

# Discussion of “Is the risk of product market predation a cost of disclosure?”

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## ABSTRACT

Bernard (2016) proposes that financially constrained firms susceptible to “product market predation” are more likely to avoid complying with a mandatory requirement to publicly disclose financial statements. Bernard tests and finds that financially constrained private firms in Germany are less likely to disclose their financial statements despite being subject to a law requiring them to do so and interprets this evidence as consistent with predation risk affecting firms’ disclosure decisions. I discuss how Bernard’s findings advance our understanding of the incentives and disincentives for disclosure. I evaluate the theoretical rationale – i.e., product market predation – as the motive for non-disclosure as well as the strengths and weaknesses of his empirical analyses. My discussion highlights the implications of these findings for disclosure regulation, especially as it relates to small private firms. I end my discussion with suggestions for future research, including ideas to use the empirical setting identified by Bernard for answering other research questions.

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## 1. Introduction

Whether product market characteristics such as competition affect firms' disclosure decisions is a topic of extensive research (see Core, 2001; Healy and Palepu, 2001; Verrecchia, 2001; and Beyer et al., 2010 for reviews of the literature). One of the primary arguments for why firms might not voluntarily disclose all their private information is that disclosures reveal proprietary information to competitors, who might use a firm's disclosures in a manner that disadvantages the disclosing firm in the product market. At a broad level, Bernard (2016) fits into the accounting literature on proprietary costs of disclosure. Its main contribution to this literature is that it predicts and empirically tests the proposition that information about a firm's financing constraint is proprietary in nature because such information can be used by competitors to take advantage of, and prey on, the financially constrained firm. Bernard (2016) is a novel paper that makes a significant contribution to the disclosure literature.

Following prior research, Bernard (2016) defines product market predation as lowering prices or increasing expenditure on non-price competition (e.g., advertising) with the goal of forcing a rival to exit. To test whether predation risk affects firms' disclosure decisions, Bernard identifies a setting in Germany where private firms are required by law to publicly disclose their financial statements. The German disclosure law was not enforced prior to 2006, leading to significant non-compliance, but in 2006, there was a sharp increase in enforcement that led to (almost) full compliance. As a result, Bernard is able to identify firms that exist in the economy pre-2006 yet choose to avoid disclosing their financial statements. Using this setting, Bernard finds that financially constrained firms are more likely to avoid disclosing their financial statements prior to the enforcement change in 2006. He interprets the association between financing constraints and non-disclosure as evidence consistent with predation. To support this inference, Bernard shows that the relation between financing constraints and non-disclosure is stronger among (i) smaller firms, (ii) less profitable firms, (iii) firms with a public rival and (iv) firms lacking long-term contracts. The intuition for these cross-sectional tests is that such firms are more susceptible to predation risk and thus are more likely to avoid disclosing their financial statements pre-2006. Finally, Bernard provides evidence that financially constrained firms that

avoided disclosure pre-2006 lose market share post-2006. This evidence is consistent with the idea that predation occurs ex-post after firms are forced to disclose their financial statements, thereby allowing competitors to prey on them.

The big picture question of whether a firm's disclosures contain proprietary information that can lead to predation is interesting and important for several reasons. First, predation (unlike competition) is undesirable as it involves economically efficient firms exiting the market because they do not have the financial resources to sustain short-term losses from predatory pricing or advertising. Thus, predation can potentially reduce economic efficiency by lowering future competition, which is socially undesirable and in contrast to other forms of competition that promote economic efficiency (e.g., Shleifer and Vishny, 1997). As a result, it is important to understand how mandatory disclosure relates to predation risk.

Second, the evidence in Bernard suggests that forcing small, financially constrained firms to disclose their financial statements exposes such firms to predation risk by larger competitors. This inference suggests that a public disclosure mandate for small private firms can be quite costly for not only the individual firm but for the economy as a whole. Small private firms typically comprise a large percentage of firms in most countries (e.g., in the U.S., private firms account for over 95% of the number of firms, over 60% of the GDP, and a large proportion of employment; see Lisowsky and Minnis, 2015). Thus, any disclosure requirement that hinders the growth and development of small firms and helps larger firms drive smaller rivals out of business could be costly for the economy as a whole. Additional research is needed to understand the costs and benefits of forcing private firm disclosure and to further validate/measure the costs of a public disclosure requirement, such as predation risk, for small private firms.

