Naming as business strategy: an analysis of eponymy and debt contracting

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Abstract

This study proposes that naming a firm eponymously is a mechanism that small private firms can use to signal their superior financial performance and commitment to fulfill debt contract obligations. Using 621,614 small private firms in Europe over the period 2008–2018, we find that small private eponymous firms pay significantly lower interest on their debts and have more long-term debt than non-eponymous firms. Our findings are robust to various controls and placebo tests. Additional analyses show that eponymy lowers the cost of debt and facilitates long-term debt via reputation signaling and private information. We also document that the effect of eponymy on debt contracting is most pronounced when there is less financial development and when firms' dependence on external financing is low, consistent with the idea that high-quality firms opt for eponymy when they consider less external financing.

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1 Introduction

Naming firms is an important and highly visible decision that business owners must make. It is not uncommon that some firms bear the names of their owners, and the practice of owner-naming is known as eponymy.[1] Prior literature (Belenzon et al. 2020, 2017; Cabral 2000) finds that eponymous ventures generate a higher return on assets and that the owners of such businesses often exude greater confidence in their operations. More broadly, the naming decision, if done in certain ways, can enable communication of latent information to outside stakeholders (Glynn and Abzug 2002; Ingram 1996; Lee 2001; McDevitt 2011; Wu 2010). While there is a growing interest in identifying entrepreneurial characteristics associated with firm performance, the impact of naming choices, particularly eponymy, on debt contracting has lain relatively unexplored. In this study, we investigate whether eponymous, small, private firms in Europe enjoy a lower cost of debt and have access to debts with a long term to maturity.

When facing borrowers with high information asymmetry, prior literature has established that debtholders charge a higher interest rate to price protect themselves from possible post-contract opportunistic behavior by borrowers (Berger and Udell 1995, 1998, 2006; Childs et al. 2005; Myers 1977). Debtholders also impose shorter terms to maturity to facilitate more frequent reviews of the borrowers' financial conditions (Barclay and Smith 1995; Guedes and Opler 1996; Ozkan 2000; Rajan and Zingales 1995; Stohs and Mauer 1996). This view, however, does not consider the notion that firm reputation and signalling strategies can act as an effective mechanism to mitigate the agency conflicts in debt contracting (Anderson et al. 2003; Diamond 1991b, 1993).[2] In this study, we argue that eponymous firms, which allow owners of small private firms to signal reputation and private information to outsiders (Belenzon et al. 2020, 2017) (lenders in our setting), are associated with a lower cost of debt and longer debt maturity.

Existing theories offer two important reasons why eponymy could be relevant to debt holders. First, naming after the owners is a mechanism for establishing a credible commitment to the firm's stakeholders (Ingram 1996)—lenders in our case. Belenzon et al. (2017) highlight a peculiar asymmetric payoff structure from

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[1] Well-known examples of eponymous firms include Charles Schwab, JP Morgan, Gucci, Guinness, Hewlett-Packard, Hess, Johnson and Johnson, Kroger, Porsche, Proctor and Gamble, Ryanair, Walgreens, and many others. While owner-naming may not be the most popular practice, the number of eponymous firms is not trivial, accounting for approximately 19 percent of small and private European firms (Belenzon et al. 2017), 20 percent of US public firms (Brockman et al. 2018), and 32 percent of the world's top family businesses (EY 2019).

[2] Early theoretical work on reputation and corporate strategy (e.g., Milgrom and Roberts 1986; Weigelt and Camerer 1988; Wilson 1985) suggests that in an incomplete information market, reputation affects firms' choice of strategy because reputation is an intangible asset that earns firms' future rents. Because it is not mandatory for small private firms to disclose financial information (Carney et al. 2015; Cassar, Ittner, and Cavalluzzo 2015), there is limited hard financial information available for these firms (Boot and Thakor 2000; Berger and Udell 2002; Petersen 2004), and debt holders are more likely to lean on soft information to infer performance in private debt contracting (Berger and Udell 1995, 2002; Petersen and Rajan 1994; Sharpe 1990).

running eponymous firms, in which success may not be increased much by a strong association between owners and firms, whereas failure can be professionally costly to entrepreneurs. This asymmetry comes about because entrepreneurs of eponymous firms cannot disassociate themselves from a poor or defunct business. Analogously, eponymous firms that honor their debt contracts may not bring extra credit to the owner's reputation, but failing to meet debt obligations can severely damage the owner's reputation. In cases of debt contract violation, eponymous owners are in a position to suffer significantly more than non-eponymous owners, as both firm and personal reputations are simultaneously impaired. This asymmetric market consequence results in higher reputational concerns for eponymous owners, thereby motivating these owners to fulfill their debt obligations ex ante and curb any possible post-contract opportunistic behavior. Based on the premise that eponymy signals reputation and commitment to lenders, we conjecture that eponymous small private firms may enjoy more favorable treatment from lenders (e.g., a lower cost of debt or more long-term debt), compared to their peers, ceteris paribus.[3]

Second, Belenzon et al. (2020) develop a theoretical framework that demonstrates how eponymy can be jointly related to profit and growth. Specifically, when entrepreneurs face a tradeoff between growth aspirations and reputation payoffs, the signaling value of eponymy, as documented in Belenzon et al. (2017), should be largely diluted by the stronger need to raise funds. The model equilibrium can explain the observation that eponymous firms are often highly profitable but are much slower to grow than non-eponymous firms, and the financing environment can materially shape the strategic choice of eponymy naming among new ventures. Based on this theoretical framework, we argue that lenders interpret eponymous firms' attributes of higher profitability and lower scalability as a latent signal of lower risk-taking, thereby allowing lower debt costs and longer debt maturities for these firms. In addition, the framework of eponymy as a dual signal of high quality and low growth also leads to the prediction that the relationship between eponymy and debt contracting will be of higher significance when a firm's needs for external financing are less pressing and when local financial development is lower.[4]

To empirically test the impact of eponymy on the debt contracting of small, private, self-managed firms, we investigate the relation between eponymy, the cost of debt, and the firm's debt structure for a sample of 621,614 firms in Europe over the period 2008–2018. We measure the cost of debt via interest paid over total interest-bearing borrowings (Francis et al. 2005b; Kim et al. 2011; Pittman

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[3] The idea that entrepreneurs feel pride in their abilities, have fervent personal attachments to their underlying businesses, and signal their strong commitments by naming firms after themselves is intuitive. Eponymy, when viewed as a latent signal of the owner's superior ability and confidence to achieve higher financial performance (Belenzon et al. 2017; Belenzon, Chatterji, and Daley 2020), could effectively help mitigate information asymmetry in external debt financing.

[4] The model in Belenzon et al. (2020) extends that in Belenzon et al. (2017) and allows for variation in scalability of business besides quality. The model implies that in the absence of financing, high-quality firms, whether with or without growth potential, will choose eponymy as a signaling strategy. In contrast, the availability of external financing will drive high quality firms with growth potential to choose non-eponymous names to get better access to capital. This should, in turn, weaken the relationship between eponymy and debt contracting.

and Fortin 2004). We assess a firm's debt structure by calculating the proportion of long-term debt in the firm's total debt structure (Barclay and Smith 1995; Díaz-Díaz et al. 2016; Vig 2013).

We first find that eponymous firms pay a lower cost of debt and borrow more long-term debt, compared with non-eponymous firms in a univariate setting. Controlling for other relevant factors that are known to affect borrowers' credit quality, we also find that eponymous firms, compared with non-eponymous firms, pay a significantly lower cost of debt and borrow more long-term debt in several multivariate analyses. For example, the results of the regression analyses show that the average interest cost savings associated with eponymy range from 68 to 148 basis points per annum, depending on the model specification. Likewise, eponymous firms are associated with 0.6 percent to 3.5 percent higher proportions of long-term debt, depending on the model specification.

To address the possibility that our results are driven by other omitted and correlated variables at the owner and firm levels, we perform several robustness checks, including propensity score matching and adding the owner fixed effect in the regression estimation. Our results are robust to these test designs. We also consider the possibility that eponymous firms merely capture the reputation effect of incorporating any surname in a firm's name (Belenzon et al. 2017; Jung et al. 2019).[5] We address this issue by performing placebo tests using firms whose names contain surname(s) but are not eponymous. We do not find evidence that these firms enjoy a lower cost of debt or exhibit a higher maturity of debt structures. Finally, our results are robust to the inclusion of various high dimensional fixed effects.

We further employ subsamples to understand the various signaling mechanisms through which eponymy affects debt contracting. In our first set of subsample analyses, we examine the role of eponymy in signaling personal reputation to lenders. Belenzon et al. (2017) argue that the rarer the entrepreneur's surname, the higher the reputational effects of eponymy, as the name of the entrepreneur is more identifiable.[6] Consistent with this idea, we find that the influence of eponymy on the cost of debt is stronger for eponymous firms with rarer surnames. There is, however, no noticeable incremental effect of rarer names on debt maturity. The signaling of reputation also suggests that debt holders can price this information ex ante and discount any potential post-contract opportunistic behavior. Consistent with this notion, we find that the effect of eponymy on debt contracting is more pronounced when debt holders should be more concerned with post-contract opportunistic behavior. In particular, we find the effect of eponymy on debt contracting to be stronger for firms

[5] Prior literature shows that a surname may change people's perceptions of a person's quality. For example, Jung et al. (2019) argue that investors who have favorable views of an analyst because of his or her surname are likely to assess the analyst's forecasts as being of more credibility and higher quality. Using favorability ratings from surveys, Jung et al. (2019) find that the market responds more strongly to forecast revisions issued by analysts who have more favorable surnames.

[6] In a study to understand intergenerational mobility, Güell, Rodríguez Mora, and Telmer (2015) use a person's last name to test if inheritance is important for economic well-being. The authors find that rarer names have higher information content about intergenerational mobility and are more indicative of the economic characteristics of individuals.

with fewer tangible assets, firms from countries with low levels of creditor protection, and firms from countries with lower levels of societal trust. We interpret these findings as eponymy being especially pertinent in signaling reputation when lenders should be more concerned with borrowers' potential opportunistic behavior.

In our second set of subsample analyses, we examine the role of eponymy in signaling private information. We document that the effects of eponymy on the cost of debt are stronger for firms that do not appoint an external auditor, younger firms, and firms from countries with lower levels of press freedom. To the extent that external auditors, firm age, and press freedom proxy for both the quantity and quality of information available on private firms, these results support the notion that eponymy provides a relevant signaling mechanism in reducing information asymmetry between firms and lenders.

In the final avenue of inquiry, we investigate how the financing environment across European regions affects the relationship between eponymy and debt contracting. The model in Belenzon et al. (2020) implies that when the external finance availability and need of external finance (as proxied by regional financial development and external finance dependence) increase, the positive relationship between profitability and eponymy should weaken. This occurs as high quality firms with growth potential sort to non-eponymous names to get better access to capital, resulting in a diluted value of eponymy. Applying this logic to the setting of debt contracting, we expect the effect of eponymy on debt contracting to be stronger when regional financial development is low and when firms' external finance dependence is low. We find empirical evidence consistent with this prediction. Last, we also find that eponymous firms are more likely to choose debt financing rather than equity financing, consistent with the notion that these firms prefer to avoid the dilution of owners' control rights.

Our study contributes to the existing literature in three significant ways. First, this study contributes to the literature on firm reputation and debt financing by evaluating the effect of eponymous naming on both the cost of debt and the structure of debts. Using large public family firms, Anderson et al. (2003) show that firms with family shareholding enjoy a lower cost of debt. In a similar vein, Díaz-Díaz et al. (2016) document that family firms have better access to long-term debts. However, family shareholding in publicly listed firms should simultaneously capture a number of factors other than firm reputation, such as lower management entrenchment due to reduced agency conflicts between managers and shareholders (Anderson et al. 2003; Wang 2006). As such, it is still unclear if firm reputation, or a lower level of owner-manager agency conflicts, matters in debt contracting. In our sample of small private firms, there is a clear absence of such agency conflicts because the owners simultaneously manage their businesses. Critically, in eponymous firms, the personal reputation of the entrepreneurs is strictly tied to their businesses, leading to an amplification of any reputation effect. Our results indicate a central role for reputation-enhancing strategies, in that eponymous firms enjoy more favorable debt contracting.

Second, this study explores a new aspect of soft information that is relevant in debt contracting, especially for small private firms. Due to an inherently high level of opacity, small private firms are primarily reliant on banks for debt financing.

Although banks possess resources and skills in extracting and incorporating soft information in credit risk assessments (Petersen 2004), deriving such soft information often involves significant transaction costs and production costs. Notably, it is much more difficult to communicate soft information in an opaque market where small private firms operate.[7] Our study finds that eponymy, a seemingly simple naming strategy, can act as an important source of soft information.[8] Most importantly, communicating eponymy and the associated signals to debt holders should incur minimal costs.

Finally, the findings in our study offer support for the theoretical framework in Belenzon et al. (2020) that models eponymous naming as a firm choice that is jointly connected to growth and profit. While Belenzon et al. (2020) largely focus on the role of the external financing environment in explaining the decision of eponymy versus non-eponymy among new ventures, our study investigates the effect of eponymy on observable outcomes of debt financing. Considering the role of growth prospects and financing needs, we find that the effect of eponymy on debt contracting is higher among firms operating in regions with lower financial development and in industries with lower dependence on external financing. In addition, corroborating the idea that eponymous firms are of high quality but low growth, we find that these firms are less likely to issue equity but more likely to issue debt, if they choose to seek external financing.

The remainder of the study is organized as follows. Section 2 reviews the literature and develops our main hypotheses. Section 3 describes the research design, data sources, and sample selection, reports descriptive statistics on major variables, and presents the results of univariate tests. Section 4 presents the results of our main analyses as well as the results of the additional analyses. The final section, Sect. 5, concludes the paper.

