we perform an analysis of the number of partners who will work on a given project, using the same explanatory variables. The descriptive statistics are presented in Table 4 and the results are shown in Table 5.

Insert Tables 4 and 5 here

Models 1 to 3 of table 5 show the results of OLS regressions predicting the Herfindhal index of partners' share of projects and report standard errors clustered by firm. In model 1, the variable of interest is the dummy variable for lockstep, which is negative, as expected, and marginally significant (10% level). In models 2 and 3, we add the variable measuring constraint at the level of the firm and its interaction with lockstep. The results reveal that the Herfindhal index is lower in firms that have a lockstep compensation system but also that the difference between lockstep and non-lockstep firms decreases when firm level utilization goes up, as shown by the positive and significant interaction effect between lockstep and average number of recent past projects per partner. As firm-level utilization increases, firms without a lockstep system are less and less unequal.

Panel (a) of Figure 6 shows the analysis of the marginal effect of lockstep as a function of the average the number of projects per partner in the past six months. It indicates that the difference in the Herfindhal index between non-lockstep and lockstep firms is statistically significant up until the median value of the average number of project per partner for non-lockstep firms (0.33). These results suggest a convergence between the deployment patterns of lockstep and non-lockstep firms as the manpower constraints become more acute. When there is no slack in the organization, even partners with greater firm-specific human capital have to share projects as they are too constrained to take them on.

Insert Figure 6 here

Models 4 to 6 of table 5 present the outcome of a zero-truncated Poisson regression predicting the number of partners that are mentioned as having worked on a deal, with standard errors clustered by firm. The lockstep variable is positive and significant in models 4 and 5, which do not include the interaction term with the average number of projects per partner in the past six months. These results suggest that there are more partners per deal in firms with a lockstep compensation system, as implied by our theoretical framework. When introducing the interaction term, the main effect of lockstep loses significance. However, a detailed analysis of the marginal effect of lockstep at different levels of the interacting variable demonstrates that the effect of lockstep is positive and significant for most values of the variable for number of projects per partner around the median. This analysis is depicted in Panel (b) of Figure 6. At the median of this variable for non-lockstep firms, the marginal effect of lockstep is statistically and economically significant. It is equal to 0.41 more partners per deal, while the average number of partner per deal is 1.29 among non-lockstep firms, representing a 30% increase over the baseline.

The results of these robustness checks are consistent with the main thrust of our theory and validate a key part of the argument: sharing projects is facilitated in firms using a compensation system that does not directly reward individual performance. These analyses, however, have some limitations as they are made at a much more aggregated level, and do not allow differentiating effects as a function of the characteristics of individual partners as in the main analysis.

DISCUSSION

Our analyses show a trade-off between high-powered individual incentives and the balance of the allocation of projects to individuals for a given set of projects. We argue that this trade-off arises as human assets with higher firm-specific capital have a greater ability to game individual incentives. In a profession where controlling opportunities is key for recognition inside and outside the firm, gaming the allocation and incentive system leads to lawyers holding onto more opportunities than is optimal for the law firm, and, as a corollary, making fewer referrals and sharing fewer mandates and clients than is optimal. Securing opportunities for oneself creates a negative externality for other lawyers by depriving them of access to

opportunities that they are better placed to serve by virtue of their availability or specific competence.

Given this, why would high-powered individual incentives nevertheless ever be useful for some of these firms? The answer to this puzzle may be the existence of another trade-off: that between high-powered incentives and the growth of the firm. High-powered incentives may also induce more aggressive client acquisition for the firm as a whole, albeit concentrated in few individuals. Some firms decide that it is worth accepting less optimal resource utilization in the short run in return for superior growth and increased market share. Conversely, firms that are already well established may be better off enforcing a cooperative status quo. This may account for the remarkable lack of adoption of high-powered incentives by the leading firms in this market, which also enjoy very stable market positions (Fairclough, 2009).

Our results suggest that those lawyers with the greatest level of firm-specific capital are also most likely to subvert and game the allocation and incentive systems for private gain as they have the greatest bargaining power, decision-making power, recognition, and superior social capital within the firm. Interestingly, we do not find statistical significance in our robustness check testing for general human capital (external recognition which is transferable across firms, as captured in rankings). This suggests that the ability for lawyers to subvert the allocation of mandates for private gain is tied to their position in the internal hierarchy and intricate knowledge of the firm rather than their perceived market value.

This speaks to the multi-faceted role of firm-specific human capital. It is potentially one of the most valuable resources for the firm, but also one that produces many dilemmas as it may easily be used for value capture by individuals (rent-seeking) rather than value creation. While we find in our setting – M&A legal advisory – a positive association between firm-specific human capital and the hoarding of projects, it is also important to note that in other settings it is possible that firm-specific human capital may be used to *avoid* being allocated to some projects if individuals consider that being associated to these projects is detrimental to capturing value for themselves. We expect the core mechanism (firm-specific human capital used by individuals to manipulate project allocation) to hold over most professional service settings, but the costs and benefits of taking on additional tasks are to be understood within each specific context.

The organizational design challenge is thus to channel the potential of firm-specific human capital into truly value-creating activities rather than value-capturing activities. This

challenge is particularly acute in knowledge-based organizations where it is often hard to distinguish a priori between the two types of activities. In such situation, a compensation policy that does not attempt to apportion profits according to a scheme that can be gamed may be attractive, implying that individual performance incentives should be weakened. Our analysis found that the most powerful lawyers were less tempted to use their personal influence to be staffed on projects when there was absolutely no incentive related to personal performance, such as in firms that shared profits purely based on seniority.

Our analysis reveals important micro-foundational forces that shape key firm-level processes and outcomes. In particular, our results highlight how individual influence derived from firm-specific human capital influences the firm's resource allocation process, and how organizational design elements such as compensation systems can inhibit the potentially adverse impact of powerful individuals on firm-level processes and outcomes. Our findings thus supplement existing studies on the intricacies of the resources allocation process (Kor and Leblebici, 2005; Sirmon, Gove, and Hitt, 2008; Sirmon, Hitt, and Ireland, 2007) as well as existing studies which stress both the individual and firm-level antecedents of firm capabilities and the interactions between factors at both levels (Felin, et al., 2012; Helfat et al., 2007;).

