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CHOOSING BETWEEN GROWTH AND GLORY

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ABSTRACT

Prior work has established that the financing environment can impact firm strategy. We argue that this influence can shape the earliest strategic choices of a new venture by creating a potential tradeoff between two objectives: rapid growth and reaping the benefits of a positive reputation (glory). We leverage a simple reputation-building strategic choice, naming the firm after the founder (eponymy), that is associated with superior profitability. Next, we argue via a formal model that the availability of/dependence on external financing can explain why high-growth firms are rarely eponymous. We find empirical support for the model's predictions using a large dataset of 1 million European firms. Eponymous firms grow considerably more slowly than similarly profitable firms. Moreover, eponymy varies in accordance with the firm's financing environment in a pattern consistent with our model. We discuss implications for the literature on new venture strategy.

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1 Introduction

A significant literature in strategy and other fields has examined the influence of the financing environment on the strategic choices of new ventures. Gans, Hsu, and Stern (2002) identify the existence of financial intermediaries as a key driver of startup commercialization decisions. Hellman and Puri (2000) and Hsu (2006) document relationships between venture capital financing and product market strategies for new ventures. In this paper, we argue that the financing environment can shape strategic choices even earlier in the life of a new venture.

We explore a scenario in which a new venture is considering two objectives: (1) establishing a positive reputation for quality, which increases profitability, and (2) rapidly scaling the venture, which typically requires attracting outside capital from financiers. We propose that an early strategic choice—deciding what to name the venture—can entail a tradeoff between these two objectives. This tension implies that the financing environment will shape new venture strategy by favoring one objective over the other.

We begin by building on prior work that has established a connection between a firm naming strategy, reputation, and profitability. This strategy is *eponymy*—meaning the founder affixes her own surname to the business name—which more strongly links the firm's reputation to the entrepreneur's personal one (Belenzon, Chatterji, and Daley 2017, BCD17 hereafter). Because eponymy is a choice, the willingness to create this stronger link is a signal of underlying quality, enhancing the firm's reputation, which feeds back into improved firm performance. In a dataset of over 1 million European small businesses, BCD17 document that eponymous ventures earn approximately 50% greater return on assets (ROA) than average firms.

Despite this documented performance advantage, casual observation suggests that very few firms with high-growth aspirations requiring outside capital choose this naming strategy. We argue this is because these non-eponymous firms are strategically prioritizing growth instead. Below, we *a*) empirically document that despite higher financial returns, eponymy is associated with slower growth; *b*) propose that firms' need for and access to outside capital play crucial roles in explaining these patterns; and *c*) exploit variation in the financing environment to provide additional empirical evidence consistent with our theory.

In the same dataset as BCD17, we find that non-eponymous firms grow twice as fast as their eponymous counterparts. This is also consistent with Guzman and Stern's (2015, 2016) finding that eponymous firms are significantly less likely to experience liquidity events such as major acquisitions or initial public offerings, implying reduced prospects and/or aspirations for growth. Figure 1 provides an illustration of the profitability/growth pattern we document. First, eponymous firms have substantially greater ROA than their non-eponymous

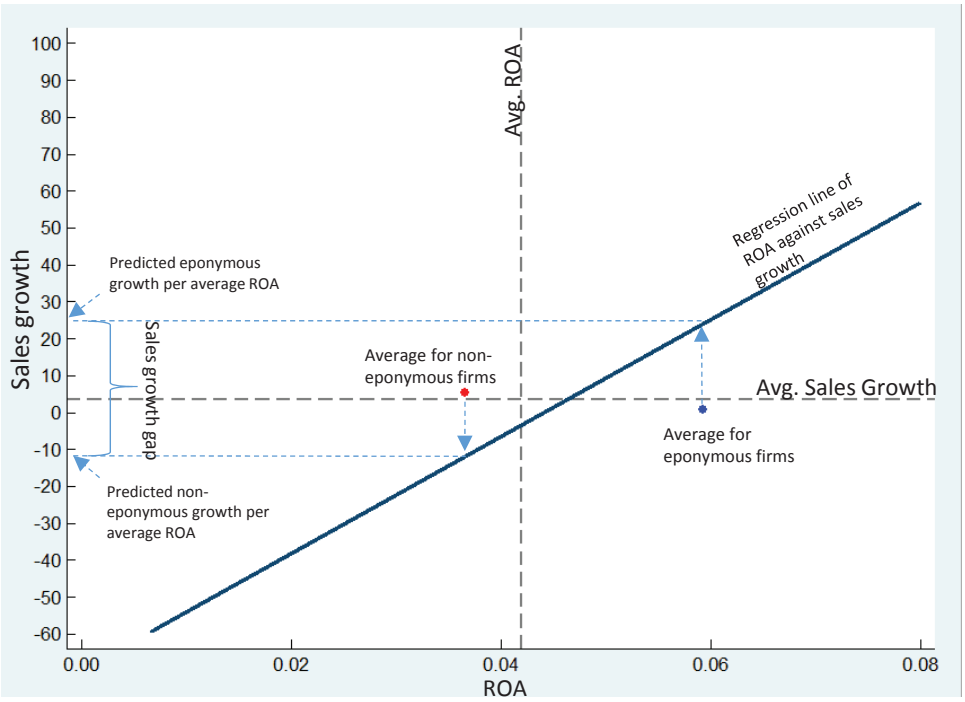

Figure 1: ROA vs. Growth for Eponymous and Non-Eponymous firms. (*Note*: Regressing ROA on sales growth, with controls for lagged sales and complete sets of three-digit industry, country, and year dummies.)

counterparts. Second, eponymous firms have sales growth of 2.1%, which is considerably lower than the 4.1% for their non-eponymous counterparts. Third, the regression line depicts, perhaps unsurprisingly, that within the entire sample, ROA and sales growth are positively correlated, as both are indicators of "success." Hence, the growth disparity between eponymous and non-eponymous firms is even more striking: Conditioning on their superior ROA, eponymous firms should grow considerably *faster* than average, but instead exhibit below-average growth.

In our model, entrepreneurs of varying characteristics begin by choosing whether or not to name their firm eponymously. The model has three key elements. First, entrepreneurs differ on two dimensions: the quality of their product (or service) and their potential for growth. Second, as in BCD17, eponymy creates a stronger association between the firm and the entrepreneur that amplifies the reputational benefits (or costs) of favorable (or unfavorable) perceived quality. Third, growth requires financing from outsiders, who may be more reluctant to provide capital to eponymous firms.

This reluctance could, potentially, have multiple rationales. For example, by virtue of strengthening the association between the firm and founder, eponymy could (*de facto*) confer greater control rights to the entrepreneur, or make it more challenging for her to

attract/maintain the team of highly talented individuals required for the firm to be a growth prospect.[1] We also identify a more subtle potential explanation for this reluctance by demonstrating that it can arise when financiers face bandwidth constraints in their selection process, often called due diligence in practice.

We demonstrate that the empirical patterns described above are consistent with the equilibrium of the model. In brief, high-quality but unscalable ventures always select eponymy. In equilibrium, then, this is precisely the message that eponymy conveys: that the business offers a high-quality product, but has poor growth prospects. Such a message is clearly anathema to attracting external financing, so is avoided by entrepreneurs with scalable businesses when the benefits of growth are sufficiently large. In this regard, there is a strategic choice between "growth" and "glory."

We therefore offer an equilibrium explanation for the seemingly conventional wisdom that eponymy dissuades financiers from working with a particular firm. Notably, though, the explanation need not be assumed outright—that is, eponymy *itself* does not have to be unpalatable to financiers, but can merely signal that a business is a poor growth opportunity in an environment where financiers cannot costlessly discern the growth prospects of every new business.

We exploit observable variation in firms' need for and access to outside capital within our dataset and find conditional correlations consistent with our theory. The differences in ROA between eponymous and non-eponymous firms narrow in regions where financial development is higher and in industries with greater dependence on external financing. These findings are consistent with the argument that high-quality entrepreneurs with scalable ideas more frequently select non-eponymous firm names in such settings. We also construct a novel measure to capture financier bandwidth in each firm's environment, and find evidence consistent with the hypothesis that bandwidth constraints play a role in scalable ventures forgoing eponymy. Finally, we are able to refute numerous alternative explanations for the relationship between eponymy and financing (such as the proposed inability of eponymous firms to attract/retain talented teams, as mentioned above), though one of our analyses is suggestive of control rights possibly contributing to the hindrance eponymy poses for financing.

Our work contributes to the literature on new venture strategy, particularly as it relates to the intersection between individual-level differences, market conditions, and strategic choices (Wu and Knott, 2006; Arora and Nandkumar, 2011; Hsu and Ziedonis, 2013; Marx et al. 2014; Kulchina 2015; Wang 2018). We also connect firm strategy decisions directly to the literature on financing entrepreneurship (Black and Strahan, 2002; Kerr and Nanda,

[1]We are grateful to three anonymous referees for these suggestions.

2009; de Bettignies, 2008; Chatterji and Seamans, 2012; Anderson and Nielson, 2012). We provide a specific example of how a strategic choice that every startup faces is shaped by the financing environment.[2] Notably, our results indicate a central role for reputation-enhancing strategies in the financing of new ventures more broadly, which few papers in this tradition have formally considered (an exception is Gompers, Kovner, Lerner and Scharfstein, 2010).

As mentioned above, our paper builds on BCD17, which both models a reputation-for-quality-based explanation of why eponymous firms are more profitable and provides corroborating empirical evidence. Neither growth nor financing are studied in BCD17. The present paper extends the model of BCD17 by allowing for heterogeneity in business scalability (in addition to quality) and analyzes the link between financing and eponymy. This addition to the model allows us to explain why eponymous firms, though more profitable, grow more slowly. In doing so we reconcile the results of BCD17 with those of Guzman and Stern (2015, 2016). Empirically, we introduce measures of a firm's financing environment at the region, industry, and firm-specific levels to explore their impact on the performance patterns of eponymous firms.

In the next section, we present a model to reconcile the various findings discussed above. We then test the implications of the model and assess alternatives using a dataset of over 1 million European firms. We conclude with the implications of our work for the literature on new ventures, reputation, and financing.

2 The Model

Informal Sketch of the Model and Explanation

Before introducing the formalities, we discuss the logic of the model in words. Entrepreneurs differ on two dimensions: the *quality* of their product (or service) and their potential for growth or *scalability*.[3] Among firms without growth potential, their only consideration is their reputation for quality. Building on BCD17, their long-run payoffs are i) increasing in perceived quality, and ii) amplified by eponymy: The stronger association between the firm and the entrepreneur increases the benefits (or costs) of a favorable (or unfavorable) reputation.

[2] Aghion and Stein (2008) also model a tradeoff between growth and profitability, but for publicly traded firms. In their setup, managers must decide how to allocate their efforts between a growth or a margin strategy given the manner in which investors will interpret how the outputs on those dimensions reflect on the manager's unknown ability. Notably, BCD17 demonstrates that effort and signaling can be complementary explanations.

[3] Of course, a *desire* for growth is a prerequisite for scalability. An owner who does not want her business to appreciably grow (for example, because she does not want to deal with the increased demands—see Hurst and Pugsley, 2011) fits within our framework as not being scalable.

This amplification effect was the key feature in BCD17. To provide a condensed version of the description therein: These reputational factors can include both market-based payoffs and non-pecuniary ones. Market-based explanations include the possibility that future business or employment opportunities for the eponymous entrepreneur depend more heavily on the impression of her firm.[4] A simple example of non-pecuniary factors could be that the founder feels pride/shame if the market believes *her* (as opposed to an unnamed owner of the firm) to be of high/low ability; according to the adages, an eponymous entrepreneur may "bring honor to her name," but also risks "besmirching" it.[5]

In equilibrium, perceived quality accounts for any information conveyed by the firm's choice of name, as well as by the quality of the firm's realized output (which, of course, is correlated with underlying firm-quality). Therefore, high-quality but low-growth entrepreneurs engage in eponymy to amplify the benefits of their likely favorable reputation, while low-quality ones mix, trading off the gain in impression from selecting eponymy against the reputational cost of their likely negative outcome being amplified.

Firms with growth potential face an additional consideration. We assume that growth requires (or, at least, is substantially aided by) *financing* from outsiders. This financing can be of many different forms, such as credit, capital infusions, IPOs, or even being acquired. Financiers perform due diligence by investigating a firm before offering it financing. Financiers are only interested in firms that are both high quality and scalable, which is revealed by their investigation.[6]

Hence, *if* eponymy is a hindrance to obtaining financing, high-quality firms with growth potential would face a tradeoff in their choice between a) enjoying the amplified reputational benefits of eponymy at a cost of lower (expected) financing and growth or b) forgoing the reputational amplification in favor of greater access to financing and growth via non-eponymy. In Section 2.1 we formulate and analyze the model under the assumption that eponymy directly hinders a firm's ability to obtain financing. This assumption could plausibly be supported by, for example, an argument that eponymy confers greater control rights on firm

[4]For example, Aubrey McClendon, co-founder of (non-eponymous) Chesapeake Energy described, "There was some fear that we'd fail, maybe spectacularly, and we thought it would be easier to live with that if our names weren't on the failed enterprise." (Robinson, Rick. "Oil Company Grows to Maturity," *The Oklahoman*, July 21, 2002.)

[5]See Leary and Kowalski (1990) for an extensive survey of evidence that individuals care *directly* about others' impressions of them "even when no immediate or future outcomes depend on the impressions they make."

[6]One interpretation is as follows. Three ingredients are necessary and sufficient for firm growth: a high-quality product, a scalable business operation, and capital investment. The financier can provide the capital for the entrepreneur to invest, but if either of the other two ingredients is missing, it will not yield a sufficient return to the financier (creditor/equity-investor/acquirer).

owners, making financiers reluctant to provide capital to these enterprises.[7]

We then consider a novel channel through which eponymy *endogenously* becomes a hindrance for financing (Section 2.2). Specifically, because due-diligence investigations require time/effort/money, we posit that financiers may not be able to investigate every firm, but only a fraction of them. Naturally, financiers focus their investigations on the firms that they believe most likely to be high-quality growth opportunities. Hence, if financing considerations are sufficiently important, the top priority of firms with growth potential will be to appear to have growth potential. If eponymy is associated with low-growth ventures—even though eponymy, per se, has no impact on the firm's quality or growth potential—then it is best to be avoided. Interestingly, this tradeoff arises in equilibrium when financiers' capacity for investigations (or *bandwidth*) is intermediate: Bandwidth must be large enough that firms with growth potential have a hope of being found, but not so large that they will be found no matter what strategy they choose.