Third, most prior disclosure research focuses on the benefits of disclosure. For example, prior research finds that disclosure helps lower the cost of capital, increases access to external finance, facilitates monitoring, and improves investment decisions. However, there is much less empirical evidence of the costs of disclosure. We need a better sense of the costs of disclosure to develop a more comprehensive understanding of why some firms are transparent and voluntarily disclose much information while other firms are relatively opaque and shy away from voluntary

disclosures (despite the documented benefits). Bernard provides evidence consistent with one important cost of disclosure, but more research is needed to identify other disclosure costs as well as factors creating cross-sectional variation in disclosure costs.

Finally, the empirical setting in Bernard seems promising for examining additional questions related to voluntary disclosure. The primary features/benefits of his setting are: First, the disclosure decision leads to a large change in the amount of information publicly available about the firm. Specifically, the disclosure decision in Bernard involves disclosing the entire balance sheet and income statement while the decision to abstain from disclosing implies there is little public information about that firm. In contrast, typical voluntary disclosure studies focus on whether providing an additional management forecast or press release has economic effects in settings where there is plenty of public information even in the absence of the marginal disclosure. Second, the private firm setting allows researchers to abstract away from capital market incentives and focus on a narrower set of factors affecting firms' disclosure incentives. And third, the natural experiment that led to an increase in disclosure was determined at the European Union level and seems largely exogenous to economic conditions in Germany at that time. Given these features, Bernard's setting seems well suited for examining additional research questions related to disclosure.

Although Bernard (2016) is a welcome first step towards understanding whether predation risk affects disclosure decisions, it is important to highlight that the evidence in Bernard is indirect because of challenges in empirically measuring or identifying predation risk. Since predation risk is unobservable, Bernard is unable to directly test the relation between *predation risk* and disclosure, and instead uses the association between *financing constraints* (proxied using adjusted leverage) and disclosure to test his hypothesis.<sup>1</sup> While a negative association between financing constraints and disclosure is consistent with Bernard's hypothesis, this association might also be consistent with other interpretations if financing constraints is correlated other factors that affect firms' disclosure incentives. Bernard's empirical setting helps

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<sup>1</sup> The chain of logic embedded in Bernard's tests is: financially constrained firms are more subject to predation risk and consequently, financially constrained firms are more likely to avoid disclosure to mitigate predation risk. The maintained assumption is that predation occurs in equilibrium, which I evaluate in section 3.

mitigate some of the obvious alternative interpretations of the financing constraints-disclosure association, but some alternative interpretations remain. Further, it is plausible that the relation between financing constraints and disclosure in Bernard's private firm setting has some new and atypical alternative interpretations that would not otherwise exist. For example, it is possible that highly levered firms avoid disclosing their financial statements pre-2006 not because they are concerned about predation risk; rather, it could be due to other incentives such as hiding their indebtedness from neighbors and relatives. Future research that extends the evidence in Bernard (e.g., by getting access to product pricing data, developing finer proxies of product market rivalry, etc.) is warranted before we draw strong conclusions about product market predation.

As the study is carefully executed, my discussion focuses on the interpretation of the findings and its regulatory implications. First, I discuss prior research on product market predation and the role of disclosure in increasing predation risk. Next, I discuss why predatory behavior might not be a pervasive phenomenon. I then discuss the empirical analyses and some potential alternative explanations. Finally, I discuss a number of suggestions for future research.

## **2. The role of disclosure in facilitating “predatory” behavior by competitors**

A long literature beginning with Telser (1966), Fudenberg and Tirole (1986) and Tirole (1988) provides analytical evidence that “deep-pocketed” or cash rich firms can force economically efficient but financially constrained rivals out of business by lowering industry profits and reducing their rivals' cash flows. This literature shows that predation can occur for two reasons. In one class of models, predation is viewed as an attempt to convince rivals that it would be unprofitable for them to remain in the industry, thus leading to their exit (e.g., Telser, 1966; Tirole, 1988). Another class of models suggests that predation occurs even if the rival/prey knows that it is profitable and economically efficient (e.g., Bolton and Scharfstein, 1990). Specifically, in the latter class of models, predation induces financially constrained firms to exit because its investors cannot distinguish between whether the firm's deterioration in performance is because of operational inefficiencies relative to rivals or because rivals artificially lower

industry profits (via predatory pricing/advertising). In other words, predators exploit and exacerbate the agency problems between financially constrained firms and its investors.

