

Blocked But Not Tackled: Who Finds New Firms When Rivals Dissolve?

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Abstract:

This paper examines the role of competitive shocks in creating opportunities for new firm foundings. I argue that the sudden dissolution of rival firms may release resources that create opportunities for firm formation, particularly among employees facing impediments to capturing value in their current organizations. Analyzing microdata from the legal services industry, I use unexpected deaths of solo-practicing attorneys as quasi-exogenous sources of rival dissolution. Results indicate that these shocks increase the odds of founding by about 30%, with stronger effects among attorneys with weaker social connections or higher competition for promotion. The paper thus highlights the role that founders play in reallocating dissolved rivals' resources while demonstrating that founding may be an important outlet for "blocked" employees to capture value from opportunities.

Managerial summary:

This paper finds that the shutdown and dissolution of a rival organization may spur employees to found new firms. As a consequence, managers may find it valuable to pay attention to employees' turnover intentions following the dissolution of a rival. Findings suggest that employees who are having trouble advancing in the firm may be the most likely to found a new organization when a rival dissolves, so managers may want to focus retention efforts on these individuals. To the extent that managers wish to capture customers, employees, and other resources that were formerly attached to a dissolved rival, managers may wish to be aware that they could be in competition with their own employees for these resources and opportunities.

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Introduction

Researchers who study “spin-out” organizations underscore that individuals often leave their current employment to found new firms, in part to exploit new opportunities (Gambardella, Ganco & Honoré, 2014). Two stylized findings emerge from this work. First, unexploited (technological) opportunities generated within the original employer “push” employees into new venture creation (e.g. Agarwal et al., 2004; Cassiman & Ueda, 2006; Klepper & Thompson, 2010). Second, individuals at the high end of the talent distribution disproportionately pursue these opportunities (Campbell et al., 2012; Elfenbein, Hamilton & Zenger, 2010; Groysberg, Nanda & Prats, 2009; though see also Åstebro, Chen & Thompson, 2011). However, relatively less attention has been paid to 1) whether opportunities arising in the external environment may also propel spinout formation, and 2) which employees might experience a greater “pull” from these outside opportunities. One such opportunity is the dissolution of a rival firm. Researchers emphasize that the dissolution of a rival firm—by unlocking potentially valuable resources, including employees, clients, and physical assets—may benefit incumbent firms, allowing them to expand and increase profitability (e.g. Knott & Posen, 2005; Hoetker & Agarwal, 2007). Do these events also create opportunities for individuals to found new firms? If so, which individuals pursue these opportunities? Answering these questions will help illuminate the extent to which rival dissolutions sow the seeds of new organizations, while also providing theoretical microfoundations that link rival dissolutions to employees’ decisions to found new firms.

In this paper, I posit that existing firms will not completely absorb the opportunities presented by rival firm dissolution – rival firm dissolution may also spur firm founding. In addition, I argue that individuals who are relatively “stuck” in their jobs will be more likely to

found a new firm following a rival's dissolution. I argue that "stuck" individuals face barriers to capturing value (i.e. compensation and/or promotion) in their current firms which reduce the opportunity cost of continued engagement with their current employer. These strictures may include a lack of social ties to powerful members of the firm (e.g. Blyler & Coff, 2003) or a lack of promotion opportunities (e.g. Sørensen & Sharkey, 2014; Kacperczyk & Marx, 2016).

Individuals facing these barriers may have a higher willingness to pay for a dissolved rival's resources and/or they may be willing to serve a dissolved rival's clients at lower prices, as compared to other players in the industry. Some of the supply-side resources and customers of the dissolved firm may flow to these founders, helping to spur their creation of new firms.

Testing the above ideas poses significant empirical challenges. Dissolutions are often driven by processes (e.g. changes in technology, weakness in industry demand) that also drive foundings (e.g. Agarwal and Gort, 1996; Hannan and Freeman, 1977), creating important concerns about omitted variable bias. Furthermore, reverse causality is likely to be an issue, since foundings might cause dissolutions (e.g. Phillips, 2002). Overcoming these challenges requires the detection of a dissolution that occurs for quasi-random reasons. Using microdata from the American legal services industry, I am able to identify sixty-one such shocks, by stringently focusing on solo-practicing attorneys who die from heart attacks, accidents, and other sudden causes (e.g. Azoulay, Graff Ziven & Yang, 2010; Johnson et al., 1985; Oettl, 2012). These solo practitioners lack attorney colleagues, so their deaths effectively dissolve their firms, creating opportunities for other attorneys to purchase their client files, to hire their employees, to obtain their office locations, or to obtain their resources in a more indirect manner, such as by securing newly available clients. While some of these opportunities are likely captured by

attorneys that stay within existing firms, I focus on whether these opportunities also spur the founding of new organizations, and by whom. While the resources released by these deaths are not, by themselves, likely enough to justify the founding of a new firm, they might provide a boost that, at the margin, makes the formation of a firm worthwhile for certain individuals.

I find that surviving attorneys who formerly competed with these deceased solo practitioners are about 30% more likely than average to found a new organization in the year following the death. Consistent with my theoretical expectation, I find that these foundings are concentrated among attorneys that face barriers to value capture within their current organizations: these include attorneys who share law school affiliations with fewer partners in their practice area, and attorneys who face more competition for promotion.

Additional analyses help link the deceased firms and the newly founded firms. For example, I find that firms founded in the wake of a rival solo practitioner's death survive longer than others, suggesting that a rival's dissolution allows for the creation of more robust startups, likely due to the acquisition of resources released by the deceased firm. In addition, while I am unable to measure transfers of clients or employees due to lack of data, I document that thirteen of the newly founded firms use the former location or contact information of a deceased firm, which provides some direct evidence connecting the resources of the deceased firms to those of the newly founded firms. I also explore important alternative explanations for the results, such as mortality salience, conflicts of client interests, and "inheritance" of clients by friends of the deceased attorneys. Expanding beyond the well-identified but relatively rare instances of sudden deaths, I also examine whether unexpected disbarments of rival solo attorneys leads to foundings, and find similar results. Finally, I discuss how this specialized setting and research

design may generalize by providing anecdotal accounts of similar outcomes in other industries.

The paper makes several contributions. The entrepreneurship literature in strategy focuses on the characteristics of individuals and their current employers when describing why new firms emerge (e.g. Anton & Yao, 1995; Cassiman & Ueda, 2006; Gambardella et al., 2014; Hellmann, 2007; Pakes & Nitzan, 1983). The entrepreneurship literature in organization theory places more emphasis on external, industry level factors (e.g. Sine & David, 2003; Hannan & Freeman, 1977). This paper contributes by combining these complementary perspectives, which rarely intersect, and making the point that a shock in the external environment produces findings by individuals who cannot easily capture value in their current job. Second, I extend existing work that examines who engages in employee entrepreneurship (e.g. Campbell et al., 2012; Kacperczyk & Marx, 2016; Sørensen & Sharkey, 2014) by documenting that “blocked” employees—those with limited social connections and those facing barriers to promotion—are an important source of new firm formation, particularly when rival firms dissolve. Finally, the paper uses employer-employee linked data and a quasi-exogenous source of dissolution to provide the strongest evidence thus far that the dissolution of one firm may lead to the founding of other firms (e.g. Aldrich, 1990; Hiatt, Sine & Tolbert 2009, Parachuri & Ingram, 2012; Pe’er & Vertinsky, 2008; Delacroix & Carroll, 1983). This valuable empirical contribution has applications to other important questions regarding firm dynamics, entrepreneurship, and innovation, which I explore in the discussion section.

Why Might the Dissolution of a Rival Lead to Firm Foundings?

My primary argument is that the dissolution of a rival may create firm founding opportunities for employees working for other organizations. The dissolved rival vacates a

customer niche, creating newly underserved demand that might be served by a newly founded firm. In addition, it may be easier for founders to obtain the supply-side resources of the dissolved rival, such as equipment and other physical capital or intangible assets like brands, patents, or client lists, owing to the dissolved firm's desire to liquidate some or most of its assets.

Consistent with this idea, prior work shows positive correlations between dissolution rates and founding rates at the industry level of analysis (Aldrich, 1990; Hiatt, Sine & Tolbert 2009, Pe'er & Vertinsky, 2008; Delacroix & Carroll, 1983). Though these authors do not discern whether these newly founded firms are helmed by former employees of dissolved organizations (who may be engaging in necessity-based self-employment) or employees of competing firms who are pursuing opportunities (who are the focus of my theory), they note the possibility that reductions in competition for resources may create opportunities for founding. For example, Delcroix and Carroll (1983: 278) note that “[t]he death of a newspaper instantaneously creates a fund of floating resources such as printing presses, offices, personnel, and even readers. . . these resources can be reassembled immediately into new press ventures.”

Additionally, anecdotes from a variety of industries describe dissolutions that enable founders to venture out of their current jobs and form new firms. For example, when the iconoclastic owner of Clark Foam, a surfboard manufacturer, suddenly decided to shut down his business in 2006, employees from other firms in the industry left their jobs to start new surfboard manufacturing firms, motivated by the availability of customers and the ability to purchase Clark's old machinery and hire its former employees (Luna, 2006). The collapse of existing tech companies during the dot-com bubble facilitated the entry of new startups by allowing founders to obtain technology equipment and other assets, with auction companies matching dissolving

firms with founders interested in buying their assets (Irwin, 2001). The dissolution of professional services firms like financial advisors (Shidler, 2010), attorneys (Butler & Paszkiet, 2008), and medical professionals such as doctors and dentists (Alty, 2015) create opportunities for founders to purchase client lists of dissolved firms, hire former personnel, or move into office locations that were previously occupied by the dissolved rival. Newly created restaurants often have their roots in the closure of a rival, which may allow founders to obtain the dissolved firm's location, its equipment, or its other assets (such as liquor licenses) (e.g. Forman, 2008)¹.