2.1 General Framework

Players and Types

There is a unit mass of entrepreneurs, each with (a firm of) type θ, which has two dimensions. First, the *quality* of her product/service/idea is either *high*, H, or *low*, L. Second, her business is either *scalable*, S, or not, N. The commonly known distribution over the four possible firm types, $\Theta \equiv \{(H,S),(H,N),(L,S),(L,N)\}$, is denoted π_0, with $\pi_0(\theta) > 0$ for all $\theta \in \Theta$. Each entrepreneur privately knows her own type. Let $\mu_0 \equiv \pi_0(H,S) + \pi_0(H,N)$ be the proportion of H-quality firms.

Each entrepreneur (also referred to as a *sender*) cares about the impression of her firm's type held by two different classes of receivers: *customers* and *financiers*. For customers, the scalability of the business is irrelevant, so the sender only benefits from improving customers' impression of her firm on the quality dimension. In contrast, the entrepreneur can only attract financiers if they believe her firm to be both high quality *and* scalable.

Sequence and Payoffs

The model consists of two periods. At the start of period 1, each entrepreneur engages in a binary signaling activity, $s \in \{\underline{s}, \overline{s}\}$, where $0 < \underline{s} < \overline{s}$ (e.g., $\overline{s}$ = eponymy, $\underline{s}$ = not). The market observes the choice of s, and updates its belief from π_0 to $\pi_1 \in \Delta(\Theta)$. Let $\mu_1 \equiv \pi_1(H,S) + \pi_1(H,N)$. As in Tadelis (1999), (i) the quality of a firm's first-period product (or service), g, is random, taking values in $\{l,h\}$ according to $\Pr(g = h|\theta = H) =$

[7] For further discussion of control rights as a potential basis for our assumption see Section 6.1.

$\Pr(g = l|\theta = L) = p \in (\frac{1}{2}, 1)$, independent across firms, and (ii) the first-period payoff to the entrepreneur is the market's belief that g will be realized h: $V_1(\mu_1) \equiv \mu_1 p + (1-\mu_1)(1-p)$.[8]

After the conclusion of the first period, the market updates its belief from π_1 to $\pi_2 \in \Delta(\Theta)$ based on the observation of g. Once again, $\mu_2 \equiv \pi_2(H,S) + \pi_2(H,N)$. The entrepreneur's second-period payoff depends on this impression and on whether she receives financing, and is intended as a reduced-form modeling of her long-run payoffs (as in Mailath, 1987).[9] Specifically, we maintain the key assumption of BCD17 that a stronger association between the entrepreneur and her firm amplifies the long-run reputational benefits (or costs) of a favorable (or unfavorable) market impression. To capture this, let $V_2(\mu_2) = \mu_2 - (1-\mu_2)$ (i.e., the μ_2-weighted convex combination of 1 and -1). If only this feature were present (as in BCD17), the sender's second-period payoff would be represented as $sV_2(\mu_2)$, and we refer to $V_1(\mu_1) + sV_2(\mu_2)$ as her *stand-alone* payoff. In addition, the entrepreneur's firm may receive financing, which generates an additional payoff of $b > 0$.[10]

Because financiers perform due diligence, only (H,S)-firms can obtain financing.[11] Let $Q(s)$ be the probability that a (H,S)-sender will receive financing if she selects $s \in \{\underline{s}, \overline{s}\}$. As discussed above, we begin with the direct assumption that eponymy is a hindrance in the market for financing:[12]

A.0 $Q(\underline{s}) > Q(\overline{s})$.

Hence, the expected financing benefit for a (H,S)-type selecting signal s is $F(s) \equiv Q(s)b$, and the increase in this benefit from selecting $\underline{s}$ instead of $\overline{s}$ is $\Delta F \equiv F(\underline{s}) - F(\overline{s}) > 0$.

Equilibrium Notion

Our solution concept is Perfect Bayesian Equilibrium, henceforth *equilibrium*. As is common in signaling models, the game has multiple equilibria. Correspondingly, in the theory of signaling games, there is a long tradition of employing criteria for deeming some equilibria

[8] In Tadelis (1999), this payoff is micro-founded by consumers valuing quality $g = h$ at 1 and $g = l$ at 0, and, being on the "long" side of the market, they pay their expected value before service is rendered.

[9] As described in BCD17, "the two-period model is a simplified approximation of a longer dynamic process ... [in which] ... information and firm performance evolve jointly throughout the life of the firm, rather than in one-shot. However, the works of Alos-Ferrer and Prat (2012) and Daley and Green (2014) show that a fully dynamic, infinite-horizon modeling of this phenomenon, while more analytically complex, does not meaningfully alter the incentives for the initial signaling decision." (p. 1642)

[10] As in footnote 9, b is a reduced-form encapsulation of the expected net benefit of the entire discounted stream of value generated from access to financing, including the possibilities that financing may not take place all at once and/or that attempting to scale could entail additional risks.

[11] The model can accommodate imperfectly revealing investigations, meaning sometimes the wrong firms will receive financing. Taking the limit to perfectly revealing investigations is done for simplicity.

[12] In Section 6 we explore factors that, *a priori*, could plausibly contribute directly to this hindrance, such as the control-rights argument mentioned above.

less desirable than others. We therefore say an equilibrium is *trivial* if it involves every entrepreneur selecting $\underline{s}$.[13]

Preliminary Analysis

First, notice that types (L,S) and (L,N) have no meaningful distinction in the model since customers do not view them differently, and financiers are not interested in either of them. Hence, we group them together and simplify to three types: $\{(H,S),(H,N),L\}$.

Next, in any equilibrium, the market updates its belief twice: from π_0 to π_1 based on the choice of s, and from π_1 to π_2 based on the realization of g. This second update is a straightforward application of Bayes rule. It follows that, given arbitrary values for s and μ_1, the entrepreneur's expected total *stand-alone* payoff is $u_\theta(s,\mu_1) \equiv V_1(\mu_1) + \mathbb{E}_g[sV_2(\mu_2(\mu_1,g))|\theta]$.

Direct calculations yield $i)$ u_θ is increasing in μ_1; and $ii)$ there exists $\underline{\mu}_\theta \in (0,1)$ such that u_θ is increasing in s if and only if $\mu > \underline{\mu}_\theta$.[14] Intuitively, all senders (i) enjoy increased perception of being high quality, and (ii) wish to amplify their stand-alone payoff if and only if they expect the second-period impression of their quality to be sufficiently high. Further, because g is informative about quality, high-quality entrepreneurs are more willing to amplify their stand-alone payoff than are low-quality ones: $\underline{\mu}_{(H,S)} = \underline{\mu}_{(H,N)} < \underline{\mu}_L$.

Consider now an L-type entrepreneur. Since her firm will not be receiving financing, her payoff in equilibrium is just her stand-alone payoff. Suppose she selects $s = \underline{s}$ and that receivers correctly believe her to be of type L, implying $\mu_1 = \mu_2 = 0$. Then her payoff is $u_L(\underline{s},0) = (1-p)-\underline{s}$. Now, define μ^* to be the belief level that satisfies $u_L(\overline{s},\mu^*) = (1-p)-\underline{s}$. That is, the low type is indifferent between selecting $\underline{s}$ and $\overline{s}$ if the resultant first-period beliefs satisfy $\mu_1(\underline{s}) = 0$ and $\mu_1(\overline{s}) = \mu^*$. From the preceding paragraph, μ^* is unique and in $(0,\underline{\mu}_L)$. As in BCD17, we assume that high-quality entrepreneurs are relatively rare:

A.1 $\pi_0(H,S) + \pi_0(H,N) \equiv \mu_0 < \mu^*$.

Results

Let $\sigma(\theta)$ denote the proportion of type-θ entrepreneurs that select $\overline{s}$. The behavior of type-(H,N) entrepreneurs is the easiest to characterize.

[13] Such an equilibrium can be supported by having receivers believe with certainty that any entrepreneur who selects $\overline{s}$ is of quality L. It is easily shown that such an equilibrium fails stability-based *refinements* such as D1 (Cho and Kreps 1987; Banks and Sobel 1987). We directly designate this equilibrium as trivial not only to simplify exposition, but also because we believe it is independently unappealing, regardless of refinements.

[14] See BCD17 for derivations.

Lemma 1 *In any nontrivial equilibrium, all* (H, N) *entrepreneurs select* $\overline{s}$ *(i.e.,* $\sigma(H, N) = 1$*).*

Intuitively, since they expect the realization of their first-period quality to be positive, H-quality senders gain more than L-quality ones from payoff amplification of their stand-alone payoff, which is the only consideration if the firm is also not scalable. Next, for the behavior of L-types:

Lemma 2 *In any nontrivial equilibrium, the proportions of* L *entrepreneurs selecting* $\underline{s}$ *and selecting* $\overline{s}$ *are both strictly positive (i.e.,* $0 < \sigma(L) < 1$*).*

Intuitively, if no L-types select $\overline{s}$, then given Lemma 1, selecting $\overline{s}$ would lead customers to believe that one's firm is certainly high quality. But then selecting $\overline{s}$ would lead to the highest possible payoff for an L-type, so they would prefer to deviate. However, if all L-types select $\overline{s}$, then customers' beliefs after seeing $\overline{s}$ are driven down. Since payoffs are amplified when $\overline{s}$ is chosen, this leads to a lower expected payoff for the L-type than selecting $\underline{s}$ (even if selecting $\underline{s}$ perfectly revealed that $\theta = L$).

Because some L-type entrepreneurs select $\underline{s}$ while others select $\overline{s}$, it must be that they are indifferent between them (which will be used to pin down the exact value of $\sigma(L)$). This indifference requires that low types who select $\overline{s}$, and thereby risk amplifying an unfavorable impression, are compensated with a higher first-period belief, $\mu_1(\overline{s})$. Since beliefs must be correct in equilibrium, we have the following.

Proposition 1 *In any nontrivial equilibrium, the average quality of entrepreneurs selecting* $\overline{s}$ *(eponymy) is higher than the average quality of entrepreneurs selecting* $\underline{s}$ *(i.e.,* $\mu_1(\overline{s}) > \mu_1(\underline{s})$*).*

What is left to specify is the behavior of (H, S)-entrepreneurs. Consider the following two equilibrium candidates.

Candidate 1

- $\sigma(H, N) = \sigma(H, S) = 1$.
- $\sigma(L) = \frac{\mu_0(1-\mu^*)}{\mu^*(1-\mu_0)}$, *which is the unique solution to* $u_L(\underline{s}, 0) = u_L(\overline{s}, \frac{\mu_0}{\mu_0+\pi_0(L)\sigma(L)}) = u_L(\overline{s}, \mu^*)$.

Candidate 2

- $\sigma(H, N) = 1$ *and* $\sigma(H, S) = 0$.
- $\sigma(L)$ *is the unique solution to* $u_L(\underline{s}, \frac{\pi_0(H,S)}{\pi_0(H,S)+\pi_0(L)(1-\sigma(L))}) = u_L(\overline{s}, \frac{\pi_0(H,N)}{\pi_0(H,N)+\pi_0(L)\sigma(L)})$.

Candidate 1 is the natural extension of the equilibrium studied in BCD17: All high-quality entrepreneurs select $\overline{s}$, amplifying the expected reputational benefits of their likely good reputation, while low-quality ones mix between imitating and not until the gain in impression from selecting $\overline{s}$ is exactly offset by the fact that the reputational cost from their likely negative outcome is amplified. Not surprisingly, if financing considerations are minimal (i.e., ΔF is small), this is the characterization of equilibrium behavior.

Proposition 2 *There exists ΔF_1 such that if $\Delta F < \Delta F_1$, then Candidate 1 is the unique nontrivial equilibrium.*

In Candidate 1, (H, S)-entrepreneurs forgo greater financing for the reputational benefit of eponymy. As ΔF gets larger, this choice becomes increasingly costly for (H, S)-types. Hence, when financing considerations are paramount, they will be better off forgoing the positive payoff amplification of $\overline{s}$, in favor of greater financing and growth.

Proposition 3 *There exists ΔF_2 such that if $\Delta F > \Delta F_2$, then Candidate 2 is the unique nontrivial equilibrium.*

When ΔF is intermediate both Candidates are equilibria. However, *all* entrepreneurs prefer Candidate 2 to Candidate 1, not just the (H, S)-types who enjoy greater financing. Because (H, S)-types now choose $\underline{s}$, doing so becomes more attractive to L-types, as they get to pool with high-quality senders, which L-types enjoy. This increases the proportion of L-types selecting $\underline{s}$ and, correspondingly, decreases the proportion of L-types selecting $\overline{s}$. Hence, $\overline{s}$ becomes a stronger signal of high quality, which (H, N)-types enjoy.[15]

Proposition 4 *If $\Delta F \in [\Delta F_1, \Delta F_2]$, both Candidates 1 and 2 are equilibria. The equilibrium expected payoffs of <u>all</u> entrepreneur types is greater in Candidate 2 than in Candidate 1.*

Finally, from Proposition 1, we know that eponymy is associated with higher average quality in both candidate equilibria. However, in Candidate 2, less high-quality entrepreneurs select into eponymy. In isolation this force decreases the relationship between eponymy and entrepreneurial quality, but analysis is more subtle because low-quality senders also respond by adjusting their mixing between eponymy and not. Nevertheless, the relationship between eponymy and quality is indeed weaker in Candidate 2.