Empirical research finds evidence *consistent* with predation occurring in certain settings but these studies are careful not to attribute their findings as definitive evidence of predation. The primary reason to be cautious when making claims of predation is that firms compete on many dimensions and financially stronger firms might have other comparative advantages over their financially constrained rivals. If financing constraints are associated with, or cause, low productivity (e.g., Hopenhayn, 2014), it is not clear whether financing constraints lead “economically efficient” firms to exit the market or just the less productive firms to exit the market. The distinction between competition and predation might seem subtle, but it is important because only predation is predicted to have negative welfare implications. Nevertheless, even dedicated court cases have found it difficult to establish whether predatory behavior occurs in practice because documenting evidence of predation (distinct from competition) requires estimates of marginal costs and evidence that price was below marginal cost.

Prior research on predation finds that (i) firms consider the risk of predation (or competition more broadly) when making corporate financing decisions, and (ii) corporate financing decisions affect product market outcomes because of competition/predation. For example, Haushalter et al. (2007), Fresard (2010) and Hoberg et al. (2014) find that firms facing predatory threats have lower leverage, greater cash holdings and are more likely to engage in hedging activities to mitigate underinvestment in the event of predation. Other studies focus on the effect of corporate financing decisions on product market outcomes, assuming predation occurs in equilibrium. For example, Chevalier (1995a, b), Phillips (1995), Zingales (1998), Campello (2003), and Barrot (2016) among others find that firms with high leverage, low cash holdings and limited access to short-term liquidity tend to (i) lose market share to their rivals, (ii) lower product quality to preserve cash flows, and/or (iii) exit the market in situations when predation is likely to have occurred.

Bernard’s innovation is that he introduces disclosure into this literature. The theoretical literature on predation assumes that rivals know the financing constraints of competitors.

Bernard relaxes this assumption and argues that the likelihood of predation not only depends on firms' corporate finance choices, such as leverage, but also on whether a firm's corporate finance choices are observed by its rivals. When a firm does not observe its rival's financing constraints, there is greater uncertainty about the ability of the rival to withstand and survive a price war. As a result, competitors are less likely to know the cost of engaging in a price war, which serves to deter predation *ex ante*. Overall, I find Bernard's research question and hypothesis intuitive. If a financially constrained firm can be forced out of the market by predators, then these firms will try to hide the fact that they are financially constrained from their rivals to mitigate the predatory threat. This non-disclosure strategy works in equilibrium because the cost of predation for a predator increases if the prey has a deep-pocket and can survive temporary losses due to predatory pricing/advertising.<sup>2</sup> But without knowing how deep a pocket the prey has, predators do not know how much a predatory strategy would cost, lowering the likelihood of predation.

### **3. Is predation risk a threat?**

Product market predation, as defined by the author and by the broader literature, suggests that firms actively seek to drive their financially constrained rivals out of business by lowering prices or engaging in other forms of non-price competition. That is, predators lower the profits/cash flows for both rival firms and themselves (e.g., by lowering product prices), and since financially constrained rivals cannot afford to incur losses, they are forced out of the market. External capital providers cannot observe whether the financially constrained firm is losing money because of predation by rivals or because of some agency problem or just managerial incompetence. Thus, in equilibrium, external financiers are unwilling to supply additional funds to firms that have losses due to predation (Bolton and Scharfstein, 1990). This lack of capital ultimately bleeds the prey to death.

Although the economic argument for predation is well-grounded in theory and is plausible, predation is unlikely to be ubiquitous in practice. To get a sense for the pervasiveness

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<sup>2</sup> As Bernard (2016) notes, firms withhold disclosure either because they are very profitable or because they are financially constrained. It is only because non-disclosure can be interpreted in multiple ways does such a strategy work in mitigating predation risk. Otherwise, the act of non-disclosure would inform rivals that the firm is financially constrained.

of predatory behavior, it is worth considering the nature of predation and the circumstances under which predation is likely to occur. Clearly, predatory activity is costly for the predator because it requires the predator to sell its product below marginal cost (or engage in costly non-price competition) to gain market share from its rivals who cannot afford to incur similar losses. Thus, firms cannot indefinitely engage in a predation strategy and, the longer the duration of predatory activity, the more costly a predation strategy is to the predator.