In order to capture these opportunities from a rival's dissolution, founders must be willing and able to provide more value than established firms to a dissolved rival's customers or to the owners of a dissolved firm's resources. For example, founders might charge lower prices to a dissolved rival's customers and/or founders might pay higher prices to obtain the dissolved rival's resources, as compared to an established firm. Why might founders be willing to do so?

I argue that an important motivation stems from the difficulty that a founder faces in capturing value inside of the current firm. These difficulties might arise from various sources, such as a lack of social ties to powerful members of the firm (e.g. Blyler & Coff, 2003) or a significant amount of competition for promotion (e.g. Sørensen & Sharkey, 2014).

Individuals facing these impediments may be willing to charge lower prices to a dissolved rival's customers, in part because these impediments reduce the opportunity cost of

¹ It is important to note that many of these industries, as well as those examined by prior authors (e.g. soft drink manufacturing in the early 1900s (Hiatt et al., 2009), newspapers in the 1800s (Delacroix & Carroll, 1983)) have relatively low entry costs / minimum efficient scale. In industries where entry costs are higher, it may be difficult for founders to obtain the capital required to translate a dissolved rival's resources into a new venture, which may weaken the relationship between rival dissolution and founding. I expand on this boundary condition in the discussion section.

remaining with the current firm. For example, an asset manager whose contract limits his residual claimancy might be willing to found his own firm and accept lower fees from the clients of a dissolved competitor, compared to what might be charged by his former firm or other extant firms in the industry. Individuals facing impediments might also be willing to pay higher prices than extant firms for the supply-side resources of a dissolved rival, in order to leave the strictures of their current firms. For example, a restaurant manager with limited prospects for promotion might be motivated to found a new restaurant to escape these impediments, and she might have a higher willingness to pay for a dissolved competitor's unexpired lease than potential bidders from extant firms. As a consequence of these micro-level motivations, some individuals may capture the resources of a dissolved rival, and these resources may, at the margin, assist them in the formation of a new firm.

Hypothesis 1: The dissolution of a rival firm increases the probability that a member of a surviving firm founds a new organization.

Who Finds a New Firm When a Rival Dissolves? The Importance of Organizational Barriers to Value Capture

If value capture motivations indeed help to connect the failure of rivals with the founding of new firms, we should observe that the positive relationship between rival failure and firm founding is more positive for individuals who face more impediments to value capture. I briefly examine two distinct impediments which have been noted by prior researchers: shared educational affiliations with powerful members of the firm and competition for promotion.

Individuals who lack shared affiliations, such as a degree from the same educational institution, to powerful members of the firm likely face higher barriers to value capture (e.g.

Blyler & Coff, 2003). Powerful individuals have many reasons to give preferential treatment to those with whom they share school ties. For example, educational affiliation is a salient marker of personal identity (e.g. Mael & Ashforth, 1992), and a long literature describes why individuals may give preference to similar others (e.g. Tajfel, 1982), including those who attended the same educational institution (e.g. Bordieau & Passeron, 1977; Cohen, Frazzini & Malloy, 2010). Thus, individuals who lack ties to powerful members of the firm may believe that they have weaker prospects for advancement and value capture within the organization (e.g. Ishida, Spilerman & Su, 1997).

Competition for promotion also poses an important barrier to value capture within the organization. When individuals face more competition, their odds of obtaining a promotion and its attendant rewards decrease (e.g. Stewman & Konda, 1983; Sørensen & Sharkey, 2014). As a consequence, the value of remaining in the current job may decline.

Thus, when a rival dissolves, individuals who face these strictures may be willing to pay relatively higher prices for the dissolved rival's resources, and/or they may be willing to charge relatively low prices to a dissolved rival's customers, given the disadvantage that they perceive inside of their current firm. As a consequence, among the set of individuals who are exposed to a rival's dissolution, individuals facing these impediments should be more likely to found a firm.

Hypothesis 2: The positive relationship between the dissolution of a rival firm and the probability that a member of a surviving firm founds a new organization is stronger for (a) members who share fewer educational affiliations with powerful members of the organization, and (b) members who face more competition for promotion.

Data

I test these hypotheses using microdata from the legal services industry in the United States,

covering the period 1999-2012. The legal services industry has hosted prior studies of firm foundings (e.g. Campbell et al., 2012; Phillips, 2002) and dissolutions (Rider, 2014; Rider & Negro, 2015). My primary data source is an electronic version of the nationwide Martindale Hubbell Legal Directory (Martindale), which I link to other data sources. Martindale is often referred to as the “white pages for lawyers.” Firms from all geographic and legal specialties have an incentive to list themselves and their attorneys in Martindale in order to maintain professional contact with other attorneys and to advertise their services to potential clients, who can search the database for free. The directory has been in existence for over 140 years and contains rich variables on hundreds of thousands of attorneys and tens of thousands of law firms.

The fundamental unit of analysis in the Martindale data is an attorney-firm-quarter. Martindale provides unique, time-stable identifiers for each attorney and law firm. It also includes information such as attorney law school, areas of practice/legal specialties (e.g. corporate versus family law), and the street address and contact information of an attorney’s office. Client relationships are not consistently included in the data. Because quarterly observations are not always available for the earliest years of the data, I collapse the data to attorney-firm-year observations. In the small number of situations where attorneys are listed in multiple firms or multiple offices of a single firm in the same period, I assign the attorney to a unique firm and unique office following the procedure described in Parkin & Baker (2006), who use similar data. I define an office at the core based statistical area (CBSA, i.e. city) level.

Sample

I define a sample of attorneys who are “at risk” of creating a new organization. I define this sample as widely as possible. I identify all attorneys working for law firms located in the United

States, which results in an initial sample of 3.7 million attorney-year observations. Then I implement two restrictions. First, I follow Phillips (2002) and eliminate the 600,000 or so solo practitioners from the risk set, because it is difficult to discern whether new firms formed by these individuals are, in fact, simply administrative recodes. Second, I require that the attorney be located in one of the US's 929 core-based statistical areas, since these are the geographical units that I use to define the boundaries of law firm competition. This drops 370,000 rural attorneys from the sample. Finally, I exclude attorneys who work for organizations that fail in the current year (results are unchanged by their inclusion) and who have missing data on date of birth, law school affiliation, and legal specialty. The final sample contains 2.7M attorney-years.

Dependent Variable

Founds new firm – This dichotomous variable takes a value of one when the attorney founds a new law firm in the following year, which effectively lags all independent variables by one year and ensures an appropriate time-ordering. I follow Phillips (2002) in identifying founding events in the Martindale data. First, the attorney must appear in a newly created law firm within three years of her exit from the current law firm without appearing in another organization. The time lag accounts for situations where founders may not list themselves in Martindale immediately. Second, the attorney must be a “name partner,” meaning that her last name must appear in the name of the law firm in the firm's first appearance in the data. Non-founders who work for the firm in its first year are not included in the measure.

I scrub recodes and mergers from this measure with two steps. First, I use flows of employees, identifying recodes and mergers when a firm's ID disappears from the data and more than 50% of the firm's employees appear again in the following year, working for the same

organization. These events are likely to be recodes or mergers, rather than startup formations (Campbell, 2005). Second, I place a 25 attorney cap on the size of a new firm to further ensure that I am not counting recodes or mergers as new organizations. Results are robust to other size caps, such as one, two, three, ten, or 50 attorneys (see Table B.1 of the online appendix). This leaves me with 13,857 named founders of 11,371 unique startups. The median number of attorneys in the first year of each new firm is one, with a mean of 2.1 and a standard deviation of 1.8.

Explanatory variables

Dissolution of a competitor firm – If a researcher wanted to design an ideal experiment for investigating the effect of rival dissolution on founding, she would randomly assign some firms to dissolve and then observe the founding behavior of individuals working for competing organizations. To approximate this ideal, I focus on unexpected deaths of solo practicing attorneys. This research design allows me to avoid important alternative explanations that might plague other approaches to studying the effect of rival failures on foundings. For example, an unobserved factor, such as weakness in the economic environment, might cause the dissolution of rival firms while also forcing other individuals in the industry into necessity-based self-employment. Or, quite differently, an unobserved shift in consumer tastes or technology might cause the dissolution of rivals while creating opportunities for founders. These deaths create a source of rival dissolution that should be unrelated to conditions in the economic environment.

My focus on solo practitioners is purposeful: if a larger firm dissolves shortly after an attorney passes away, there is an unobserved reason why that firm chose to dissolve rather than continue, and I want to prevent these unobservables (such as weakness in the environment) from

affecting my analyses. As a robustness test, I also examine disbarments of solo practicing attorneys, where competitors are required to cease practicing law due to ethical violations.

I identify deaths in two ways. First, I obtain from Martindale a list of attorneys in the directory who Martindale knows to have died from 1998-2012. In order to keep its directory current, Martindale periodically cross-checked its database with the Death Master File provided by the Social Security Administration. I obtain exact date of death and cause of death information by searching for these individuals by name and location in ObituaryData.com, which compiles obituary information from thousands of newspapers around the United States into a searchable database. Second, I identify other deaths of attorneys by searching ObituaryData.com for terms such as “attorney”, “partner in the law firm.” I link this second set of individuals to Martindale data using name, location, and other information listed in the obituary. I define deaths as unexpected if the person 1) is under the age of 65 and 2) the obituary describes the person’s death as sudden or unexpected, such as from a heart attack, accident, or sudden illness. I exclude suicides. I am able to identify the deaths of 1,078 individuals who appear as partner attorneys in the Martindale data in the year prior to their deaths. Of these, I am able to classify 365 (34%) as unexpected via cause of death information in the obituary. This ratio comports well with prior research, such as Azoulay et al. (2010), who find a 45% rate among 248 superstar scientists; Shi, Hoskisson & Zhang (2016), who find a 24% rate among 296 corporate directors; and Nguyen & Neilson (2010), who find a 30% rate among 772 corporate directors. These samples are likely to be demographically similar to partner attorneys, giving me confidence that the data are appropriate. Of the 365 unexpected deaths of partners, 61 are solo practitioners. See Table 2 for a breakdown of the partner attorneys who suffer unexpected deaths.