[15]For $\Delta F \in [\Delta F_1, \Delta F_2]$ there is also a third equilibrium in which (H, S)-types mix between $\underline{s}$ and $\overline{s}$. Each type's payoff in this third equilibrium is less than their payoff in Candidate 2, but greater than their payoff in Candidate 1. There are no other nontrivial equilibria. Hence, whenever Candidate 2 is an equilibrium, it generates the highest payoffs to *all* entrepreneur types among all nontrivial equilibria.

Proposition 5 *Selecting $\overline{s}$ (eponymy) is associated with a larger difference in average quality in Candidate 1 than in Candidate 2 (i.e., letting $\mu_1^C(s)$ be the proportion of high-quality entrepreneurs among those selecting s in Candidate C, we have $\mu_1^1(\overline{s})-\mu_1^1(\underline{s}) > \mu_1^2(\overline{s})-\mu_1^2(\underline{s})$).*

2.2 Bandwidth Constraints

The analysis above assumes that eponymy makes a firm less attractive to financiers. In this subsection we further develop the model by considering a more subtle argument. In it, financiers care only about the quality and scalability of a firm—which, recall, is revealed by their due-diligence investigation. However, because such investigations take time/effort/money, they cannot investigate every firm, but only a fraction of them. That is, there is a capacity constraint that limits the fraction of firms that financiers can investigate. Because financiers are only interested in (H, S)-firms, they will focus their investigations on the firms they believe most likely to be high-quality growth opportunities.

The subtlety in the model, then, is that $Q(\underline{s})$ and $Q(\overline{s})$ are no longer fixed, but instead vary with the profile of play: The likelihood of being investigated and financed depends on the equilibrium inference drawn from seeing the choice of signal, s. Hence, we no longer impose the direct Assumption A.0. Instead, let q be the fraction of firms that can be investigated. Further, in order for our results to be stated in terms of model primitives, from the financing considerations $F(\underline{s})$ and $F(\overline{s})$ we must disentangle the benefit, b, from its likelihood, $Q(\underline{s})$ and $Q(\overline{s})$, respectively. With these updates, we show that the main insights from Section 2.1 continue to hold, and identify the conditions under which eponymy *endogenously* leads to a disadvantage in the market for financing.

In the sequence of play, after observing a firm's choice of signal s and the quality of its first-period product g, financiers decide whether they are sufficiently interested in the firm to investigate it further. For any candidate equilibrium profile, we must specify the priority order of investigation given each firm's choice of s and realization of g. Naturally, financiers will focus on the firms they believe most likely to be of type (H, S), as summarized by their belief π_2. Therefore, augment the description of Candidate 1 with: financiers first investigate senders that select $\overline{s}$, starting with those for which $g = h$. Likewise, augment the description of Candidate 2 with: financiers first investigate senders that select $\underline{s}$, starting with those for which $g = h$.

In subtle contrast to Section 2.1, there is now a coordination element to equilibrium: Financiers focus their investigations using what they believe to be signals of (H, S)-types, and (H, S)-types want to choose signals they believe will lead to financiers investigating

them. Hence, while the property assumed in A.0 arises endogenously in Candidate 2, it is actually violated in Candidate 1. The only two alterations from the results in Section 2.1 are then as follows. First, Candidate 1 is always an equilibrium. Second, Propositions 3 and 4 are replaced with the following.

Proposition 6 *If b is large enough, then*

- *there exists $\underline{q} < \overline{q}$, both in $(0,1)$, such that Candidate 2 is an equilibrium when $q \in [\underline{q}, \overline{q}]$*
- *and, if p is also large enough, there exists $\underline{\underline{q}} < \overline{\overline{q}}$, both in $(\underline{q}, \overline{q})$, such that Candidate 2 maximizes the payoffs of <u>all</u> entrepreneurs among nontrivial equilibria when $q \in [\underline{\underline{q}}, \overline{\overline{q}}]$.*

Hence, the suitability of Candidate 2 as a prediction of behavior is strongest for intermediate levels of due-diligence capacity. As in Section 2.1, the driving force behind the eponymy-growth tradeoff is the *relative* financing disadvantage eponymy generates. When financiers have the bandwidth to investigate almost all firms (i.e., q close to 1), (H,S)-firms will almost surely be financed, no matter what name they choose, so they decide to enjoy the reputational benefits of eponymy as well. At the other extreme, when financiers have so little bandwidth that they investigate almost no firms (i.e., q close to 0), (H,S)-firms will almost surely *not* be financed, no matter what name they choose, so they again decide to at least enjoy the reputational benefits of eponymy.

For intermediate q the titular tradeoff between growth and glory arises. For the (H,S)-entrepreneur, selecting eponymy generates an expected reputational benefit, regardless of q. On the other hand, selecting non-eponymy allows (H,S)-types to separate from (H,N)-types (who always select eponymy, Lemma 1) and become more easily identifiable to financiers. As described in the preceding paragraph, for this second consideration to bite, there must be enough bandwidth for there to be a real hope of being financed, but not so much bandwidth that there is no fear (H,S)-types will not be financed. Intuitively, there are two mechanisms for sorting in the model: by name choice and by realized quality of output. High-quality firms with growth potential differentiate themselves from high-quality but low-growth firms via name choice, and from low-quality firms via realized quality.

3 Data

We use the same dataset as BCD17, which we briefly review here. The data are from the Amadeus database, maintained by Bureau van Dijk (BvD), which contains ownership, management, and financial information for European firms. BvD obtains its data from regulatory filings, third-party vendors, and its own proprietary sources. Amadeus includes both private

and public firms in its data collection, allowing for an in-depth examination of new firms. It also contains detailed ownership information, including the names of each shareholder, the number and type of shares held, and information on the board of directors and management of each firm. We supplement this data with information on the characteristics and locations of banks from Bank Scope and Google Maps.

We build our sample from firms located in Western European countries. In our sample, 19% of firms are from Italy, 19% from Spain, 17% from France, 15% from Great Britain, 14% from Portugal, and the remaining are from 10 other nations in the region.[16] We retain only those firms for which we have ownership information and data on their annual profits (EBIT) and assets. The dataset covers the years 2002-2012 (inclusive). We aggregate the data into a cross-sectional format by averaging the variables, such as ROA and sales growth, within firm over time. The results we report are based on this cross-sectional data. Our final estimation sample includes 1,363,694 firms.

The main variable of interest in this paper is whether an entrepreneur names the firm after herself. We refer the reader to BCD17 for an extensive discussion of how eponymy can be defined and measured, as well as various sensitivity analyses. To code this variable in the present paper, we use a string-matching algorithm that matches the firm name to the last name of its leading shareholder. The automated process compares both names, assigns a matching score, and identifies exact matches. We create a dummy variable that receives the value of 1 for each firm whose name includes the name of its owner (eponymous ventures) and 0 for all other firms. In the estimation sample, 23% of firms are eponymous.

Table 1 presents summary statistics for the main variables in our sample. The average firm has an ROA of 0.042 (a median of 0.019) and generates $2.2 million in annual sales (a median of $402,000), has annual sales growth of 0.036 (a median 0.016), holds $2.6 million in assets (a median of $418,000), has 17 employees (a median of 4), has 2 shareholders (a median of 2), and equity dispersion (i.e., $1 - HHI$) of 0.47 (a median of 0.50).[17]

Table 2 presents mean comparison tests for differences in the main characteristics of eponymous ventures and other companies. Eponymous ventures have higher ROA (0.059 vs. 0.037; difference is significant at the 1 percent level), but lower growth (0.021 vs. 0.041; difference is significant at the 1 percent level). Table 3 shows that these differences in ROA and growth are also evident in a regression framework (discussed further below). Although eponymous firms are on average about 1 year older than other firms, they hold fewer assets ($2.3 million vs. $2.6 million; difference is significant at the 1 percent level). We find no

[16] German firms are not required to report balance sheet information, and hence most of them are dropped from our sample.

[17] HHI is the sum of squared equity shares across the firm's owners.

substantial differences in annual sales between eponymous and non-eponymous firms. Note that eponymous firms have slightly higher profits (as measured by EBIT), even though they have fewer assets than non-eponymous firms. These findings suggest that eponymous firms are generating higher ROA (EBIT/assets) through superior asset efficiency and may possess more intangible assets such as owner reputation.

Firms in our sample are drawn from a wide industry distribution. For ease of presentation, we aggregate the three-digit SIC codes to two-digit SIC categories. Appendix Table A1 presents the distribution of firms by industry. The most represented industries in our sample are Business Services (124,890 firms), Real Estate (123,756 firms) and Construction (115,674 firms). The share of eponymous firms varies across industries, from a high of 56% in Legal Services to a low of 8% in Communications.

4 Performance Patterns of Eponymous Ventures

We begin our analysis by presenting estimates of the relationship of the likelihood of eponymy with ROA and sales growth. We estimate the following baseline specification:

$$\Pr(Eponymous_i = 1) = \beta_0 + \beta_1 ROA_i + \beta_2 Growth_i + \mathbf{Z}_i'\gamma + \tau_t + \mu_j + \varphi_c + \epsilon_i$$

where $Eponymous_i$ is a dummy variable receiving the value of 1 if firm i is eponymous and 0 otherwise. ROA is EBIT divided by assets, and $Growth$ is computed as $\ln(\frac{Sales_t}{Sales_{t-1}})$; both variables are averaged over the years 2002-2012. $\mathbf{Z}$ is a vector of firm-level controls including logged sales, logged number of shareholders, and equity dispersion. τ, μ, and φ are complete sets of year-of-incorporation, three-digit SIC code, and country dummies. ϵ is a firm-level i.i.d. error term.

Aside from industry differences, there is also variation in the ownership structure of firms in this dataset that should be considered. It is possible that firms with single owners or more concentrated ownership might be more likely to be eponymous, and that ownership structure might separately impact performance. We include controls for the annual number of shareholders and concentration of equity among those shareholders in all specifications to account for these possibilities.

Our theory predicts a positive relationship between the likelihood of eponymy and ROA (Proposition 1), and a negative relationship between the likelihood of eponymy and sales growth when financing considerations are significant (Propositions 3 and 4). Therefore, we

expect $\hat{\beta}_1 > 0$ and $\hat{\beta}_2 < 0$.[18]

Table 3 presents the estimation results for the relationship between eponymy, ROA, and growth. The general pattern of results shows that eponymous firms have better performance, as indicated by higher ROA, but experience lower sales growth. We view these results as conditional correlations that are consistent with our model. Column 1 includes ROA, but does not control for sales growth. The coefficient estimate on ROA is positive and highly significant. This estimate implies that a two-standard-deviation increase in ROA is associated with a 3.3 percentage point increase (0.692×0.048) in the likelihood that a firm is eponymous. Column 2 includes sales growth without controlling for ROA. The coefficient estimate on sales growth is negative and highly significant. This estimate implies that a two-standard-deviation increase in sales growth decreases the likelihood that a firm is eponymous by 1.6 percentage points (0.782×0.020). Column 3 includes both ROA and sales growth in a single regression. The coefficient estimates maintain their signs and statistical significance, and slightly increase in absolute value (as one would expect given the positive correlation between ROA and sales growth shown in Figure 1).

In Column 4, we exploit variation within owners by comparing eponymous firms to non-eponymous firms owned by the same owner. For this analysis, as in BCD17, we assigned a unique identifier to each owner within and across years. We used direct and fuzzy matching techniques to account for name-spelling errors and recording variations in determining whether any two records are the same person. This process allows us to track within-firm changes in eponymy and identify serial entrepreneurs. We supplemented this matching by using detailed physical address information and business partners, which allows us to further discern the identities of individuals with the same name. Using this process for the entire sample, we matched over 11 million individual owner records associated with our sample firms and assigned unique identifiers, both within and across years. For each multiple-firm owner, we estimate owner fixed effects while controlling for observables. Based on our unique identifier-assignment procedure, we have 1,144,878 distinct individual owners, out of which about 10% owned at least two businesses. The vast majority of owners with multiple businesses focus on the same industry, both within a given year and over time. The owner fixed-effect results are consistent with the previous specification, and the estimates are slightly larger in absolute value. A two-standard-deviation increase in ROA (respectively, sales growth) is associated with a 3.7 percentage point increase (2.4 percentage point decrease) in the likelihood of eponymy.

[18] When presenting results for the full sample of Western European nations, we expect that financing considerations will be significant in aggregate. In other analyses, however, we exploit differences in the financing environment to further test our theory.

Column 5 explores differences between firms that are owner managed (the leading owner is also the CEO or in an equivalent leadership position in the firm) and non-owner-managed firms. The coefficient estimates on ROA and sales growth are similar to the estimates from the complete sample.

We also investigate whether ownership concentration may be related to eponymy, ROA, and growth. While in all specifications we control for the number of shareholders and equity dispersion, Columns 6-8 present separate estimates for firms with exactly one, two, or more than two owners, respectively. Note that the incidence of eponymy is of similar magnitudes across all of these firms; we do not see a significantly larger share of single-owner firms choosing eponymy. Further, we find the same relationship between eponymy, ROA, and sales growth for all subsamples, which is inconsistent with the notion that ownership concentration is driving this relationship.

We also seek to explore whether firm attributes or industry-specific shocks could explain our results. Column 9 shows that we find similar results when we restrict the sample to young firms (up to 3 years old), for which we would expect signaling one's quality to be especially important. In the final three columns, we consider whether the rise of Internet-enabled commerce created the incentive to have a domain name and that this in turn influenced firm naming decisions. Column 10 restricts the sample only to firms founded post-2002, at which time the need for a business website would have been readily apparent. The same pattern of results holds.

Another set of tests to gain insights into the possible effect of e-commerce is to compare businesses that sell to consumers versus to other businesses. We classified consumer products industries by using the 4th revision of the United Nations' Broad Economic Categories (BEC).[19] These categories allow for the identification of consumer durables and consumer nondurable products. We crosswalk consumer products identified in the BEC to the United Nations' Harmonized Commodity Description and Coding System.[20] This list of products is then finally matched to their corresponding SIC and NAICS codes as in the data appendix in Pierce and Schott (2012). The same pattern of results holds for firms in consumer products industries (Column 11) and those in industries that sell to other businesses (Column 12).