Given that predation is costly and that the cost of predation increases with the duration over which it occurs, certain industries and product markets are likely to be more conducive for a predation strategy. As discussed in Bernard, some examples of product market features that facilitate predation are as follows. The predator's product has to be a close substitute for the prey's product and customers have to be price-sensitive for predation to be effective and successful. That is, a predation strategy would make economic sense for the predator only if the prey's customers are willing to stop buying the prey's product and switch to the predator's product following a price discount (or increased advertising) by the predator. Thus, product substitutability and low switching costs are important conditions for predation to exist.

In addition, for predation to be an economically viable strategy, there have to be some barriers to entry that help the predator retain the prey's customers in the future after the prey has exited the market. If predation leads to only temporary increases in market share for the predator that are competed away later, then it is unlikely that firms would incur the cost of predation ex ante. For example, Zingales (1998) argues that predation should be present only in less competitive industries because only in the presence of some barriers to entry can the predator recover the short-run costs of preying.

Given that the success of product market predation requires a number of such stylized conditions, it seems unlikely that predation is a pervasive phenomenon that affects the average firm in an industry. Yet, Bernard's analysis assumes that the average highly levered firm in an industry faces predation risk and incorporates this risk in its disclosure decision. As a result, I am skeptical of descriptive validity the predation hypothesis. Adding to my skepticism, Bernard examines German firms, where business practices are based on relationships. Hall and Soskice

(2001, p. 27) state that “One of the effects [of having a business culture based on relationships] is to encourage corporate strategies that focus on product differentiation and niche production, rather than direct product competition with other firms in the industry, since close inter-firm collaboration is harder to sustain in the presence of the intense product competition...” Thus, it is unclear that predation and other forms of cut-throat competition are pervasive in relational economies such as Germany. On one hand, it seems that the German setting and unique conditions necessary for predation to be successful only lowers the power of Bernard’s tests. On the other hand, however, these same factors increase the concern that perhaps a correlated omitted variable affects the results in Bernard. Additional research is needed to determine whether predation is the correct interpretation of the evidence in Bernard.

#### **4. Empirical analyses and research setting**

Empirically testing whether product market predation affects disclosure behavior is challenging for two reasons. First, the threat of product market predation, the main construct of interest, is unobservable and thus is assumed to exist in practice and felt by firms. Bolton and Scharfstein (1990) provide analytical evidence showing that such threats can exist in equilibrium, and empirical research provides evidence consistent with predatory behavior in some settings (see e.g., Chevalier, 1995b; Zingales, 1998; Barrot, 2016). However, there is little direct evidence that firms actually engage in predation. Second, while predation and competition are theoretically different constructs, empirically separating these is very difficult (and perhaps not necessary for Bernard’s contribution). As discussed earlier, most papers examining product market predation dating back to Chevalier (1995b) and as recent as Barrot (2016) recognize this limitation and are careful not to interpret their results as definitive evidence of “predation.” In light of these challenges, Bernard (2016) deserves credit for identifying his empirical setting and devising his tests of the relation between predation and disclosure. Nevertheless, there are a few important concerns about his analyses that are worth highlighting, primarily to direct future research towards devising tests that overcome these limitations.

The principal limitation of Bernard's analyses is that he uses an indirect approach to test his research question. Although his theoretical prediction is that predation is negatively associated with disclosure, his empirical analyses examine whether industry-adjusted leverage net of cash (henceforth, leverage for brevity) is negatively associated with disclosure. Essentially, Bernard uses leverage as a proxy for predation. To the extent leverage captures other factors that affect disclosure incentives, observing an association between leverage and disclosure does not necessarily confirm (or reject) Bernard's hypothesis. Given the indirect nature of his tests, Bernard relies on the research setting to help mitigate concerns about alternative interpretations. Specifically, in his private firms setting, the other incentives for non-disclosure (e.g., hiding bad news) are unlikely to exist because there are no capital market pressures. As long as all stakeholders in the company can privately obtain the firm's financial statements, public disclosure does not serve to inform them and thus they are unlikely to be affected by the firm's choice to not disclose.