A limitation of our empirical analysis is that it only compares the effect of compensation systems across firms and does not include cases of firms changing their compensation system over time. However lawyers may self-sort into firms with different compensation systems depending on their individual preferences and abilities. For instance, more entrepreneurial types may prefer to work in firms where individual rewards are stronger, while individuals who value collegiality may prefer to work for firms that embrace such values in their compensation system. Similarly, firms may also seek different types of candidates. The implication is that conducting the experiment of changing the compensation system of a firm unexpectedly (while keeping its personnel constant) would likely lead to effects of weaker magnitude than those found in our estimates.

CONCLUSION

Making use of micro-data on how UK M&A law firms allocate their partners to incoming M&A legal advisory mandates between 2003 and 2005, our study shows that law firms actively balance the workload among their partners in order to prevent excessive congestion. Further, firms selectively stretch those human assets with the greatest firm-specific human capital in

order to utilize their most valuable resources more efficiently. However, our results also suggest that those human assets with the greatest levels of firm-specific human capital actively influence the allocation process in their favor to potentially increase their value capture, as well as to protect their ownership of client relationships and to obtain ownership of as many new projects as possible. This leads to a form of non-cooperative stretching of these individuals and hinders the efficient sharing of projects and clients within the firm, thereby potentially harming the firm and impeding the generation of rents at the firm level. Interestingly, our findings suggest that law firms can adopt a rent-sharing system which remunerates based on firm-performance and seniority – weakening the individual’s incentive – to encourage greater sharing of clients and projects among lawyers, thereby mitigating the managerial dilemmas and conflicts of interest in human asset allocation.

This paper contributes to the literature on human-capital-intensive firms (Coff, 1997; von Nordenflycht, 2010) by exploring how incentive systems can be used to deal with managerial dilemmas affecting the allocation of the firm’s most valuable human assets to incoming projects. It also complements research that has started to provide a rich picture of the multi-faceted role of human capital in the strategy of knowledge-based firms (Mayer, Somaya and Williamson, 2012).

Moreover, this paper also enriches the literature on incentives in strategic management by refining our understanding of the scope of gaming of incentives in human-capital-intensive firms (Frank and Obloj, 2013; Obloj and Sengul, 2012) as well as the usefulness of group-performance-based incentives (Zenger and Marshall, 2000).

Finally, our study contributes to the emerging literature on the micro-foundations of firm performance (e.g. Barney, Ketchen and Wright, 2011; Foss, 2011; Teece, 2007) by shedding light on how individuals shape the resource allocation outcome and how firms can channel this effect through organizational design, thereby offering insights into important micro-foundational factors explaining heterogeneity in firm capabilities.

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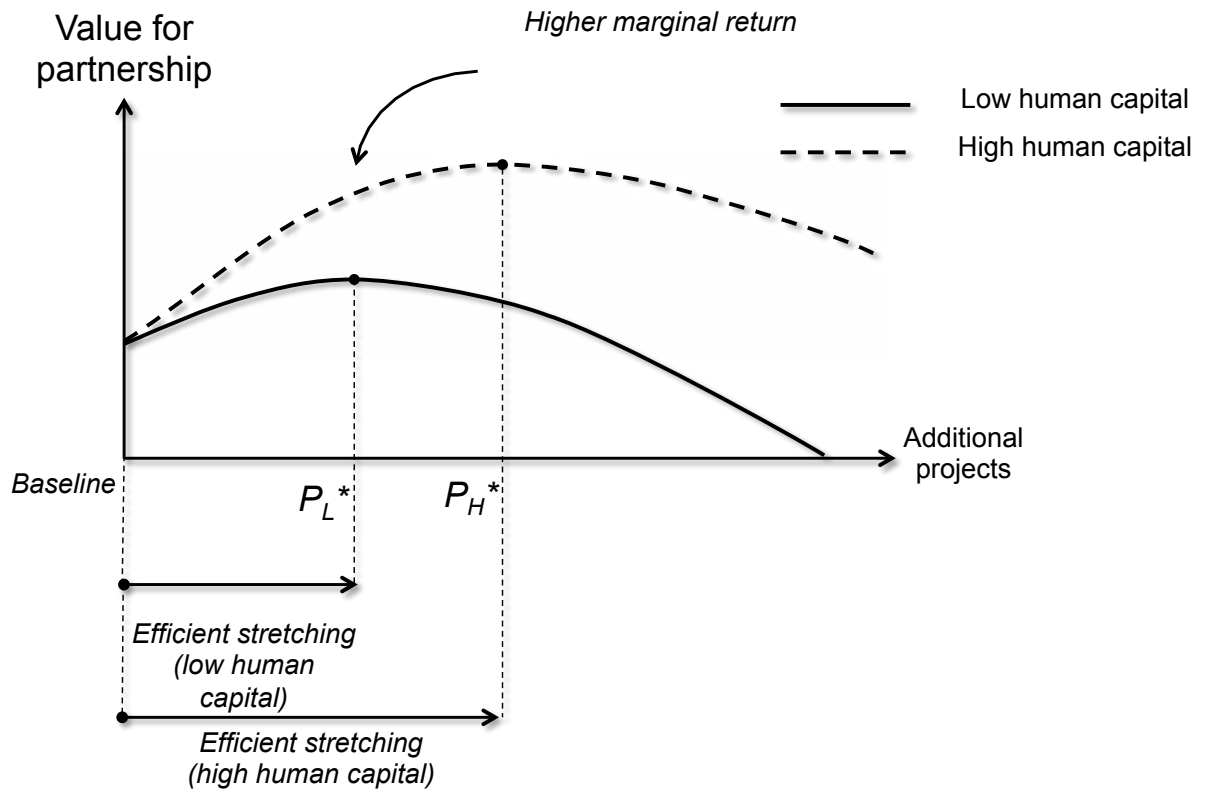
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FIGURES