In sum, the analysis in Table 3 indicates that eponymous firms are more profitable, but grow more slowly, and this relationship is robust even when exploiting variation across ventures of the same owner, dividing the data into key subsamples, and including additional control variables.

[19] https://unstats.un.org/unsd/trade/classifications/bec.asp

[20] https://unstats.un.org/unsd/tradekb/Knowledgebase/50018/Harmonized-Commodity-Description-and-Coding-Systems-HS

5 The Financing Environment

We documented above that eponymous firms are more profitable but grow more slowly. Our theory predicts that financing considerations are a key driver of this performance pattern. In this section, we leverage variation in the firm's financing environment to test these predictions of our model.

5.1 Financial Development

Financial development refers to the quality and quantity of a firm's local financial institutions (Levine, 1997). In more financially developed regions, we predict that the expected benefits of seeking financing are higher, since there are a greater number of financial intermediaries with deeper expertise in comparison to less financially developed regions. Thus we use this measure to proxy for aggregate financing considerations (i.e., ΔF in the model).

5.1.1 Measuring Financial Development

We first compute measures of financial development at the regional level. A challenge in this approach is that firms in the Amadeus dataset are not classified to regions. Nevertheless, for each firm we have information on its physical address. We use this information to manually match each firm/city to a region. Regions are identified according to the Nomenclature of Territorial Units for Statistics (NUTS).[21]

We collected data from Internet searches on all cities related to each NUTS level 1 code. City lists were standardized by cleaning all non-alphabetic characters and converting all strings to uppercase characters.[22] We further verified the match by country since similar names can be related to several countries.[23] Firms in our sample are matched into 100 regions that are part of 15 Western European countries. The number of regions varies by country. For example, British firms belong to 12 regions, French firms to 9 regions, Spanish firms to 7 regions, and Italian firms to 5 regions. Due to the differences in the number of regions per country, our econometric analysis is always performed within country.

We first proxy for regional financial development by using the region's absolute number of employees in financial credit institutions. Because regions vary by size, in all regressions

[21] http://ec.europa.eu/eurostat/web/nuts/overview.

[22] In addition, ligatures and letters that contain diacritics were replaced by their Latin character combination equivalent; for example, "Æ" with "AE," "ß" with "SS," and "Ü" with "UE." Finally, we used an automated fuzzy string-matching algorithm on the standardized names to link each firm, based on the city from its address field, to its related NUTS code. This match takes into account similar names, spacing differences, spelling mistakes, and other data-entry errors. For example, "Norderstet" was matched to the German city Norderstedt.

[23] For example, Winkel is an Italian town in NUTS FR4, as well as a Swiss municipality in NUTS CH04.

we control for region fixed effects (ω_r). Information on the number of employees in financial credit institutions in each region comes from Structural Business Statistics (SBS) provided by Eurostat. SBS collects information on credit institutions, where a credit institution is "an undertaking whose business is to receive deposits or other repayable funds from the public and to grant credits for its own account" (SBS definition).[24] The number of financial institution employees varies considerably across regions, from a 10th percentile value of 18,501 to a 90th percentile value of 131,456 (mean of 75,103 and standard deviation of 39,060). Data on employees in financial institutions are available only for the following countries: Austria, Belgium, Germany, Great Britain, and Italy (covering a total of 39 regions).

We use two additional measures of regional financial development: the number of credit institutions in the region and the productivity of the local financial institutions. The number of credit institutions in each region is based on SBS data, and varies from a 10th percentile value of 1.3 to a 90th percentile value of 9.7 (mean of 5.7 and standard deviation of 3.7). Financial sector productivity is the ratio between total revenues by financial institutions in a region and the number of financial sector employees, which comes from the European Competitiveness Index 2006-2007 report (Huggins and Davies, 2006). Financial sector productivity varies from a 10th percentile value of 61,140 to a 90th percentile value of 121,770 (mean of 88,555 and standard deviation of 24,948). Information on the number of credit institutions is available for the following countries: Austria, France, Germany, Great Britain, Italy, and Spain (a total of 53 regions). Information on productivity of financial institutions is available for the following countries: Austria, Denmark, Finland, France, Germany, Great Britain, and Spain (a total of 55 regions). Hence, using these additional measures has the benefit of increasing the geographic coverage for our tests.[25]

The three measures described above all capture financial development at the regional level. We next develop finer measures of the financial development of each firm's local environment using the precise addresses of firms and proximate banks. Arguably, financial development should be higher for firms that have greater access to banks. We introduce data from BvD's Bank Scope dataset to construct these financial development measures. The first is the number of banks in the city of the focal firm, and the second is the minimum distance between the focal firm and a bank in its city.

To obtain distances between firms and banks, we undertake a multi-step process. We first extract street address, city, region, postal code, and country information from Bank

[24] All credit institutions under this definition operate in the NACE 65.2 or NACE 65.12 business segments.

[25] An example of a region that is ranked highly on financial development is Northwest Italy (NUTS ITC). The share of eponymous firms in this region is 0.1. An example of a region that is ranked low on financial development is Schleswig-Holstein (Germany, NUTS DEF). The share of eponymous firms in this region is 0.4. The regions are nearly identical in terms of population density.

Scope. We then employ a custom program that utilizes the Google Maps Geocoding API to obtain geographic coordinates of these locations. Based on these coordinates, we calculate straight-line distances in kilometers between the firms and local banks within each city in our sample. A main challenge for obtaining distances between street-level locations is that street addresses are prone to misspellings. While this issue cannot be perfectly remedied, using Google Maps Geocoding API enables us to handle small variations in spelling because the API corrects incorrect addresses whenever it is able to find a close match. We manually check a subset of these adjusted addresses to make sure that they are within reasonable areas based on city and postal code information.

5.1.2 Empirical Findings on Financial Development

We now turn to exploring how the performance patterns of eponymous firms differ based on the level of financial development in their area. We estimate the following specification:

$$\Pr(Eponymous_i = 1) = \beta_0 + \beta_1 ROA_i \times FinDev_r + \beta_2 ROA_i + \mathbf{Z}_i'\gamma + \tau_t + \mu_j + \varphi_c + \omega_r + \epsilon_i$$

Our model implies that in the absence of financing considerations, high-quality firms, both scalable and non-scalable, will sort into eponymy (Proposition 2). In contrast, the availability of financing pushes high-quality firms with growth potential out of eponymy and into non-eponymous names (Propositions 3 and 4). When these high-quality firms choose non-eponymous names, it should weaken the relationship between performance and eponymy (Proposition 5). Thus, we expect that as the availability of finance increases, the positive relationship between ROA and eponymy should weaken. Applying this logic to our empirical analysis, we generally expect a positive eponymy-ROA relationship, $\hat{\beta}_2 > 0$, which weakens as the level of financial development improves, $\hat{\beta}_1 < 0$.

Table 4 presents the estimation results, which confirm our theoretical predictions. In Column 1, the coefficient estimate on the interaction term between ROA and the log of the region's number of employees in credit institutions is negative and statistically significant. This finding indicates that as financing considerations increase in importance, the difference in ROA between eponymous and non-eponymous firms shrinks. Based on the estimate from Column 1, moving from the 10th to the 90th percentile value of this measure of financial development lowers the positive estimate on ROA by 33% (from 0.18 to 0.12). Columns 2 and 3 present the same pattern of results with our additional measures of regional financial development: number of credit institutions (Column 2) and productivity of financial institutions (Column 3).

Columns 4-6 present the results using our firm-level measures of financial development

generated from Bank Scope. Here we measure financial development using the number of banks in the city where the firm is located (Column 4) and the shortest distance between the focal firm and a bank (Columns 5 and 6).[26] Both of these measures moderate the ROA-eponymy relationship as expected. The coefficient estimate on the interaction term of ROA with number of banks is negative and significant (Column 4), which is consistent with the idea that as the number of banks in the city of a focal firm increases (hence financial development increases), more high-quality firms sort into non-eponymy. For distance from a bank (Columns 5 and 6), the coefficient estimates on the interaction term between ROA and distance are positive, consistent with the idea that as the distance between a firm and its closest bank increases (hence financial development decreases), fewer high-quality firms sort into non-eponymy.

As a final robustness check, in Column 7 we use self-reported firm-distance-from-bank data from the World Management Survey (WMS).[27] The sign of the coefficient is as expected, although only significant at the 11% level. Note that we have a much smaller sample of firms from the WMS (1,370 firms), which may partially explain the precision of this estimate.

5.2 External Finance Dependence

The value of obtaining external financing should be higher for firms in industries that are more reliant on external finance. Thus we exploit variation in industry external finance dependence (Rajan and Zingales, 1998) to proxy for the benefit of obtaining financing (i.e., b in the model).

5.2.1 Measuring External Finance Dependence

We follow Rajan and Zingales (1998) and rank industries according to their dependence on external finance. In computing measures of external finance dependence, we use American Compustat firms, with values averaged over the pre-estimation sample period 1990-2001. As discussed by Rajan and Zingales (1998), U.S. industries provide an appropriate benchmark for analysis. Since the U.S. market is one of the most advanced capital markets in the world, American firms face the least frictions in accessing external finance. This means that the amount of external finance used by these companies is likely to be a "pure" measure of their demand for external finance.

[26] We are unable to extract distance information for the complete sample. Hence we report the estimation results for the entire sample of firms in Column 5 and for a subsample of firms (254,393 observations) in Column 6, where firm-bank distance information was successfully extracted.

[27] https://cdnstatic8.com/worldmanagementsurvey.org/wp-content/images/2010/09/Manufacturing-Survey-Instrument.pdf

We compute two of Rajan and Zingales's measures of dependence: External Finance Dependence and External Equity Dependence. External Finance Dependence is the ratio between capital expenditures minus cash flow from operations and capital expenditures. External Finance Dependence varies from a 10th percentile value of 0.1 to a 90th percentile value of 0.56 (mean of 0.35 and standard deviation of 0.19). External Equity Dependence is the ratio between the net amount of equity issued and capital expenditures. External Equity Dependence varies from a 10th percentile value of -0.3 to a 90th percentile value of 0.36 (mean of 0.10 and standard deviation of 0.32).

5.2.2 Empirical Findings on Finance Dependence

To investigate the effect of external finance dependence, we estimate the following specification:

$$\Pr(Eponymous_i = 1) = \beta_0 + \beta_1 ROA_i \times ExtDep_j + \beta_2 ROA_i + \mathbf{Z}_i'\gamma + \tau_t + \mu_j + \varphi_c + \epsilon_i$$

Our theory predicts that the positive relationship between eponymy and ROA will weaken as external finance dependence increases, and thus we expect $\hat{\beta}_1 < 0$.[28]

Table 5 exploits variation across industries in terms of their demand for external financing (measured by External Finance Dependence, except for Column 2, which uses External Equity Dependence). Our theoretical predictions are confirmed. The coefficient estimate on the interaction term between ROA and external dependence (Column 1) is negative and statistically significant. Results are similar when using External Equity Dependence (Column 2).

To mitigate concerns that the ROA-external dependence interaction is driven by unobserved industry heterogeneity, Column 3 controls for industry fixed effects (the linear term of external dependence is absorbed by the industry fixed effects). The coefficient estimate on the ROA-external dependence interaction remains negative and statistically significant. Finally, Column 4 calculates External Finance Dependence based only on young Compustat firms (5 years or less from their IPO year) to better align this measure with our sample of firms, which are predominantly young and small. The negative ROA-external finance dependence interaction remains.

[28]Recall that external finance dependence proxies for b in the model, and that ΔF is increasing in b. Hence the prediction follows the same logic described in Section 5.1.2.

5.3 Bandwidth Constraints

As described above, we found strong evidence for our theory's predicted relationship between the financing environment and eponymy. Recall that a critical component of our theory is that eponymy is a hindrance in the market for financing (Assumption A.0 in the general framework, Section 2.1). In Section 2.2 we demonstrated that this hindrance can arise endogenously when financiers face bandwidth constraints. We next build a unique measure to capture bandwidth and empirically explore the predictions of this endogenous explanation.

5.3.1 Measuring Bandwidth

We operationalize financier bandwidth as follows. For each firm, we identify its nearest bank using Bank Scope data (see Section 5.1.1 for details). Then, we count the number of other firms that are closer to that bank than the focal firm. Arguably, as the number of closer firms increases, the likelihood that the focal firm will be able to attract financing decreases (in other words, the bandwidth in the firm's environment decreases). Hereafter we refer to this notion as *density*. Note that density is inversely related to the concept of bandwidth in the model.

On average, there are 1.56 banks in a city where our firms reside. The average distance between a firm and a bank is 5 km, and the minimum distance between a firm and a bank is 0. The average distance between a firm and its nearest bank is 3.85 km. Per bank, there is an average of 2,189 firms in a 50 km radius. For density, an average firm has 5,478 firms that are closer to its nearest bank (a median of 1,673).[29]

5.3.2 Empirical Findings on Bandwidth

To explore the impact of bandwidth, we estimate the following specification:

$$\Pr(Eponymous_i = 1) = \beta_0 + \beta_1 ROA_i \times ln(1 + CloserFirms_i) + \beta_2 ROA_i \times ln(1 + BankDistance_i) + \beta_3 ROA_i + \mathbf{Z}_i'\gamma + \tau_t + \mu_j + \varphi_c + \omega_r + \epsilon_i$$

Note that we control for the distance of the focal firm to its nearest bank in all specifications.

We present the results from this analysis in Table 6. In Columns 1-3, we find that the interaction between ROA and our measure of density (log of the number of firms closer to the bank) is negative and statistically significant. This result holds whether we use all firms in the dataset, even those that do not have detailed address information (Column 1) or only

[29]Note that out-of-sample firms are also included in density calculations. That is, for in-sample firm i with distance D_i to its nearest bank B_i, we count *all* firms j within D_i of B_i even if we do not have firm j's financial or ownership information.

firms that we have bank-distance data available for (Column 2). In Column 3, we show that the result holds when we consider only small firms, defined by having sales lower than the median firm in the sample.