I define solo practitioners as those attorneys who are the only individuals affiliated with their firm in the Martindale data. *Rival solo practitioner dies unexpectedly* takes a value of one when a solo practitioner who competes in the same CBSA and legal specialty as the focal attorney dies unexpectedly in the current year (see Online Appendix A for details on specialties).

A few potential pathways might lead an attorney to found a new law firm following the unexpected death of a rival solo practitioner. The founder might engage in a direct transaction with the estate of the deceased person, paying a fee to acquire client files, an unexpired lease, or the telephone number of the firm (e.g. Geraghty, 2007). Indirect pathways may also be important. Founders may secure a deceased person's clients without directly compensating the deceased person's estate. Founders might also hire personnel, such as assistants or paralegals, who previously worked for the deceased person, not only for the employees' general skills, but also as a conduit for their knowledge about potential clients (e.g. Somaya et al., 2008). It is important to emphasize that these deaths may not, by themselves, release enough resources to justify the founding of a new firm. Instead, they might be best viewed as providing, at the margin, a boost to an individual who is considering forming a new firm.

Shared educational affiliations with powerful members of the firm (H2a): The law school that an attorney attends has been used extensively in prior research as a marker of shared educational affiliation (e.g. Rider, 2014). I follow this existing work, and I measure shared educational affiliations by calculating the *percentage of partners in the attorney's office and legal specialty who obtain their law degree from the same law school as the focal attorney*. Because these partners work closely with the focal attorney, they are the individuals who are most likely to affect her promotion and compensation.

Competition for promotion (H2b). Associates, the junior members of law firms, compete with each other for promotion into the firm's partnership. A common measure of the intensity of this competition is the firm's *ratio of associates to partners* (e.g. Galanter & Palay, 1991), often referred to as a law firm's "leverage ratio". Similar to the law school ties measure, I calculate this variable using associates and partners who share the same office and legal specialty as the focal attorney. While associates can be promoted without the departure of an existing partner, this ratio provides a reasonable approximation of the average number of competitors vying for a given promotion opportunity (Bidwell & Keller, 2014; Sørensen & Sharkey, 2014; Stewman & Konda, 1983). While partners also compete with each other to advance to higher levels of the partnership (e.g. from non-equity to equity partner), I am unable to observe these gradations in the Martindale data, so my analyses for H2b focus only on associates.

Control variables

Individual level. I control for *age*, *experience*, and *tenure* using date of birth, date of graduation from law school, and date joined the current firm (left censored), respectively. A dummy indicates whether the attorney is an *associate*. I measure gender using the gender typicality of an attorney's first name, according to the US Social Security Administration (SSA)² and the database maintained by GenderChecker.com. I create dummies for *male* and *female*. I control for *legal specialty* with a set of 26 dummies for each of the legal specialties identified in Appendix A. I also account for an attorney's overlap with his colleagues in terms of legal specialty. I calculate *legal specialty overlap with coworkers* by first constructing a 26-dimension vector for each lawyer and for each law firm, which allows me to define the position of each

² <http://www.ssa.gov/oact/babynames/limits.html>

attorney and each law firm in “legal specialty” space. I then create the overlap measure by taking the cosine of the angle between the attorney’s vector and the employer’s vector.³

I control for attorney quality in three major ways. First, I link self-reported law school affiliation to the rankings provided by US News and World Report (USNWR) for the pre-sample years of 1994-1998. USNWR ranks law schools from 1-50 during this period, and I create five dummies that indicate the quintile of the average *ranking of the attorney’s law school* during this period.⁴ The excluded group includes unranked schools. Second, Martindale contains short biographies where attorneys can list law school accomplishments. I include indicators of whether attorneys report that they 1) earned membership in Order of the Coif, a prestigious *law school honor society* open to no more than 10% of graduates, 2) participated as an *editor of a law review*, 3) participated in *moot court*, an exclusive club where students practice litigation proceedings, 4) served as a *law clerk for a judge*, or 5) earned *Phi Beta Kappa* as an undergraduate. Other work using the same data (Carnahan & Greenwood, 2017) show that these variables strongly predict attorney promotion, suggesting that they are valuable markers of attorney quality. Third, Martindale surveys attorneys and asks them to rate the quality of their peers in other firms on a scale of A, B, and C. These ratings are important markers of quality that are often displayed prominently on attorney websites. I include a dummy for each of these *attorney peer ratings* to help capture time-varying attorney quality. In robustness tests, I use

³ If A_i and F_j represent the vectors for attorney i and law firm j , legal specialty overlap would be computed as: $A_i \cdot F_j / |A_i| |F_j|$, meaning that I use the dot product to compute the angle between the vectors.

⁴ USNWR rankings began in 1987. I commence my measurement in 1994 because this is the first year that the rankings included at least 50 schools. The top of the rankings are stable over time, with only 18 schools ever to receive a top 15 ranking by USNWR from 1987-2016.

attorney and *law school cohort fixed effects* to control for stable differences in attorney quality and time-varying differences in law school quality.

Firm-level controls. I control for *firm size* and *office as % of total firm size* using attorney headcount. I control for firm performance using *growth in headcount*, calculated as $(\text{firm size}_t - \text{firm size}_{t-1})$. I also measure whether the *firm is acquired*, calculated when the firm exits the data and more 50% of the firm's attorneys appear in the same firm in the next year. My primary analyses include *office fixed effects*, which control for time-stable differences across each legal establishment in the data. Offices are defined by the intersection of law firm and city, so this fixed effect also captures time-stable differences in geography.

Rival controls. I account for the density of competition in the local legal market with *# of rival firms*, which consists of the number of firms who share the attorney's CBSA and at least one of her legal specialties. I include *% of rival firms that are solo practices* to account for the baseline probability that the focal attorney will be exposed to the death of a solo practitioner in the current year. To account for local economic conditions and compare death-related failures to other failures, I control for *Rival closures, solo practices* and *Rival closures, firm size > 1*. I identify these failures when a rival firm stops listing in the Martindale directory, scrubbing recodes and mergers using the process noted above. *Rival partner dies unexpectedly, firm size > 1* is the number of unexpected deaths of non-solo practicing partner attorneys who work in the same CBSA as the focal attorney (but not the same firm) and share at least one legal specialty with the focal attorney. *Year dummies* are also included in the analysis.

Estimation

Founding a new firm is a dichotomous outcome. In the results that follow, I primarily estimate

linear probability models due to the ease of interpreting coefficients and interaction terms. All results displayed are unchanged when using logit models. I also ensure that results are robust to a penalized logit model that adjusts for rare events (Allison, 2012). Because the death of a solo practitioner “treats” many attorneys in the same CBSA (city), I cluster standard errors by CBSA to account for dependence across observations. I also incorporate block-bootstrapping methods which allow for correlation in standard errors within a CBSA.

Results

Table 1 provides summary statistics. 0.5% of attorneys found a new firm in a given year. Carnahan, Agarwal & Campbell (2012) use US Census data from the legal services industry and show a 1% startup rate. Their definition of firm founder is broader than the one used here (they include all employees of a law firm in its first year, while I examine only named partners), so this .5% rate is consistent and gives confidence in the ability of the Martindale data to capture startup events. We see that about 1% of attorneys in the sample are “treated” by the unexpected death of a rival solo practitioner. 18% of the partners in an attorney’s practice area attended the attorney’s law school. The average attorney works in a practice area with about .5 associates per partner.

TABLE 1 ABOUT HERE

Table 1 shows that solo practitioners are often lower-status individuals - they are less likely to have attended a top law school, to have earned law school honors, or to have a high peer reputation. This comports with expectation, as some solo practitioners may work alone due to a lack of other employment options. Table 1 shows a more complex picture with firm founders.

They have higher peer ratings than other attorneys, but they are also less likely to have attended a top law school. This comports with expectation, as founders often come from the tails of the talent distribution (e.g. Åstebro et al., 2011). Individuals who pursue a high status law degree may also have weaker tolerance for the uncertainty inherent in self-employment.

Table 2 provides summary statistics on partner attorneys who die unexpectedly. Each of the 61 deaths of solo practitioners “treats,” on average, 475 attorneys in the estimation sample⁵. These solo practitioners have an average age of 54 at time of death, and they are mostly male.

TABLE 2 ABOUT HERE

Table 3 provides cross sectional correlations. This table shows the correlation between the treatment variable, *rival solo practitioner dies unexpectedly*, and the other covariates. The only variable with a correlation above .07 is *% of rival firms that are solo practices* (correlation of .12). This relationship is intuitive; each variable will increase as the focal attorney works in a city and legal specialty with more solo practitioners. The overall lack of correlation between the treatment variable and other covariates provides some indication of its quasi-random assignment.

TABLE 3 ABOUT HERE

Table 4 provides an initial test of Hypothesis 1 by comparing unconditional founding rates of treated and non-treated attorneys. The probability that an individual founds a new firm in the year after experiencing the death of a rival solo practitioner is about .9%, as compared to .5% for the overall sample. This 80% increase from the sample mean (i.e. $(.90-.50)/.50$) is

⁵ (e.g. 2.7M sample * .01 receiving treatment / 61 deaths)

economically significant and has a p-value of 0.001.