In addition, Bernard conducts a number of cross-sectional tests to mitigate concerns about alternative interpretations of his results, as well as a test of changes in market share after firms are forced to disclose. While these analyses are helpful, they still leave room open for alternative interpretations. Specifically, the disclosure decisions of German private companies could be affected by incentives unique to the setting that might not apply to the typical U.S. public company. For example, it is possible that the disclosure incentives of private companies in Germany are affected by the fact that neighbors, friends, and relatives can learn about the wealth and business successes/failures of the company owners. Perhaps then highly levered firms choose to avoid publicly disclosing their financial statements to hide their indebtedness from their relatives and neighbors. Neighbors/relatives are just one example, but more generally, it is plausible that highly levered firms wish to hide the information available in financial statements for some other reason that is not well understood in the literature. Given that there is little research examining the disclosure incentives of non-U.S. private firms, it is not clear what correlated omitted variables (if any) affect the inferences in Bernard, and whether any such correlated omitted variables add noise or bias to the results.

In sum, the cross-sectional and indirect nature of the tests makes it difficult to convincingly rule out alternative interpretations of the results. Bernard makes an important contribution by suggesting and providing preliminary evidence that predation risk affects disclosure. However, additional research is needed to support the claims in Bernard.

## **5. Unanswered questions, suggestions for future research, and conclusions**

### *5.1. Private firm disclosure regulation*

Considering that most private firms are small and financially constrained (to some degree),<sup>3</sup> and that financially constrained firms are particularly vulnerable to product market predation, why then do countries require such firms to publicly disclose their financial statements? Private companies with limited liability are required to disclose their financial statements to the public (and often receive audits) in many countries including Australia, Brazil, Germany, India, the U.K. and most E.U. member countries. In fact, the U.S. is one of the few developed countries in which limited liability private companies, irrespective of their size, have no public disclosure requirements.

The evidence in Bernard (2016) suggests that the public disclosure requirement exposes small private firms to predation risk, thereby imposing significant costs on them. Thus, a natural question is who benefits from the public disclosures of private firms? And do these benefits exceed the costs of public disclosure? It is not obvious that *public* disclosure of firms' financial statements confers any benefits to the *disclosing private firm*. Private firms without dispersed ownership bases can disseminate their financial statement disclosures to their investors and other stakeholders on a private basis. As long as there is a private disclosure channel through which private firms can communicate with their stakeholders, there might not be any economic benefit of public disclosure to the disclosing private firm. Thus, a promising research opportunity is to examine whether the public disclosure requirement for private firms confers any benefits to the disclosing firm. Considering that 45 percent of the sample of private firms in Germany disclosed their financial statements even when the disclosure law was not enforced (per Table 2 in

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<sup>3</sup> For example, the median firm in Bernard's sample has €12 million in total assets.

Bernard), suggests that there might be a benefit to such disclosures. Yet, it is not obvious what the benefits might be, making this an interesting and important a topic for future research.

Putting the above argument aside, one important rationale for forcing private firms to publicly disclose their financial statements even if they do not derive any benefit is because such information is valuable from a social welfare perspective due to their externalities (e.g., Dye, 1990; Admati and Pfleiderer, 2000; Badertscher et al., 2013; Shroff et al., 2016). Since private firms are not subject to a public disclosure requirement in the U.S., the performance of even large, economically important firms such as Cargill Inc. and Koch Industries are largely unknown. Information about the economic performance of such large companies is valuable for all firms in the industry because the demand and cost conditions are typically correlated within an industry, and prior research finds that the disclosures of one firm helps other firms in the industry make better decisions and achieve a lower cost of capital.<sup>4</sup> Understanding whether these social benefits exceed the private costs to the disclosing firm is an important topic with significant policy implications. Based on the inference in Bernard (2016), small private firms operating in economies with a public disclosure requirement have to make a difficult choice: (i) either take on leverage, which can facilitate faster growth but at the same time expose the firm to a higher risk of predation by larger rivals, or (ii) just keep leverage ratios low even if that means settling for a slower growth rate. Given that small private firms play an important role in facilitating job creation and economic growth in most countries, it seems that forcing such firms to disclose their financial statements could be costly for the economy as a whole. Yet, perhaps this cost of predation is more than offset by the externalities of their disclosures. One way in which future research could attempt to test whether public disclosure is *net beneficial* is by comparing the growth rates and the productivity of companies operating in different economies, exploiting cross-sectional variation in an industry's external financing needs (e.g., Rajan and Zingales, 1998) and cross-sectional variation in the value of peer-firm disclosures.<sup>5</sup>

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<sup>4</sup> See Dye (1990), Admati and Pfleiderer (2000) and Lambert et al. (2007) for analytical evidence and Durnev and Mangen (2009), Badertscher et al. (2013), and Shroff et al. (2014, 2016) for empirical evidence. See Leuz and Wysocki (2016) for a review of the literature.