Just as in our earlier analyses (Sections 5.1 and 5.2), the negative coefficient on the interaction of interest means that as density increases (i.e., bandwidth decreases), the positive relationship between eponymy and ROA declines. This empirical pattern is consistent with the argument that as density increases, high-quality scalable firms sort out of eponymy and into non-eponymous names, which our theory predicts will happen when density rises from low to moderate levels (Proposition 6).

In contrast to our predictions about financial development and external finance dependence however, the model predicts that if density further rises from moderate to high levels, high-quality scalable firms would sort back into eponymy. Hence, the empirical findings in Columns 1-3 are consistent with the preponderance of our sample firms existing in low to moderate density environments. The descriptive statistics of the density measure (Table 1) support this conjecture, as the distribution of density is highly right-skewed, with the average being far higher than the median.[30]

We next turn to exploring whether there is in fact a U-shaped effect of bandwidth on the eponymy-ROA relationship. In Column 4, we add density-quartiles to the specification used in Column 2 (all proximate firms). We find that the negative effect is indeed non-monotonic and strongest for firms in the 3rd quartile of density (the latter fact again being consistent with the preponderance of our sample firms existing in low to moderate density environments). In Column 5 we add density-quartiles to the specification used in Column 3 (all proximate small firms). Again, we find the same non-monotonic effect, which is strongest in the 3rd quartile of firms.

6 Alternative Explanations

The evidence presented above provides support for our theory, including the endogenous explanation for why eponymy hinders access to financing. In this section, we consider alternative explanations and present additional robustness checks. Recall first that in Table 3 , we conducted robustness checks on the relationship between eponymy, ROA, and sales growth. We demonstrated that differences in the number of owners, firm age, and opportunities for e-commerce do not appear to explain our findings (Columns 6-12).

[30] We also ran the analysis without taking the log in the density measure, and the result continues to hold.

6.1 Control Rights and Family Firms

One possibility is that eponymy confers greater control rights to the owner at the expense of financiers. This scenario could lead to financiers avoiding eponymous firms, and thereby become a potential factor supporting Assumption A.0 within our theory. Note that the notion that eponymy confers greater control rights is not mutually exclusive with our bandwidth explanation for why eponymy hinders access to finance.

While we cannot measure control rights at the firm level, we can attempt to shed some light on this argument by analyzing a set of firms that have long been associated with a preference for control: family firms and those managed by their founders.

We first establish that the same relationship between eponymy, ROA, and sales growth holds within family and founder-managed firms, but that these firms alone do not drive the results in the full sample. We then leverage the reputation of family and founder-managed firms as control-loving to explore the above hypothesis that eponymy confers control rights and could therefore factor into our Assumption A.0.

There is a rich tradition of family firm scholarship in strategy, economics, and organizations. The role of family members as top executives, employees, and key stakeholders for the firm has been found to be related to financial performance (Villalonga and Amit, 2006; Miller, Breton-Miller and Scholnick, 2008; Minichilli, Corbetta, and MacMillan, 2010) and preferences for growth (Mishra and McConaughy, 1999; Gallo, Tapies, and Cappuyns, 2004; Block, 2012; Miller, Minichilli, and Corbetta 2013; Patel and Chrisman, 2014). A key driver of performance patterns for family firms is that owners typically have stronger emotional attachment to the business, leading them to play a more prominent role in the organization (Gersick et al., 1997; Gomez-Mejia et al., 2007; Belenzon et al., 2016). Villalonga and Amit (2008) document how founding families use various mechanisms, including dual-class stock, to enhance their control of publicly traded companies. This body of work is consistent with the idea that family owners have a preference for control.

There is some overlap between the research on family firms and studies of founder-managed firms (Wasserman, 2003). Founders are thought to have a stronger emotional attachment to the firm and have been empirically shown to have a preference for control (e.g., Bennett, Lawrence, and Sadun, 2015). In light of this work, in the analyses below we aggregate family businesses and founder-managed businesses into a single group.

In Table 7 we present results from analysis conducted on World Management Survey data (WMS, 1,376 European firms). We implement the same eponymy coding procedure for the WMS sample of firms, and use the WMS's classifications of family and founder-managed firms. About 13 percent of the firms in the WMS sample are eponymous (an incidence level

lower than in our main sample, mostly because the WMS sample focuses on medium-sized firms, whereas our sample includes many small firms).

In Column 1, we replicate our main results on this far smaller sample, finding the same relationship between eponymy, ROA, and sales growth. In Column 2 we limit the sample to only family and founder-managed businesses, both of which are associated with a preference for control. In Column 3 we run the analysis on the whole WMS sample and control for family and founder-managed businesses. In both cases, our results are similar to that of our main analysis. While these firms are slightly more likely to be eponymous, it is unlikely that their preference for control is driving our findings on the relationship between ROA, sales growth, and eponymy.

Columns 4-6 examine how the eponymy-ROA relationship is moderated by the family-ownership/founder-managed variable and by financial development. Consistent with the view that family and founder-managed firms have a stronger preference for control, we find that the ROA-eponymy relationship is stronger for these firms (that is, among family and founder-managed firms, high-quality firms are more likely to be eponymous than are other high-quality firms). However, this result is evident only in regions with low financial development (Column 5). In regions with high financial development (Column 6), there is no discernible difference in the ROA-eponymy relationship for family and founder-managed firms compared to other firms.

Returning to the conjecture that eponymy may confer control rights to the owner, our results provide some insight. Suppose that eponymy confers greater control rights, which financiers dislike (and family and founder-managed firms prize). Then the observed pattern is consistent with family and founder-managed firms trading off the benefits from stronger control with the desire for scalability. That is, when financial development is weak and scaling is not likely, high-quality family and founder-managed firms disproportionately sort into eponymy to enjoy the benefits of control (on top of reputation enhancement). But when scaling is possible (i.e., financial development is high), these firms forgo eponymy to attract financing, just as other high-quality firms do. Taken together, these results are consistent with the suppositions that eponymy increases the owner's control and hinders her access to financing, which would lend support to Assumption A.0. within our model.

6.2 Management Style

Another potential explanation for our results could be that eponymous firms are managed differently than non-eponymous firms. We explore this possibility in Table 8. Using the World Management Survey (WMS), we can investigate whether there are systematic differ-

ences between eponymous and non-eponymous firms in terms of how they are managed.

As in Table 7, Column 1 of Table 8 replicates our baseline results for reference. In each subsequent column, the "WMS variable" row indicates the conditional correlation between the survey variable (e.g., "Developing talent") and eponymy.

In Column 2, we test for systematic differences in the overall quality of the firm's management. For this question, the top manager rates from 1 to 10 the overall management quality of the organization, self-excluded (survey section "Human Resources/Constraints on Management, Question g"). We find no differences between eponymous and non-eponymous firms.

Eponymous entrepreneurs might have trouble attracting high-quality talent that is required for growth. Perhaps these would-be employees are unwilling to work for a firm where the founder would presumably receive disproportionate credit for their contribution. If this argument were true, we would expect to find systematic differences in talent management between eponymous and non-eponymous firms. Columns 3-5 examine three survey questions from the WMS that are likely to pick up such heterogeneity: Column 3, Developing talent (survey Q16); Column 4, Retaining talent (Q18); and Column 5, Performance tracking (Q4). Each of these questions is assessed on a 5-point scale. For all of these questions, there is no systematic difference in the responses of eponymous and non-eponymous firms.

We next explore whether there are differences in effort between managers of eponymous and non-eponymous firms. In BCD17, the authors empirically explore whether there are differences in effort between eponymous and non-eponymous firms and find none. For completeness, we include similar analyses on our slightly smaller set of firms in the present manuscript. Columns 6 and 7 examine answers to the questions from the WMS about the average weekly hours worked for managers and the entire workforce, respectively ("Human Resources/Constraints on Management, Question c"). There is no systematic difference in the amount of hours worked by managers or workers, inconsistent with the view that differences in total effort levels explain why eponymous firms have higher ROA but grow more slowly than non-eponymous firms.

Columns 8-12 investigate potential differences in several additional aspects of managerial style. Column 8 (Time Horizon, Q10) and Column 9 (Targets, Q11) consider the extent to which managers plan for the future and set targets. Both questions are assessed by the interviewer on a 1-5 scale. Column 10 investigates whether there are differences in span of control between eponymous and other firms ("Organization Questions, g"). Columns 11 and 12 explore whether there are differences between eponymous and non-eponymous firms with respect to self-reported production capabilities (Lean Manufacturing Introduction, Q1) and an assessment of the rationale for adoption of new methods (Lean Manufacturing Rationale,

Q2). For all of these analyses, we find no differences between eponymous and non-eponymous firms.

In sum, based on World Management Survey data, we find exactly the same relationship between eponymy, ROA, and growth as in our much larger sample—but no evidence that these differences are driven by different management styles, practices, or capabilities.

7 Concluding Remarks

We seek to explain a puzzle in entrepreneurial strategy: If a particular reputation-enhancing strategic choice is associated with greater profitability, why do more firms with growth aspirations not use it? We present a model and provide supporting empirical evidence to argue that the availability of and dependence on external financing are important considerations in resolving this puzzle.

We first observe a unique relationship between eponymous ventures (those named after the owner), ROA, and sales growth. Eponymous firms are more profitable than the average firm, but have lower sales growth. Our model is able to account for these patterns in a setting where firms differ in both quality and scalability. We demonstrate how financing concerns lead high-growth aspirants to sort into non-eponymous names, creating the patterns of performance we observe in the data.

The model makes further predictions about how these patterns should vary with the firm's financing environment. We use a large dataset of European firms and develop several new measures of the firm-specific financing environment to test these implications of the model, and we find support for its propositions.

Our work has broader implications for the academic study of entrepreneurial strategy. We propose that a key decision in entrepreneurship comes early on: when an entrepreneur decides how closely to tie herself to her firm. This decision has attendant tradeoffs related to reputational-payoff amplification and the possibility of growth, which are influenced by the financing environment. We believe that this nexus between the individual and the firm is an important area for future scholarly inquiry.

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Table 1. Summary Statistics

	(1)	(2)	(3)	(4)	(5)	(6)
				Distribution		
Variable	Obs.	Mean	Std. Dev.	10th	50th	90th
Dummy for eponymous	1,363,694	0.229	0.420	0	0	1
Returns on Assets	1,363,694	0.042	0.346	-0.130	0.019	0.222
Sales growth	1,363,694	0.036	0.391	-0.332	0.016	0.381
Sales ($,'000)	1,363,694	2,160	6,733	17	402	4,363
Assets ($,'000)	1,363,694	2,555	45,180	23	418	4,130
Profits ($,'000)	1,363,694	54	2,301	-43	8	160
Number of employees	842,597	17	648	1	4	25
Number of shareholders	1,363,694	2	4	1	2	4
Equity dispersion	1,363,694	0.47	0.33	0.1	0.50	0.95
Year of incorporation	1,363,694	1998	7.2	1987	1999	2007
Employees in credit institutions	488,038	75,103	39,060	18,501	80,698	131,456
Employees in credit institutions (normalized by size)	488,038	13	18	1	5	59
Productivity of financial institutions	729,114	88,555	24,948	61,140	84,109	121,770
Num. of credit institutions	949,739	5.7	3.7	1.3	5.1	9.7
Num. of Banks	360,974	15.4	24.0	1.0	3.0	72.0
Distance to a bank (shortest, km)	311,873	3.9	6.8	0.3	1.9	8.8
Num. of "closer" firms, all	311,873	5,478	7,609	63	1,673	15,633
Num. of "closer" firms, small	311,873	2,584	3,918	19	421	11,786
Industry external equity dependence	1,072,204	0.10	0.32	-0.3	0.09	0.36
Industry external finance dependence	1,072,204	0.35	0.19	0.1	0.34	0.56

Notes: This table provides summary statistics for the main variables used in the econometric analysis. The unit of analysis is a firm. Values are averageed over the period 2002-2012.

Table 2. Eponymous *vs.* Non-Eponymous Firms

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
		Eponymous			Non-Eponymous		
Variable	(3) minus (6)	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.
Returns on Assets	0.022**	312,525	0.059	0.331	1,051,169	0.037	0.349
Sales growth	-0.020**	312,525	0.021	0.325	1,051,169	0.041	0.409
Sales ($,'000)	70**	312,525	2,214	6,766	1,051,169	2,144	6,723
Assets ($,'000)	-325**	312,525	2,304	79,240	1,051,169	2,629	27,951
Profits ($,'000)	7	312,525	59	1,001	1,051,169	52	2,565
Number of shareholders	-0.3**	312,525	2	2.7	1,051,169	2.3	4.4
Year of incorporation	-1**	312,525	1997	7.4	1,051,169	1998	7.2

Notes: This table presents mean comparison tests for eponymous *vs.* non-eponymous firms. ** denotes that the difference in means is significant at the 1 percent level. *ROA* is profits over assets. Values are winsorized at -2 and 2.