2 Literature review and hypothesis development

Firm reputation is a common mechanism to signal private information (Bagwell and Riordan 1991; Fombrun and Shanley 1990; Milgrom and Roberts 1986; Spence 1973; Weigelt and Camerer 1988) and to mitigate lenders' fear of deliberate wealth expropriation (Kreps 1990; Shleifer and Vishny 1997). Specifically, lenders rely on firms' established reputation to configure firms' characters

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[7] For example, time and efforts in building a good relationship between a business and a bank do not immediately transmit to another good relationship between the business and a new bank (Petersen and Rajan 1994).

[8] While large public firms can reduce information asymmetry via a broad range of choices, such as producing high-quality financial reports, hiring and retaining reputable managers, and obtaining recommendations from a third party (Cao, Myers, and Omer 2012; Francis, Huang, Rajgopal, and Zang 2008; Spence 1973), small private firms have fewer communication mechanisms. Even in cases where financial information can be made available, the quality and credibility of such information are often inferior to that of public firms (Ball and Shivakumar 2005). Eponymy is adopted when the owners believe the business is sufficiently profitable and of high quality (Cabral 2000; Belenzon et al. 2017).

(Weigelt and Camerer 1988) and also as a guide in various lending decisions (Diamond 1989, 1991a, b; John and Nachman 1985; Shleifer and Vishny 1997). Empirical evidence suggests that good reputation helps firms reduce information asymmetry and, therefore, substantially mitigates the agency conflicts of debts (Anderson et al. 2003; Diamond 1989, 1991b). To reap the economic benefits of reputation, large public firms can engage in various reputation-building activities, including recruiting reputable managers, obtaining a third party's recommendations, and providing high-quality financial reports (Cao et al 2012; Francis et al 2008; Spence 1973; Wang 2006).

Reputation building strategies are, however, much harder for small private firms. These firms often have limited financial resources, low media visibility, inadequate institutional affiliations, and low-quality financial reports (Ball and Shivakumar 2005; Bigus and Hillebrand 2017; Burgstahler et al. 2006).[9] Because of these constraints, lenders often rely on soft information about small private firms to infer their performance, risks, and credibility and to determine the appropriate types of lending and interest costs (Berger and Udell 1995, 1998, 2002, 2006; Cassar et al. 2015; Petersen and Rajan 1994). For example, the literature on relationship lending shows that banks infer small firms' reputation and credibility from repeated borrowings and track records (e.g., Berger and Udell 1995; Cassar et al. 2015; Diamond 1991b; Petersen and Rajan 1994; Shleifer and Vishny 1997). This relationship lending, however, takes time and is costly to build and maintain (Berger and Udell 1995). In addition, relationship lending is mostly dependent on banks' characteristics and less influenced by borrowers' qualities (Berger and Udell 2002; Elsas 2005; Elyasiani and Goldberg 2004).[10]

Prior studies have established that a firm's name is the bearer of reputation that summarizes the firm's attributes, and that this name can represent a large amount of soft information (Tadelis 1999).[11] Some firm names associate the firms with a bad reputation (McDevitt 2014; Wu 2010), whereas other firm names could be an effective strategy to demonstrate the owner's commitment to high quality (Cabral 2000; Choi 1998; Ingram 1996) and to alleviate the problem of information

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[9] Small private firms suffer from informational opacity problems, as they are usually only obliged to disclose rudimentary information about their financial position and performance (Berger and Udell 1998). There is a more severe information asymmetry issue between small private firms and lenders due to the lack of hard information.

[10] Prior studies indicate that relationship lending to small business is dependent on the willingness of banks, the physical distance to borrowers, the concentration of local banks, the internal structures of banks, the length of the banking relationship, the number of banking relationships with other banks, the number of other services from the same bank, bank regulations, technology, and the extent to which the bank can influence the borrower's management (Berger and Udell 2002; Elsas 2005; Elyasiani and Goldberg 2004). Relationship lending, therefore, reflects the quality of a particular banking relationship but does not necessarily indicate the quality of borrowers. This banking relationship can disappear when the bank ceases operation (Elyasiani and Goldberg 2004), and is not transferrable to other banks (Berger and Udell 1995).

[11] There is evidence that firms deliberately choose particular names in order to associate with (or disassociate from) a good (bad) reputation (Wu 2010). Specifically, firms with poor reputations are more likely to make radical name changes and tend to adopt the names of their better-recognized brands to associate themselves with a good reputation.

asymmetry in the product market (Choi 1998). For example, naming a firm after the corporate parent is a mechanism for establishing a credible commitment to quality service (Ingram 1996), while random firm names are often associated with low-quality service (McDevitt 2014).

In this study, we focus on naming firms after the owners, known as eponymy. We posit that eponymy leads to lower costs of borrowing by signaling the borrowers' quality in the financial market. First, borrowers' opportunistic behavior to lenders should create much greater impacts on eponymous owners than on non-eponymous owners because eponymy generates a tight reputational association between the owner and the firm (Belenzon et al. 2017; Deephouse and Jaskiewicz 2013). Any poor financial performance by an eponymous firm directly impairs the owner's reputation (Belenzon et al. 2017). Similarly, any post-contract opportunistic behavior by an eponymous firm to its lenders can severely damage the owner's personal reputation.[12] Eponymous owners are, therefore, likely to put more effort into fulfilling their debt obligations ex ante. As a result, lenders may have greater confidence in eponymous firms and lower their interest charges.

Second, Belenzon et al. (2020) develop a theoretical framework to show that eponymous firms, which are often highly profitable, may strategically choose much slower growth rates and less scalable business, compared with non-eponymous firms. Based on this theoretical framework, we argue that from the lenders' perspective, eponymous firms with higher profitability, lower scalability, and poor growth opportunity may be interpreted as a latent signal of lower risk-taking. Therefore, the debtholders are willing to offer lower interest charges to the eponymous firms. Based on the arguments mentioned above, this study has the following hypothesis:

H1: Eponymous firms are associated with a lower cost of debt.

Extant literature has also established the importance of short-term debts in mitigating agency conflicts (Barnea et al. 1980; Childs et al. 2005; Myers 1977). In a leveraged firm, equity holders can expropriate wealth from their debt holders by rejecting profitable projects (Myers 1977) and undertake riskier investment projects (Jensen and Meckling 1976). To deal with these agency conflicts of debt, debt holders can impose shorter debt maturity to borrowers to facilitate more frequent renegotiation of loan contract terms. In particular, short-term debt can be an effective mechanism for monitoring borrowers, as it alleviates the underinvestment problem (Myers 1977), allows creditors to effectively monitor borrowers with the least effort (Rajan and Winton 1995), and facilitates efficient

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[12] A failed eponymous firm further impairs the owner's personal reputation and results in a significant financial burden for the owner's family (Shepherd 2009; Ucbasaran et al. 2013). While failure to meet debt contract obligations and post-contract opportunistic behavior may also cause concerns to non-eponymous firms, non-eponymous owners may find them easier to cope with, as their names are not on the businesses (Belenzon et al. 2017). Hence, eponymy generates a direct reputational effect.

liquidation by transferring control rights to creditors if the manager fails to pay (Hart and Moore 1998).

Diamond (1991b) nevertheless argues that a firm's good reputation can reduce the need for constant monitoring, since firms with good reputations have more to lose when they default. Following Diamond (1991b), empirical studies document evidence on the role of firm reputation in determining debt maturity. For example, due to family owners' reputation concerns, family-controlled firms have a longer debt maturity structure than non-family firms (Anderson et al. 2003; Díaz-Díaz et al. 2016). The family owners' reputation concern becomes greater when the firms are named after the owners (Belenzon et al. 2017; Deephouse and Jaskiewicz 2013). Owners identify more strongly with their firms when the firms are named eponymously, and this heightened identification motivates family members to pursue a favorable reputation. Eponymous owners' strong motivation to maintain a good reputation helps reduce their incentives to expropriate their lenders' wealth and lowers the risk of opportunistic behavior. In addition, eponymy could signal the owner's superior performance and lower growth rates (Belenzon et al. 2017, 2020), which in turn enhances the lower risk-taking potential perceived by lenders. Consequently, lenders may require less monitoring and are likely to grant long-term debt to eponymous firms. This leads to our second hypothesis:

H2: Eponymous firms are associated with a longer debt maturity structure than non-eponymous firms.

3 Research design, data, and sample

3.1 Research design

We use the following model to test H1 and H2:

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\begin{aligned}
Costofdebt_{it}/Long-termDebtratio_{it} = {} & \beta_0 + \beta_1 Eponymous_{it} + \beta_2 Profitability_{it} \\
& + \beta_3 Firmsize_{it} + \beta_4 Firmage_{it} + \beta_5 Salesgrowth_{it} \\
& + \beta_6 Salesvolatility_{it} + \beta_7 Discretionaryaccruals_{it} \\
& + \beta_8 Assettangibility_{it} + \beta_9 Benchmarkrates_{it} + \beta_{10} Currentratio_{it} \\
& + \beta_{11} Interestcoverageratio_{it} + \beta_{12} Gearing_{it} + \beta_t Year_t \\
& + \beta_j Industry_j + \beta_c Country_c + \varepsilon_{it}.
\end{aligned}
$$

(1)

The dependent variable when we test H1, *Cost of debt*, is the interest paid in year *t* divided by the average of short-term loans and long-term debts at the beginning and end of each year (Francis et al. 2005a; Francis et al. 2005b; Kim et al. 2011; Pittman and Fortin 2004). The dependent variable when we test H2 is *Long-term debt ratio* which is the proportion of long-term debts in year *t* in a firm's total debts in year *t* (Barclay and Smith 1995; Vig 2013). The main variable of interest in both equations, *Eponymous*, is an indicator variable that equals one for firms named after

the major owners and zero otherwise.,[13][14] A significantly negative β_1 coefficient when the dependent variable is *Cost of debt* and a significantly positive β_1 coefficient when the dependent variable is *Long-term debt ratio* offer supports for hypotheses 1 and 2, respectively.

The model specifications include a variety of firm-specific characteristics as control variables, to isolate the effect of the naming strategy from the associated effects of other firm-specific credit risk factors. When the dependent variable is *Cost of debt*, *Profitability* is expected to negatively correlate to *Cost of debt* because profitable firms service their debts better (Kim et al. 2011).[15] Banks are likely to charge profitable firms lower interest rates. The literature on the cross-sectional determinants of loan pricing, in general, finds that *Firm size* is inversely related to credit risk (Petersen and Rajan 1994; Pittman and Fortin 2004). *Firm size* is measured by three variables: *ln(Assets)*, *ln(Sales)*, and *ln(Employees)* (Belenzon et al. 2017). These measures are selected because they are the main factors in determining the size of a business in Europe.[16] We include *Firm age*, as eponymy signaling is strongest for young firms (Belenzon et al. 2017). *Sales growth* controls for the effect of a firm's growth potential on the interest costs (Belenzon et al. 2020; Francis et al. 2005b; Kim et al. 2011). *Discretionary accruals*, derived from the modified cross-sectional Jones model as described in Kothari et al. (2005), measure financial reporting quality and have a negative relation with costs of debt (Costello and Wittenberg-Moerman 2011;

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[13] To determine whether a firm is eponymous, we use STATA's MatchIt command to identify if the entire last name of the owner is included in the firm name. MatchIt provides a similarity score between two different text strings by performing various string-based matching techniques (Raffo 2017). A similarity score of 1 implies a perfect similarity and therefore indicates an eponymous firm. For example, a firm named "AUTOHAUS PIRKER GMBH & CO KG" whose owner is named "PIRKER" returns a similarity score of 1 and is coded 1 under the eponymous dummy; whereas an individual named "MASER" who owns a firm named "JOSEF MAESER GMBH" has a similarity score of 0 and is coded 0 for the eponymous dummy.

[14] We follow Belenzon et al. (2017) to clean the data. First, shareholder last names (SHN) and company names (COMP) are standardized by cleaning all non-alphabetic characters and converting all strings to uppercase characters. Second, the SHN variable is cleaned to distinguish between individual shareholders and legal-entity shareholders. For this process, we use the lists of business-related terms and legal-entity endings (e.g., PLC, LLC, GMBH, SAS) identified by Belenzon et al. (2017). All SHNs that are matched with the lists of business-related terms, and legal-entity endings are dropped from the dataset. The remaining observations are then further cleaned by removing preceding titles such as "MR," "DR," "JR," "MADAME," and "MME," as well as other common words like "FAMILY," "CHILDREN," "MEMBERS," and "THE OTHERS." Third, the SHN and COMP variables are split into individual words. For example, the firm name "AUTOHAUS PIRKER GMBH & CO KG" is cleaned to "AUTOHAUS PIRKER" and then split into "AUTOHAUS" and "PIRKER." Most of owners' last names are one word. Last names consisting of multiple words are split into separate words. Finally, we are able to use MatchIt to match each last name of the major owner to each word of their firm name. This process is randomly verified by extensive manual checks. After manual checks, we create a dummy for eponymy that receives the value of 1 for firms whose names include the name of the major owner and 0 for all other firms. There are 289,803 eponymy records, or 17.21 percent of the firm-year observations in the final estimation sample used in the main analyses.

[15] We use profitability instead of ROA to avoid a possible correlation between ROA and asset tangibility (see, for example, Kim et al. 2011).

[16] The definitions of European small and medium-sized enterprises are available on https://ec.europa.eu/growth/smes/business-friendly-environment/sme-definition_en and in Appendix A.

Francis et al. 2005c; Minnis 2011; Sengupta 1998).[17] A higher *Asset tangibility* is expected to reduce the costs of borrowing, as more collateral decreases the riskiness of debt (Bharath, Sunder, and Sunder 2008; Kim et al. 2011).

We include *Current ratio*, *Gearing*, *Interest coverage ratio*, and *Sales volatility* to account for differences in the firms' operating and financial risks (Bharath et al. 2008; Chang et al. 2009; Francis et al. 2005a; Francis et al. 2005b; Kim et al. 2011; Pittman and Fortin 2004). We also include *Benchmark rates* of individual countries, as our dataset contains 28 countries exhibiting different minimum lending rates. Finally, *Year*, *Industry*, and *Country* dummies control for year, industry, and country fixed effects.[18] *Industry* dummies are based on two-digit US SIC codes. ε_{it} is an error term. Standard errors are clustered by firm following Belenzon et al. (2017).