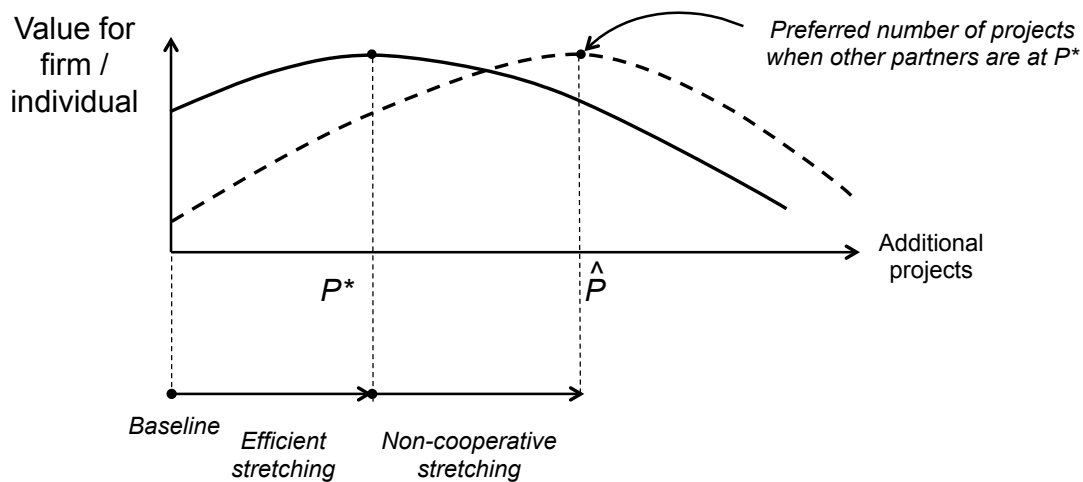
Figure 1: Efficient Human Asset Deployment – Stretching Of More Productive Resource¹³



¹³ We assume that greater levels of firm-specific human capital imply higher marginal productivity for any level of work load.

Figure 2: Efficient Human Asset Deployment – Stretching Of More Productive Resource

Panel (a): Efficient vs. non-cooperative stretching



Panel (b): Loss in firm value due to human asset influence on deployment decision

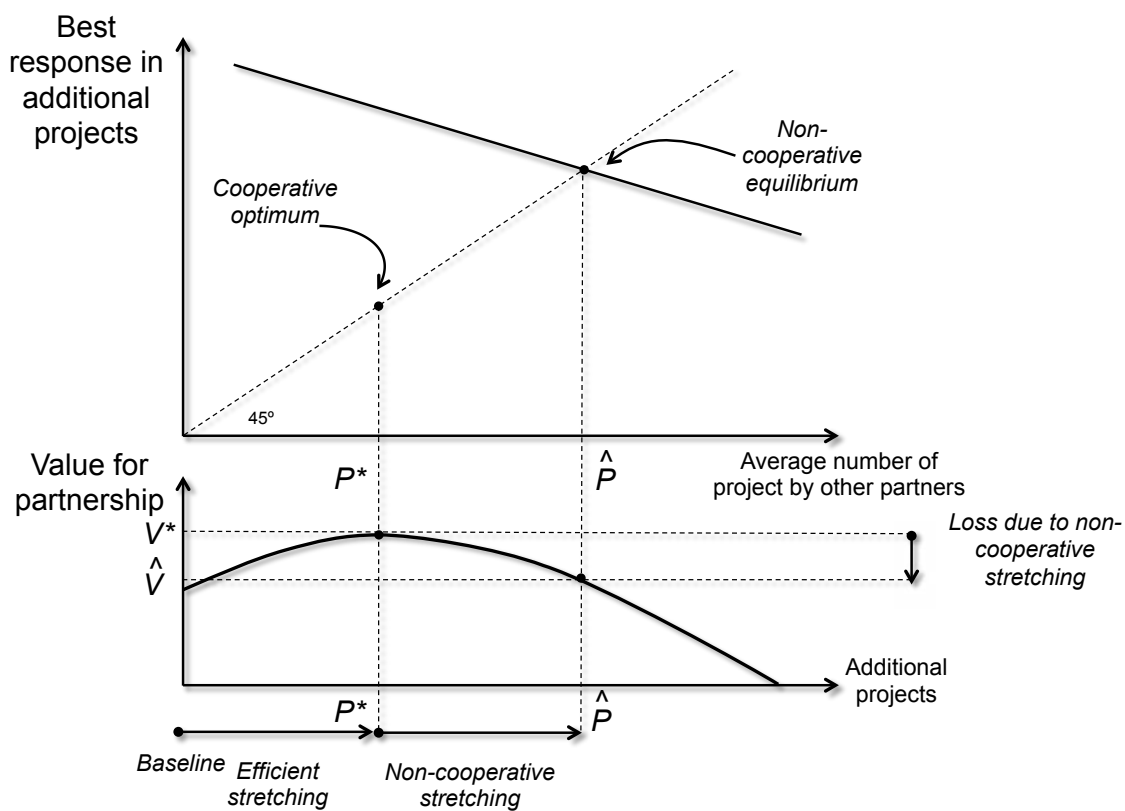
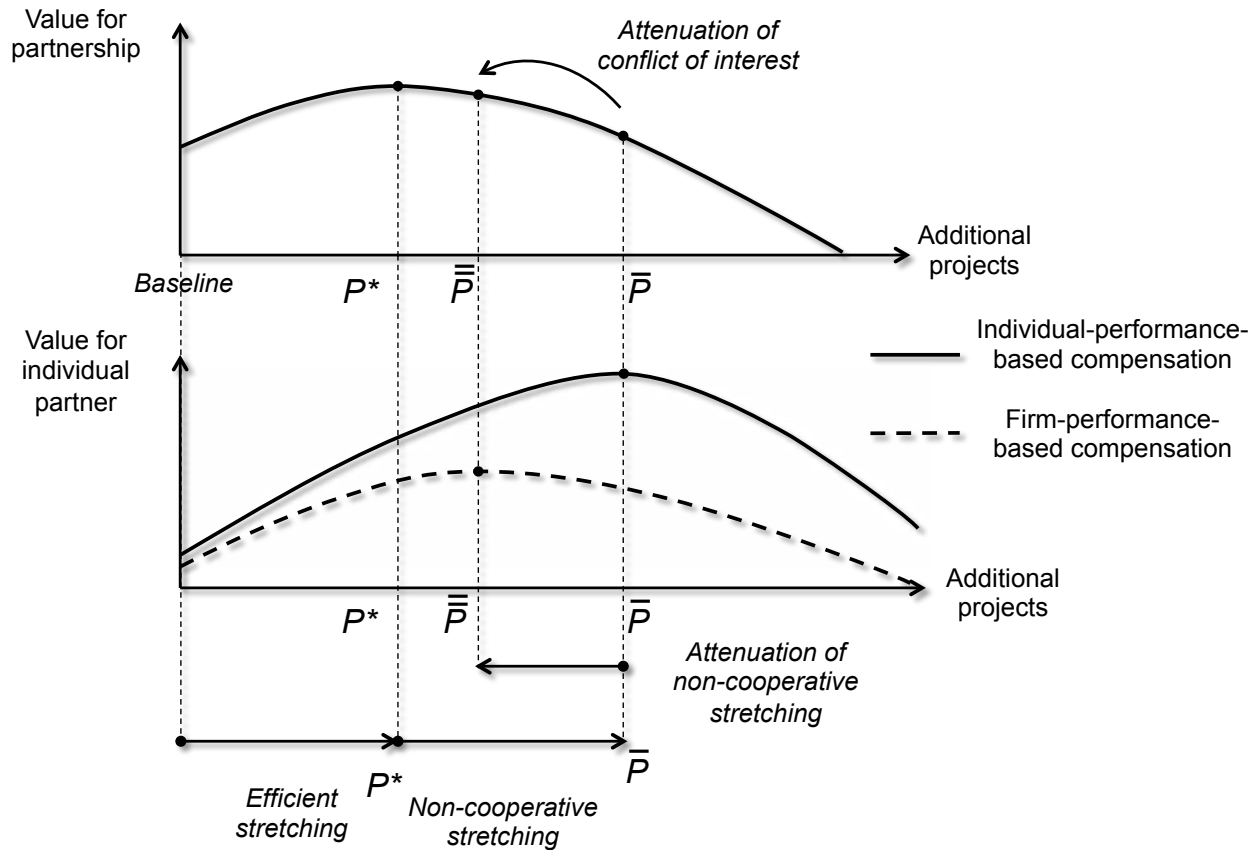