<sup>5</sup> Two examples of recent studies along these lines are Breuer et al. (2016a, b).

Finally, there is very little research examining or even describing the different approaches countries employ to regulate private company disclosures. Clearly, there are vast differences across countries with the U.S. at one extreme and the E.U. member countries at the other. Future research describing such regulatory differences and providing insight into the determinants and consequences of these differences has the potential to be impactful as these are largely unanswered questions.

### *5.2. Real effects of disclosure*

Bernard does not focus on the real effects of disclosure in the German setting, leaving open opportunities for additional research. Bernard provides preliminary evidence that disclosure has real effects by showing that the financially constrained firms that are forced to disclose their financial statements post-2006 (due to the enforcement change) observe a decline in their market share, cash holdings, and growth. However, there are many opportunities to improve the analyses and better understand the real effects in the context of Bernard's setting. For example, disclosure, via its effect on predation risk or financing frictions more broadly, may affect a firm's decision on whether to invest and expand (the intensive margin) as well as to enter and exit the market (the extensive margin). Most accounting studies examine the effect of disclosure on the intensive margin. Future research can contribute to our understanding of the real effects of disclosure by examining firms' decisions to enter and exit the market. For example, in Bernard's setting, it is plausible that information about firms' financing constraints induce new rivals from other industries to enter the market or existing rivals to grow their market share.

### *5.3. Measuring "predation risk" and understanding the mechanisms*

Research that expands our understanding of *how* predation affects disclosure incentives is likely to make a significant contribution to the literature. In addition, research that improves the measurement of predation risk is also likely to be important (perhaps using textual analyses; e.g., Li et al., 2013). It would also be useful to identify settings where we might observe predatory behavior more directly. If researchers could gain access to data on product prices for firms in some industries or perhaps due to disclosure requirements in some country, one could develop

sharper predictions based on temporal changes in prices and its relation to disclosure. Similarly, settings in which researchers can better identify the set of competitors (rather than rely on industry classifications) and examine strategic interactions among competitors could prove useful in understanding the relation between disclosure and product market outcomes. For example, Chevalier (1995a, b) uses data on product prices at different supermarket chains as well as entry/exit behavior of supermarket stores to test the effect of capital structure on product market outcomes. Her analysis focuses on a single industry and identifies competitors based on the local markets in which they operate.<sup>6</sup> In contrast to such studies in economics and finance, the accounting literature has not explored the potential to further our understanding of the role of disclosure and product markets in narrower settings.

#### *5.4. Externalities*

Finally, while the focus of Bernard is on the effect of disclosure on the disclosing firm, there is much left to be learned about the externalities or spillover effect of disclosures within the context of the empirical setting in Bernard. For example, there is no evidence in Bernard (or otherwise) on whether predators grow faster and gain market share after observing the financial statements disclosures of their prey.

#### *5.5. Summary*

The relation between disclosure and product market characteristics such as predation, remain important and open questions. Bernard (2016) is a nice paper that gives us a new way of thinking about an old literature. It also brings an interesting literature on predation risk, which is largely a corporate finance topic, into accounting. Further, the empirical setting identified and described in Bernard is also a contribution to the literature. In this discussion, I highlight some of the limitations of Bernard (2016), which should be viewed as opportunities for future research. In addition, I discuss the regulatory implications of the evidence in Bernard and highlight related, but unanswered, questions about private company disclosure regulation.

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<sup>6</sup> Similarly, Zingales (1998) focuses on the effect of deregulation in U.S. trucking industry and uses fairly granular data to test the effects of capital structure on firm survival, prices and investment. Most recently, Barrot (2016) uses data on French trucking firms and examines the effect of trade credit on the entry and exit of trucking firms.

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