When the dependent variable is *Long-term debt ratio*, we follow the findings of prior studies to select control variables. Previous literature on debt maturity structure has established that firm size, firm age, firm quality, liquidity risk, operating risk, and default risk can have systematic effects on the choice of debt maturity (Barclay and Smith 1995; Diamond 1991a; Díaz-Díaz et al. 2016; Fung and Goodwin 2013; Guedes and Opler 1996; Gul and Goodwin 2010; Stohs and Mauer 1996). In this study, we include all these factors as control variables. To be consistent with Eq. 1, we measure firm size using total assets, sales, and the number of employees. Firm size can be positively or negatively related to the debt structure (Díaz-Díaz et al. 2016; Fung and Goodwin 2013; Gul and Goodwin 2010), and, therefore, we do not have a particular prediction for the coefficient on firm size. Following Barclay and Smith (1995), we assess firm quality by estimating the firm's discretionary accruals and expect a negative coefficient.

The factors that mitigate lenders' concern about firms' liquidity and default risks are captured by the firms' *Profitability*, *Asset tangibility*, *Current ratio*, and *Interest coverage ratio* (Barclay and Smith 1995; Díaz-Díaz et al. 2016; Fung and Goodwin 2013; Guedes and Opler 1996; Gul and Goodwin 2010). We expect positive relationships between these variables and *Long-term debt ratio*, as firms reporting higher profits and owing more tangible assets are less likely to provoke financial reviews by lenders. In addition, we expect a positive relation between *Gearing* and *Long-term debt ratio*, since highly indebted firms would prefer longer-term debts to control their higher financial risk (Diamond 1993; Stohs and Mauer 1996). Finally, we include *Benchmark rates* to control for differences in the country-level borrowing risk, and *Year*, *Industry*,

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[17] We use the absolute value of performance-adjusted discretionary accruals, where normal total accruals are estimated for each country-industry year using the modified cross-sectional Jones model, as described in Kothari et al. (2005). The estimation of performance-adjusted discretionary accruals involves total assets, the differences between changes in revenue and changes in debtors, tangible assets, and lagged ROA. Further details of these calculations are in Appendix B.

[18] We do not include firm fixed effects in our main regression, as there is no time-series change in the eponymy status in our sample. In the final sample, there are 103,931 eponymous firms and 289,803 eponymous firm-year observations. Within the group of eponymous firms, we do not observe changes in the family names of the leading shareholders or changes in firm names. While there are changes in the leading shareholders' ownership, these changes are within a family and do not lead to changes in the family names of the leading shareholders. Belenzon et al. (2017) also document that changes in eponymy status are very rare.

and *Country* dummies to control for unobservable heterogeneity in the cross-sectional analyses. Standard errors are clustered by firm following Belenzon et al. (2017).

3.2 Sample and data sources

The initial sample for this study consists of all privately traded European firms that are included in Orbis, a database maintained by Bureau van Dijk (BvD). BvD obtains its data from regulatory filings, third-party vendors, and its own proprietary sources. Orbis includes extensive private firms in its data collection, allowing for an in-depth examination of small private firms. Orbis also contains very detailed ownership information, including individuals' shareholdings, management details, and financial information.

European firms provide an appealing setting in which to examine the research question in our study, for two reasons. First, more than 60 percent of companies in Europe are family businesses, of which there are a considerable number of small private firms.[19] Second, there is a great variety of distinct last names in European countries (Güell et al. 2015). A large number of distinct surnames facilitates our tests on the reputation effect from eponymy, as each surname is likely to be uniquely associated with one family.

Our sample includes only those firms that are located in Europe and registered as a private limited partnership or sole trader/proprietorship. The firms' owners have to be natural persons and hold at least 50 percent of the firms' equity stakes. These criteria ensure that our selection satisfies the definition of self-managed family firms specified by the European Commission.[20] This initial screen generates 2,624,531 firms and 36,128,599 firm-year observations.

Table 1 discusses our sample screening steps and data cleaning procedures. Only firms with adequate ownership information are retained. The sampling procedure further excludes firms that have insufficient data to measure the variables included in the regression models. To alleviate potential outlier problems, we winsorize all continuous variables at the 1st and 99th percentiles. After applying the selection criteria, the sample to test the impacts of *Eponymy* on *Cost of debt* and *Long-term debt ratio* consists of a total of 1,684,012 firm-year observations (from 621,614 firms) over 2008–2018, of which 289,803 are eponymous.[21]

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[19] The sources of the proportion of family firms in Europe are from https://ec.europa.eu/growth/smes/promoting-entrepreneurship/we-work-for/family-business_en and http://www.europeanfamilybusinesses.eu/family-businesses/ facts-figures.

[20] The definition of a family firm is available on https://ec.europa.eu/growth/smes/supporting-entrepreneurship/family-business_en.

[21] All firms are classified as small-sized firms in Orbis and meet the European Commission's definition of small or micro firms. The size classification in Orbis is a firm's registered firm size, which is the primary source that distinguishes small firms from larger firms in this study. We use the European Commission's definitions of firm size as an additional confirmation only, because the European Commission emphasizes that the definitions are guidelines only and the exact classifications depend on the status of individual firms. The firm size classification of the European Commission is in EURO. Given that the exchange rates from EURO to USD in 2008-2018 were between 1.1 to 1.5, the average of 1.25 was used to assess the firm size in our sample. The definitions of small and micro firms are from https://ec.europa.eu/growth/smes/sme-definition_en. Appendix A lists the European Commission's definitions of small and medium-sized enterprises.

Table 1 Data Search Criteria and Sample Screening

Orbis: Search step	Number of firms
1. Status: Active companies, Inactive companies, Unknown situation	318,116,518
2. World region, country & subdivisions: Western Europe, Eastern Europe	111,594,703
3. Standardized legal form: Private limited company, Partnership, Sole trader/ proprietorship	85,898,469
4. Only directors or managers who are also shareholders and only directors or managers who are individuals	29,210,894
5. Short Term Loans: All companies with at least a known value in any year of 2007 to 2018	9,059,065
6. Long Term Debt: All companies with at least a known value in any year of 2007 to 2018	6,980,424
7. Interest Paid: All companies with at least a known value in any year of 2007 to 2018	2,624,531
Boolean search generates	2,624,531

This generates 2,624,531 firms and 36,128,599 firm-year observations
The sample screening process below starts with 36,128,599 firm-year observations

Data cleaning	Number of observations
Initial sample	36,128,599
minus missing ownership information	
total ownership less than 98.01 percent	1,204,275
missing ownership percentage	11,083,033
minor shareholders	3,769,835
missing surname	7,105,291
missing firm name	9,181
	12,956,984
also minus missing financial data	
negative dollar values[\]	22,803
missing values for long-term debts and short-term loans	10,058,387
missing values for the control variables	1,191,782
The final sample contains 621,614 firms of 1,684,012 firm-year observations	1,684,012

When searching in Orbis, the next search step incorporates the previous search step. For example, search step 3 is the combination of search criteria 1, 2, and 3

Firms with total shareholding of less than 98.01 percent are deleted due to the unknown source of ownership. For example, company A displays three shareholders, who own 10 percent, 15 percent, and 25 percent. Because the total percentage known is 50 percent and the source of the other 50 percent is unknown, company A is deleted during this process. We use 98.01 percent as the cutoff because Orbis defines wholly owned firms as 98 percent or more

Observations with unknown "shareholder direct %" in a year are deleted. Orbis uses "shareholder direct %" to define the percentage of ownership held by the ultimate shareholders. This information is required to determine the major shareholders, which are then used to determine if a firm is eponymous

Minor shareholders are deleted, as only major shareholders' surnames are used to identify eponymy (Belenzon et al. 2017). Following Belenzon et al. (2017), major shareholders' "shareholder direct %" is more than 50 percent in a year

Compared with the data cleaning process in Belenzon et al. (2017), which has to convert local characters to English for name matching purposes, the company names and shareholders' full names are in English in Orbis. Therefore, we do not need to perform translations

This includes negative interest paid, negative loans, negative long-term debts, and negative total assets

Panel A of Table 2 lists non-eponymous and eponymous firms by country. In the sample, 32.28 percent of firms are from Italy, 17.16 percent from Spain, 10.78 percent from Portugal, 8.57 percent from Bulgaria, 6.07 percent from Russia, 3.71 percent from France, and 21.43 percent from the other 21 European nations. Our sample bears some resemblance to the sample in Belenzon et al. (2017), of which 94 percent is from Spain, France, Great Britain, Portugal, Norway, and Italy.

Table 2, Panel B, presents the distributions of eponymous and non-eponymous firm–years in nine industries using two-digit US SIC codes. Eponymous firms are more prevalent in Manufacturing (62,018 firms), Construction (55,460 firms), and Wholesale Trade (47,039 firms). The share of eponymous firms varies across industries, from a maximum of 21.4 percent in Manufacturing to a minimum of 0.1 percent in Public Administration. Compared with the sample in Belenzon et al. (2017), the most represented industries are Construction, Services, and Wholesale Trade. Panel C of Table 2 shows the distributions of eponymous and non-eponymous firms year by year. The proportion of eponymous firms in the sample is highest in 2008 and lowest in 2018.

3.3 Descriptive statistics and univariate analysis

Panel A of Table 3 presents descriptive statistics for the full sample of 1,684,012 firm-year observations over the period 2008–2018. The definitions of all variables in the table are in Appendix B. All financial data are in USD thousands. The mean (median) *Cost of debt* is 0.0818 (0.0399) with a relatively large standard deviation of 0.1625, suggesting that the variable is positively skewed. The mean and median values of *Long-term debt ratio* are 0.248 and 0.1516, respectively. This suggests that small private firms, on average, have relatively lower long-term debt in their debt structures.

On average, 17.21 percent of the observations in the sample are eponymous. The proportion of eponymous observations is slightly lower than the proportion in Belenzon et al. (2017), who record 18.9 percent of firm-year observations as eponymous. The mean and median values of *Profitability* are 0.0346 and 0.0247, respectively, suggesting that these firms experienced a low profit margin during the sample period. The measures of *Firm size* have means (medians) of 6.8604, 6.8773, and 2.1151 (6.7799, 6.8112, and 1.9459) for total assets, sales, and the number of employees, with relatively small standard deviations from 1.3501 to 1.6505. These small variations in the measures of size are not surprising, given that the sample consists of relatively small, privately held firms. While the sample firms experienced some volatility in sales (mean of 0.2727), there were general increases in sales (mean of 0.0787). *Asset tangibility*, measured by tangible assets divided by total assets, is 0.2792. On average, the firms maintain a good *Current ratio* of 2.4821 and a high *Interest coverage ratio* of 12.084. Finally, the financial gearing is relatively high, with debts amounting to 66.6 percent of total assets, which is consistent with the expectation that debt financing is important to small privately held firms.

In panel B of Table 3, the full sample (N=1,684,012) is partitioned into subsamples of non-eponymous firms (N=1,394,209) and eponymous firms (N=289,803). As shown in the first rows, the cost of debt is significantly lower for the eponymous subsample than for the non-eponymous subsample (6.95 percent versus 8.43 percent). The

Table 2 Summary Statistics

Panel A—Distribution of Non-Eponymous and Eponymous Observations across Countries

Countries	Non-Eponymous		Eponymous		Total	
	Obs	Percent	Obs	Percent	Obs	Percent
Austria	367	0.03%	252	0.09%	619	0.04%
Belgium	57	0.00%	43	0.01%	100	0.01%
Bosnia and Herzegovina	1,943	0.14%	265	0.09%	2,208	0.13%
Bulgaria	125,604	9.01%	18,758	6.47%	144,362	8.57%
Czechia	51,736	3.71%	5,834	2.01%	57,570	3.42%
Denmark	362	0.03%	211	0.07%	573	0.03%
Finland	29,293	2.10%	7,443	2.57%	36,736	2.18%
France	46,685	3.35%	15,804	5.45%	62,489	3.71%
Germany	21,176	1.52%	11,127	3.84%	32,303	1.92%
Greece	1,730	0.12%	595	0.21%	2,325	0.14%
Hungary	13	0.00%	3	0.00%	16	0.00%
Ireland	723	0.05%	260	0.09%	983	0.06%
Italy	453,561	32.53%	90,103	31.09%	543,664	32.28%
Latvia	40,222	2.88%	364	0.13%	40,586	2.41%
Luxembourg	75	0.01%	32	0.01%	107	0.01%
Norway	39,380	2.82%	12,161	4.20%	51,541	3.06%
Poland	5,695	0.41%	751	0.26%	6,446	0.38%
Portugal	132,585	9.51%	48,998	16.91%	181,583	10.78%
Romania	3,807	0.27%	148	0.05%	3,955	0.23%
Russia	101,797	7.30%	409	0.14%	102,206	6.07%
Serbia	626	0.04%	42	0.01%	668	0.04%
Slovakia	60,016	4.30%	3,359	1.16%	63,375	3.76%
Slovenia	9,082	0.65%	3,031	1.05%	12,113	0.72%
Spain	226,762	16.26%	62,280	21.49%	289,042	17.16%
Sweden	21	0.00%	9	0.00%	30	0.00%
Turkey	13	0.00%	3	0.00%	16	0.00%
Ukraine	5,513	0.40%	15	0.01%	5,528	0.33%
United Kingdom	35,365	2.54%	7,503	2.59%	42,868	2.55%
Total	1,394,209	100%	289,803	100%	1,684,012	100%

Panel B—Distribution of Non-Eponymous and Eponymous Observations Across Industries