Figure 3: Non-Cooperative Stretching Under Different Rent-Sharing Systems



Note to Figure 2 and Figure 3: From a formal game theoretical standpoint, the reasoning illustrated above relies on the assumption that a partner’s marginal benefit from trying to take on more projects is decreasing in the aggregate efforts the other partners make to take on more projects themselves. Such property is sufficient to guarantee that at a non-cooperative equilibrium all partners are putting more effort than what is optimal to maximize the sum of their individual value captured. Moreover, this property ensures that weaker personal incentive make the equilibrium move closer to the collective optimum. For general results on the comparative statics of such game, see Acemoglu and Jensen (2013).

Figure 4: Number Of M&A Announcements between January 2003 and 2005

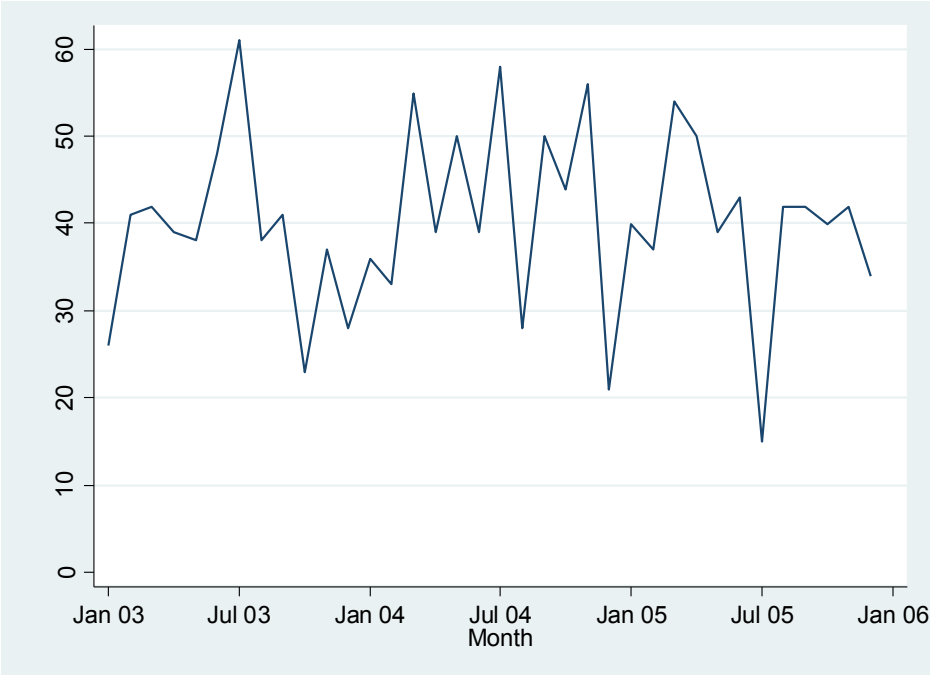
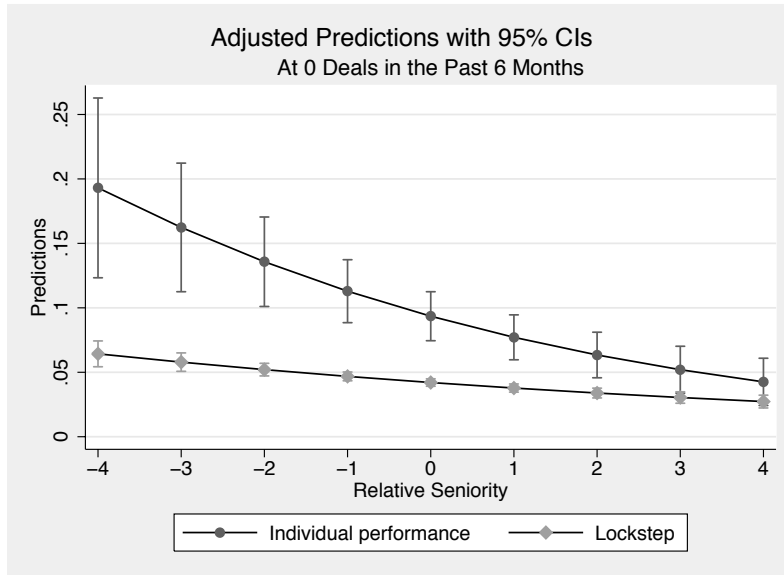
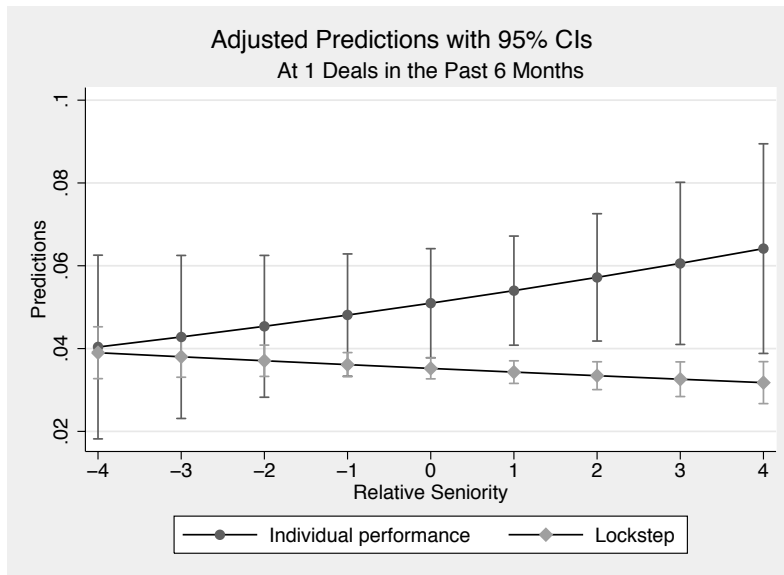