TABLE 4 ABOUT HERE

Table 5 tests H1, H2a, and H2b. P-values are displayed in parentheses. Model 1 provides a simple regression with the treatment variable and no covariates. The .004 marginal increase in the probability that an individual founds a new firm is similar in size to the result in Table 4. Model 2 adds the full suite of control variables, including office fixed effects, year dummies, legal specialty dummies, and the variables listed in Table 1. Results imply a .0019 increase in founding probability for the treatment group. Using the baseline rate of founding of .005 as a starting point, this effect size suggests that the 61 deaths lead to 49 more founders⁶ than we might have otherwise expected if the deaths had not occurred⁷. Marginal effects of control variables comport with prior literature. Male attorneys, less experienced attorneys, attorneys with shorter tenure, attorneys in smaller firms, and attorneys with high peer ratings are more likely to found. Law school ties to partners in the law office reduce the odds of starting a new firm, as does being an associate or attending a top law school.

TABLE 5 ABOUT HERE

FIGURE 1, FIGURE 2 ABOUT HERE

⁶ 26,197 attorneys are treated by these deaths. If these individuals formed firms at the rate of the rest of the sample, we would expect $26,197 \cdot .005 = 131$ founders. Instead, we see $26,197 \cdot (.005 + .0019) = 180$ founders. $180 - 131 = 49$.

⁷ It is important to note that this figure may not necessarily suggest that 49/61=80% of the demand formerly served by the deceased individuals flow to newly founded firms. Interviews and background research suggest that the clients of deceased individuals often scatter to multiple surviving attorneys; even when attorneys purchase a deceased person's practice outright, they often do not successfully retain many clients (e.g, Brill, 2011). It is a key limitation that I lack client data and cannot assess the extent to which the demand formerly served by the deceased person is captured by extant firms versus startups, and I discuss this limitation in the discussion section.

Table 5, Model 3 tests H2a. I add an interaction of the treatment variable with the percentage of partners in the focal attorney's practice area who attended the same law school as the focal attorney. The interaction term is negative and with $p\text{-value}=.000$. Figure 1 allows for an interpretation of the economic significance of H2a. We see that when an attorney has no law school ties to a partner in her practice area, the marginal effect of treatment is about .003. The marginal effect of treatment declines to zero if the attorney has law school ties to at least 40% of partners in the practice area. These values are well represented in the data (mean=.18, SD=.28) and suggest an economically important effect size. H2a receives strong support in the data.

Model 4 tests H2b. The sample is limited to associates, since these are the only individuals for whom I can measure competition for promotion. We see that the interaction between the treatment variable and the ratio of associates to partners in the attorneys' office (which capture competition for promotion) is positive with $p\text{-value}=.000$, implying that associates who face more competition for promotion are more likely to found a firm when a rival solo practitioner dies unexpectedly. Figure 2 allows for an interpretation of effect size. When the associate-partner ratio increases from the sample mean of .56 to the mean +1 SD (SD=.74), the treatment effect increases by .002, which is 40% of the sample mean. H2b receives support. Model 5 includes the interactions for H2a and H2b in the same model and results are unchanged. Model 6 replaces office fixed effects with attorney fixed effects, and results are unchanged.

Robustness tests

Please see Table 7 for a summary of robustness tests and additional analyses.

Pre-treatment trends. An important assumption underlying the previous analysis is that

there is no pre-treatment difference in the probability that treated attorneys and non-treated attorneys found new firms (e.g. Bertrand, Duflo, & Mullainathan, 2004). The longitudinal nature of the data allows me to explicitly test this assumption. I estimate the following equation:

$$(1) \Pr(Y_{it}) = \alpha_{it} + \beta_i \text{EverTreated}_i + \sum_{k=-5}^5 \beta_k \text{TreatmentClock}_k + \gamma_{it} \text{Controls}_{it} + \varepsilon_{it}$$

EverTreated_i is a dummy that takes a value of one if the attorney ever experiences the death of a rival solo practitioner during the sample period, providing the treated observations with their own intercept in the model. I am interested in the β_k coefficients, which measure the change in firm founding probability in the years preceding and following the death of a rival solo practitioner, relative to the baseline difference established by *EverTreated_i*. *Controls_{it}* are the full set of controls indicated in Table 5, Model 2, including office fixed effects and dummies for year and legal specialty. For attorneys who are treated multiple times, I focus on the first treatment.

Figure 3 presents the estimates of the β_k coefficients as well as the β_i *EverTreated_i* coefficient (represented by the coefficient labeled “Baseline”). I exclude the β_k dummy that corresponds to the year of the death, in order to allow the *EverTreated_i* dummy to establish the baseline difference between the treatment and control groups in that year. Treated attorneys do not statistically differ in their probability of forming a new firm, except in the year immediately following the solo practitioner’s death. The effect size indicates a .0018 marginal increase in the probability of founding, similar in size to the results above. These results provide additional confidence in the quasi-random assignment of the death of solo practitioners.

 FIGURE 3 ABOUT HERE

Initial size of startup firms – An important empirical choice made in the prior analyses is to place a cap of 25 attorneys on the size of newly founded firms. I explore the implications of this choice in Table B.1 (online appendix), where I estimate models which limit the initial size of the startup to one, two, or three attorneys. Results are consistent across these models.

Correlation in standard errors – The death of a single solo practitioner treats many attorneys in the same city (i.e. CBSA), raising concerns about correlation in the standard errors among attorneys in the same city. Model 5 of Table B.1 replicates results with standard errors which are calculated with the more conservative block bootstrapping approach, which allows for correlation in the standard errors of observations in the same city, and we see consistent results.

Use of linear probability model – Foundings are a dichotomous outcome. All results displayed in the paper are robust to using logit estimation; I display results for H2a in Model 6 of Table B.1. Estimates are the same when using a Firth logit model, which Allison (2012) recommends for the examination of rare events. This is expected given the large number of foundings in the sample (i.e. founding is not rare from an event-count perspective).

TABLE 6 ABOUT HERE

Deaths are idiosyncratic – While sudden deaths provide an empirically convenient source of competitor dissolution, they are uncommon and perhaps difficult to generalize. To increase the robustness of results, I also examine a different type of competitor dissolution: solo practitioners who are disbarred. Malfeasance is arguably a more generalizable reason for firm dissolution than death. Table B.2 displays results and provides more details. Rivals to disbarred

individuals have an increase in founding which is about half the effect size that we observed for sudden death, supporting H1 ($p=.034$). H2a and H2b are not supported.

Alternative explanations

Mortality salience - The death of a rival attorney could cause other attorneys to re-examine their lives (e.g. Carnahan, Kryscynski & Olson, 2017) and might lead attorneys to found new firms in order to increase flexibility and spend time with family. If this effect drives the results, unexpected deaths of partner attorneys in all firm sizes, not just solo practitioners, should increase the probability of new firm founding. These deaths are equally tragic but do not create a founding opportunity in the same way as the death of a solo practitioner, since colleagues are present to inherit a deceased attorney's client matters. In Table 5, the coefficient on *Rival partner dies unexpectedly, firm size > 1* is not statistically different from zero; and a Wald test confirms that it is different from the treatment effect at $p=.04$.

Preference for autonomy – Individuals with a preference to “be their own boss” may find that a rival's dissolution provides them with a long-awaited opening to found their own firm. I lack a measure that allows me to capture this type of variation. However, the analyses in Table 5, Model 6, which use individual fixed effects, should absorb stable preferences for autonomy. In addition, this explanation cannot easily explain the interaction effects for H2a-b, which provides additional confidence that autonomy preferences do not fully explain the results.

Foundings by friends who wind down the deceased person's practice - Bar associations encourage attorneys to make arrangements with a “back-up” attorney to close and wind down their firm in the event of their death (e.g. Brill, 2011). Often attorneys do not make such arrangements, and attorneys in the community volunteer or are appointed to wind down a

deceased practice (e.g. Maskaleris & Cooperman, 1997). It is possible that attorneys involved in a wind-down might use new client contacts to start a new firm. These individuals shoulder the uncertainty of founding, but this idiosyncratic process might limit generalizability.

Articles in legal journals and interviews, both with attorneys who have wound down practices of deceased solo practitioners as well as with members of state bar associations who have overseen such wind-downs, suggest that these back-up attorneys are often friends of the deceased (e.g. Berson, 2013). To evaluate this “inheritance” explanation empirically, in Table B.2, I examine whether demographic similarity (which increases the odds of friendship) between a deceased and treated individual helps to predict founding. I examine overlap in law school, gender, age, and prior employment. I do not find evidence that demographically similar individuals are more likely to found firms. These patterns conform with anecdotal accounts, which note that “backup” attorneys are often other solo practitioners. These individuals are not included in the set of potential founders (see “Sample” above), so they do not affect the results.

Attorney quality - A possible alternative explanation is that attorneys who are impeded in their jobs are simply lower quality and that the opportunity provided by a solo practitioner’s death is only attractive to lower quality attorneys. In the prior analyses, I include numerous controls for attorney quality and also provide results using office fixed effects and individual fixed effects to help account for this possibility. I also push further on this idea in Table 6, where I interact the treatment variable with various measures of attorney quality. I use law school rank

(both dichotomous and continuous) for the full sample, law school honor society membership⁸ for associates (since a quality signal from law school may be less germane to senior attorneys), and peer ratings for partners (since most associates do not yet have peer ratings). Each of these interactions is imprecisely estimated, with large p-values. However, it is important to emphasize that absence of evidence is not evidence of absence, so differences in attorney quality may still be responsible for some of the patterns observed.

Conflicts of interest - Attorneys in the same firm cannot serve clients with competing legal interests, so it is possible that an attorney may start a new firm following the death of a rival in order to serve the deceased rival's clients while avoiding conflicts of interest with his current employer. While these attorneys still shoulder the uncertainty of firm founding, this type of behavior is idiosyncratic to legal services and also threatens generalizability. Conflicts of interest are likely to be salient for attorneys who practice in the same specialties as many of their colleagues, since they are likely to have clients with overlapping legal matters. In Table 6, Model 5, I interact the treatment variable with legal specialty overlap with coworkers. The interaction and associated log likelihood tests have very large p-values, which provides some confidence that conflicts of interest do not drive the results. Martindale lacks client data.