Industries	Non-Eponymous		Eponymous		Total	
	Obs	Percent	Obs	Percent	Obs	Percent
Construction	172,666	12.38%	55,460	19.14%	228,126	13.55%
Finance, Insurance & Real Estate	70,935	5.09%	11,757	4.06%	82,692	4.91%
Manufacturing	294,721	21.14%	62,018	21.40%	356,739	21.18%
Mining	24,500	1.76%	4543	1.57%	29,043	1.72%
Public Administration	1630	0.12%	292	0.10%	1922	0.11%
Retail Trade	188,969	13.55%	40,885	14.11%	229,854	13.65%
Services	285,107	20.45%	41,258	14.24%	326,365	19.38%

Table 2 (continued)

Transportation & Public Utilities	95,867	6.88%	26,134	9.02%	122,001	7.24%
Unclassified	1419	0.10%	417	0.14%	1836	0.11%
Wholesale Trade	258,395	18.53%	47,039	16.23%	305,434	18.14%
Total	1,394,209	100%	289,803	100%	1,684,012	100%

Panel C—Distribution of Non-Eponymous and Eponymous Observations across Years

Years	Non-Eponymous		Eponymous		Total	
	Obs	Percent	Obs	Percent	Obs	Percent
2008	682	0.05%	219	0.08%	901	0.05%
2009	3,900	0.28%	962	0.33%	4,862	0.29%
2010	37,546	2.69%	10,014	3.46%	47,560	2.82%
2011	69,353	4.97%	17,978	6.20%	87,331	5.19%
2012	94,930	6.81%	24,425	8.43%	119,355	7.09%
2013	127,609	9.15%	29,483	10.17%	157,092	9.33%
2014	150,237	10.78%	27,645	9.54%	177,882	10.56%
2015	260,773	18.70%	55,937	19.30%	316,710	18.81%
2016	312,008	22.38%	62,595	21.60%	374,603	22.24%
2017	252,435	18.11%	47,033	16.23%	299,468	17.78%
2018	84,736	6.08%	13,512	4.66%	98,248	5.83%
Total	1,394,209	100%	289,803	100%	1,684,012	100.00%

Notes. Panel A of Table 2 presents the distribution of eponymous and non-eponymous firm-year observations for 28 countries. Panel B presents the distribution of eponymous and non-eponymous observations based on two-digit US SIC classifications. Panel C of Table 2 presents the distribution of eponymous and non-eponymous firm-year observations over 11 years from 2008 to 2018. We consider a firm as eponymous (non-eponymous) if the last name of the firm owner is (not) included in the firm name

long-term debt ratio is significantly higher for eponymous firms than for non-eponymous firms (27.69 percent versus 24.19 percent). While these univariate comparisons are consistent with the hypotheses, the mean and median of other variables also differ significantly between the two subsamples. Thus, the differences in *Cost of debt* and *Long-term debt ratio* between non-eponymous and eponymous are only suggestive, because other differences between the firms in the subsamples are not properly controlled. Panel B emphasizes the importance of controlling for the relevant firm-level characteristics.[22]

4 Main results and additional tests

4.1 Main results

Table 4 presents the estimation results for the relationship between *Eponymous* and *Cost of debt* in columns 1 to 3, and for the impact of *Eponymous* on *Long-term debt*

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[22] In a later section with robustness tests, we employ propensity score matching (PSM) to minimize the differences in firm characteristics between the two groups. After employing PSM, the differences largely disappear. The results using the sample after PSM are generally similar to our main results.

Table 3 Descriptive Statistics for the Full Sample

Panel A—Distributional Properties (N = 1,684,012)

Variable	Mean	SD	Q1	Median	Q3
Cost of debt	0.0818	0.1625	0.023	0.0399	0.073
Long-term Debt ratio	0.248	0.2713	0	0.1516	0.4211
Eponymous	0.1721	0.3775	0	0	0
Profitability	0.0346	0.1617	0.0054	0.0247	0.0694
ln(Assets)	6.8604	1.5178	5.8141	6.7799	7.8144
ln(Sales)	6.8773	1.6505	5.7714	6.8112	7.8868
ln(Employees)	2.1151	1.3501	1.0986	1.9459	2.8904
ln(Firm age)	2.5186	0.7187	2.0794	2.5649	3.0445
Sales growth	0.0787	0.4716	-0.1358	0.0033	0.1818
Sales volatility	0.2727	0.3624	0.0667	0.1514	0.3219
Discretionary accruals	0.0088	0.0033	0.0071	0.0088	0.0103
Asset tangibility	0.2792	0.2597	0.0560	0.2000	0.448
Benchmark rates	0.0286	0.0259	0.0149	0.0186	0.0371
Current ratio	2.4821	3.8570	1.0345	1.4191	2.2813
Interest coverage ratio	12.084	31.466	1.2857	3.2308	10.333
Gearing	0.666	0.2337	0.5065	0.7091	0.8613

Panel B—Distributional Properties by Eponymous Status

Variables	Non-Eponymous minus Eponymous		Eponymous observations				Non-Eponymous observations			
	t Test	Wilcoxon Test	N	Mean	Median	SD	N	Mean	Median	SD
Cost of debt	0.0148***	0.0054***	289,803	0.0695	0.0355	0.1436	1,394,209	0.0843	0.0409	0.1661
Long-term Debt ratio	-0.0350***	-0.0621***	289,803	0.2769	0.2026	0.2695	1,394,209	0.2419	0.1405	0.2713
Profitability	0.0032***	0.0022***	289,803	0.0320	0.0229	0.1480	1,394,209	0.0352	0.0251	0.1644
ln(Assets)	-0.1223***	-0.117***	289,803	6.9617	6.8763	1.5117	1,394,209	6.8394	6.7593	1.5182
ln(Sales)	-0.0995***	-0.0773***	289,803	6.9597	6.8752	1.6538	1,394,209	6.8601	6.7979	1.6493

Table 3 (continued)

ln(Employees)	0.0436***	0.0000****	289,803	2.0790	1.9459	1.2698	1,394,209	2.1226	1.9459	1.3661
ln(Firm age)	-0.1985***	-0.2077****	289,803	2.6829	2.7726	0.7160	1,394,209	2.4845	2.5649	0.7146
Sales growth	0.0350***	0.012***	289,803	0.0497	-0.0062	0.4056	1,394,209	0.0847	0.0058	0.4840
Sales volatility	0.0576***	0.0242***	289,803	0.2250	0.1319	0.2939	1,394,209	0.2826	0.1561	0.3743
Discretionary accruals	-0.0001****	-0.0001****	289,803	0.0088	0.0089	0.0027	1,394,209	0.0088	0.0088	0.0034
Asset tangibility	-0.0107****	-0.0283****	289,803	0.2881	0.2230	0.2484	1,394,209	0.2774	0.1947	0.2619
Benchmark rates	0.0013***	-0.0025***	289,803	0.0275	0.0198	0.0229	1,394,209	0.0288	0.0174	0.0264
Current ratio	-0.1835****	-0.1176****	289,803	2.6340	1.5176	3.9564	1,394,209	2.4505	1.4	3.8352
Interest coverage ratio	0.5463****	0.1591***	289,803	11.6313	3.0909	30.5115	1,394,209	12.1777	3.25	31.6594
Gearing	0.0187***	0.029***	289,803	0.6505	0.6853	0.2282	1,394,209	0.6693	0.7143	0.2347

Notes. Panel A of Table 3 provides summary statistics for the main variables used in the regression analyses. Panel B presents mean and median comparison tests for eponymous versus non-eponymous firms. All variables are defined in Appendix B

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

Table 4 Regression Results of Eponymy and Debt Contracting

	Cost of debt			Long-term Debt ratio		
Variables	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
Eponymous	-0.0148***	-0.0114***	-0.0068***	0.0350***	0.0280***	0.0060***
	(0.0004)	(0.0004)	(0.0004)	(0.0010)	(0.0007)	(0.0007)
Profitability		0.0044***	-0.0052***		0.0714***	0.0797***
		(0.0010)	(0.0010)		(0.0021)	(0.0019)
ln(Assets)		-0.0099***	-0.0135***		0.0284***	0.0396***
		(0.0002)	(0.0003)		(0.0005)	(0.0004)
ln(Sales)		0.0012***	0.0053***		-0.0273***	-0.0304***
		(0.0002)	(0.0003)		(0.0004)	(0.0004)
ln(Employees)		0.0045***	0.0016***		-0.0063***	-0.0081***
		(0.0002)	(0.0002)		(0.0003)	(0.0003)
ln(Firm age)		0.0067***	0.0058***		-0.0033***	-0.0089***
		(0.0003)	(0.0003)		(0.0004)	(0.0004)
Sales growth		0.0187***	0.0147***		0.0039***	0.0042***
		(0.0006)	(0.0006)		(0.0004)	(0.0004)
Sales volatility		0.0051***	0.0109***		-0.0143***	-0.0050***
		(0.0005)	(0.0005)		(0.0007)	(0.0007)
Discretionary accruals		-0.0076***	-0.0049***		0.0137***	-0.0048***
		(0.0003)	(0.0003)		(0.0007)	(0.0007)
Asset tangibility		-0.0723***	-0.0591***		0.4262***	0.3555***
		(0.0007)	(0.0007)		(0.0014)	(0.0014)
Benchmark rates		-0.0032***	0.0017***		0.0111***	-0.0027***
		(0.0001)	(0.0001)		(0.0001)	(0.0002)
Current ratio		-0.0003***	-0.0003***		0.0300***	0.0283***
		(0.0001)	(0.0001)		(0.0001)	(0.0001)
Interest coverage ratio		-0.0001***	-0.0001***		-0.0008***	-0.0007***
		(0.0000)	(0.0000)		(0.0000)	(0.0000)
Gearing		-0.0555***	-0.0647***		0.1576***	0.2117***
		(0.0009)	(0.0010)		(0.0014)	(0.0014)
Country Fixed Effects	No	No	Yes	No	No	Yes
Industry Fixed Effects	No	No	Yes	No	No	Yes
Year Fixed Effects	No	No	Yes	No	No	Yes
Observations	1,684,012	1,684,012	1,684,012	1,684,012	1,684,012	1,684,012
R-squared	0.0012	0.0346	0.0541	0.0024	0.3594	0.4624

Notes. Table 4 presents the results of the tests on the association of eponymous firm names and the cost of debt in columns 1 to 3, and the relationship between eponymous firm names and debt maturity in columns 4 to 6. Column 1 and column 4 of Table 4 report the estimated coefficients of the eponymous dummy only. Column 2 and column 5 introduce control variables. Column 4 and column 6 present the regression results of the full models, including all control variables and year, industry, and country fixed effects. All variables are defined in Appendix B. Standard errors in parentheses are clustered by firm (Belenzon et al. 2017)

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

ratio in columns 4 to 6. Columns 1 and 4 of Table 4 report the estimated coefficients of *Eponymous* only. Columns 2 and 5 introduce control variables, and columns 3 and 6 include country, industry, and year fixed effects as well as control variables. The general pattern of results shows that eponymous firms borrow at lower costs, as indicated by negative coefficients of *Eponymous* in the first three columns. While the magnitude of the eponymous effect decreases when control variables and fixed effects are included, eponymous firms still manage to borrow at 0.68 percent lower than their non-eponymous counterparts. The results suggest that a firm's name is indicative of the firm's credibility and is likely considered by banks when they determine the costs of borrowing. This signaling role of eponymy is vitally important, as small and private firms may not have other effective mechanisms through which to demonstrate their commitment to repay lenders. Focusing on the impact of eponymy on debt maturity, the variable *Eponymous* in columns 4 to 6 is positive and significant at the 1 percent level. Thus, consistent with the notion that less frequent monitoring is needed, our results show that eponymous firm names are associated with a longer debt maturity.

The estimated coefficients on control variables are as expected and mostly consistent with prior studies (Bharath et al. 2008; Costello and Wittenberg-Moerman 2011; Francis et al. 2005a, b, c; Kim et al. 2011; Pittman and Fortin 2004). First, the negative coefficients on *Profitability*, *Firm age*, *Asset tangibility*, *Current ratio*, and *Interest coverage ratio* suggest that lenders charge lower interest costs to profitable, mature firms with more tangible assets and firms with lower financial risks. Second, the positive coefficients on *Sales volatility* and *Discretionary accruals* are consistent with the idea that firms experiencing more fluctuations in sales or reporting poor-quality earnings appear riskier to lenders. Third, the positive coefficient on *Benchmark rates* suggests that firms from a country of high national lending rates borrow at higher costs.

There are mixed results for measures of *Firm size*. While *ln(Assets)* exhibits a similar pattern to findings from prior studies that larger firms have lower costs of debt (Petersen and Rajan 1994; Pittman and Fortin 2004), the coefficients on *ln(Sales)* and *ln(Employees)* suggest that firms with higher net sales and more employees borrow at more expensive rates.[23] There is a positive coefficient on *Sales growth*, contrary to an expectation of a negative relation (Francis et al. 2005b). The positive coefficient is likely due to the different setting of this study, which uses small private firms instead of the public firms or large private firms that have been commonly employed in prior studies (Kim et al. 2011). In addition, the negative coefficient on *Gearing* contradicts the expectation that a higher gearing ratio is associated with a higher cost of borrowing. The negative coefficient is likely to be due to how *Cost of debt* is measured.[24]

The coefficients on the control variables in the tests of the impact of *Eponymous* on *Long-term debt ratio* are generally consistent with prior studies. For example, firms

[23] Recent studies on the comparison of public and private debt (Bharath et al. 2008) and private debt only (Kim et al. 2011) also report mixed findings on firm size and argue that firm size is not an appropriate determinant of private loans.