Figure 5: Effect of Interaction of Lockstep, Constraint and Relative Seniority

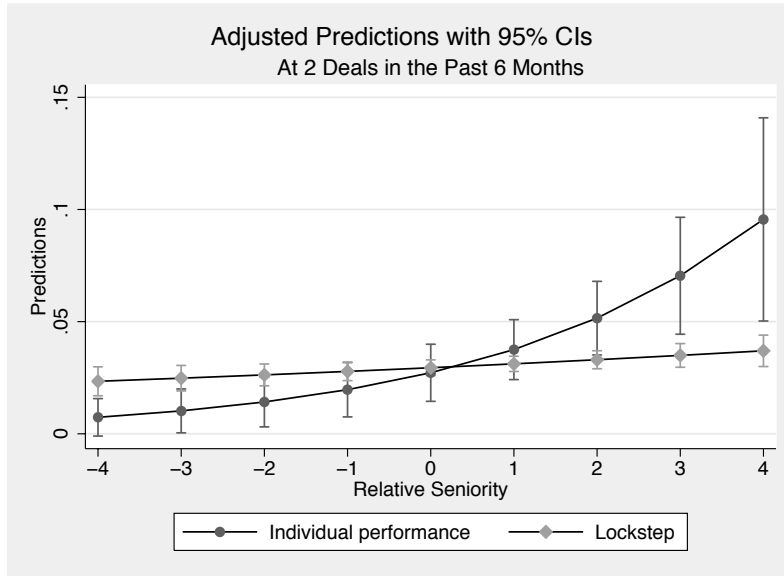
Panel (a): Relationship between relative seniority and probability of being staffed for seniority-based (lockstep) and individual compensation system at 0 deal in the past 6 months



Panel (b): Relationship between relative seniority and probability of being staffed for seniority-based (lockstep) and individual compensation system at 1 deal in the past 6 months



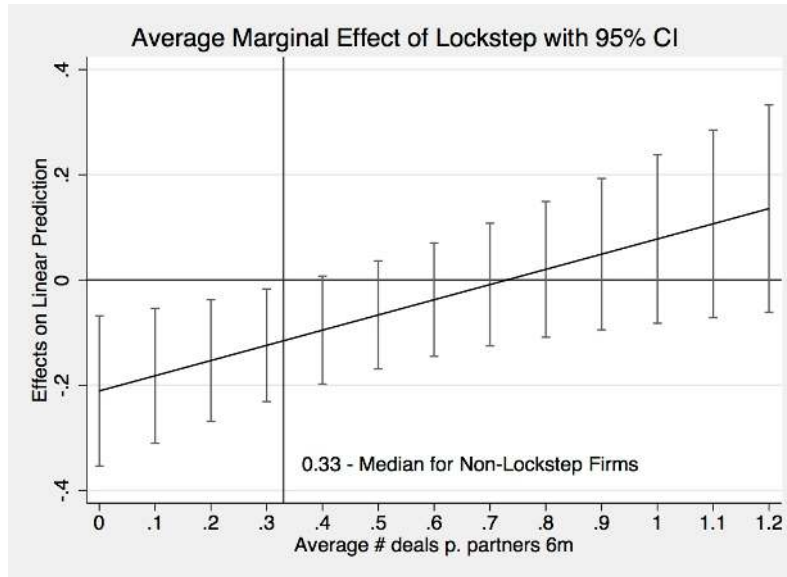
Panel (c): Relationship between relative seniority and probability of being staffed for seniority-based (lockstep) and individual compensation system at 2 deals in the past 6 months



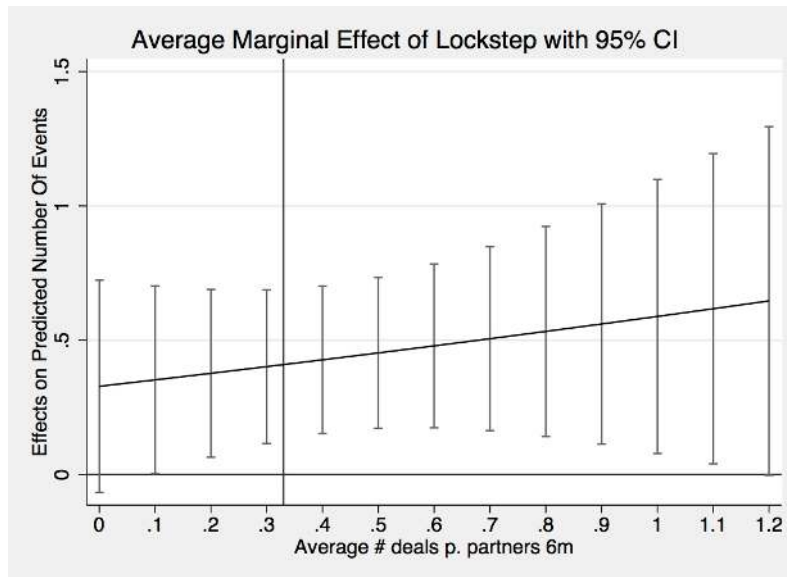
Note to Figure 5: The figures were generated using the margins command in Stata 13, based on the estimated from a random effect model, assuming an individual-firm effect equal to 0. We cannot use the conditional logit to generate meaningful probabilities as the fixed effect are not estimated and their distribution is thus unknown. We instead use the estimates from the random effect model as the individual-firm effects have a mean of 0 by assumption. The estimated coefficients in the random effect are similar in sign, statistical significance and magnitude to those of model 5 of Table 2 for all the hypothesized interaction effects. The results are available in table A.1 of the Appendix.