Results are spurious – The previous results do not show direct evidence of a connection between the deceased attorneys and the newly founded firms. To address this issue, first, I examine variation in the competitive overlap between the deceased attorney and the treated attorney. Individuals who have more competitive overlap will be better positioned to capitalize

⁸ Results using the other law school related measures of quality, including law review, judicial clerkship, moot court, and Phi Beta Kappa (which is an undergraduate honor) show similar results. I use honor society membership here because it has the strongest correlation with the odds that an associate is promoted to partner.

on any opportunity created by the death. I split the treatment effect into attorneys who share one and more than one legal specialty with the deceased (Table 6, Model 6). The increase in the probability of founding is .0031 for the individuals with overlap in multiple areas, while it is .0017 for individuals with overlap in one area (p value of difference = .204). Second, I examine the addresses and telephone numbers of newly founded firms, and I compare them to those of the deceased individuals. This is the best marker of resource transfer that I have available, as client information is not available. I find that twelve newly founded firms occupy the exact address of a deceased attorney (including suite number), and one newly founded firm lists the exact same telephone number as a deceased attorney. This provides some prima facia evidence that founders utilize the resources of the deceased individuals⁹.

Performance of startup firms - To further pursue the concern that results are spurious, I examine the performance of firms founded by attorneys “treated” by a solo practitioner’s death. I measure performance using survival and firm growth (headcount). To the extent that treated startups outperform others, this provides some evidence of a connection between the deceased firms and the startup firms (e.g. resources released by the deceased firm provide treated startups with some manner of advantage). Table B.3 of the online appendix displays results and provides more information. I find that “treated” founders survive longer than others. This result helps tighten the causal linkage between the deceased firms and the newly founded firms. Better survival among treated founders might suggest that they are pursuing opportunities, though

⁹ I searched Lexis Nexis, Proquest, and Google for notices of sales or client transfers from the deceased individuals to individuals in the sample, but I did not find any such notices for the deaths in my sample. This comports with expectation, as Brill (2011) notes that buyers of legal practices often contact clients individually, in order to ensure continued business, and many state laws require sellers of legal practices to inform clients via certified mail.

survival is an imperfect measure of startup performance (Gimeno et al., 1997).

TABLE 7 ABOUT HERE

Discussion

I examine whether dissolutions of rival firms create opportunities for individuals to found new organizations. In order to minimize concerns with reverse causality and omitted variable bias, I focus on a special class of firm dissolutions: unexpected deaths of solo practicing attorneys. I find that the probability of an attorney founding a new law firm increase by about 30% from the base rate upon the unexpected death of a rival solo practitioner, with rivals defined by city and legal specialty. These founders tend to be attorneys who share law school affiliation with few partners in their firms and attorneys who faced more competition for promotion in their prior firms. My primary interpretation of these results (along with numerous additional analyses) is that rival failures are most likely to encourage founding among individuals who face impediments inside of their current organizations. These founders might directly purchase assets of a deceased individual, or they might obtain newly available resources in a more indirect manner, such as by securing newly available clients. While I lack data on clients, I provide other evidence that suggests that resources flow from the deceased person to the newly founded firms. For example, I find that founders who were “treated” by the unexpected death prior to entry survive longer than other startups, and I find thirteen instances where a newly founded firm lists the same address or telephone number formerly held by a deceased firm.

Contributions and future work

The paper makes contributions that have the potential to simulate novel research in the employee

entrepreneurship literature and in the firm dynamics literature. First, I unite and extend two complementary literatures that rarely intersect: the employee entrepreneurship literature (Agarwal et al., 2004; Anton & Yao, 1995; Cassiman & Ueda, 2006; Gambardella et al., 2014; Hellmann, 2007; Klepper & Thompson, 2010), and the literature that examines how the external environment creates opportunities for firm formation (e.g. Sine & David, 2007; Hiatt et al., 2009). The employee entrepreneurship literature closely examines the individual and organizational mechanisms that lead employees to turn opportunities into newly founded firms, but it largely focuses on internal innovations as the source of firm formation opportunities, neglecting the external environment. It is also largely theoretical due to the difficulty of measuring opportunities, particularly those which are not exploited (see Gambardella et al., 2014 for an exception). The literature which examines how the external environment may create opportunities for firm formation lacks a detailed consideration of the prior employment of individuals who form new firms, so it does not often explain why founders may find entrepreneurship more attractive than their current jobs. This paper shows the promise of combining both perspectives. I build and test theory which describes how firm formation emerges from the *interaction* between external opportunities and the characteristics of an employee's current job. I focus on the interaction between rival dissolutions and organizational barriers to value capture, and future work can explore how newly founded firms emerge from the combination of other external shocks (e.g. changes in technology or regulation) and other employee and organizational characteristics.

Second, the paper makes a further contribution to the employee entrepreneurship literature by showing how organizational barriers to value capture, such as shared social ties and

competition for promotion, play a critical role in determining whether employees will pursue an opportunity via the founding of a new firm. Prior work in this vein emphasizes the parent firm's strategy (e.g. Cassiman & Ueda, 2006; Hellmann & Perotti, 2011; Klepper & Thompson, 2010) and resources (e.g. Agarwal et al., 2004; Kacperczyk, 2012), or the characteristics of the technology underlying the opportunity (e.g. Gambardella et al., 2014; Ganco, 2012) as important determinants of whether an individual will remain in the firm or pursue an opportunity by founding a new organization. This paper suggests that social ties and competition for promotion matter because they alter the opportunity costs of remaining with the firm.

The results for H2a (law school ties to partners) also contribute to the nascent literature examining how employees' social ties influence their entrepreneurship decisions (e.g. Nanda & Sørensen, 2010). I find that social ties help tether the employee to the firm when an opportunity arrives quasi-exogenously from outside the organization. However, in other situations, social ties might serve as the *source* for valuable ideas that could be exploited inside of a new firm (e.g. Hansen, 1999), perhaps leading to higher rates of founding for well-connected individuals. Exploring this tension and delineating the circumstances under which social ties increase versus decrease founding is a valuable opportunity that is highlighted by the current manuscript.

The results examining social ties and competition for promotion also provide an important complement to a different stream of work in employee entrepreneurship, which emphasizes that founders often consist of "star" employees who seek a vehicle to earn returns from sizeable opportunities (e.g. Groysberg et al., 2009; Campbell et al. 2012; Elfenbein et al., 2012) or of "misfits" who enter self-employment because they have no other employment options (e.g. Åstebro et al., 2011). The theory and results presented here suggest a middle

ground: founding is also important for employees who may or may not be stars but do face obstacles to advancement in their current jobs. Founding a new firm may allow them to earn returns from relatively modest opportunities (in this case, the dissolution of a small rival firm). Combining these ideas suggests an underlying assortative matching process, where star employees may found firms primarily to pursue larger opportunities, while other employees found firms to pursue smaller opportunities that are ignored by stars. Future work that models this process directly could make an important contribution (see Mindruta, Moeen & Agarwal, 2016).

Finally, the paper makes an important empirical contribution to the broad-based research stream that examines the relationship between dissolution of one firm and the birth of others (e.g. Agarwal & Gort, 1996; Delacroix & Carroll, 1983; Hiatt et al., 2009; Pe'er & Vertinsky, 2008; see also Parachuri & Ingram, 2012). While prior work finds positive correlations between dissolutions and foundings at the industry level, prior work has not used employee-employer linked microdata, nor has it examined quasi-exogenous dissolutions. As a consequence, necessity based entrepreneurship, whereby former employees of dissolved firms start new organizations because they have lack employment options, creates a strong alternative explanation for prior results. I am able to set aside this critical alternative explanation for the first time, providing some of the strongest evidence so far that dissolutions lead to foundings.

The research design used here may inspire future work that uses quasi-exogenous dissolutions to examine other important research questions involving firm dynamics, entrepreneurship, and innovation. For example, reports suggest that the sudden dissolution of Clark Foam, the surfboard manufacturer mentioned above, provoked a wave of innovation in the

industry because new entrants used Clark's resources to engage in experimentation (Housman, 2015) and that the closure of NASA facilities spurred innovation as former NASA employees moved into other sectors (Kharif, 2012). Research that rigorously examines these types of shocks, perhaps using qualitative methods, may deliver unanticipated, novel insights.

Other exciting research questions come into focus when we consider that the resources released by a rival's dissolution could be captured by incumbent firms as well as by employee entrepreneurs. Which resources are captured by incumbents and which resources are captured by employee entrepreneurs? Do incumbents and employee entrepreneurs use dissolved firms' resources for different purposes? These questions follow naturally from the theory and results presented here, and answering them will help us better understand the differing roles played by incumbent firms and startups in the process of resource reallocation and creative destruction.

Limitations

Despite these contributions, the paper has important limitations. The first is generalizability. While the theory presented here should extend to other contexts, the effect that rival dissolution has on founding may be larger in legal services than in other settings. Legal services has low barriers to entry for individuals who are already licensed members of the industry (e.g. low minimum efficient scale, absence of covenants-not-to-compete [Starr, Balasubramanian & Sakakibara, 2016]), making it easier for founders to compete with incumbents for a dissolved firm's resources. Conflicts of interest, a friction specific to the legal services industry, may also cause the hypothesized effects to be larger in this setting than others.

Focusing on deaths of solo practitioners has important tradeoffs. This choice provides empirical clarity, because these dissolutions have a clear cause and a clear timing, and should not

be driven by factors that also correlate with foundings. However, the number of these events is relatively small. While I also examine disbarments to ensure the robustness of my results, the scale required to pursue the opportunities created by deaths and disbarments is small, making it possible for firm founders to compete for them at relative parity with existing firms. In settings where the pursuit of opportunities requires larger scale, existing firms may absorb more of the opportunities that are created when a rival dissolves. Furthermore, we might also see weaker results for H2a-b if we examined other types of dissolutions. Deaths of solo practitioners may create relative modest opportunities. If opportunities are more sizeable, employees who do not face large impediments in their jobs may also be attracted to them.