Table 3. The Relationship Between Eponymy with ROA and Growth

Dependent variable: *Dummy for eponymous*												
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	All firms	All firms	All firms	Within-Owner	Owner-managed firms	Single-owner firms	Two-owner firms	≥Three owner firms	Young firms (age≤3)	Firms founded post-2002	Consumer goods	Business to business
Return on Assets	0.048**		0.051**	0.054**	0.054**	0.050**	0.052**	0.031**	0.047**	0.052**	0.047**	0.051**
	(0.001)		(0.001)	(0.006)	(0.001)	(0.002)	(0.002)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)
Sales growth		-0.020**	-0.024**	-0.030**	-0.021**	-0.025**	-0.021**	-0.020**	-0.037**	-0.028**	-0.022**	-0.026**
		(0.001)	(0.001)	(0.005)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
ln(*Sales*)	0.002**	0.004**	0.003**	0.009**	-0.001	-0.003**	0.001**	0.007**	0.002**	0.004**	0.004**	0.004**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
ln(*No. shareholders*)	0.007**	0.005**	0.007**	-0.013**	0.008**	-	-	-0.016**	-0.004	0.005**	0.005**	0.005**
	(0.001)	(0.001)	(0.001)	(0.004)	(0.001)			(0.002)	(0.003)	(0.003)	(0.003)	(0.003)
Equity dispersion	-0.088**	-0.090**	-0.089**	-0.134**	-0.080**	-	-0.061**	-0.143**	-0.097**	-0.090**	-0.090**	-0.090**
	(0.001)	(0.001)	(0.001)	(0.008)	(0.001)		(0.003)	(0.005)	(0.004)	(0.004)	(0.004)	(0.004)
Dummy for owner-managed					0.754**							
					(0.001)							
Incorporation year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Owner fixed-effects	No	No	No	Yes	No	No	No	No	No	No	No	No
Three-digit SIC dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Incidence of eponymy:	0.226	0.226	0.226	0.226	0.226	0.231	0.235	0.205	0.205	0.215	0.215	0.212
ROA standard deviation:	0.346	0.346	0.346	0.346	0.346	0.394	0.354	0.244	0.204	0.361	0.360	0.362
Sales growth standard deviation:	0.391	0.391	0.391	0.391	0.384	0.402	0.376	0.368	0.136	0.380	0.382	0.381
Observations	1,363,694	1,363,694	1,363,694	1,363,694	1,363,694	402,857	427,753	274,149	130,362	865,783	425,127	938,567
R-squared	0.09	0.08	0.09	0.88	0.16	0.08	0.09	0.11	0.06	0.08	0.09	0.08

Notes: This table presents OLS estimation results for the relationship between eponymy, ROA, and growth. Analysis is cross-sectional and values are averaged over the period 2002-2012. Column 4 restricts the sample to firms with owners who own more than one business and includes owner fixed effects. Column 5 classifies firms as owner-managed if the last name of the manager is the same as the last name of the leading shareholder. Column 6 includes only firms that are named after an individual. Column 7-9 restrict the sample to firms with 1, 2 and 3 and above shareholders, respectively. Standard errors (in parentheses) are robust. * and ** indicate statistical significance at the 5% and 1% level, respectively.

Table 4. Eponymy and Financial Development

Dependent variable: *Dummy for eponymy*							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Financial development measure:	Employees in credit institutions	No. of credit institutions	Productivity of financial institutions	No. of banks in a city, Bank Scope	Distance from a bank, Google API	Distance from a bank, Google API	WMS, Distance from a bank
Return on Assets	0.075**	0.062**	0.727**	0.040**	0.014**	0.015**	-0.161
	(0.002)	(0.001)	(0.051)	(0.004)	(0.004)	(0.004)	(0.178)
Return on Assets × ln(*financial development measure*)	-0.009**	-0.015**	-0.060**	-0.003**	0.013**	0.013**	0.150
	(0.001)	(0.001)	(0.005)	(0.001)	(0.002)	(0.002)	(0.094)
Sales growth	-0.023**	-0.023**	-0.024**	-0.025**	-0.025**	-0.019**	-0.045*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.018)
ln(*Sales*)	0.003**	0.003**	0.003**	0.004**	0.004**	0.004**	0.019*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.008)
ln(*No. shareholders*)	0.008**	0.008**	0.008**	0.007**	0.006**	0.007**	
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	
Equity dispersion	-0.088**	-0.088**	-0.088**	-0.083**	-0.081**	-0.079**	
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	
ln(financial development measure)					-0.002	0.001	-0.011
					(0.001)	(0.001)	(0.016)
Country dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Incorporation year dummies	Yes	Yes	Yes	Yes	Yes	Yes	No
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region FEs (NUTS/City)	Yes	Yes	Yes	Yes	Yes	Yes	No
Incidence of eponymy:	0.226	0.226	0.226	0.229	0.226	0.159	0.128
Average ROA sample value:	0.048	0.048	0.048	0.045	0.05	0.042	0.062
One-Std change in financial development	18	4	24,910	25	7	7	34
Observations	1,104,736	1,104,736	1,104,736	1,042,255	1,104,759	254,393	1,370
R-squared	0.09	0.09	0.09	0.18	0.17	0.09	0.06

Notes: This table presents OLS estimation results of how the relationship between eponymy and ROA varies by financial development. For Column 1-3, the *Financial development measures* are at the NUTS level. In Column 3, *No. of credit institutions* is divided by 1000. For Columns 4 the *Financial development measure* is at the city level and is computed based on the number of banks located in the focal firm's city as reported in Bank Scope for year 2009. In Column 5, the *Financial development measure* is at the firm level and is measured by the minimum distance (km) between the focal firm and a matched Bank Scope bank in the same city, based on Google API. The estimation sample for Column 6 is based on data from the World Management Survey for financial year 2007. In this specification, financial development is the actual distance from the nearest bank as reported by the survey respondent. Standard errors (in parentheses) are robust. * and ** indicate statistical significance at the 5% and 1% level, respectively.

Table 5. Eponymy and Industry External Finance Dependence

Dependent variable: *Dummy for eponymy*				
	(1)	(2)	(3)	(4)
	Baseline	External equity dependence	Industry FEs	External dependence based on young (Compustat) firms
Return on Assets × Industry external dependence	-0.020**	-0.018**	-0.009*	-0.011*
	(0.004)	(0.005)	(0.004)	(0.004)
Industry external dependence (finance)	-0.033**	-0.029**	-	-
	(0.001)	(0.002)		
Return on Assets	0.053**	0.051**	0.049**	0.049**
	(0.002)	(0.002)	(0.002)	(0.002)
Sales growth	-0.034**	-0.034**	-0.024**	-0.024**
	(0.001)	(0.001)	(0.001)	(0.001)
ln(*Sales*)	0.008**	0.008**	0.003**	0.003**
	(0.000)	(0.000)	(0.000)	(0.000)
ln(*No. shareholders*)	0.004**	0.004**	0.007**	0.007**
	(0.001)	(0.001)	(0.001)	(0.001)
Equity dispersion	-0.099**	-0.122**	-0.089**	-0.089**
	(0.001)	(0.001)	(0.001)	(0.001)
Country dummies	Yes	Yes	Yes	Yes
Incorporation year dummies	Yes	Yes	Yes	Yes
Industry dummies	No	No	Yes	Yes
Incidence of eponymy:	0.226	0.226	0.226	0.226
Average ROA sample value:	0.05	0.05	0.05	0.05
One-Std change in external dependence	0.32	0.32	0.32	0.32
Observations	1,104,759	1,104,759	1,104,759	1,104,759
R-squared	0.05	0.05	0.09	0.09

Notes: This table presents OLS estimation results of how the relationship between eponymy and ROA varies by industry external finance dependence. Standard errors (in parentheses) are robust. * and ** indicate statistical significance at the 5% and 1% level, respectively.

Table 6. Eponymy and Bandwidth

Dependent variable: *Dummy for eponymy*					
	(1)	(2)	(3)	(4)	(5)
	No. of Firms w/ shorter distance to bank	No. of Firms w/ shorter distance to bank (non-missng bank obs.)	No. of small Firms w/ shorter distance to bank	Non-monotonic effects (All closer firms)	Non-monotonic effects (Small closer firms)
Return on Assets	0.038**	0.037**	0.031**	0.028**	0.028**
	(0.010)	(0.009)	(0.008)	(0.007)	(0.007)
Return on Assets × ln(1+No. of closer firms)	-0.003**	-0.003**	-0.002*		
	(0.001)	(0.001)	(0.001)		
Return on Assets × ln(1+Distance from a bank	0.015**	0.015**	0.013**	0.010**	0.010**
	(0.003)	(0.002)	(0.002)	(0.003)	(0.003)
Return on Assets×					
No. of closer firms Q2				0.007	0.006
				(0.008)	(0.008)
No. of closer firms Q3				-0.018**	-0.029**
				(0.009)	(0.007)
No. of closer firms Q4				-0.009	-0.009
				(0.008)	(0.007)
Sales growth	-0.025**	-0.019**	-0.019**	-0.019**	-0.019**
	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)
ln(*Sales*)	0.004**	0.004**	0.004**	0.004**	0.004**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ln(*No. shareholders*)	0.006**	0.007**	0.007**	0.007**	0.007**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Equity dispersion	-0.081**	-0.079**	-0.079**	-0.079**	-0.079**
	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)
ln(1+No. of closer firms)	0.001	0.006**	-0.058	-0.058	-0.058
	(0.001)	(0.001)	(0.047)	(0.047)	(0.047)
ln(1+Distance from a bank)	-0.003*	-0.005**	0.000	-0.001	-0.001
	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)
No. of closer firms Q2				0.010**	0.010**
				(0.003)	(0.003)
No. of closer firms Q3				0.021**	0.021**
				(0.005)	(0.005)
No. of closer firms Q4				0.012*	0.012*
				(0.005)	(0.005)
Country dummies	Yes	Yes	Yes	Yes	Yes
Incorporation year dummies	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes
City FEs	Yes	Yes	Yes	Yes	Yes
Dummy for missing distance values	Yes	-	-	-	-
Incidence of eponymy:	0.226	0.159	0.159	0.159	0.159
Average ROA sample value:	0.048	0.042	0.042	0.042	0.042
One-Std change in No. of closer firms	7,781	7,781	3,909	-	-
Observations	1,104,759	254,393	254,393	254,393	254,393
R-squared	0.18	0.09	0.09	0.09	0.09

Notes: This table presents OLS estimation results of how the relationship between eponymy and ROA varies by financier bandwidth. Bank data is obtained from Bankscope for the year 2009 and is restricted to Commercial and Cooperative banks in the same city as the focal firm. *Distance from a bank* is measured by the minimum distance (km) between the focal firm and a matched Bankscope bank in the same city, based on Google API. For Column 1, *No. of closer firms* is measured as the number of firms in the focal firm's city with a shorter distance to a bank (average of all relevant banks). Column 1 includes a dummy variable that equals 1 for observations with missing distance information and zero for all other observations. Column 2 restricts the sample to firms with complete bank distance information. For Column 3, *No. of closer firms* is restricted to small firms (below median sales). Standard errors (in parentheses) are robust. * and ** indicate statistical significance at the 5% and 1% level, respectively.

Table 7. Eponymy and Control: Evidence from World Management Survey (WMS)

Dependent variable: *Dummy for eponymy*						
	(1)	(2)	(3)	(4)	(5)	(6)
	Base	Only (WMS) family/founder firms	Controlling for Family/Found	Family/Founder-ROA interaction	Low financial development regions	High financial development regions
Return on Assets × *Dummy for family/founder owned firm*				0.309**	0.540**	-0.009
				(0.106)	(0.127)	(0.161)
Return on Assets	0.155**	0.377**	0.156**	0.060	0.009	0.173
	(0.048)	(0.106)	(0.047)	(0.043)	(0.047)	(0.128)
Sales growth	-0.047*	-0.127**	-0.051**	-0.052**	-0.050	-0.048
	(0.018)	(0.041)	(0.018)	(0.018)	(0.032)	(0.025)
ln(*Sales*)	0.021*	0.024	0.023**	0.023**	0.029*	0.021
	(0.009)	(0.022)	(0.009)	(0.009)	(0.014)	(0.012)
Dummy for family/founder owned firm			0.071**	0.051*	0.058	0.053
			(0.023)	(0.023)	(0.037)	(0.030)
Country dummies	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes
Incidence of eponymy:	0.128	0.156	0.128	0.128	0.134	0.123
Average ROA sample value:	0.062	0.059	0.062	0.062	0.065	0.060
Observations	1,376	486	1,376	1,376	620	756
R-squared	0.14	0.26	0.14	0.15	0.23	0.21

Notes: This table presents OLS estimation results for the relationship between eponymy, ROA, and growth controlling for measures of family and founder management from the World Management Survey in 2007. Column 2 is restricted to family and founder-managed firms. Column 5 and 6 are restricted to firms from regions with below and above the median no. of credit institutions, respectively. Standard errors (in parentheses) are robust. * and ** indicate statistical significance at the 5% and 1% level, respectively.

Table 8. Alternative Explanations: Evidence from World Management Survey

Dependent variable: *Dummy for eponymy*												
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Base	Manager's self-score, overall	Developing Talent	Retaining Talent	Performance Tracking	ln(Avg weekly hours for managers)	ln(Avg weekly hours for all workforce)	Time Horizon	Targets	ln(Average no. people managed per person)	Lean Mfg., Introduction	Lean Mfg., Rationale
WMS variable		-0.007	0.004	-0.000	0.009	0.043	0.045	0.013	-0.001	0.027	0.019	0.012
		(0.008)	(0.011)	(0.009)	(0.010)	(0.078)	(0.138)	(0.010)	(0.011)	(0.031)	(0.010)	(0.009)
Return on Assets	0.155**	0.155**	0.156**	0.153**	0.156**	0.154**	0.154**	0.156**	0.157**	0.150**	0.150**	0.152**
	(0.048)	(0.048)	(0.048)	(0.048)	(0.048)	(0.048)	(0.048)	(0.047)	(0.048)	(0.047)	(0.047)	(0.047)
Sales growth	-0.047*	-0.047**	-0.047*	-0.047**	-0.045*	-0.047*	-0.047*	-0.045*	-0.049**	-0.046*	-0.044*	-0.046*
	(0.018)	(0.018)	(0.018)	(0.018)	(0.018)	(0.018)	(0.018)	(0.018)	(0.019)	(0.018)	(0.018)	(0.018)
ln(*Sales*)	0.021*	0.022*	0.020*	0.021*	0.019*	0.021*	0.021*	0.019*	0.021*	0.020*	0.017*	0.019*
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
Country dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Incidence of eponymy:	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128
Average ROA sample value:	0.062	0.062	0.062	0.062	0.062	0.062	0.062	0.062	0.062	0.062	0.062	0.062
Observations	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376	1,376
R-squared	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14

Notes: This table presents OLS estimation results comparing management practices of eponymous and non-eponymous firms using data from the World Management Survey in 2007. Standard errors (in parentheses) are robust. * and ** indicate statistical significance at the 5% and 1% level, respectively.