Figure 6: Marginal Effect of Lockstep at Different Levels of Avg. Number of Deals Per Partner

Panel (a): Effect of Lockstep on HHI



Panel (b): Effect of Lockstep on number of partners per deal



TABLES

Table 1: Descriptive Statistics for Main Analysis

Variable	Mean	S.D.	Min	Max	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
(1) Staffing	0.04	0.2	0	1	1															
(2) Staffings in last 6	0.65	0.9	0	8	0.02	1														
(3) Lawyer ranked in	0.18	0.39	0	1	0.05	0.14	1													
(4) Lockstep	0.95	0.22	0	1	-0.06	0.03	-0.04	1												
(5) Relative seniority	0.01	1.86	-4.75	4.6	0.00	0.05	0.31	0.00	1											
(6) Number of	201.3	126.0	11	516	-0.04	-0.05	-0.06	0.25	-0.05	1										
(7) Leverage ratio	6.04	1.58	2.17	17.12	-0.03	0.02	0.21	0.18	0.00	0.11	1									
(8) Firm Rank	0.43	0.43	0	1	0.01	0.02	0.42	0.04	0.03	0.20	0.19	1								
(9) Missing Firm	0.42	0.49	0	1	-0.01	-0.01	-0.40	-0.01	0.01	-0.14	-0.16	-0.85	1							
(10) Crossborder	0.37	0.48	0	1	-0.01	0.00	-0.06	0.07	-0.01	0.21	-0.08	-0.01	0.01	1						
(11) New client	0.69	0.46	0	1	0.01	-0.02	0.02	-0.03	0.00	0.01	0.03	0.01	-0.01	-0.02	1					
(12) Top category	0.14	0.35	0	1	0.01	-0.02	-0.05	0.07	-0.02	0.25	-0.10	0.03	-0.02	0.19	-0.02	1				
(13) Bottom category	0.28	0.45	0	1	0.01	0.00	0.08	-0.07	0.02	-0.27	0.13	-0.01	0.00	-0.16	0.05	-0.25	1			
(14) Missing deal value	0.12	0.32	0	1	-0.01	0.01	0.01	0.01	0.00	-0.10	0.04	-0.03	0.02	-0.05	0.04	-0.15	-0.22	1		
(15) Lawyer rank	0.31	0.36	0	1	0.01	0.01	0.31	0.00	-0.11	0.08	0.11	0.52	-0.71	0.00	0.00	0.01	0.00	-0.01	1	
(16) Client is acquirer	0.64	0.48	0	1	-0.01	0.00	0.00	-0.01	0.00	0.04	0.01	0.01	0.00	0.07	-0.05	0.02	0.02	-0.02	0.00	1
(17) Seniority winsored	207.7	67.53	67	410	-0.01	-0.08	0.12	-0.05	0.23	0.04	0.01	0.13	-0.17	0.00	0.01	0.01	0.00	-0.01	0.04	0.00

Table 2: Main Regression Results

DV: Partner being staffed on a new deal		(1)	(2)	(3)	(4)	(5)
	Test of					
Individual constraint (staffings in last 6 months)	Baseline (-)	-0.308*** (0.0354)	-0.365*** (0.0405)	-0.649*** (0.115)	-0.844*** (0.156)	
Relative seniority (abs) x Individual constraint	H1 (+)		0.120*** (0.0163)	0.122*** (0.0163)	0.302*** (0.0599)	
Lockstep x Individual constraint	H2 (+)			0.303* (0.119)	0.506** (0.161)	
Lockstep x Relative seniority					0.224 (0.260)	
Lockstep x Individual constraint x Relative seniority	H3 (-)				-0.194** (0.0622)	
Number of partners at law firm		-0.000536 (0.00223)	7.11e-05 (0.00272)	0.000760 (0.00269)	0.000600 (0.00268)	0.000757 (0.00268)
Leverage ratio		0.0530 (0.0540)	0.0733 (0.0603)	0.0703 (0.0593)	0.0588 (0.0598)	0.0493 (0.0602)
Firm Rank (normalized)		0.391+ (0.204)	0.488* (0.237)	0.498* (0.237)	0.496* (0.236)	0.485* (0.235)
Missing Firm Rank		0.0481 (0.635)	-0.0472 (0.723)	0.00229 (0.719)	-0.134 (0.773)	-0.00305 (0.717)
Crossborder mandate		0.0164 (0.0478)	0.0188 (0.0481)	0.0198 (0.0481)	0.0204 (0.0482)	0.0212 (0.0482)
Relative seniority (abs)		-0.290* (0.135)	-0.176 (0.156)	-0.162 (0.153)	-0.154 (0.153)	-0.336 (0.259)
New client		-0.0314 (0.0490)	-0.0328 (0.0492)	-0.0325 (0.0491)	-0.0319 (0.0491)	-0.0332 (0.0492)
Top category mandate size		0.259*** (0.0660)	0.254*** (0.0664)	0.247*** (0.0666)	0.246*** (0.0667)	0.247*** (0.0666)
Bottom category mandate size		-0.135* (0.0549)	-0.137* (0.0555)	-0.134* (0.0553)	-0.135* (0.0554)	-0.134* (0.0553)
Missing deal value		-0.195* (0.0769)	-0.184* (0.0771)	-0.187* (0.0773)	-0.189* (0.0774)	-0.187* (0.0775)
Lawyer rank (normalized)		-0.659* (0.277)	-0.766* (0.325)	-0.748* (0.326)	-0.755* (0.326)	-0.760* (0.328)
Client is acquirer dummy		-0.00172 (0.0462)	-0.00233 (0.0462)	-0.000684 (0.0464)	-0.00182 (0.0464)	-0.00324 (0.0465)
Seniority winsored		0.00133 (0.00515)	0.00446 (0.00557)	0.00511 (0.00563)	0.00500 (0.00571)	0.00489 (0.00569)
Lawyer ranked in relevant field		-0.457 (0.293)	-0.448 (0.367)	-0.473 (0.354)	-0.462 (0.351)	-0.468 (0.353)
Area missing		-0.211 (0.667)	-0.115 (0.761)	-0.157 (0.759)	-0.0296 (0.807)	-0.172 (0.756)
Ranked in relevant field x Rank		0.853* (0.348)	0.949* (0.429)	0.967* (0.420)	0.957* (0.417)	0.961* (0.420)
Year fixed effects		YES	YES	YES	YES	YES
Individual-firm fixed-effects		YES	YES	YES	YES	YES
Observations		68,726	68,726	68,726	68,726	68,726
Clusters		1094	1094	1094	1094	1094
Pseudo R-squared		0.00532	0.0143	0.0192	0.0197	0.0205
Log-Likelihood		-9623	-9623	-9623	-9623	-9623