Another limitation stems from the non-random assignment of my measures of impediments to value capture (H2a-b). Attorneys who have fewer law school ties to partners in their practice area and more competition for promotion may vary on other important dimensions, such as skills and quality. I take numerous steps to address alternative explanations that might arise from this endogeneity (i.e. many controls for attorney quality, use of individual and office fixed effects), but readers should interpret these results with the appropriate level of caution.

Finally, I am unable to track the clients of the deceased and newly founded firms. While I find that thirteen startups occupy the former address or use the former telephone number of deceased individuals, indicating that the resources of deceased firms are used in founding, tracking clients would enhance my ability to connect deaths and subsequent founding events. I am also unable to discern the precise channel by which founders acquire the resources of the deceased attorney, e.g. via direct payments to the deceased person's estates. Future work that is able to track resources of dissolved firms at a more granular level will make an important

contribution to our understanding of the resource reallocation process.

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Table 1: Summary Statistics:

	(1)			(2)			(3)			(4)		
	Full Estimation	Sample		Founds New Firm			Does Not Found New Firm			All Solo Practitioners		
	n	Mean	StDev	n	Mean	StDev	n	Mean	StDev	n	Mean	StDev
DV: Founds new firm	2746500	0.005	0.071	13857	1.000	0.000	2732643	0.000	0.000	617071	N/A	0.034
H1: Rival solo practitioner dies unexpectedly	2746500	0.010	0.097	13857	0.018	0.133	2732643	0.010	0.097	617071	0.015	0.122
H2a: % of partners in practice area from attorney's law school	2746500	0.183	0.283	13857	0.190	0.297	2732643	0.183	0.283	617071	N/A	0.000
H2b: Associate-partner ratio in practice area	2746500	0.559	0.749	13857	0.520	0.716	2732643	0.559	0.749	617071	N/A	0.197
Associate	2746500	0.240	0.427	13857	0.222	0.416	2732643	0.240	0.427	617071	N/A	0.043
Attorney age	2746500	46.347	11.558	13857	45.693	10.098	2732643	46.351	11.564	605472	52.885	10.423
Years since law school graduation	2746500	19.371	11.787	13857	18.449	10.272	2732643	19.376	11.794	615797	24.487	10.840
Tenure with firm	2746500	4.912	3.613	13857	4.718	3.559	2732643	4.913	3.613	617071	3.229	3.073
Tenure with firm is left-censored	2746500	0.479	0.500	13857	0.395	0.489	2732643	0.480	0.500	617071	0.160	0.366
Partner	2746500	0.690	0.462	13857	0.684	0.465	2732643	0.690	0.462	617071	1.000	0.364
Overlap in legal specialty with officemates	2746500	0.612	0.243	13857	0.619	0.234	2732643	0.612	0.243	617071	N/A	0.000
Male first name	2746500	0.741	0.438	13857	0.772	0.419	2732643	0.741	0.438	617071	0.752	0.432
Female first name	2746500	0.209	0.406	13857	0.181	0.385	2732643	0.209	0.406	617071	0.197	0.398
Peer rating: A	2746500	0.356	0.479	13857	0.363	0.481	2732643	0.356	0.479	617071	0.199	0.399
Peer rating: B	2746500	0.179	0.383	13857	0.205	0.404	2732643	0.179	0.383	617071	0.278	0.448
Peer rating: C	2746500	0.018	0.133	13857	0.027	0.161	2732643	0.018	0.133	617071	0.053	0.223
Law school rank 1-10	2746500	0.123	0.329	13857	0.075	0.264	2732643	0.123	0.329	617071	0.062	0.241
Law school rank 11-20	2746500	0.097	0.296	13857	0.082	0.275	2732643	0.097	0.296	617071	0.064	0.244
Law school rank 21-30	2746500	0.060	0.238	13857	0.044	0.205	2732643	0.061	0.239	617071	0.042	0.200
Law school rank 31-40	2746500	0.091	0.287	13857	0.091	0.288	2732643	0.091	0.287	617071	0.076	0.265
Law school rank 41-50	2746500	0.054	0.225	13857	0.064	0.245	2732643	0.054	0.225	617071	0.057	0.231
Law school unranked	2746500	0.575	0.494	13857	0.643	0.479	2732643	0.575	0.494	617071	0.700	0.458
Law school rank (1-50, continuous)	1167285	21.757	13.847	4947	24.914	13.898	1162338	21.743	13.845	185213	25.321	13.854
Law school honor society	2746500	0.075	0.263	13857	0.056	0.230	2732643	0.075	0.264	617071	0.019	0.138
Law review editorial position	2746500	0.155	0.362	13857	0.142	0.349	2732643	0.155	0.362	617071	0.057	0.232
Moot court participant	2746500	0.064	0.245	13857	0.091	0.287	2732643	0.064	0.245	617071	0.036	0.186
Phi Beta Kappa	2746500	0.072	0.258	13857	0.052	0.223	2732643	0.072	0.259	617071	0.026	0.158
Clerked for judge	2746500	0.102	0.302	13857	0.100	0.300	2732643	0.102	0.302	617071	0.045	0.206
Firm size (# attorneys)	2746500	170.26	288.72	13857	105.819	235.670	2732643	170.594	288.936	617071	1.000	0.000
Office as % of total firm size	2746500	0.700	0.328	13857	0.747	0.313	2732643	0.700	0.328	617071	1.000	0.000
Growth in firm headcount	2746500	8.252	38.849	13857	4.380	30.594	2732643	8.271	38.886	497949	-0.040	0.717

Firm is acquired	2746500	0.004	0.062	13857	0.008	0.090	2732643	0.004	0.062	617071	0.000	0.104
Rival closures, solo practitioners	2746500	11.287	14.973	13857	11.646	15.253	2732643	11.286	14.972	617071	11.880	16.138
Rival closures, firm size>1	2746500	6.809	10.052	13857	6.139	9.194	2732643	6.812	10.056	617071	4.714	7.681
# rival firms	2746500	658.70	919.83	13857	592.828	831.501	2732643	659.034	920.251	617071	551.47	875.08
% of rival firms that are solo practices	2746500	0.297	0.163	13857	0.331	0.166	2732643	0.297	0.163	617071	0.413	0.163
Rival partner dies unexpectedly, firm size>1	2746500	0.021	0.150	13857	0.021	0.146	2732643	0.021	0.150	617071	0.013	0.113

Level of analysis is the attorney-year. See online appendix for practice area information. Solo practitioners are not included in the estimation sample.

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Table 2: Partner attorneys who suffer unexpected deaths

	(1)					(2)				
	n	Mean	StDev	Min	Max	n	Mean	StDev	Min	Max
Cause of death: heart attack	61	0.07	0.25	0	1	264	0.16	0.37	0	1
Cause of death: accident	61	0.23	0.42	0	1	264	0.20	0.40	0	1
Cause of death: sudden illness	61	0.07	0.25	0	1	264	0.13	0.34	0	1
Cause of death: other sudden cause	61	0.64	0.48	0	1	264	0.51	0.50	0	1
Attorney age	61	54.15	7.52	32	65	264	52.73	7.59	33	64
Male first name	61	0.87	0.34	0	1	264	0.88	0.32	0	1
Female first name	61	0.11	0.32	0	1	264	0.10	0.30	0	1
Peer rating: A	61	0.23	0.42	0	1	264	0.55	0.50	0	1
Years since law school graduation	61	26.48	9.25	5	40	264	25.99	8.17	5	40
Graduated from top 10 law school	61	0.04	0.22	0	1	264	0.12	0.38	0	1
Firm size (# attorneys)	61	1.00	0.00	1	1	264	127.55	188.03	2	503
Observations	61					264				

Summary statistics are for year prior to death

Table 3: Cross Sectional Correlations

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 Founds new firm	1.00														
2 Rival solo practitioner dies unexpectedly	0.01	1.00													
3 Associate	-0.01	-0.02	1.00												
4 % of partners in practice area from attorney's law school	0.00	-0.01	-0.04	1.00											
5 Associate-partner ratio in practice area	-0.01	-0.01	0.44	-0.08	1.00										
6 Attorney age	0.00	0.02	-0.64	0.04	-0.34	1.00									
7 Years since law school graduation	0.00	0.03	-0.65	0.02	-0.34	0.97	1.00								
8 Tenure with firm	0.00	0.05	-0.42	0.04	-0.23	0.46	0.47	1.00							
9 Tenure with firm is left-censored	-0.01	-0.01	-0.45	0.07	-0.22	0.44	0.45	0.49	1.00						
10 Partner	0.00	0.02	-0.83	0.06	-0.41	0.51	0.52	0.40	0.46	1.00					