[24] Bharath et al. (2008) and Francis et al. (2005b) point out that the use of realized debt cost is a noisy proxy for the underlying construct and can lead to inconsistent results. Our study uses interest paid instead of interest expenses to measure the costs of borrowing. As a result, the costs of borrowing in this study are realized debt costs, which may not be the interest rates stated in the lending agreements. The interest expenses, calculated by interest rates in lending contracts, are not available in Orbis.

with more tangible assets, firms with higher current ratio, and more profitable firms tend to have more long-term debt (Fung and Goodwin 2013; Gul and Goodwin 2010). The positive coefficient on *Gearing* and the negative coefficient on *Sales volatility* are consistent with prior studies' findings that firms with higher operating risk and highly indebted firms are more likely to seek long-term debt (Diamond 1993; Fung and Goodwin 2013; Stohs and Mauer 1996). On the other hand, the negative coefficients on *Firm age* and *Discretionary accruals* indicate that older firms and firms with lower earnings quality are more likely to borrow short-term debt (Barclay and Smith 1995; Díaz-Díaz et al. 2016). The measures of firm size, as expected, report mixed results. The coefficient of *Interest coverage ratio*, measuring the firm's financial performance to mitigate the default risk, is expected to be positive but is negative. This suggests that firms with high earnings relative to interest expenses are more likely to use short-term debt.

4.2 Sensitivity tests

This section examines the sensitivity of our reported empirical results by exploring whether the results are subject to omitted and correlated variables at the firm level as well as at the owner level.

4.2.1 Propensity score matching

To address the possibility that certain omitted variables explain our findings, we employ propensity score matching (PSM) to reduce our reliance on the specification of the relationship between variables (Rosenbaum and Rubin 1983; Shipman et al. 2017). Following Shipman et al. (2017), the application of PSM in this study is justified from two aspects. First, there is a clear cutoff to assign observations to treatment and control groups. The treatment group of this study contains eponymous firms, and non-eponymous firms are in the control group. Second, some characteristics determining the naming strategy may also relate to the firms' debt contracting. For example, Belenzon et al. (2020) argue that the switch between eponymy and non-eponymy can be affected by sales growth and the size of a firm, which also influence interest rates (Kim et al. 2011) and debt maturity (Díaz-Díaz et al. 2016; Gul and Goodwin 2010).

To be consistent with the baseline regressions, we include all control variables, as well as year, industry, and country dummies, to estimate the matching scores (Shipman et al. 2017). The matching estimator of PSM is the single nearest neighbor with one neighbor and with replacement but no caliper.[25] Matching with replacement can

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[25] We use STATA command teffects psmatch for PSM analysis. We did not require a caliper distance because teffects psmatch command by default not only matches the nearest neighbor but also considers other controls with identical propensity scores (SSCC 2015). However, given that several control variables remain statistically different between the treated and control groups, we further require caliper distances of 0.01, 0.03, and 0.1. These caliper distances are selected because they are the most commonly used in accounting research (Shipman et al. 2017). At all selected caliper distances, the matching quality remains unchanged. *Cost of debt*, *Debt ratio*, *Firm size*, *Sales volatility*, and *Benchmark rates* are still significantly different between the eponymous and non-eponymous groups. At a caliper of 0.1, the regression results are exactly the same as our reported results.

improve matching quality and allow for more successful matches (Shipman et al. 2017). We choose one-to-one matching over one-to-many matching because one-to-many matching can reduce the quality of some matches (Shipman et al. 2017).[26]

Table 5 presents the pre- and post-matching distributional properties of the treatment and control firms by using PSM along with *p values*. While Shipman et al. (2017) alert researchers that they should not evaluate covariate balances by assessing the statistical significance per se, *p values* shed some light on the quality of matches in the absence of prior studies of similar research issues, sample composition, and sample size. Overall, *p values* indicate that the matching is successful in achieving balances for most covariates. For example, the operating and financial differences of the two groups are statistically insignificant. In the cases of statistically significant covariates, the differences between the treatment and control groups are economically small. The primary variables of interest, *Cost of debt* and *Long-term debt ratio*, remain statistically different between the two groups after matching.

The regression results of this PSM analysis are in columns 1 and 2 of Table 6, which show the impact of *Eponymous* on *Cost of debt* and *Long-term Debt ratio*, respectively. All regressions are estimated with year, industry, and country fixed effects to control for systematic differences in the firms' naming strategies. *Eponymous* remains significantly negative in column 1 and significantly positive in column 2, suggesting that the relations between eponymy and the firm's debt contracting in the baseline regressions are statistically reliable. Specifically, the results of PSM confirm the main results by finding a comparable non-eponymous observation for every eponymous observation. As there are 289,803 eponymous observations, 289,803 non-eponymous observations with identical firm characteristics are matched. In the sample of 579,606 observations, eponymous firms on average incur 0.71 percent lower borrowing costs than the matched non-eponymous firms. In addition, eponymous firms continue to exhibit more long-term debt in their debt structures.

4.2.2 Placebo tests

4.3 Firm names containing any surname

To rule out possible effects of other naming strategies, we conduct placebo tests by exploring if there is an effect associated with firm names that contain any surname but not the owner's surname. The placebo tests focus on this alternative naming

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[26] A one-to-one match is used instead of one-to-many, as each matching estimator has its own advantages and shortcomings (Shipman et al. 2017). Given that most accounting research uses a one-to-one match (Shipman et al. 2017), our study follows this practice. When identifying matched observations, teffects psmatch not only matches the nearest neighbor but also controls for other observations of identical propensity scores (SSCC 2015). Compared with one-to-one matching in traditional STATA's psmatch2 command, teffects psmatch improves matching quality by following Abadie and Imbens's (2006) recommendation to match with all tied observations. STATA's psmatch2 command by default matches with one of the tied observations, which may lead to suboptimal matches when two or more observations have the same propensity score (SSCC 2015).

Table 5 Pre- and Post-Matching Distributional Properties of Treatment and Control Firms

Panel A—Original Sample

Variables	Non-Eponymous		Eponymous		Mean Difference
	#N Obs	Mean	#N Obs	Mean	
Cost of debt	1,394,198	0.0840	289,797	0.0690	0.015***
Long-term Debt ratio	1,394,209	0.242	289,803	0.277	-0.035***
Profitability	1,394,209	0.035	289,803	0.032	0.003***
ln(Assets)	1,394,209	6.839	289,803	6.962	-0.122***
ln(Sales)	1,394,209	6.86	289,803	6.96	-0.100***
ln(Employees)	1,394,209	2.123	289,803	2.079	0.044***
ln(Firm age)	1,394,209	2.484	289,803	2.683	-0.198***
Sales growth	1,394,209	0.085	289,803	0.05	0.035***
Sales volatility	1,394,209	0.283	289,803	0.225	0.058***
Discretionary accruals	1,394,209	0.009	289,803	0.009	-0.000***
Asset tangibility	1,394,209	0.277	289,803	0.288	-0.011***
Benchmark rates	1,394,209	0.029	289,803	0.027	0.002***
Current ratio	1,394,209	2.45	289,803	2.634	-0.183***
Interest coverage ratio	1,394,209	12.178	289,803	11.631	0.546***
Gearing	1,394,209	0.669	289,803	0.651	0.019***

Panel B—Post PSM

Variables	Non-Eponymous		Eponymous		Mean Difference
	#N Obs	Mean	# N Obs	Mean	
Cost of debt	289,797	0.074	289,797	0.069	0.004***
Long-term Debt ratio	289,803	0.248	289,803	0.277	-0.029***
Profitability	289,803	0.032	289,803	0.032	0
ln(Assets)	289,803	6.957	289,803	6.962	-0.004
ln(Sales)	289,803	6.952	289,803	6.96	-0.008*
ln(Employees)	289,803	2.065	289,803	2.079	-0.014***
ln(Firm age)	289,803	2.678	289,803	2.683	-0.005***
Sales growth	289,803	0.049	289,803	0.05	-0.001
Sales volatility	289,803	0.222	289,803	0.225	-0.003***
Discretionary accruals	289,803	0.009	289,803	0.009	0
Asset tangibility	289,803	0.288	289,803	0.288	0
Benchmark rates	289,803	0.027	289,803	0.027	-0.000***
Current ratio	289,803	2.627	289,803	2.634	-0.007
Interest coverage ratio	289,803	11.712	289,803	11.631	0.08
Gearing	289,803	0.651	289,803	0.651	0.001

Notes. Table 5 presents pre- and post-matching distributional properties of samples using PSM. To be consistent with the baseline regression, all control variables, as well as year, industry, and country dummies, are used to estimate the matching scores (Shipman et al. 2017). All variables are defined in Appendix B. *** *p value* < 0.01, ** *p value* < 0.05, * *p value* < 0.1

strategy because naming after random surnames can mislead lenders if the chosen surnames are associated with a credible reputation. Indeed, prior studies find that certain surnames also have the reputation effect (Belenzon et al. 2017; Jung et al. 2019), whereas other naming strategies—for example, firm names starting with "A" or incorporating quality-related terms—do not.[27]

To test for the potential confounding effect of any surname included in firm names, we only employ non-eponymous firms from the full sample to fully eliminate the reputational effect of eponymy. There are 1,394,209 non-eponymous observations, of which 30.93 percent (431,254 observations) contain non-owners' surnames.[28] To measure the impact of non-owners' surnames, we construct *Dummy for firm with any surname*, which equals one when a firm's name contains any surname.[29] The coefficient of *Dummy for firm with any surname* is expected to be negative and significant for *Cost of debt* and positive and significant for *Long-term debt ratio* if there is a name premium for random surnames.

Column 3 of Table 6 shows the effect of *Dummy for firm with any surname* on *Cost of debt*. Column 4 of Table 6 reports the effect of random surnames on *Long-term debt ratio*. The coefficient estimates on *Dummy for firm with any surname* in both samples are statistically insignificant. Hence, firms incorporating any random surname do not appear to enjoy more long-term debt or lower costs of debt. The signaling effect of naming a firm after a person's name seems to work only for eponymy. This is likely because eponymy establishes a strong bond between the owners and the firms, while naming after random surnames does not.

4.4 Alternative measure of *Eponymous*

In our main regressions, we measure the firms' eponymous status as a dummy variable that equals 1 for an exact match between the firm name and the owner's family name and 0 for all others, including similar names. In this section, we generate *Similscore*, which uses values from 0 to 1 to measure the similarity between the firm name and the owner's family name.[30] A higher *Similscore* suggests that the firm

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[27] Studies testing the impacts of other naming strategies report that firm names starting with "A" or numbers and firms with multiple names are associated with more customer complaints (McDevitt 2011, 2014). Belenzon et al. (2017) find that quality-related firm names do not influence the impact of eponymy and can lead to poor financial performance.

[28] Following Belenzon et al. (2017), we determine whether a firm's name contains a surname by matching all firm names in our sample to the population of surnames of owners in the initial sample of 2,624,531 firms or 36,128,599 firm-year observations.

[29] The procedure to identify if a firm name contains a random surname follows that in Belenzon et al. (2017). Specifically, we start with cleaned shareholder surnames (SHN) and cleaned company names (COMP). We then delete duplicates of shareholder names to obtain a list of distinct surnames. Next, we split firm names into individual words for matching purposes. We match each cleaned and distinct surname (SHN) with every split word of the firm name. The variable *Dummy for firm with any surname* takes a value of one when SHN matches any split word of the firm name, and zero otherwise.

[30] Consistent with the main regressions, we use STATA's MatchIt command to assess the similarity between the firm name and the owner's family name. When constructing *Eponymous* for the main regressions, we replace observations whose similarity score is less than one with zero. Thus, *Eponymous* is 1 or 0. In the construct of *Similscore*, we keep the original similarity scores.

Table 6 Endogeneity Checks

Placebo tests

Variables	PSM		Any surname		Similscore		Owner fixed effect		Country-Year fixed effects	
	Column 1 Cost of debt	Column 2 Long-term Debt ratio	Column 3 Cost of debt	Column 4 Long-term Debt ratio	Column 5 Cost of debt	Column 6 Long-term Debt ratio	Column 7 Cost of debt	Column 8 Long-term Debt ratio	Column 9 Cost of debt	Column 10 Long-term Debt ratio
Eponymous	-0.0071***	0.0069***					-0.0060***	0.0059***	-0.0068***	0.0059***
	(0.0006)	(0.0008)					(0.0019)	(0.0023)	(0.0004)	(0.0007)
Dummy for firm with any surname			-0.0003	0.0004						
			(0.0004)	(0.0006)						
Similscore					-0.0071***	0.0056***				
					(0.0005)	(0.0007)				
Profitability	-0.0028	0.0839***	-0.0061***	0.0802***	-0.0052***	0.0797***	-0.0139***	0.0662***	-0.0046***	0.0798***
	(0.0019)	(0.0033)	(0.0011)	(0.0020)	(0.0010)	(0.0019)	(0.0030)	(0.0043)	(0.0011)	(0.0019)
ln(Assets)	-0.0139***	0.0427***	-0.0137***	0.0392***	-0.0135***	0.0396***	-0.0169***	0.0444***	-0.0136***	0.0396***
	(0.0004)	(0.0007)	(0.0003)	(0.0005)	(0.0003)	(0.0004)	(0.0009)	(0.0012)	(0.0003)	(0.0004)
ln(Sales)	0.0046***	-0.0337***	0.0059***	-0.0299***	0.0053***	-0.0304***	0.0070***	-0.0211***	0.0053***	-0.0303***
	(0.0005)	(0.0007)	(0.0003)	(0.0005)	(0.0003)	(0.0004)	(0.0008)	(0.0011)	(0.0003)	(0.0004)
ln(Employees)	0.0023***	-0.0089***	0.0013***	-0.0075***	0.0016***	-0.0081***	0.0003	-0.0097***	0.0018***	-0.0085***
	(0.0004)	(0.0006)	(0.0003)	(0.0004)	(0.0002)	(0.0003)	(0.0007)	(0.0009)	(0.0003)	(0.0003)
Sales growth	0.0051***	0.0050***	0.0059***	0.0043***	-0.0048***	-0.0089***	-0.0046***	0.0022**	-0.0048***	0.0040***
	(0.0006)	(0.0008)	(0.0003)	(0.0004)	(0.0003)	(0.0004)	(0.0010)	(0.0010)	(0.0003)	(0.0004)
Sales volatility	0.0161***	-0.0054***	0.0144***	-0.0048***	0.0058***	0.0042***	0.0039***	-0.0004	0.0052***	-0.0049***
	(0.0012)	(0.0014)	(0.0006)	(0.0007)	(0.0003)	(0.0004)	(0.0008)	(0.0018)	(0.0003)	(0.0007)
Discretionary accruals	0.0127***	-0.0036***	0.0107***	-0.0049***	0.0147***	-0.0050***	0.0122***	-0.0018	0.0148***	-0.0057***