Robust standard errors in parentheses, clustered by partner-firm. *** p<0.001, ** p<0.01, * p<0.05, + p<0.1

Table 3: Robustness Checks

DV: Partner being staffed on a new deal		(1)	(2)	(3)	(4)	Test	(5)
	Test of	Only Non-ranked partners		Lockstep	Non-Lockstep	(3) vs. (4)	LPM
Individual constraint (staffings in last 6 months)	Baseline (-)	-0.967*** (0.187)	-0.905*** (0.160)	-0.338*** (0.0399)	-0.867*** (0.152)	*** (p<.001)	-0.0563*** (0.0114)
Relative seniority (abs)	H1 (+)	0.347*** (0.0728)	0.291*** (0.0628)	0.109*** (0.0163)	0.300*** (0.0590)	** (p<.01)	0.0205*** (0.00573)
Lockstep x Individual constraint	H2 (+)	0.596** (0.193)	0.548*** (0.166)				0.0400*** (0.0115)
Lockstep x Relative seniority		0.346 (0.433)	0.288 (0.257)				0.0460+ (0.0248)
Lockstep x Individual constraint x Relative seniority	H3 (-)	-0.217** (0.0766)	-0.187** (0.0654)				-0.0151** (0.00578)
Lawyer ranked in relevant field x Individual constraint			0.161 (0.224)				
Lockstep x Lawyer ranked in relevant field			-0.981 (0.634)				
Lockstep x Individual constraint x Lawyer ranked in relevant field			-0.103 (0.237)				
Number of partners at law firm		0.00150 (0.00326)	0.000761 (0.00268)	0.00141 (0.00284)	-0.00157 (0.00963)		1.08e-05 (8.81e-05)
Leverage ratio		0.0747 (0.0826)	0.0508 (0.0602)	0.0751 (0.0745)	0.0232 (0.120)		0.00332 (0.00382)
Firm Rank (normalized)		0.609+ (0.346)	0.487* (0.234)	0.531* (0.248)	0.473 (0.787)		0.0168+ (0.00906)
Missing Firm Rank		-0.197 (0.785)	0.180 (0.724)	0.648 (0.802)	-13.49*** (1.640)		-0.00322 (0.0279)
Crossborder mandate		0.0323 (0.0555)	0.0215 (0.0482)	0.0285 (0.0504)	-0.0716 (0.167)		0.000756 (0.00185)
Relative seniority (abs)		-0.535 (0.442)	-0.408 (0.258)	-0.155 (0.166)	-0.127 (0.409)		-0.0578* (0.0255)
New client		-0.00763 (0.0566)	-0.0343 (0.0492)	-0.0303 (0.0516)	-0.0791 (0.167)		-0.00124 (0.00184)
Top category mandate size		0.200** (0.0735)	0.248*** (0.0665)	0.253*** (0.0664)	0.136 (0.542)		0.00935*** (0.00269)
Bottom category mandate size		-0.139* (0.0656)	-0.134* (0.0552)	-0.130* (0.0601)	-0.167 (0.141)		-0.00569** (0.00220)
Missing deal value		-0.191* (0.0911)	-0.187* (0.0773)	-0.193* (0.0817)	-0.0790 (0.244)		-0.00690* (0.00270)
Lawyer rank (normalized)		-0.692+ (0.359)	-0.755* (0.330)	-0.791* (0.340)	0.0319 (1.361)		-0.0201* (0.0102)
Client is acquirer dummy		-0.0215 (0.0540)	-0.00273 (0.0466)	-0.00908 (0.0497)	0.0405 (0.122)		1.08e-05 (0.00187)
Seniority winsored		0.00177 (0.00692)	0.00476 (0.00568)	0.00463 (0.00590)	-0.00255 (0.0183)		0.000159 (0.000184)
Lawyer ranked in relevant field		NA	0.414 (0.642)	-0.590 (0.375)	0.585 (1.221)		-0.0234 (0.0169)
Area missing		0.191 (0.841)	-0.370 (0.760)	-0.756 (0.842)	12.71*** (2.138)		0.00107 (0.0281)
Ranked in relevant field x Rank		NA	0.977* (0.417)	1.108* (0.431)	-0.767 (1.804)		0.0395* (0.0196)
Year fixed effects		YES	YES	YES	YES		YES
Individual-firm fixed-effects		YES	YES	YES	YES		YES
Observations		56,010	68,726	65,279	3,447		68,726
Clusters		904	1094	937	157		1094
Pseudo R-squared / R-squared		0.0252	0.0207	0.0173	0.0648		0.008
Log-Likelihood		-7180	-9623	-8856	-767.2		

Robust standard errors in parentheses, clustered by partner-firm. *** p<0.001, ** p<0.01, * p<0.05, + p<0.1

Table 4: Robustness check – Descriptive Statistics of Analysis of HHI and Number of Partners per Deal