11	Overlap in legal specialty with officemates	0.00	0.02	0.06	0.03	0.04	-0.07	-0.07	-0.01	-0.03	-0.04	1.00				
12	Male first name	0.00	0.01	-0.24	0.01	-0.12	0.27	0.28	0.12	0.17	0.24	0.02	1.00			
13	Female first name	0.00	-0.01	0.23	-0.01	0.12	-0.26	-0.28	-0.11	-0.16	-0.23	-0.02	-0.87	1.00		
14	Peer rating: A	0.01	0.02	-0.45	0.03	-0.19	0.59	0.61	0.29	0.36	0.41	-0.03	0.20	-0.20	1.00	
15	Law school rank 1-10	-0.01	-0.01	-0.03	-0.15	0.05	0.05	0.06	0.01	0.02	0.01	-0.01	0.03	-0.03	0.05	1.00
16	Law school rank (1-50)	0.01	0.02	0.01	0.24	-0.08	-0.04	-0.06	0.00	-0.01	0.01	0.02	-0.02	0.02	-0.05	-0.74
17	Law school honor society	0.00	0.00	-0.05	0.03	0.00	0.03	0.02	0.04	0.05	0.04	-0.01	0.01	0.00	0.08	-0.06
18	Law review editorial position	0.00	0.00	-0.05	0.00	0.01	0.04	0.03	0.03	0.04	0.04	0.00	0.02	-0.02	0.09	-0.02
19	Moot court participant	0.01	0.01	0.02	0.01	0.02	-0.08	-0.08	-0.02	-0.03	-0.01	0.03	-0.03	0.03	-0.03	-0.07
20	Phi Beta Kappa	0.00	0.00	-0.06	-0.04	-0.01	0.00	0.02	0.03	0.04	0.05	-0.02	-0.02	0.03	0.05	0.19
21	Clerked for judge	0.00	0.00	-0.02	-0.02	0.03	-0.03	-0.03	0.01	0.00	0.02	0.02	0.00	0.00	0.03	0.08
22	Firm size (# attorneys)	-0.02	0.01	0.12	-0.14	0.19	-0.14	-0.14	-0.03	-0.16	-0.15	-0.13	-0.06	0.06	-0.07	0.17
23	Office as % of total firm size	0.01	-0.01	-0.09	0.14	-0.15	0.12	0.12	0.08	0.16	0.12	0.10	0.04	-0.04	0.04	-0.13
24	Growth in firm headcount	-0.01	0.00	0.06	-0.05	0.10	-0.07	-0.07	-0.06	-0.07	-0.06	-0.04	-0.03	0.02	-0.04	0.07
25	Firm is acquired	0.01	0.00	0.00	0.00	0.01	0.00	0.00	-0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.01
26	# rival firms	-0.01	0.05	0.06	-0.13	0.10	-0.04	-0.03	0.04	-0.13	-0.08	0.17	-0.01	0.01	-0.06	0.18
27	% of rival firms that are solo practices	0.01	0.12	-0.03	-0.02	-0.08	0.10	0.10	0.41	-0.18	0.00	0.11	0.00	0.00	0.05	0.00
28	Rival closures, solo practitioners	0.00	0.07	0.02	-0.12	0.06	-0.02	0.00	0.01	-0.08	-0.04	0.18	0.01	-0.01	0.00	0.13
29	Rival closures, firm size>1	0.00	-0.01	0.01	-0.11	0.07	-0.04	-0.02	-0.16	0.01	-0.02	0.13	0.02	-0.02	0.00	0.13
30	Rival partner dies unexpectedly, firm size>1	0.00	0.00	-0.03	-0.01	-0.02	0.04	0.04	0.07	0.00	0.03	0.02	0.01	-0.01	0.03	0.01
		16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
16	Law school rank (1-50)	1.00														
17	Law school honor society	0.06	1.00													
18	Law review editorial position	0.02	0.26	1.00												
19	Moot court participant	0.07	0.00	0.00	1.00											
20	Phi Beta Kappa	-0.20	0.07	0.06	0.00	1.00										
21	Clerked for judge	-0.08	0.13	0.20	0.02	0.07	1.00									
22	Firm size (# attorneys)	-0.22	0.07	0.06	-0.04	0.05	0.05	1.00								
23	Office as % of total firm size	0.17	-0.05	-0.06	0.02	-0.04	-0.04	-0.71	1.00							
24	Growth in firm headcount	-0.09	0.02	0.02	-0.01	0.01	0.02	0.43	-0.27	1.00						

25	Firm is acquired	-0.01	0.00	0.00	0.00	0.00	0.00	-0.03	0.02	-0.03	1.00					
26	# rival firms	-0.23	-0.02	0.03	-0.01	0.02	0.02	0.26	-0.17	0.09	0.00	1.00				
27	% of rival firms that are solo practices	0.02	0.01	0.00	0.00	-0.01	0.00	0.11	-0.05	0.02	-0.03	0.30	1.00			
28	Rival closures, solo practitioners	-0.18	-0.02	0.02	0.01	0.02	0.00	0.14	-0.10	0.06	0.01	0.69	0.26	1.00		
29	Rival closures, firm size>1	-0.18	-0.02	0.02	0.01	0.02	0.00	0.05	-0.06	0.03	0.03	0.49	-0.13	0.74	1.00	
30	Rival partner dies unexpectedly, firm size>1	-0.02	0.00	0.01	0.00	0.01	0.01	0.02	-0.02	0.01	0.00	0.03	0.06	0.02	-0.01	1.00

Table 4: Unconditional comparison of founding rates

	Value	N observations	DV: % founds new firm		
Rival solo practitioner dies unexpectedly	0	2,720,303	0.005		
Rival solo practitioner dies unexpectedly	1	26,197	0.009	T-test diff	p-value
		Difference	0.004	10.10	.000

Table 5: DV: Finds a new firm. Linear probability models (Models 1-6)

	(1) Full sample	(2) Full sample	(3) Full sample	(4) Assoc. only	(5) Assoc. only	(6) Full sample
H1: Rival solo practitioner dies unexpectedly	0.00445 (0.000)	0.00193 (0.008)	0.00305 (0.000)	-0.00001 (0.996)	0.00209 (0.419)	0.00294 (0.001)
H2a: Rival solo practitioner dies* % of partners in practice area from attorney's law school			-0.00704 (0.000)		-0.01521 (0.001)	-0.00712 (0.001)
H2b: Rival solo practitioner dies* Assoc-part. ratio				0.00385 (0.019)	0.00377 (0.021)	
% of partners in prac. area from law school		-0.00083 (0.001)	-0.00078 (0.001)	-0.00144 (0.006)	-0.00136 (0.009)	-0.00177 (0.013)
Associate-partner ratio in practice area		-0.00001 (0.868)	-0.00001 (0.868)	0.00023 (0.041)	0.00023 (0.041)	0.00098 (0.000)
Associate		-0.00319 (0.000)	-0.00319 (0.000)			-0.00241 (0.001)
Attorney age		0.00006 (0.000)	0.00006 (0.000)	0.00019 (0.000)	0.00019 (0.000)	0.00120 (0.000)
Years since law school graduation		-0.00016 (0.000)	-0.00016 (0.000)	0.00007 (0.101)	0.00007 (0.100)	
Tenure with firm		-0.00006 (0.035)	-0.00006 (0.035)	0.00040 (0.000)	0.00040 (0.000)	-0.00020 (0.038)
Tenure with firm is left-censored		-0.00080 (0.000)	-0.00080 (0.000)	-0.00001 (0.981)	-0.00001 (0.984)	0.02742 (0.000)
Partner		-0.00254 (0.000)	-0.00254 (0.000)			-0.00721 (0.000)
Overlap in legal specialty with officemates		-0.00285 (0.000)	-0.00285 (0.000)	-0.00256 (0.000)	-0.00256 (0.000)	-0.00506 (0.000)
Male first name		0.00102 (0.000)	0.00102 (0.000)	0.00105 (0.003)	0.00105 (0.003)	
Female first name		-0.00013 (0.509)	-0.00014 (0.508)	-0.00092 (0.008)	-0.00092 (0.008)	
Peer rating: A		0.00219 (0.000)	0.00219 (0.000)			0.00198 (0.000)
Peer rating: B		0.00167 (0.000)	0.00167 (0.000)			0.00228 (0.000)
Peer rating: C		0.00225 (0.000)	0.00225 (0.000)			0.00160 (0.046)

Law school rank 1-10	-0.00051	-0.00052	-0.00072	-0.00072		
	(0.000)	(0.000)	(0.006)	(0.006)		
Law school rank 11-20	-0.00017	-0.00017	-0.00019	-0.00019		
	(0.249)	(0.246)	(0.484)	(0.481)		
Law school rank 21-30	-0.00098	-0.00098	-0.00074	-0.00074		
	(0.000)	(0.000)	(0.029)	(0.029)		
Law school rank 31-40	0.00003	0.00003	-0.00027	-0.00027		
	(0.869)	(0.878)	(0.334)	(0.326)		
Law school rank 41-50	-0.00044	-0.00043	-0.00081	-0.00081		
	(0.071)	(0.072)	(0.134)	(0.137)		
Law school honor society	-0.00048	-0.00048	-0.00078	-0.00078		
	(0.007)	(0.007)	(0.030)	(0.029)		
Law review editorial position	-0.00010	-0.00010	-0.00039	-0.00039		
	(0.481)	(0.480)	(0.101)	(0.102)		
Moot court participant	0.00112	0.00112	0.00128	0.00129		
	(0.000)	(0.000)	(0.004)	(0.004)		
Phi Beta Kappa	-0.00007	-0.00007	-0.00004	-0.00004		
	(0.672)	(0.672)	(0.899)	(0.893)		
Clerked for judge	0.00032	0.00032	0.00001	0.00001		
	(0.035)	(0.035)	(0.964)	(0.970)		
Firm size (# attorneys, 1000s)	-0.00218	-0.00220	-0.00346	-0.00348	0.00283	
	(0.004)	(0.004)	(0.002)	(0.002)	(0.001)	
Office as % of total firm size	0.00047	0.00047	0.00024	0.00024	-0.01259	
	(0.566)	(0.563)	(0.870)	(0.868)	(0.000)	
Growth in firm headcount	0.00169	0.00170	0.00728	0.00730	-0.00243	
	(0.098)	(0.096)	(0.000)	(0.000)	(0.100)	
Firm is acquired	0.00674	0.00673	-0.00019	-0.00020	0.00082	
	(0.000)	(0.000)	(0.893)	(0.885)	(0.597)	
# rival firms, 1000s	-0.00002	-0.00002	-0.00073	-0.00073	0.00041	
	(0.895)	(0.880)	(0.000)	(0.000)	(0.070)	
% of rival firms that are solo practices	0.00042	0.00041	0.00369	0.00366	0.00133	
	(0.623)	(0.631)	(0.070)	(0.072)	(0.260)	
Rival closures, solo practitioners	0.00001	0.00001	0.00002	0.00002	0.00001	
	(0.105)	(0.107)	(0.052)	(0.054)	(0.086)	
Rival closures, firm size>1, 1000s	0.00551	0.00577	-0.00502	-0.00452	0.01257	
	(0.617)	(0.597)	(0.797)	(0.816)	(0.125)	
Rival partner dies unexpectedly, firm size>1	0.00050	0.00050	-0.00020	-0.00019	0.00015	
	(0.268)	(0.267)	(0.799)	(0.806)	(0.772)	
Estimation	OLS	OLS	OLS	OLS	OLS	OLS
Fixed effect	None	Office	Office	Office	Office	Attorney
Legal specialty dummies	No	Yes	Yes	Yes	Yes	Yes
Year dummies	No	Yes	Yes	Yes	Yes	Yes
N atty-year obs	2746500	2746500	2746500	658956	658956	2746500
R-sq	0.000	0.049	0.049	0.088	0.088	0.230