Table 6 (continued)

Placebo tests

Variables	PSM		Any surname		Similscore		Owner fixed effect		Country-Year fixed effects	
	Column 1 Cost of debt	Column 2 Long-term Debt ratio	Column 3 Cost of debt	Column 4 Long-term Debt ratio	Column 5 Cost of debt	Column 6 Long-term Debt ratio	Column 7 Cost of debt	Column 8 Long-term Debt ratio	Column 9 Cost of debt	Column 10 Long-term Debt ratio
	-0.001	(0.0013)	-0.0006	(0.0007)	(0.0006)	(0.0007)	(0.0016)	(0.0016)	(0.0006)	(0.0007)
ln(Firm age)	-0.0039***	-0.0103***	-0.0052***	-0.0084***	0.0109***	-0.0047***	0.0086***	-0.0080***	0.0107***	-0.0090***
	-0.0004	(0.0006)	-0.0003	(0.0004)	(0.0005)	(0.0007)	(0.0014)	(0.0011)	(0.0005)	(0.0004)
Asset tangibility	-0.0586***	0.3582***	-0.0591***	0.3532***	-0.0590***	0.3555***	-0.0491***	0.3178***	-0.0591***	0.3548***
	-0.0012	(0.0022)	-0.0008	(0.0015)	(0.0007)	(0.0014)	(0.0026)	(0.0040)	(0.0007)	(0.0014)
Benchmark rates	0.0008***	-0.0025***	0.0020***	-0.0029***	0.0017***	-0.0027***	0.0029***	-0.0005	0.0055***	-0.0305***
	-0.0002	(0.0004)	-0.0001	(0.0002)	(0.0001)	(0.0002)	(0.0004)	(0.0006)	(0.0007)	(0.0011)
Current ratio	-0.0005***	0.0274***	-0.0002***	0.0282***	-0.0003***	0.0283***	0.0000	0.0246***	-0.0003***	0.0283***
	-0.0001	(0.0002)	-0.0001	(0.0001)	(0.0001)	(0.0001)	(0.0002)	(0.0003)	(0.0001)	(0.0001)
Interest coverage ratio	-0.0001***	-0.0007***	-0.0001***	-0.0007***	-0.0001***	-0.0007***	-0.0001**	-0.0006***	-0.0001***	-0.0007***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Gearing	-0.0676***	0.2216***	-0.0649***	0.2087***	-0.0647***	0.2117***	-0.0600***	0.2042***	-0.0644***	0.2116***
	-0.0016	(0.0022)	-0.0011	(0.0015)	(0.0010)	(0.0014)	(0.0032)	(0.0041)	(0.0010)	(0.0014)
Owner Fixed Effects							Yes	Yes		
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		

Table 6 (continued)

Placebo tests

Variables	PSM		Any surname		Similscore		Owner fixed effect		Country-Year fixed effects	
	Column 1 Cost of debt	Column 2 Long-term Debt ratio	Column 3 Cost of debt	Column 4 Long-term Debt ratio	Column 5 Cost of debt	Column 6 Long-term Debt ratio	Column 7 Cost of debt	Column 8 Long-term Debt ratio	Column 9 Cost of debt	Column 10 Long-term Debt ratio
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Country x Year Fixed Effects							Yes	Yes	Yes	Yes
Observations	579,606	579,606	1,394,209	1,394,209	1,684,012	1,684,012	212,258	212,258	1,684,012	1,684,012
R-squared	0.0534	0.4733	0.0537	0.4576	0.0541	0.4624	0.3675	0.3675	0.0550	0.4636

Notes. Table 6 presents the regression results of endogeneity checks. Columns 1 and 2 present the regression results of PSM. Columns 3 and 4 show the placebo tests to examine the impacts of naming a firm after any surname. The results of *Similscore*, as an alternative measure of *Eponymous*, are in columns 5 and 6. Columns 7 and 8 present the effects of eponymy by including the owner's fixed effects. Columns 9 and 10 show the effects of eponymy by including country-year fixed effects. All variables are defined in Appendix B. Standard errors in parentheses are clustered by firm (Belenzon et al. 2017)

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

name strongly resembles the owner's family name. A firm with *Similscore* of 1 is an eponymous firm.

The results of the impacts of *Similscore* on *Cost of debt* and *Long-term debt ratio* are in columns 5 and 6 of Table 6, respectively. In general, the results are consistent with the main regressions, in that *Similscore* is significantly and negatively associated with *Cost of debt* and significantly and positively related to *Long-term debt ratio*.

4.4.1 Owner fixed-effect estimation

Because eponymy is more likely to be used by owners of superior ability (Belenzon et al. 2017), eponymy may just merely capture the effect of the owner's ability. If this argument is true, the fundamental driver of interest differentials and debt maturity variations in the samples is the owners' managing abilities. This section assesses this argument by including owner fixed effects in our regression models. The borrowing costs and debt maturities of the firms are not expected to be significantly different if the owners' superior ability drives the results. In contrast, the coefficient of *Eponymous* is expected to remain significantly negative in the *Cost of debt* column and significantly positive in the *Long-term debt ratio* column if banks rely on eponymy as a signal of both the manager's ability and private information.

To track individual owners, we use the owner's full name to assign a unique identifier to each owner. Owners with missing first names are not included.[31] This filtering process retains 212,258 observations in the sample. Columns 7 and 8 of Table 6 present the effects of eponymy with owner fixed effects on *Cost of debt* and *Long-term debt ratio*, respectively. The negative and significant coefficient on *Eponymous* in column 7 and the positive and significant coefficient on *Eponymous* in column 8 confirm the argument that a firm's name is an effective signaling mechanism to reduce information asymmetry (Tadelis 1999).

4.4.2 Country-year fixed effect estimation

We also include country-year fixed effects to absorb time series temporary omitted variables in a given country-year. The results are in columns 9 and 10 of Table 6. We control for country-year fixed effects as well as industry fixed effects in the model specifications. The results are similar to those from the baseline regressions, in that *Eponymous* is significantly and negatively associated with *Cost of debt* and significantly and positively related to *Long-term debt ratio*.

Overall, these robustness checks enhance the credibility of the results of the baseline regressions.

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[31] The name-cleaning procedure is the same as the procedure for identifying eponymous firms. The number of observations drops from 1,684,012 to 212,258 due to missing first names.

4.5 Additional analyses

4.5.1 Tests of reputation signaling

As we argue in Sects. 1 and 2, eponymous firms can enjoy a lower cost of capital and longer-term debt because eponymy signals reputation. This section tests this notion by partitioning the full sample into subsamples of different firm characteristics relating to reputation.

4.6 Name rarity

We first explore the impact of naming a firm after a rarer surname in reducing the cost of debt. Because rarer firm names are more memorable and identifiable by the public (Belenzon et al. 2017), firms with such names should have greater reputational benefits or costs. As a result, our reputation signaling suggests that the relations between *Eponymous*, *Cost of debt*, and *Long-term debt ratio* will be more pronounced when eponymous firm names become rarer. To examine the impact of rarer names, we follow Belenzon et al. (2017) and measure the frequency of each owner's last name in the population of owners in the same industry and country. We count the number of times the same family name appears for all businesses and then divide this count by the total number of business owners in the relevant industry and country. Since this is a measure of commonality, the smaller the measure, the rarer the family name.

The first four columns of Table 7 present the regression results using *Rarer* surnames and *Common* surnames subsamples. The *Rarer* subsample contains the bottom quartile of *Name rarity* in an industry of a country in a given year, and the rest are in the subsample of *Common* surnames. The subsamples are intended to provide evidence on whether a rarer eponymous name, implying greater reputational benefits or costs, is associated with a lower borrowing cost and a longer debt maturity. Consistent with the main results of *Cost of debt*, the coefficients of *Eponymous* in both subsamples are negative and significant. Most interestingly, eponymous firms with rarer names manage to borrow at 18 basis points lower than their counterparts with more common surnames. The coefficient estimates in the subsamples are different, and the difference is statistically significant at the 1 percent level using the Chow (1960) test. This finding is consistent with the argument, in Belenzon et al. (2017), that eponymy makes the firms' reputation and the owners' reputation indistinguishable, and this joint reputation is magnified by rarer surnames. The comparison of the coefficients of *Eponymous* in the two subsamples of the firms' debt maturity, however, is not significant.

Our reputation signaling also assumes that debt holders can price-discount potential post-contract opportunistic behavior ex ante. To further validate this assumption, we explore whether the effects of eponymy are more pronounced when debt holders' concerns about post-contract opportunistic behavior are more severe.

4.7 Asset tangibility

The first partition variable we consider is asset tangibility. Agency conflicts of debts may become more severe when a borrower's assets consist of less tangible assets. Firms with fewer tangible assets present a higher risk to lenders, as these firms are less likely to possess assets of collateral value (Minnis 2011). When firms with a high proportion of tangible assets are at risk of defaulting, the owners/managers will have more difficulty diverting the assets because tangible assets are "tied down and easily observable" (Dyck and Zingales 2004, p. 559). There is evidence that the proportion of tangible assets in a firm's asset structure affects debt maturity and the costs of borrowing (Ashbaugh-Skaife et al. 2006; Guedes and Opler 1996; Kim et al. 2011).

Eponymy may help firms with low tangible assets reduce lenders' concerns about possible wealth expropriation, as it signals the firm's commitment to delivering the expected performance (Cabral 2000; Choi 1998), and the reputation concern of eponymous owners prevents them from acting opportunistically. To test the impacts of tangible assets and provide further evidence, we partition the full sample into *High* and *Low* according to the proportion of tangible assets in a firm's total assets in an industry of a country.[32] Firms from the bottom 25 percent in a year are in the *Low* subsample, and firms from the top 75 percent are in the *High* subsample.

Columns 5 and 6 of Table 7 present the results on *Cost of debt*. Eponymous firms holding more tangible assets borrow at 0.55 percent cheaper than non-eponymous firms. Eponymous firms possessing fewer tangible assets borrow at 0.86 percent lower than their counterparts. The coefficient on *Eponymous* is higher in the *Low* subsample than in the *High* subsample, and the difference is statistically significant at the 1 percent level (*p value is* 0.0062). This suggests that the reputation effect of eponymy enhances a firm's intangible collateral to complement its physical collateral, which is usually lacking in small private firms (Kim et al. 2011).

Columns 7 and 8 of Table 7 presents the results on *Long-term debt ratio*. The higher coefficient on *Eponymous* in the *Low* subsample suggests that the owners' greater reputation concern results in fewer agency conflicts of debt, which leads to a longer debt maturity structure. Banks recognize the credibility implied from eponymy and also believe in the eponymous owners' superior ability to repay debts, so they are willing to lend more long-term debt and charge lower interest costs.

4.8 Societal trust

The next factor we consider is the level of societal trust in a country. The level of societal trust captures the security of loans from the banks' perspective. Societal trust is a general expectation of a broader community or country toward a given

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[32] Tangible assets are labelled "Tangible Fixed Assets" in Orbis, which refer to non-current physical assets. The exact definition is "All tangible assets such as buildings, machinery, etc." (Global Format, Format Definitions, Orbis).

Table 7 Cross-Sectional Test: Tests of the Signalling Effects

Variables	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12	Column 13	Column 14	Column 15	Column 16
	Name rarity				Asset tangibility				Societal trust				Creditor protection			
	Cost of debt		Long-term Debt ratio		Cost of debt		Long-term Debt ratio		Cost of debt		Long-term Debt ratio		Cost of debt		Long-term Debt ratio	
	Rarer	Common	Rarer	Common	High	Low	High	Low	High	Low	High	Low	Protected	Absent	Protected	Absent
Eponymous	-0.0080***	-0.0062***	0.0047***	0.0056***	-0.0055***	-0.0086***	0.0050***	0.0074***	-0.0032***	-0.0085***	-0.0004	0.0047***	-0.0058***	-0.0241***	0.0055***	0.0151***
	(0.0007)	(0.0004)	(0.0008)	(0.0005)	(0.0003)	(0.0008)	(0.0005)	(0.0008)	(0.0008)	(0.0005)	(0.0012)	(0.0006)	(0.0003)	(0.0020)	(0.0004)	(0.0013)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
p value of test of equal coefficients on Eponymous between the subsamples	0.0004***		0.5108		0.0062***		0.0999*		0.0001***		0.0026***		0.0000***		0.0000***	
Observations	421,402	1,262,610	421,402	1,262,610	1,257,153	426,859	1,257,153	426,859	215,553	741,700	215,553	741,700	1,620,855	63,157	1,620,855	63,157
R-squared	0.0519	0.0563	0.4350	0.4625	0.0559	0.0481	0.4641	0.4341	0.0477	0.0508	0.4573	0.4219	0.0568	0.0417	0.4614	0.3261

Notes. Table 7 presents the regression results of the reputation channel. Columns 1 to 4 present the regression results of subsamples using *Rarer* surnames and *Common* surnames. The *Rarer* subsample contains the top 25 percent of rarer family names in an industry of a country in a given year, and the rest of the observations are in the subsample of *Common* surnames. Columns 5 and 6 (columns 7 and 8) present the results of the tests on the relation between eponymy and the cost of debt (debt maturity), conditional on the level of tangible assets in a firm. The full sample of 1,684,012 firm-year observations is partitioned into *High* and *Low* according to the proportion of tangible assets in a firm's total assets in an industry of a country. Firms in the top 25 percent in a year are in the *High* subsample, and the other 75 percent are in the *Low* subsample. Columns 9 and 10 (columns 11 and 12) present the effects of eponymy on the costs of borrowing (debt maturity) in high-trust countries and low-trust countries, respectively. The partitions of high-trust and low-trust countries are based on the median level of ranked responses to WVS's societal trust-related question in a year (Guan et al. 2020). Columns 13 and 15 show the results for *Absent* creditor protections; the results for *Absent* creditor protection are in columns 14 and 16. We measure the creditor protection by the creditor rights index of Djankov et al. (2007). The *Protected* subsample contains the countries with a nonzero index. The *Absent* subsample comprises the countries with no creditor protection law. The control variables include *Profitability, Firm size, Sales growth, Sales volatility, Discretionary accruals, Firm age, Asset tangibility, Benchmark rates, Current ratio, Interest coverage ratio,* and *Gearing.* All variables are defined in Appendix B. Standard errors in parentheses are clustered by firm (Belenzon et al. 2017)

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

person (Gambetta 1988; Guiso et al. 2006; Putnam 2000). The level of societal trust, based on responses to the World Value Survey (WVS), influences investors' perceptions of managers' trustworthiness (Guan et al. 2020; Guiso et al. 2008). In a similar vein, a higher level of societal trust can positively influence banks' subjective beliefs about the credibility of a firm to repay (Guiso et al. 2008; Knack and Keefer 1997; Zak and Knack 2001).