	Variable	Mean	S.D.	Min	Max	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1)	Herfindhal index of workload after	0.15	0.2	0.03	1	1								
(2)	Number of partners staffed on the	1.61	1.06	1	8	-0.21	1							
(3)	Lockstep	0.86	0.35	0	1	-0.35	0.12	1						
(4)	Average # deals p. partners 6m	0.45	0.23	0	1.19	-0.50	0.01	0.14	1					
(5)	Number of partners at law firm	159.74	124.82	11	516	-0.39	0.20	0.34	-0.03	1				
(6)	Leverage ratio	5.95	1.88	2.17	17.12	-0.11	-0.08	0.17	0.19	0.05	1			
(7)	Deal value (natural log)	4.08	2.19	0	9.78	-0.14	0.27	0.07	-0.05	0.36	-0.12	1		
(8)	Missing deal value	0.12	0.32	0	1	-0.03	-0.08	0.03	0.05	-0.07	0.04	-0.68	1	
(9)	Crossborder mandate	0.32	0.47	0	1	-0.12	0.11	0.10	0.02	0.21	-0.07	0.19	-0.01	1
(10)	Adviser of the acquirer	0.63	0.48	0	1	-0.05	0.01	0.03	0.04	0.05	0.01	-0.01	0.01	0.06

Table 5: Robustness Check – Analysis of HHI and Number of Partners per Deal

Dependent Variable Method	(1) HHI OLS	(2) HHI OLS	(3) HHI OLS	(4) Nbr Partners Poisson	(5) Nbr Partners Poisson	(6) Nbr Partners Poisson
Lockstep	-0.137+ (0.0740)	-0.0985+ (0.0568)	-0.211** (0.0712)	0.530** (0.197)	0.516** (0.191)	0.411 (0.270)
Average # deals p.		-0.447*** (0.0601)	-0.680*** (0.0906)		0.183 (0.215)	-0.0542 (0.411)
Lockstep x Average #			0.289* (0.112)			0.263 (0.479)
Number of partners at law firm	-0.000439** (0.000145)	-0.000524*** (0.000136)	-0.000516*** (0.000136)	0.000590 (0.000621)	0.000642 (0.000625)	0.000648 (0.000627)
Leverage ratio	-0.00704 (0.00817)	0.00248 (0.00654)	0.00112 (0.00663)	-0.0657 (0.0465)	-0.0696 (0.0466)	-0.0702 (0.0466)
Deal value (natural log)	-0.00847 (0.00543)	-0.00688 (0.00508)	-0.00639 (0.00505)	0.191*** (0.0208)	0.191*** (0.0209)	0.191*** (0.0209)
Missing deal value	-0.0602* (0.0264)	-0.0429 (0.0267)	-0.0432 (0.0263)	0.540** (0.187)	0.535** (0.187)	0.535** (0.187)
Crossborder mandate	-0.00917 (0.0108)	-0.000980 (0.00846)	-0.00282 (0.00824)	0.0555 (0.0717)	0.0516 (0.0724)	0.0506 (0.0726)
Adviser of the acquirer	-0.0128 (0.0105)	-0.00437 (0.00784)	-0.00311 (0.00766)	0.00730 (0.0561)	0.00388 (0.0553)	0.00438 (0.0553)
Year 2004	-0.0127 (0.0130)	-0.0204 (0.0127)	-0.0190 (0.0127)	-0.0875 (0.0887)	-0.0792 (0.0845)	-0.0777 (0.0838)
Year 2005	-0.00885 (0.0128)	-0.0212 (0.0158)	-0.0234 (0.0141)	-0.0431 (0.117)	-0.0368 (0.106)	-0.0375 (0.106)
Constant	0.440*** (0.0860)	0.555*** (0.0686)	0.647*** (0.0731)	-1.072*** (0.280)	-1.128*** (0.284)	-1.035** (0.331)
Observations	1,860	1,860	1,860	1,860	1,860	1,860
R-squared / LL	0.215	0.447	0.462	-1927	-1926	-1926
Clusters	56	56	56	56	56	56

Robust standard errors clustered by firm in parentheses, *** p<0.001, ** p<0.01, * p<0.05, + p<0.1

Online Appendix A.1: Table A1. Random Effect Model Used for Illustration of Predicted Effect of Triple Interaction

Variables	Hypotheses	(1) Random Effect	(2) Individual-Firm Fixed Effects (Model 5 of Table 2)
Relative Seniority		-0.210*** (0.0496)	-0.336 (0.259)
Lockstep		-0.854*** (0.120)	Absorbed
Individual constraint (staffings in last 6 months)	Baseline (-)	-0.653*** (0.132)	-0.844*** (0.156)
Relative seniority (abs) x Individual constraint	H1 (+)	0.271*** (0.0538)	0.302*** (0.0599)
Lockstep x Individual constraint	H2 (+)	0.468*** (0.135)	0.506** (0.161)
Lockstep x Relative seniority		0.0983+ (0.0533)	0.224 (0.260)
Lockstep x Individual constraint x Relative seniority	H3 (-)	-0.186*** (0.0556)	-0.194** (0.0622)
Lawyer ranked in relevant field		0.624*** (0.170)	-0.468 (0.353)
Ranked in relevant field x Rank		0.108 (0.242)	0.961* (0.420)
Number of partners at law firm		-0.00197*** (0.000282)	0.000757 (0.00268)
Leverage ratio		-0.0795*** (0.0218)	0.0493 (0.0602)
Firm Rank (normalized)		0.0409 (0.126)	-0.760* (0.328)
Missing Firm Rank		0.477 (0.537)	0.0481 (0.635)
Crossborder mandate		0.0144 (0.0470)	0.0164 (0.0478)
New client		0.0448 (0.0483)	-0.0314 (0.0490)
Top category mandate size		0.237*** (0.0640)	0.259*** (0.0660)
Bottom category mandate size		-0.0733 (0.0524)	-0.135* (0.0549)
Missing deal value		-0.200** (0.0757)	-0.195* (0.0769)
Lawyer rank (normalized)		-0.0980 (0.139)	-0.659* (0.277)
Client is acquirer dummy		-0.0294 (0.0462)	-0.00172 (0.0462)
Seniority winsored		-0.000978* (0.000495)	0.00133 (0.00515)
Area Missing		-0.433 (0.535)	-0.211 (0.667)
Year Fixed effects		YES	YES
Individual-firm random effects		YES	NO
Individual-firm fixed effects		NO	YES
Observations		68,726	68,726
Clusters		1,094	1,094

Robust standard errors in parentheses, clustered by partner-firm *** p<0.001, ** p<0.01, * p<0.05, + p<0.1