



Externalities of public firm presence: Evidence from private firms' investment decisions[☆]



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ABSTRACT

Public firms provide a large amount of information through their disclosures. In addition, information intermediaries publicly analyze, discuss, and disseminate these disclosures. Thus, greater public firm presence in an industry should reduce uncertainty in that industry. Following the theoretical prediction of investment under uncertainty, we hypothesize and find that private firms are more responsive to their investment opportunities when they operate in industries with greater public firm presence. Further, we find that the effect of public firm presence is greater in industries with better information quality and in industries characterized by a greater degree of investment irreversibility. Our results suggest that public firms generate positive externalities by reducing industry uncertainty and facilitating more efficient private firm investment.

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1. Introduction

Public firms disclose large amounts of information, such as their business strategy, financial performance, expected future outlook, current and future investment outlays, material

contracts, and business risks. In addition, information intermediaries, such as financial analysts and the business press, analyze, discuss, and disseminate firms' disclosures. Collectively, these disclosure activities can improve the information environment for firms within the industry by reducing uncertainty

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about demand, supply, and cost conditions, as these factors are interrelated within an industry (Mitchell and Mulherin, 1996; Admati and Pfleiderer, 2000). In contrast, private firms are not required to publicly disclose information in the U.S. Also, analysts and the business press provide much less coverage of private firms. As a result, little is known about the operations and performance of private firms. Thus, the composition of public and private firms in an industry is likely to have a significant effect on the industry's information environment.

This paper examines whether greater public firm presence in an industry can increase the responsiveness of firms' investment to investment opportunities by enriching the industry's information environment, thereby reducing uncertainty. The intuition is that as more firms in an industry publicly disclose information and receive coverage by information intermediaries, a more complete perspective of the current economic environment and future outlook for the industry emerges. This reduction in industry uncertainty can then be used by peer firms in the industry to make more informed investment decisions. Our analysis is based on the theoretical predictions of investment under uncertainty, which indicates that when investment decisions are (even partially) irreversible, firms become cautious and hold back on investment in the face of uncertainty (e.g., Dixit and Pindyck, 1994). As a result, higher uncertainty leads to a reduction in firms' responsiveness to investment opportunities (Bloom, Bond, and Van Reenen, 2007; Julio and Yook, 2012).¹ If greater public firm presence leads to lower uncertainty in the industry, firms operating in that industry are likely to be more responsive to investment opportunities.

Using a novel data set of private U.S. firms created by Sageworks Inc., we investigate whether private firms operating in industries with greater public firm presence are more responsive to their investment opportunities than those operating in industries with lower public firm presence.² Following Hubbard (1998), we interpret the responsiveness of investment to investment opportunities as a proxy for investment efficiency, where investment is measured as the change in gross fixed assets (Desai, Foley, and Hines, 2009; Asker, Farre-Mensa, and Ljungqvist, 2012) and investment opportunities is measured using lagged sales growth (Wurgler, 2000; Whited, 2006; Bloom, Bond, and Van Reenen, 2007; Biddle, Hillary, and Verdi, 2009; Asker, Farre-Mensa, and Ljungqvist, 2012). We proxy

for public firm presence in an industry using the percentage of industry sales that are generated by public firms.

Consistent with our prediction, we find that private firm investment is more sensitive to investment opportunities in industries with a greater public firm presence. This result is robust to using alternative proxies for investment opportunities (i.e., Tobin's Q for private firms, industry Q , and state tax rate changes), an alternative measure of public firm presence, and controls for the degree of competition in an industry. Further, our findings continue to hold when we use firm fixed-effects and a 'changes' specification to test our hypothesis.

Next we examine cross-sectional variation in the relation between public firm presence and private firm investment sensitivities. We begin by examining whether differences in the quality and quantity of information disclosed in the industry affect the extent to which public firm presence reduces uncertainty. If the firms and information intermediaries in an industry disclose less information or information that conceals economic performance, public firm presence is less likely to reduce uncertainty and facilitate the investment decisions of peer firms in such an industry. Accordingly, we predict and find that the relation between public firm presence and private firms' investment sensitivity is stronger when the public firms have more informative earnings, provide more management forecasts, and are covered by more analysts.

Second, we examine whether variation in the degree of investment irreversibility across industries affects the relation between public firm presence and private firms' investment sensitivity. Corporate investment decisions are characterized by some degree of irreversibility, i.e., investment expenditures are at least partially sunk, and thus cannot be costlessly undone once incurred (Pindyck, 1991). When investment decisions are irreversible, uncertainty makes firms more cautious and leads firms to take a 'wait and see' strategy, thereby reducing the sensitivity of investment to investment opportunities (Bloom, Bond, and Van Reenen, 2007; Julio and Yook, 2012). Accordingly, we predict and find that the effect of public firm presence on the responsiveness of investment to investment opportunities is greater in industries characterized by higher degrees of investment irreversibility. These cross-sectional results provide additional support for our hypothesis that public firms' disclosures reduce industry uncertainty, which helps peer firms in the industry identify and exploit investment opportunities.

Like other research that examines corporate investment, our empirical tests are subject to potential endogeneity concerns. A standard concern in the investment literature is that investment opportunities are measured with error (e.g., Erickson and Whited, 2000). Further, public firm presence in an industry might be correlated with industry-wide growth opportunities that are not captured by our firm-specific proxies for growth opportunities.³ We conduct three tests to mitigate these concerns. First, we identify two instruments for public firm presence, verify the strength of these instruments (Staiger and Stock, 1997) and their joint

¹ Note that our prediction relates to the responsiveness of investment to investment opportunities *rather than* the level of investment. The theoretical literature on investment under uncertainty finds that uncertainty has an ambiguous effect on the level of investment. Under some conditions, uncertainty has a positive effect on investment (e.g., Hartman, 1972; Abel, 1983; Caballero, 1991), while under other conditions, uncertainty has a negative effect (e.g., Dixit and Pindyck, 1994; Pindyck, 1993). Most empirical studies, however, find a negative relation between investment and uncertainty (e.g., Leahy and Whited, 1996; Guiso and Parigi, 1999). Bloom, Bond, and Van Reenen (2007) provide evidence using simulated data that while the effect of uncertainty on the level of investment depends on modeling assumptions, uncertainty reduces the responsiveness of investment to investment opportunities and this relation is robust to different assumptions.

² Although our predictions apply for both public and private firms, we focus on private firms to mitigate endogeneity concerns and facilitate empirical identification. We provide a detailed discussion in Section 2.2.

³ However, as we note earlier, our predictions concern the *sensitivity* of investment to investment opportunities rather than the *level* of investment, which is more likely to be affected by changes in growth opportunities.

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