Prior studies find that, in countries with high trust, banks put less effort into distinguishing one firm from another, as the risk of perceived expropriation risk, in general, is lower (Meng and Yin 2019). Thus, in countries with high societal trust, while eponymous firms are expected to borrow more long-term debt and at lower costs than non-eponymous firms, the reputational role of eponymy may be smaller. In low-trust countries, however, banks need to assign a higher level of perceived risk of post-contract opportunistic behavior to the borrowers ex ante. Therefore, we expect that eponymous firms from countries with low trust can negotiate more favorable debt contracts due to their stronger reputational role.

Following prior studies in the trust literature (Ahern et al. 2015; Guan et al. 2020; Guiso et al. 2008; La Porta et al. 1997), the level of societal trust in a country is based on the responses to the WVS question "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?" The responses are coded to one if a survey participant reports that most people can be trusted, and zero otherwise. Then, the mean of the responses in each country-year is calculated to measure the level of societal trust (Guan et al. 2020). Three waves of the WVS survey (2005–2009, 2010–2015, and 2016–2020) overlap with our sample period (2008–2018). We use the most recent survey to measure the level of societal trust for each country-year in the sample. The partitions of high-trust and low-trust countries are based on the median level of societal trust in a year (Guan et al. 2020).

Columns 9 and 11 of Table 7 show the effects of eponymy on debt contracts in high-trust countries, and columns 10 and 12 present the relations in low-trust countries. As expected, eponymous firms have more long-term debt and pay lower costs in both the high-trust and low-trust subsamples. The coefficients on *Eponymous* in low-trust countries are lower in the *Cost of debt* column and higher in the *Long-term debt ratio* column than the coefficients on *Eponymous* in high-trust countries. These differences are significant at the 1 percent level. This suggests that eponymy plays a critical role in signaling borrowers' willingness to honor debt contracts in an environment of lower credibility.

4.9 Creditor protection

The last factor we consider is creditor protection. Unlike the level of societal trust, which indicates banks' subjective beliefs about the credibility of a firm, creditor protection is an official measure of banks' rights to be repaid. The level of creditor protection is dependent on the number of laws in a country that limit expropriation from lenders. In countries with strong creditor protections, borrowers face higher bankruptcy costs ex ante and are less likely to strategically default to expropriate

lenders' wealth (Cho et al. 2014). As a result, well-protected lenders are willing to offer more long-term debt and require lower interest rates (Boubakri and Ghouma 2010; Cho et al. 2014).

When the legal protection of creditors in a country is weak, creditors are more likely to require firm-level monitoring that limits potential opportunistic actions by owners or managers (Miller and Reisel 2012). The firm-level monitoring activities of creditors, nevertheless, can be substituted for by the borrowers' reputation (Diamond 1991b), which requires fewer resources from creditors and may equalize the bargaining power in banking relationships (Fratianni 2006; Rajan 1992). Since a firm name measures the firm's reputation and since eponymy signals a credible reputation, we expect that the impact of eponymy is stronger in countries with weak creditor protections.

We empirically measure the level of creditor protection by the creditor rights index of Djankov et al. (2007), who update the original index prepared by Porta et al. (1998). The index has four components, each of which is a dummy variable that equals one if certain creditor protection provisions are embodied in a country's laws and regulations, and zero otherwise.[33] The *Protected* subsample contains the countries with a nonzero index value. The *Absent* subsample consists of the countries with no creditor protection laws.[34]

Columns 13 and 15 of Table 7 show the results when creditor protection is present. Columns 14 and 16 show the results when creditor protection is absent. The effects of *Eponymous* are significant in all subsamples but stronger in the subsamples with no creditor protection. The differences are significant at the 1 percent level. In the context of no formal legal protection, banks are more reliant on a firm's conscienceto repay. Eponymous firms, in striving to maintain a credible reputation regardless of the laws, are more likely to meet their debt obligations than non-eponymous firms. Banks treat eponymous firms as more secure borrowers by lending them more long-term debt and charging them lower interest rates.

4.9.1 Cross-sectional tests: role of the information environment

As we argue in Sects. 1 and 2, eponymy also lowers the cost of capital and facilitates long-term debt via signaling. We posit that such signaling is more pronounced when the firm's external information environment is more opaque. This section tests this conjecture.

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[33] The creditor rights index is computed as the sum of four legal indicators: "First, there are restrictions, such as creditor consent or minimum dividends, for a debtor to file for reorganization. Second, secured creditors are able to seize their collateral after the reorganization petition is approved. Third, secured creditors are paid first out of the proceeds of liquidating a bankrupt firm. Finally, management does not retain administration of its property pending the resolution of the reorganization" (Djankov et al. 2007, p. 303).

[34] High and low subsamples are not used because the creditor rights index ignores the relative importance of each component in different countries (Cho et al. 2014) and does not measure the quality of the laws' enforcement (Boubakri and Ghouma 2010). We nevertheless use "weak" or "low" creditor protection when referring to the *Absent* subsample, because the creditor rights index may not capture all creditor protection provisions in a country.

4.10 Auditor

We first examine if the effects of eponymy are greater for firms without external auditors. If a firm does not hire an external auditor, the hard financial information that is available to lenders can be limited. One would expect the signaling role of eponymy to be greater when the financial information is thus limited for small and private firms. We empirically investigate this conjecture by investigating the effect of *Eponymous* in the context of an external *Auditor*.

Columns 1 and 3 of Table 8 present the results in the context of firms engaging an auditor in a year, and columns 2 and 4 show the results when there is no auditor. The differences in the coefficient estimates on *Eponymous* between the subsamples are statistically significant at the 1 percent level. When there is no auditor engagement, naming after the owners helps firms lower the costs of borrowing and borrow more long-term debt more significantly.,[35][36] The results confirm the argument that eponymy delivers, to banks, a message similar to the appointment of an external auditor.

Given that auditor appointment is not immediately accessible to all small private firms, these results suggest that eponymy and hiring external auditors are substitutes. Compared with hiring external auditors, naming firms after the owners has several advantages, such as affordability and convenience.

4.11 Firm age

Younger firms generally have higher information asymmetry due to their limited transactions with private lenders, and therefore are likely to present a lower debt maturity for more frequent monitoring and to incur higher interest costs (Diamond 1989, 1991b). Older firms, due to good borrowing histories and credible track records, can result in lower monitoring costs for private lenders, thereby mitigating the agency conflicts of debt (Diamond 1989, 1991b). Therefore, we expect the effect of eponymous firm names to be stronger for young firms.

We partition the full sample into subsamples of *Younger* firms (firms whose age in a given year is in the bottom quarter of an industry in a country) and *Older* firms (all other firms). The results are in columns 5 to 8 of Table 8. As expected, in the subsample of younger firms, the coefficient on *Eponymous* in the *Cost of debt* regression is 0.86 percent, which is 0.22 percent lower than for older firms. In the analysis of *Long-term debt ratio*, younger eponymous firms have more long-term debt than the mature eponymous firms. The differences are statistically significant at the 5 percent level. These results are consistent with the Belenzon et al. (2017) finding that eponymy effectively signals eponymous

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[35] Of the 94,116 observations having an auditor, 8,809 observations involve the Big-4 auditing firms. In untabulated results, the size of an auditor does not relate to a greater reduction in the interest costs of borrowing. This finding is consistent with Kim et al. (2011) in the context of private lending.

[36] The negative coefficient on *Eponymous* in column 3 of Table 8 suggests that firms engaging audit services are associated with more short-term debt. Fung and Goodwin (2013) find similar results and argue that audit engagement curbs managers' incentives to manage earnings, which reduces the firm's ability to obtain long-term debt.

Table 8 Cross-Sectional Test: Role of the Information Environment

Variables	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
	External auditor(s)				Firm age				Press freedom			
	Cost of debt		Long-term Debt ratio		Cost of debt		Long-term Debt ratio		Cost of debt		Long-term Debt ratio	
	Appointed	Absent	Appointed	Absent	Younger	Older	Younger	Older	High	Low	High	Low
Eponymous	−0.0030	−0.0071***	−0.0046***	0.0068***	−0.0086***	−0.0064***	0.0089***	0.0053***	−0.0057***	−0.0116***	0.0039***	0.0067***
	(0.0022)	(0.0004)	(0.0015)	(0.0004)	(0.0007)	(0.0004)	(0.0009)	(0.0005)	(0.0004)	(0.0010)	(0.0007)	(0.0006)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
p value of test of equal coefficients on Eponymous between the subsamples	0.0000***		0.0000***		0.0204**		0.0129**		0.0000***		0.0239**	
Observations	94,116	1,589,896	94,116	1,589,896	470,182	1,213,830	470,182	1,213,830	1,307,860	376,152	627,993	1,056,019
R-squared	0.0403	0.0548	0.4605	0.4647	0.0582	0.0523	0.4898	0.4534	0.0452	0.0594	0.4954	0.4242

Table 8 (Continued)

Notes. Table 8 presents the regression results of the information channel. Columns 1 to 4 present the impacts of *Eponymous* in the context of auditor appointment. Columns 1 and 3 present the results of engaging auditors in a year, and columns 2 and 4 show the impacts of *Eponymous* when there is no auditor. Columns 5 and 6 (columns 7 and 8) present the results of the relation between eponymy and the costs of debt (debt maturity), conditional on firm age. Columns 5 and 7 present the subsample of *Younger* firms, whose firm ages in a given year are in the bottom quarter of an industry in a country, and columns 6 and 8 show the subsample of *Older* firms, which contains all other firms. Columns 9 and 10 (columns 11 and 12) present the results of the relation between eponymy and the cost of debt (debt maturity), conditional on the level of press freedom in a given country. The degree of press freedom is measured by using the Press Freedom Index, which is an annual ranking, published by Reporters Without Borders, based on the assessment of the press freedom of a country. Similar to societal trust, the median value of the Press Freedom Index divides the full sample into *High* and *Low* subsamples. The control variables include *Profitability, Firm size, Sales growth, Sales volatility, Discretionary accruals, Firm age, Asset tangibility, Benchmark rates, Current ratio, Interest coverage ratio,* and *Gearing.* All variables are defined in Appendix B. Standard errors in parentheses are clustered by firm (Belenzon et al. 2017)

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

owners' superior ability and helps eponymous firms with limited borrowing histories overcome information asymmetry with their lenders.

4.12 Press freedom

The last factor we consider is the level of press freedom in a country. The degree of press freedom may alter banks' reliance on a firm's soft information, including the firm's name. Banks can collect reliable information about a firm via diverse communication channels when the media of a country is trustworthy. On the contrary, countries with little media freedom are often characterized by limited communication channels, high corruption, and low transparency (Chowdhury 2004). In such countries, banks' abilities to acquire information to reduce information asymmetry could be materially constrained. Therefore, eponymy is expected to be a more valuable source of soft information to infer a firm's financial performance and credibility.

To test our conjecture, we empirically measure the degree of press freedom using the Press Freedom Index. Published by Reporters Without Borders, the Press Freedom Index is an annual ranking based on the assessment of press freedom in countries in the previous year. As there is one-year lag in publication, we use the prior year's index to measure press freedom in the following year. For example, the 2017 index shows the level of press freedom in 2016 and is assigned to the observations of 2016 in our sample. Consistent with the partitions of societal trust, the median value of the Press Freedom Index divides the full sample into *High* and *Low* subsamples.

As presented in columns 9 to 12 of Table 8, eponymous firms in all degrees of press freedom manage to borrow more long-term debt and at lower cost. The effects of eponymy are statistically stronger when the information environment of a country is less transparent and less independent. This is consistent with the expectation that banks view firm names as a genuine source of information in an opaque information environment.

4.12.1 Cross-sectional tests: role of the financing environment

The model in Belenzon et al. (2020) implies that when the external financing availability and the need for financing (as proxied by regional financial development and external financing dependence) increase, the positive relationship between profitability and eponymy will weaken. This occurs as high-quality firms with growth potential sort to non-eponymous names to get better access to capital, resulting in a diluted value of eponymy. Applying this logic to the setting of debt contracting, we expect the effect of eponymy on debt contracting to be stronger when regional financial development is low and when firms' dependence on external finance is low.

To empirically test this conjecture, we follow Belenzon et al (2020) to construct measures of firms' regional financial development and external finance dependence. We first use a region's relative number of employees in financial credit institutions

to proxy for regional financial development.[37] The region's relative number of employees in financial credit institutions is the total number of employees in financial credit institutions divided by the total population of the region. Information on the total number of employees in financial credit institutions in each region comes from Structural Business Statistics (SBS), provided by Eurostat. Information on the total population is from the European census. Due to large variations in the regions' characteristics, we control for region fixed effects (Belenzon et al. 2020).[38] A region is classified as less financially developed when its relative number of employees in financial credit institutions is less than the median value across all regions in a year.