Exact p-values in parentheses. Models use robust standard errors clustered on city (i.e. CBSA)

Rivals share the same city and legal specialty as the focal attorney

Table 6: Robustness tests: Interactions with attorney quality measures, conflicts of interest

	(1)	(2)	(3)	(4)	(4)	(5)	(6)
	Full sample	Top 50 Law School	Assoc. only	Partners only	Partners only	Full sample	Full sample
Rival solo practitioner dies unexpectedly	0.00218 (0.008)	0.00002 (0.992)	0.00420 (0.035)	0.00121 (0.200)	0.00137 (0.107)	0.00040 (0.800)	
Law school rank 1-10*Rival solo dies	-0.00197 (0.177)						
Law school ranking*Rival solo dies		0.00006 (0.460)					
Law school honor society*Rival solo dies			-0.00113 (0.838)				
Peer rating: A* Rival solo dies				-0.00003 (0.983)			
Peer rating: A, B, or C * Rival solo dies					-0.00025 (0.846)		
Overlap in legal specialty with officemates *Rival solo dies						0.00235 (0.339)	
Shares one prac. area w/deceased ^a							0.0017 (0.033)
Shares more than one prac. area w/deceased ^a							0.0031 (0.093)
Estimation	OLS	OLS	OLS	OLS	OLS	OLS	OLS
Fixed effect unit	Office	Office	Office	Office	Office	Office	Office
Legal specialty dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N atty-year obs	2746500	1167285	658956	1896256	1896256	2746500	
R-sq	0.049	0.084	0.088	0.068	0.068	0.049	

Exact p-values in parentheses. Models use robust standard errors clustered on city (i.e. CBSA)

Rivals share the same city and legal specialty as the focal attorney.

^aA Wald test comparing these coefficients has a test statistic of 1.56 and a p-value of .20.

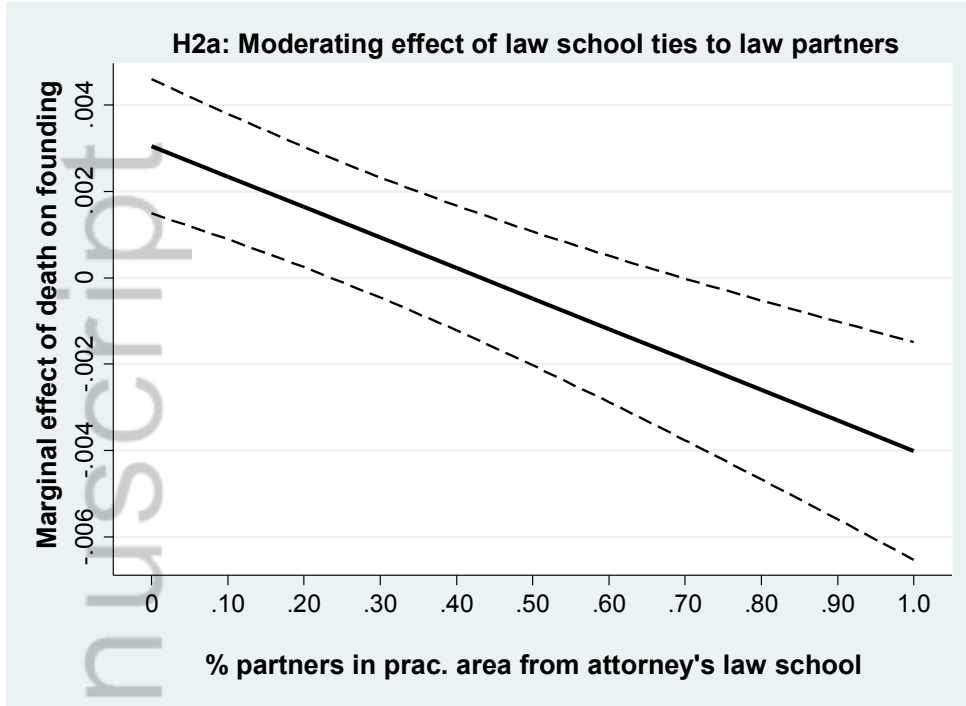
Table 7: Summary of sensitivity analyses

Category	Issue	Test	Result	Location
<i>Alternative explanations</i>	Deaths increase mortality salience, leading to founding as attorneys re-examine their lives	Examine effect of deaths of non-solo practitioners	Deaths of non-solo practitioners do not increase foundings.	Table 5, Model 2
	Results driven by friends of deceased who inherit the legal practice	Examine demographic overlap between treated and deceased	Treatment effect does not increase with demographic similarity	Table B.2 ¹⁰ , Models 3-6
	Results driven by lower quality attorneys	Examine interactions with treatment and measures of attorney quality	Interactions are insignificant	Table 6, Models 1-4
		Use individual fixed effects	Results are consistent	Table 5, Model 6
	Results driven by conflicts of client interests	Examine interaction between treatment and sharing of legal specialties with coworkers	Interaction is insignificant	Table 6, Model 5
	Results are spurious	Examine performance of treated founders	Treated founders survive longer than others, possibly from resource transfer	Table B.3
		Examine variation in legal specialty overlap between treated and deceased	Treatment effect is larger for individuals who compete more intensely with deceased (p=.20)	Table 6, Model 6
		Examine transfer of resources from dead individuals to treated individuals	13 treated founders use exact address or exact phone number of deceased	N/A
<i>Robustness tests</i>	Deaths are not quasi-random	Examine parallel trends assumption	Results are consistent	Figure 3
	Size cut offs for startup firms is arbitrary	Examine other size cutoffs	Results are consistent	Table B.1, Models 1-4

¹⁰ Tables B.1, B.2 and B.3 appear in the online appendix.

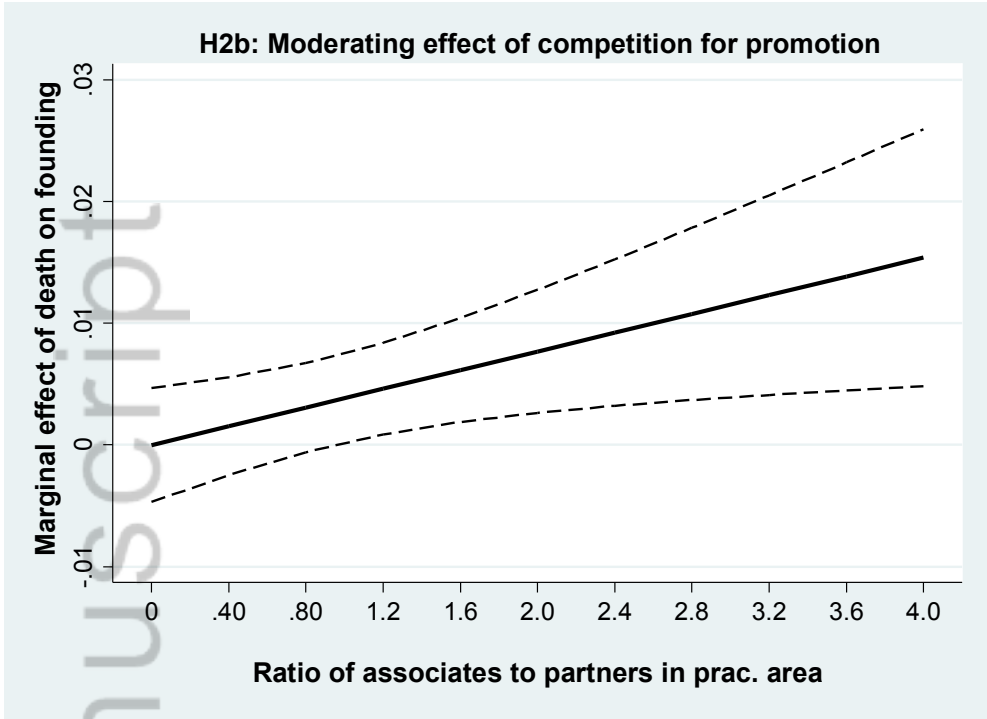
Deaths treat many attorneys in same city	Use block bootstrapped standard errors, sampling within city	Results are consistent	Table B.1, Model 5
Foundings are dichotomous outcome	Use logit, penalized logit	Results are consistent	Table B.1, Model 6
Deaths are idiosyncratic	Examine sudden disbarments	H1 supported, H2a-b not supported	Table B.2, Models 1-2

Figure 1: Test of H2a: How Treatment Effect Varies with Shared Law School Affiliations with Partner Attorneys in Attorney's Practice Area. OLS Estimation.



Note: Model contains full set of controls reported in Table 5. Mean of the DV is .005.

Figure 2: Test of H2b: How Treatment Effect Varies with Competition for Promotion. OLS Estimation.



Note: Model contains full set of controls reported in Table 5. Mean of the DV is .005.

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Figure 3: Time Trend of Treatment Effect, Linear Probability Estimation



Note: Figure shows results of estimation of Equation 1. Model contains full set of controls reported in Table 5. Baseline effect corresponds to “EverTreated” dummy in Equation 1.

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