A Proofs

It is easier to prove Lemma 2 first, then Lemma 1. We also state and prove a third lemma, before turning to the proofs of the propositions.

Proof of Lemma 2. For the purpose of contradiction, suppose that $\sigma(L) = 0$ in a nontrival equilibrium. Since the equilibrium is nontrival, either $\sigma(H,S) > 0$ or $\sigma(H,N) > 0$. Hence, $\mu_1(\overline{s}) = 1$. By deviating to $\overline{s}$, the low type would earn $u_L(\overline{s},1) > u_L(\underline{s},\mu_1(\underline{s}))$ for any value of $\mu_1(\underline{s})$. Hence, $\sigma(L) > 0$ in any nontrival equilibrium.

Suppose instead that $\sigma(L) = 1$. Since the equilibrium is nontrival, either $\sigma(H,S) < 1$ or $\sigma(H,N) < 1$. Hence, $\mu_1(\underline{s}) = 1$ and $\mu_1(\overline{s}) < \mu_0 < \mu^*$, the last inequality by Assumption A.1. By deviating to $\underline{s}$, the low type would earn $u_L(\underline{s},1) > u_L(\underline{s},0) = u_L(\overline{s},\mu^*) > u_L(\overline{s},\mu_1(\overline{s}))$. Hence, $\sigma(L) < 1$ in any nontrival equilibrium. ■

Proof of Lemma 1. From Lemma 2, in any nontrival equilibrium $\mu_1(\underline{s})$ and $\mu_1(\overline{s})$ satisfy $u_L(\underline{s},\mu_1(\underline{s})) = u_L(\overline{s},\mu_1(\overline{s}))$. The single-crossing property of u_L and u_H established in BCD17 then implies that $u_H(\underline{s},\mu_1(\underline{s})) < u_H(\overline{s},\mu_1(\overline{s}))$, so the (H,N)-sender strictly prefers $\overline{s}$ in any nontrival equilibrium. ■

Lemma 3 *Fix $\sigma(H,N) = 1$ and $\sigma(H,S) = k \in [0,1)$. For any value of $\sigma(L)$, denote the Bayesian consistent beliefs as*

$$\mu_1(\underline{s}|\sigma(L)) = \frac{\pi_0(H,S)(1-k)}{\pi_0(H,S)(1-k) + \pi_0(L)(1-\sigma(L))}, \quad \textit{and}$$
$$\mu_1(\overline{s}|\sigma(L)) = \frac{\pi_0(H,N) + \pi_0(H,S)k}{\pi_0(H,N) + \pi_0(H,S)k + \pi_0(L)\sigma(L)}.$$

Then there exists a unique $\sigma(L) \in (0,1)$ that solves $u_L\left(\underline{s},\mu_1(\underline{s}|\sigma(L))\right) = u_L\left(\overline{s},\mu_1(\overline{s}|\sigma(L))\right)$.

Proof. Since u_L is continuous and strictly increasing in μ_1, *i)* $u_L(\underline{s},\mu_1(\underline{s}|\sigma(L)))$ is continuous and strictly increasing in $\sigma(L)$; and *ii)* $u_L(\overline{s},\mu_1(\overline{s}|\sigma(L)))$ is continuous and strictly decreasing in $\sigma(L)$. So there is at most one value of $\sigma(L)$ that equates them. To see a solution exists we evaluate the extreme values of $\sigma(L)$.

$$u_L(\overline{s},\mu_1(\overline{s}|\sigma(L)=0)) = u_L(\overline{s},1) > u_L(\underline{s},\mu_1) \;\; \forall\, \mu_1, \quad \text{including } \mu_1(\underline{s}|\sigma(L)=0)$$

$$u_L(\underline{s},\mu_1(\underline{s}|\sigma(L)=1)) = u_L(\underline{s},1) > u_L(\overline{s},\underline{\mu}_L) > u_L(\overline{s},\mu_0) \geq u_L(\overline{s},\mu_1(\overline{s}|\sigma(L)=1))$$

where for the $\sigma(L) = 1$ case, the first inequality is by definition of $\underline{\mu}_L$, the second is by Assumption A.1, and the third is by direct calculation that $\mu_1(\overline{s}|\sigma(L)=1) \leq \mu_0$. Hence, a solution exists by the intermediate value theorem. ■

Proof of Proposition 1. Fix any nontrival equilibrium. By Lemma 2, $\mu_1(\underline{s}), \mu_1(\overline{s})$ satisfy $u_L(\underline{s},\mu_1(\underline{s})) = u_L(\overline{s},\mu_1(\overline{s}))$. In addition, Bayesian consistency of equilibrium beliefs and the law of

iterated expectation require that $E[\mu_1(s)] = \mu_0$. Hence,

$$\min\{\mu_1(\underline{s}), \mu_1(\overline{s})\} \leq \mu_0 \leq \max\{\mu_1(\underline{s}), \mu_1(\overline{s})\}.$$

Suppose now that $\mu_1(\overline{s}) \leq \mu_1(\underline{s})$. Then, $\mu_1(\overline{s}) \leq \mu_0 < \mu^* < \underline{\mu}_L$, by Assumption A.1. But, by definition of $\underline{\mu}_L$, satisfying $u_L(\underline{s}, \mu_1(\underline{s})) = u_L(\overline{s}, \mu_1(\overline{s}))$ then requires $\mu_1(\underline{s}) < \mu_1(\overline{s})$, which is a contradiction. Hence, $\mu_1(\overline{s}) > \mu_1(\underline{s})$. ■

Proof of Proposition 2. From Lemmas 1 and 2, in any nontrivial equilibrium $\sigma(L) \in (0,1)$ and $\sigma(H,N) = 1$. We first establish that if ΔF is sufficiently small, then $\sigma(H,S) = 1$ as well. The (H,S)-type's expected payoff from selecting $\underline{s}$ is $u_H(\underline{s}, \mu_1(\underline{s})) + F(\underline{s})$, and her payoff from selecting $\overline{s}$ is $u_H(\overline{s}, \mu_1(\overline{s})) + F(\overline{s})$. From the proof Lemma 1, in any nontrival equilibrium, $u_H(\underline{s}, \mu_1(\underline{s})) < u_H(\overline{s}, \mu_1(\overline{s}))$. Therefore, if $\Delta F \equiv F(\underline{s}) - F(\overline{s})$ is sufficiently small, the (H,S)-type must strictly prefer $\overline{s}$ in any nontrival equilibrium, and equilibrium characterization is reduced to pinning down the mixing behavior of the low types, $\sigma(L)$.

Given that all H-quality senders select $\overline{s}$ and L senders mix between $\underline{s}$ and $\overline{s}$, receiver beliefs must satisfy $\mu_1(\underline{s}) = 0$. Since low types are mixing, they must be indifferent, meaning $\mu_1(\overline{s}) = \mu^*$ is required. Receiver beliefs must also be consistent with strategies:

$$\mu_1(\overline{s}) = \frac{\mu_0}{\mu_0 + (1-\mu_0)\sigma(L)} = \mu^*. \tag{1}$$

Solving (1) yields $\sigma(L) = \frac{\mu_0(1-\mu^*)}{\mu^*(1-\mu_0)}$, establishing that the unique nontrival sender-strategy profile consistent with equilibrium is given by Candidate 1. ■

Proof of Proposition 3. From Lemmas 1 and 2, in any nontrivial equilibrium $\sigma(L) \in (0,1)$ and $\sigma(H,N) = 1$. We first establish that if ΔF is sufficiently large, then $\sigma(H,S) = 0$. The (H,S)-type's expected payoff from selecting $\underline{s}$ is $u_H(\underline{s}, \mu_1(\underline{s})) + F(\underline{s})$, and her payoff from selecting $\overline{s}$ is $u_H(\overline{s}, \mu_1(\overline{s})) + F(\overline{s})$. The difference $u_H(\overline{s}, \mu_1(\overline{s})) - u_H(\underline{s}, \mu_1(\underline{s}))$ is bounded above by the finite value $u_H(\overline{s}, 1) - u_H(\underline{s}, 0) = (2p-1) + (\overline{s} - \underline{s})$. Therefore, if $\Delta F \equiv F(\underline{s}) - F(\overline{s})$ is sufficiently large, the (H,S)-type must strictly prefer $\underline{s}$ in any nontrival equilibrium, and equilibrium characterization is reduced to pinning down the mixing behavior of the low types, $\sigma(L)$. By Lemma 3, given $\sigma(H,N) = 1$ and $\sigma(H,S) = 0$, there is indeed a unique $\sigma(L)$ that solves the low-type indifference condition, establishing Candidate 2 as the unique nontrival equilibrium. ■

Proof of Proposition 4. To find all nontrival equilibria, proceed as follows. From Lemmas 1 and 2, in any nontrivial equilibrium $\sigma(H,N) = 1$ and $\sigma(L) \in (0,1)$. Letting μ_1^C be the consistent belief in Candidate C, it follows that in any nontrivial equilibrium, $\mu_1(\underline{s}) \in [\mu_1^1(\underline{s}), \mu_1^2(\underline{s})]$. Recall that $\mu_1^1(\underline{s}) = 0$, and to simplify notation let $\bar{\mu} \equiv \mu_1^2(\underline{s})$ (which is unique by Lemma 3). Fix now any value $\mu_1(\underline{s}) = y \in [0, \bar{\mu}]$, and let $z(y)$ be the unique belief such that $u_L(\underline{s}, y) = u_L(\overline{s}, z(y))$, as required for L-type indifference. By the established properties of u_L (see BCD17), Proposition 1, and $y \leq \bar{\mu}$, we have $z(y) \in (y, \underline{\mu}_L)$. Finally, define $D(y) \equiv u_H(\overline{s}, z(y)) - u_H(\underline{s}, y)$, which is continuous on $[0, \bar{\mu}]$.

Putting it together, there are three (not necessarily mutually exclusive) equilibrium cases: *i*) Candidate 1 is an equilibrium if and only if $D(0) \geq \Delta F$; *ii*) Candidate 2 is an equilibrium if and only if $D(\bar{\mu}) \leq \Delta F$; and *iii*) there is an equilibrium with $\sigma(H,S) \in (0,1)$ if and only if there exists $y \in (0, \bar{\mu})$ such that $D(y) = \Delta F$. To see when each case can arise, for each $s \in [\underline{s}, \overline{s}]$, define $\ell(s|y)$ to be the unique belief value satisfying $u_L(s, \ell(s|y)) = u_L(\underline{s}, y)$, which is strictly increasing in both s and y. Noting that $z(y) = \ell(\overline{s}|y)$, $D(y)$ can then be expressed as

$$D(y) = \int_{\underline{s}}^{\overline{s}} \frac{d}{ds} u_H(s, \ell(s|y)) ds. \tag{2}$$

Expanding the integrand gives

$$\frac{d}{ds} u_H(s, \ell(s|y)) = \frac{\partial u_H(s, \ell(s|y))}{\partial s} + \frac{\partial u_H(s, \ell(s|y))}{\partial \ell(s|y)} \frac{\partial \ell(s|y)}{\partial s}. \tag{3}$$

Finally, because $u_L(s, \ell(s|y))$ is constant in s by construction,

$$\frac{\partial \ell(s|y)}{\partial s} = \frac{-\frac{\partial u_L(s, \ell(s|y))}{\partial s}}{\frac{\partial u_L(s, \ell(s|y))}{\partial \ell(s|y)}}. \tag{4}$$

Combining (3), (4), and the functional forms of u_H and u_L, we obtain a closed-form (though cumbersome) expression for the integrand of (2). Tedious algebra establishes that this expression is strictly decreasing in the belief level, ℓ, for all values in $[0, \underline{\mu}_L]$. Hence, the integrand of (2) strictly decreases pointwise as y increases, meaning D is strictly decreasing in y.

We conclude that $\Delta F_1 = D(\bar{\mu}) < D(0) = \Delta F_2$. The equilibrium characterization statements in Propositions 2-4 (as well as in footnote 15) follow immediately.[31]

It is left to establish the claim that Candidate 2 maximizes the payoffs of all types among nontrival equilibria. For the L-type, by Lemma 2, in any nontrivial equilibrium her payoff is $u_L(\underline{s}, \mu_1(\underline{s}))$. In Candidate 2, $\sigma(H,S) = 0$ and $\mu_1(\underline{s})$ is therefore maximized among nontrivial equilibria. Since u_L is increasing in μ_1, the claim is established for the L-type. For the (H,N)-type, by Lemma 1, in any nontrivial equilibrium her payoff is $u_H(\overline{s}, \mu_1(\overline{s}))$. In Candidate 2, $\mu_1(\underline{s})$ is maximized among nontrivial equilibria, and the L-type is indifferent between $\underline{s}$ and $\overline{s}$ in all nontrivial equilibria. Since u_L is increasing in μ_1, $\mu_1(\overline{s})$ is likewise maximized among nontrivial equilibria. Since u_H is increasing in μ_1, the claim is established for the (H,N)-type. Finally, for the (H,S)-type, in any nontrivial equilibrium with $\sigma(H,S) < 1$, her payoff is $u_H(\underline{s}, \mu_1(\underline{s})) + F(\underline{s})$. Hence, just as for the L-type, Candidate 2 maximizes her payoffs among such equilibria. Therefore, the last step is to verify that the (H,S)-type prefers Candidate 2 to Candidate 1 whenever both are equilibria. This is indeed the case because

$$u_H(\underline{s}, \mu_1^2(\underline{s})) + F(\underline{s}) \geq u_H(\overline{s}, \mu_1^2(\overline{s})) + F(\overline{s}) > u_H(\overline{s}, \mu_1^1(\overline{s})) + F(\overline{s}),$$

where the first inequality holds because Candidate 2 is an equilibrium, and the second inequality is from $\mu_1^2(\overline{s}) > \mu_1^1(\overline{s})$ and u_H increasing in μ_1. ■

[31] Therefore, the current proof also establishes Propositions 2 and 3. Their proofs above are retained for their directness and simplicity.