Table 9 presents the results of this analysis. Consistent with our expectation, the effect of eponymous firm names is more pronounced for firms operating in less financially developed regions. The coefficient of -0.0104 in column (2) and the coefficient of -0.0067 in column (1) show that eponymous firms can borrow at a lower interest rate in less financially developed regions. The saving in interest cost for firms operating in less financially developed regions is 35 percent ((0.0104–0.0066)/0.0104 = 0.355) relative to the total interest cost for firms operating in more financially developed regions. The *p*-value of the test on equal coefficients between Columns (1) and (2) suggests that the difference is statistically significant at the 5 percent level.

Similarly, columns (3) and (4) show that eponymous firms can borrow more long-term debt when they operate in less financially developed regions. The *p*-value of the test on equal coefficients between columns (3) and (4) suggests that the difference is statistically significant at the 10 percent level. Overall, the results in Table 9 show that while eponymy still plays an important role in debt contracting for firms operating in more financially developed regions, the impact is less significant than for eponymous firms operating in less financially developed regions.

To measure firms' external financing dependence, we rely on variation in industry external financing dependence. Specifically, we employ the ranking of external financing dependence among US industries. Prior studies (Rajan and Zingales 1999; Belenzon et al. 2020) suggest that this is a reliable measure of demand for external financing, as US firms face the least friction in accessing external finance. We use financial data from Compustat for US firms and average external financing dependence over a period before the selection of our main sample.[39]

An industry's external financing dependence is the ratio between its capital expenditures minus cash flow from operations and its capital expenditures. Next, we divide the full sample into two subsamples. The subsample *Less financially dependent* includes firms from industries whose external financial dependence ratio is less than the median value across all industries.

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[37] Regions are identified according to the Nomenclature of Territorial Units for Statistics (NUTS) Level 1 code.

[38] Data on employees in financial institutions are available for Austria, Belgium, Germany, Great Britain, and Italy (a total of 39 regions).

[39] Specifically, we follow Belenzon et al. (2020) and rank industries according to their dependence on external finance. We use US Compustat firms to determine which industries are more dependent on external financing over the pre-estimation period of 2008–2018.

Table 9 The Impact of Financial Development

Variables	Cost of debt		Long-term debt ratio	
	Column 1	Column 2	Column 3	Column 4
	More Financially Developed	Less Financially Developed	More Financially Developed	Less Financially Developed
Eponymous	-0.0067***	-0.0104***	0.0030***	0.0062***
	(0.0008)	(0.0010)	(0.0008)	(0.0008)
Control variable	Yes	Yes	Yes	Yes
Region Fixed Effects	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
p-value from test of equal coefficients on Eponymous between subsamples	0.0254**		0.0762*	
Observations	319,651	299,900	319,651	299,900
R-squared	0.0450	0.0509	0.3509	0.3682

Notes. Table 9 presents the regression results of the impact of financial development in a region. The first two columns are the impact of regional financial development on the relationship between eponymous firm names and *Cost of debt*. The last two columns show the impact of regional financial development on the relationship between eponymous firm names and *Long-term debt ratio*. Regional financial development is a region's relative number of employees in financial credit institutions. Regions are identified according to the NUTS Level 1 code. A region is classified as less financially developed when the region's relative number of employees in financial credit institutions is less than the median value of relative number of employees in financial credit institutions in a year. The control variables include *Profitability*, *Firm size*, *Sales growth*, *Sales volatility*, *Discretionary accruals*, *Firm age*, *Asset tangibility*, *Benchmark rates*, *Current ratio*, *Interest coverage ratio*, and *Gearing*. All variables are defined in Appendix B. Standard errors in parentheses are clustered by firm (Belenzon et al. 2017)

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

Table 10 presents the results of this analysis. The coefficient of -0.0080 in column (2) and the coefficient of -0.0059 in column (1) show that eponymous firms can borrow at a lower interest rate when they are more dependent on external financing. The saving in interest cost for firms with a high dependence on external financing is 26 percent ((0.008–0.0059)/0.008 = 0.262), relative to the total interest cost for firms with a low dependence on external financing. The p-value of the test on equal coefficients between columns (1) and (2) suggests that the difference is statistically significant at the 5 percent level. Columns (3) and (4), however, show that there is no clear difference in the long-term debt that eponymous firms can borrow between the subsamples with low and high dependence on external financing.

The results reported in Tables 9 and 10 are consistent with the theoretical prediction in Belenzon et al. (2020) that the value of naming firms after the owners should be influenced by the level of financial development in an economy and the extent to which a firm may depend on external financing for future growth.

Table 10 The Impact of Financial Dependence

Variables	Cost of debt		Long-term debt ratio	
	Column 1	Column 2	Column 3	Column 4
	More Financially Dependent	Less Financially Dependent	More Financially Dependent	Less Financially Dependent
Eponymous	-0.0059***	-0.0080***	0.0065***	0.0054***
	(0.0005)	(0.0005)	(0.0006)	(0.0006)
Control variables	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
p- value from test of equal coefficients on Eponymous between subsamples	0.0174**		0.4472	
Observations	963,680	709,145	963,680	709,145
R-squared	0.0553	0.0528	0.4676	0.4547

Notes. Table 10 presents the regression results of the impact of financial dependence in an industry. The first two columns are the impact of financial dependence on the relationship between eponymous firm names and *Cost of debt*. The last two columns show the impact of financial dependence on the relationship between eponymous firm names and *Long-term debt ratio*. An industry's external financial dependence is the ratio between expenditures minus cash flow from operations and capital expenditures (Rajan and Zingales 1999). The less financially dependent subsample includes firms from industries whose financial dependence ratio is less than the median value of financial dependence ratio. The control variables include *Profitability*, *Firm size*, *Sales growth*, *Sales volatility*, *Discretionary accruals*, *Firm age*, *Asset tangibility*, *Benchmark rates*, *Current ratio*, *Interest coverage ratio*, and *Gearing*. All variables are defined in Appendix B. Standard errors in parentheses are clustered by firm (Belenzon et al. 2017)

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

4.12.2 Debt versus equity financing

In this section, we explore whether eponymous firms prefer debt financing or equity financing. The theoretical framework of Belenzon et al. (2020) predicts that eponymous firms are less likely to choose equity financing, as they intend to prevent the dilution of the control rights of the founders. Therefore, when eponymous firms need external financing, we posit that they prefer debt financing over equity financing.

To empirically test this conjecture, we analyze the firms' funding sources and examine whether eponymous firms use more debt financing than equity financing. We expect that eponymous firms are more likely to borrow from banks, compared with their non-eponymous counterparts, and hence have higher a portion of debt financing relative to equity financing. Specifically, we assess the debt–equity portion by computing the difference between changes in debt and changes in equity capital divided by the sum of changes in debt and changes in equity capital.,[40][41]

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[40] The debts are the sum of short-term loans and long-term debts in a year. The equity capital is the issued share capital in a year. All data are from Orbis.

[41] Mathematically, the debt–equity portion is (changes in debts – changes in equity capital) / (changes in debts + changes in equity capital).

Table 11 presents the results of this analysis. In both univariate and multivariate regressions, eponymous firms tend to use a higher portion of debt financing. This is consistent with our expectation and provides supporting evidence to Belenzon et al. (2020) that eponymous firms, due to a desire to secure the owners' control, are reluctant to issue equity.

5 Conclusion

The decision whether to use the owner's name in a firm name, known as eponymy, is seemingly arbitrary. Intuitively, one would expect which name an entrepreneur chooses to matter less than the entrepreneur's actions and strategies in running the business, or there should be little correlation between the two. In this study, however, we propose that eponymous entrepreneurs signal a strong reputational commitment and higher information quality to lenders. If eponymy implies better fulfillment of debt contract obligations, we expect that there will be more favorable debt contract terms.

Using a panel dataset of 621,614 firms in Europe from 2008 to 2018, we document that eponymous firms account for 17 percent of our sample firms. In a univariate setting, we first find that eponymous firms pay a lower cost of debt and exhibit higher debt maturity compared to non-eponymous firms. In a regression framework with comprehensive controls for credit quality, we also find that small

Table 11 The Impact on Debt versus Equity Financing

Variables	Debt versus Equity Financing	
	Column 1	Column 2
Eponymous	0.0214***	0.0305***
	(0.0028)	(0.0027)
Control variables	No	Yes
Country Fixed Effects	Yes	Yes
Industry Fixed Effects	Yes	Yes
Year Fixed Effects	Yes	Yes
Observations	635,518	635,518
R-squared	0.2515	0.2937

Notes. Table 11 presents the regression results of the impact of eponymous firm names on firms' preference between debt financing and equity financing. Firms' preference between debt financing and equity financing is proxied by the difference between changes in debt capital and changes in equity capital divided by the sum of changes in debt capital and changes in equity capital. The debts are the sum of short-term loans and long-term debt in a year. Equity capital is the issued share capital in a year. All data are from Orbis. The control variables include *Profitability*, *Firm size*, *Sales growth*, *Sales volatility*, *Discretionary accruals*, *Firm age*, *Asset tangibility*, *Benchmark rates*, *Current ratio*, *Interest coverage ratio*, and *Gearing*. All variables are defined in Appendix B. Standard errors in parentheses are clustered by firm (Belenzon et al. 2017)

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

private eponymous firms pay significantly lower interest on their debts and borrow more long-term debt than non-eponymous firms. The results of the baseline regressions show that the interest cost savings associated with eponymy per se range from 68 to 148 basis points. The increase in long-term debt is between 0.6 percent and 3.5 percent, depending on the model specifications. The above findings are robust to various controls and placebo tests.

We find that the effect of eponymy is more pronounced for firms with fewer tangible assets and firms located in countries with low creditor protections and lower levels of societal trust. These findings suggest that eponymy affects debt contracts by enhancing firm reputation. Next, we document that the effect of eponymy is stronger for younger firms, firms that do not appoint an external auditor, and firms from countries with a lower level of press freedom. We interpret this as eponymy providing a salient signal in reducing information asymmetry between private firms and lenders. Consistent with the prediction from the model in Belenzon et al. (2020) on financing considerations diluting the value of eponymy, we find that the effects of eponymy on debt contracting are much stronger when the need for external financing is lower and when financial development is lower.

The cost of debt capital and debt maturity are of exceptional importance to small private firms. Prior studies have shown a number of ways that firm characteristics can affect the design and pricing of debt contracts, such as family shareholding (Anderson et al. 2003; Díaz-Díaz et al. 2016) and using soft information (Berger and Udell 1998, 2006; Petersen 2004). Our study, together with several anecdotal eponymous naming practices, points to a new economic value of firm names. Our findings suggest that firms that are named after their owners enjoy significantly lower cost of capital and acquire debts with significantly longer maturity.

Appendix A

Table 12 Definitions of small and medium-sized enterprises

	Employees	Turnover	Balance sheet total
Micro	< 10	≤ EUR 2 m	≤ EUR 2 m
Small	< 50	≤ EUR 10 m	≤ EUR 10 m
Medium	< 250	≤ EUR 50 m	≤ EUR 43 m

(Available at: https://ec.europa.eu/growth/smes/sme-definition_en)

Appendix B

Table 13 Variable definitions and calculations

Long-term debt ratio	This is the firm's long-term debt ratio in year t: $$\frac{long-term\ debt_t}{current\ liabilities_t + long-term\ debt_t}$$
Cost of debt	This is the firm's average interest rate on interest-bearing debts in year t. We estimate the interest rate using interest paid in year t divided by the average interest-bearing debts in year t: $$\frac{interest\ paid_t}{((short-term\ loans_{t-1} + long-term\ debt_{t-1}) + (short-term\ loans_t + long-term\ debt_t))/2}$$ According to the Global Format Definitions of Orbis, *short-term loans* are short-term financial debts to credit institutions (loans and credits) and part of long-term financial debts payable within the year. *Long-term debt* is long-term financial debts to credit institutions (loans and credits). *Short-term loans* and *Long-term debt* are from Orbis, Bureau van Dijk
Eponymous	A dummy variable that is coded 1 for eponymous firms and 0 for non-eponymous firms. To determine whether a firm is eponymous, we check if the entire last name of the major owner is included in the firm name
Profitability	Profit before tax in year t divided by sales in year t
Firm size	Three measures including the natural log of assets, the natural log of sales, and the natural log of the number of employees
Assets	Total assets in year t. If missing, total assets are replaced by the sum of current assets in year t and non-current assets in year t
Sales	Net sales in year t. If missing, sales are replaced by operating income in year t
(Number of) Employees	Total number of employees included in the firm's payroll in year t
Firm age	The difference between the reporting year and the year of incorporation
Discretionary accruals	We use the modified cross-sectional Jones model (Jones 1991) as described in Kothari et al. (2005) to estimate total accruals. The modified Jones model is estimated for each country-industry-year grouping as follows: $$\frac{TA_{it}}{Assets_{i,t-1}} = \beta_0 + \beta_1 \frac{1}{Assets_{i,t-1}} + \beta_2 \frac{(\Delta Rev_{it} - \Delta AR_{it})}{Assets_{i,t-1}} + \beta_3 \frac{PPE_{it}}{Assets_{i,t-1}} + \beta_4 ROA_{i,t-1} + \varepsilon_{it}$$ where TA is total accruals, measured as the change in non-cash assets minus the change in short-term (non-financial) liabilities, minus depreciation and amortization; ΔREV is the annual change in sales; ΔAR is the annual change in accounts receivable; PPE is property, plants, and equipment; and ROA is the return on assets. Discretionary accruals are the absolute value of the residuals from the above regression model
Asset tangibility	Tangible assets in year t divided by total assets in year t
Benchmark rates	Country-specific long-term interest rates published by OECD, available at https://data.oecd.org/
Sales growth	The annual change in sales, scaled by lagged sales
Sales volatility	The standard deviation of sales divided by total assets in the past three years
Current ratio	Current assets in year t divided by current liabilities in year t
Interest coverage ratio	Earnings before interest and taxes (EBIT) in year t divided by interest paid in year t
Gearing	Total liabilities in year t divided by total assets in year t

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