Proof of Proposition 5. Let $f_L(s|\hat{u}_L)$ be the indifference curve, as a function from s to μ_1, for the low type's excepted payoff level $\hat{u}_L$ (i.e., $u_L(s, f_L(s|\hat{u}_L)) = \hat{u}_L$). Throughout, we use superscripts 1 and 2 to refer to objects from Candidate 1 and Candidate 2, respectively. Recall that $\mu_1^1(\underline{s}) = 0 < \mu_1^2(\underline{s}) < \underline{\mu}_L$. Since, $\sigma^1(L), \sigma^2(L) \in (0,1)$ (see Lemma 2), we have that:

$$\hat{u}_L^1 = u_L(\underline{s}, \mu_1^1(\underline{s})) = u_L(\overline{s}, \mu_1^1(\overline{s})) < u_L(\underline{s}, \mu_1^2(\underline{s})) = u_L(\overline{s}, \mu_1^2(\overline{s})) = \hat{u}_L^2.$$

To prove the proposition, we need to show that

$$\begin{aligned}
\mu_1^1(\overline{s}) - \mu_1^1(\underline{s}) &> \mu_1^2(\overline{s}) - \mu_1^2(\underline{s}) \\
f_L(\overline{s}|\hat{u}_L^1) - f_L(\underline{s}|\hat{u}_L^1) &> f_L(\overline{s}|\hat{u}_L^2) - f_L(\underline{s}|\hat{u}_L^2) \\
f_L(\underline{s}|\hat{u}_L^2) - f_L(\underline{s}|\hat{u}_L^1) &> f_L(\overline{s}|\hat{u}_L^2) - f_L(\overline{s}|\hat{u}_L^1),
\end{aligned}$$

which is simply that the two indifference curves are closer together at $\overline{s}$ than they are at $\underline{s}$. Using the fact that $u_L(s, f_L(s|\hat{u}_L)) = \hat{u}_L$, it is a matter of direct calculation to observe *i)* that $f_L(\cdot|\hat{u}_L)$ is continuous, increasing, and concave for all $\hat{u}_L < u_L(s, \underline{\mu}_L)$—which, recall, does not depend on s by definition of $\underline{\mu}_L$—and *ii)* that

$$\left.\frac{\partial f_L}{\partial s}\right|_{s,\mu_1} \text{ is increasing in } s.$$

Hence, for a given value of s, letting $\tilde{s} > s$ be the solution to $u_L(\tilde{s}, f_L(s|\hat{u}_L^2)) = \hat{u}_L^1$, we have that

$$0 < f_L'(s|\hat{u}_L^2) < f_L'(\tilde{s}|\hat{u}_L^1) < f_L'(s|\hat{u}_L^1),$$

meaning the respective indifference curves are getting closer as s increases. ■

Proof of Proposition 6. The proposition has two claims.

1. Verification of Candidate 2 as an Equilibrium: Fix the profile of play and corresponding beliefs in accordance with Candidate 2 and let $\Delta Q(q)$ be the endogenous value of $Q(\underline{s}|q) - Q(\overline{s}|q)$. Clearly, $\Delta Q(q)$ is continuous in q, with $\Delta Q(0) = \Delta Q(1) = 0$. Next, define $q^* = \pi_0(H,S) + \pi_0(L)\,(1 - \sigma(L))$, which is the total mass of senders selecting $\underline{s}$ in Candidate 2. Since (in Candidate 2) financiers prioritize their investigations on senders who select $\underline{s}$, as q increases between 0 and q^*, $Q(\underline{s}|q)$ continuously increases from $Q(\underline{s}|0) = 0$ to $Q(\underline{s}|q^*) = 1$, while $Q(\overline{s}|q)$ remains constant at 0. Next, as q increases between q^* and 1, $Q(\underline{s}|q)$ remains constant at 1, while $Q(\overline{s}|q)$ continuously increases from $Q(\overline{s}|q^*) = 0$ to $Q(\overline{s}|1) = 1$. Hence, ΔQ is single-peaked about q^*.

Given the results of Section 2.1, for Candidate 2 to be an equilibrium it is sufficient to show

$$\begin{aligned}
&u_H(\overline{s}, \mu_1^2(\overline{s})) + Q(\overline{s})b \leq u_H(\underline{s}, \mu_1^2(\underline{s})) + Q(\underline{s})b \\
&u_H(\overline{s}, \mu_1^2(\overline{s})) - u_H(\underline{s}, \mu_1^2(\underline{s})) \leq Q(\underline{s})b - Q(\overline{s})b = \Delta Q(q) \times b. \qquad (5)
\end{aligned}$$

Recall that *i)* $u_H(\overline{s}, \mu_1^2(\overline{s})) > u_H(\underline{s}, \mu_1^2(\underline{s}))$ and *ii)* ΔQ is continuous, single-peaked about q^*, and equals 0 for $q = 0, 1$. Therefore, (5) can only hold on an interval $[\underline{q}, \overline{q}]$, and such an interval exists if and only if b is sufficiently large, establishing the proposition's first claim.

2. Payoffs: For now, fix $q = \pi_0(H,S)$. If b and p are both sufficiently large, then the only possible nontrival equilibria are Candidates 1 and 2. To see this, consider any nontrival equilibrium. By Lemma 1, $\sigma(H,N) = 1$. If $\sigma(H,S) = 1$ as well, then the equilibrium is Candidate 1. Now fix any $\sigma(H,S) \in [0,1)$. By Lemmas 2 and 3, there is a unique value of $\sigma(L) \in (0,1)$ consistent with equilibrium. Hence, it is sufficient to establish that the (H,S)-type cannot be strictly mixing: $\sigma(H,S) \notin (0,1)$. Suppose that $\sigma(H,S) \in (0,1)$. Then, if p is sufficiently large,

$$\pi_2(H,S|\underline{s}, g=h) = \frac{\pi_0(H,S)(1-\sigma(H,S))p}{\pi_0(H,S)(1-\sigma(H,S))p + \pi_0(L)(1-\sigma(L))(1-p)}$$

$$\approx \frac{\pi_0(H,S)(1-\sigma(H,S))}{\pi_0(H,S)(1-\sigma(H,S))} = 1$$

and

$$\pi_2(H,S|\overline{s}, g=h) = \frac{\pi_0(H,S)\sigma(H,S)p}{\pi_0(H,S)\sigma(H,S)p + \pi_0(H,N)p + \pi_0(L)\sigma(L)(1-p)}$$

$$\approx \frac{\pi_0(H,S)\sigma(H,S)}{\pi_0(H,S)\sigma(H,S) + \pi_0(H,N)} \ll 1$$

Hence, financiers prioritize $(\underline{s},h)$ senders, and every high-quality sender is virtually certain to produce $g = h$. Hence, as $p \to 1$, the total mass of $(\underline{s},h)$ tends to $\pi_0(H,S)(1-\sigma(H,S)) < q$, so $Q(\underline{s}) \to 1$ as well. However, the total mass of senders with $g = h$ tends to $\pi_0(H,S) + \pi_0(H,N) > q$, so $Q(\overline{s}) \not\to 1$. Then by the same argument at end of the "verification" proof above, with b sufficiently large the (H,S)-type strictly prefers $\underline{s}$, contradicting the premise that she is mixing.

Thus, for the $q = \pi_0(H,S)$ case, it is now sufficient to establish that all types achieve a higher expected payoff in Candidate 2 than in Candidate 1. For the L and (H,N)-types, the arguments are the same as provided in the proof of Proposition 4. For the (H,S)-type, the difference between her payoff in Candidate 2 and Candidate 1 is

$$\begin{aligned}
&\big(u_H(\underline{s}, \mu_1^2(\underline{s})) + Q^2(\underline{s})b\big) - \big(u_H(\overline{s}, \mu_1^1(\overline{s})) + Q^1(\overline{s})b\big) \\
&\quad = \big(Q^2(\underline{s}) - Q^1(\overline{s})\big)b - \big(u_H(\overline{s}, \mu_1^1(\overline{s})) - u_H(\underline{s}, \mu_1^2(\underline{s}))\big) \\
&\quad\quad \to \left(1 - \frac{q}{\mu_0}\right) b - \big(u_H(\overline{s}, \mu_1^1(\overline{s})) - u_H(\underline{s}, \mu_1^2(\underline{s}))\big) \qquad [as\ p \to 1].
\end{aligned}$$

Since $q = \pi_0(H,S) < \pi_0(H,S) + \pi_0(H,N) = \mu_0$ and $u_H(\overline{s}, \mu_1^1(\overline{s})) - u_H(\underline{s}, \mu_1^2(\underline{s}))$ is bounded above by the finite value $u_H(\overline{s},1) - u_H(\underline{s},0) = (2p-1) + (\overline{s} - \underline{s})$, the (H,S)-type achieves a higher payoff in Candidate 2 if b is sufficiently large. Finally, see that equilibrium payoffs are continuous in q, establishing that the result holds on an interval $[\underline{\underline{q}}, \overline{\overline{q}}]$. ■

Table A1. Eponymy Incidence by Industry

2-digit SIC code	Industry	Firms	Eponymous	% eponymous
01	Agricultural Production - Crops	6,127	1,458	24
02	Agricultural Production - Livestock and Animal Specialties	5,648	1,404	25
07	Agricultural Services	6,953	2,253	32
08	Forestry	1,079	311	29
09	Fishing, Hunting and Trapping	1,653	363	22
10	Metal Mining	162	30	19
12	Coal Mining	63	18	29
13	Oil and Gas Extraction	608	90	15
14	Mining and Quarrying of Nonmetallic Minerals, Except Fuels	2,481	736	30
15	Building Cnstrctn - General Contractors & Operative Builders	91,991	26,185	28
16	Heavy Cnstrctn, Except Building Construction - Contractors	9,340	2,995	32
17	Construction - Special Trade Contractors	115,674	43,205	37
20	Food and Kindred Products	18,851	6,165	33
21	Tobacco Products	82	16	20
22	Textile Mill Products	6,467	1,498	23
23	Apparel, Finished Prdcts from Fabrics & Similar Materials	9,018	2,051	23
24	Lumber and Wood Products, Except Furniture	11,346	4,447	39
25	Furniture and Fixtures	8,106	2,562	32
26	Paper and Allied Products	3,615	601	17
27	Printing, Publishing and Allied Industries	18,729	2,639	14
28	Chemicals and Allied Products	5,009	541	11
29	Petroleum Refining and Related Industries	142	14	10
30	Rubber and Miscellaneous Plastic Products	6,989	1,025	15
31	Leather and Leather Products	4,848	1,192	25
32	Stone, Clay, Glass, and Concrete Products	9,293	2,760	30
33	Primary Metal Industries	5,025	1,008	20
34	Fabricated Metal Prdcts, Except Machinery & Transport Eqpmnt	34,743	9,334	27
35	Industrial and Commercial Machinery and Computer Equipment	19,672	3,738	19
36	Electronic, Elctrcl Eqpmnt & Cmpnts, Excpt Computer Eqpmnt	8,354	916	11
37	Transportation Equipment	4,330	977	23
38	Mesr/Anlyz/Cntrl Instrmnts; Photo/Med/Opt Gds; Watchs/Clocks	4,153	679	16
39	Miscellaneous Manufacturing Industries	4,978	1,166	23
40	Railroad Transportation	179	40	22
41	Local, Suburban Transit & Interurbn Hgwy Passenger Transport	7,386	2,345	32
42	Motor Freight Transportation	28,147	11,814	42
43	United States Postal Service	747	98	13
44	Water Transportation	2,807	479	17
45	Transportation by Air	885	104	12
46	Pipelines, Except Natural Gas	22	5	23
47	Transportation Services	13,168	1,997	15
48	Communications	4,235	325	8
49	Electric, Gas and Sanitary Services	6,948	1,353	19
50	Wholesale Trade - Durable Goods	110,830	23,586	21
51	Wholesale Trade - Nondurable Goods	66,645	16,524	25
52	Building Matrials, Hrdwr, Garden Supply & Mobile Home Dealrs	11,308	3,614	32
53	General Merchandise Stores	5,025	1,010	20
54	Food Stores	22,035	6,361	29
55	Automotive Dealers and Gasoline Service Stations	9,234	3,080	33
56	Apparel and Accessory Stores	25,532	5,856	23
57	Home Furniture, Furnishings and Equipment Stores	23,976	5,822	24
58	Eating and Drinking Places	46,329	7,768	17
59	Miscellaneous Retail	46,336	10,822	23
60	Depository Institutions	2,520	299	12
61	Nondepository Credit Institutions	11,931	2,407	20
62	Security & Commodity Brokers, Dealers, Exchanges & Services	864	111	13
63	Insurance Carriers	2,014	557	28
64	Insurance Agents, Brokers and Service	5,841	1,839	31
65	Real Estate	123,756	17,600	14
67	Holding and Other Investment Offices	16,117	3,384	21
70	Hotels, Rooming Houses, Camps, and Other Lodging Places	14,209	1,680	12
72	Personal Services	22,675	4,811	21
73	Business Services	124,890	14,454	12
75	Automotive Repair, Services and Parking	21,220	7,205	34
76	Miscellaneous Repair Services	8,111	2,012	25
78	Motion Pictures	4,514	341	8
79	Amusement and Recreation Services	17,337	2,031	12
80	Health Services	22,445	6,976	31
81	Legal Services	3,950	2,216	56
82	Educational Services	10,914	1,329	12
83	Social Services	3,624	363	10
84	Museums, Art Galleries and Botanical and Zoological Gardens	277	22	8
86	Membership Organizations	335	49	15
87	Engineering, Accounting, Research, Management & Related Svcs	87,048	17,149	20
89	Services, Not Elsewhere Classified	7	1	14
91	Executive, Legislative & General Government, Except Finance	387	63	16
92	Justice, Public Order and Safety	342	43	13
94	Administration of Human Resource Programs	60	6	10
95	Administration of Environmental Quality and Housing Programs	116	24	21
96	Administration of Economic Programs	44	8	18
97	National Security and International Affairs	398	53	13
Others	Others	445	112	25
Total		1,363,694	312,525	23