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Information asymmetry, leverage and firm value: Do crisis and growth matter?

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ABSTRACT

Drawing on pecking order and agency cost theories, we assess the extent to which information asymmetry is an important determinant of firm value and the extent to which this relationship is conditional on the leverage level of firms. We also assess the impact of information asymmetry on firm value during the pre and post 2007/09 financial crisis period and for high and low growth opportunity firms. Using a large sample of UK firms, our empirical findings suggest that information asymmetry adversely impacts firm value, and that this effect decreases with firm's leverage. We also find that leverage has a negative effect on firm value, and that the marginal effect of leverage is lower for information asymmetric firms. Further, we find that the relation between information asymmetry and firm value is more pronounced in the post-crisis period than the pre-crisis period. Finally, we show that the impact of information asymmetry on firm value is higher (lower) for firms with high (low) growth opportunities.

1. Introduction

The central proposition of Myers (1984) pecking order theory (hereafter POT) is that managers acting as agents of stockholders tend to know more than the market about the value of their firm. Thus, in an attempt to minimise the adverse selection costs of external financing, firms are driven by the desire to finance new investment by using internally generated funds, followed by debt and, finally, equity. In other words, firms tend to follow a hierarchical financing order in which debt has priority over equity. The extant empirical literature (Agarwal & O'Hara, 2007; Danso & Adomako, 2014; Drobetz, Grüninger, & Hirschvogl, 2010; Leary & Roberts, 2010; Shen, 2014) provides support for this view. Within the realm of corporate finance, research on Myers (1984) information asymmetry has made a significant contribution in the past decade and scholars have pursued diverse objectives. Principal among these are the identification of the impact of information asymmetry on debt issuance and access to public debt (Fosu, 2014; Shen, 2014), the market value of corporate cash holdings (Drobetz et al., 2010), corporate bond yield spreads (Lu, Chen, & Liao, 2010) and corporate financial decision (Agarwal & O'Hara, 2007; Bharath, Pasquariello, & Wu, 2009; Tang, 2009).

Collectively, as observed in the literature, scholarly evidence depicts that knowledge accumulation around the issue of information asymmetry has been substantial. However, key knowledge voids remain within the realm of corporate finance research. First, literature to date has failed to shed light on the joint effects of information asymmetry and leverage on firm value; thus, understanding of the potential interaction between information asymmetry and leverage remains unexplored. Second, the impact of information asymmetry before and after the 2007/09 financial crisis is yet to receive attention from scholars. Third, evidence on the joint effect of information asymmetry and growth opportunities on firm value is also scarce.

A critical argument in Myers (1984) and Myers and Majluf (1984) is that information asymmetry drives many corporate finance decisions. When corporate insiders have more information about their future performance than is publicly available, investors are less able to accurately assess the firm's fundamental quality. In view of this, information asymmetric firms needing external financing will face higher equity costs. All other things being equal, therefore, one would expect information asymmetric firms to have suboptimal investments, with a deteriorating effect on their value.

The hypothesised relationship mentioned above does not, however, pay attention to the interaction between information asymmetry and financing decisions. In fact, the POT critically conditions the financing behaviour of firms on their levels of information asymmetry (Myers, 2001). The theory suggests that fulfilling external financing

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needs with debt rather than outside equity can reduce the adverse selection costs arising from information asymmetry; the cost of debt remains cheaper than outside equity under conditions of information asymmetry (Myers, 1984). This suggests that debt financing can be value-enhancing conditional on the severity of information asymmetry. Under severe asymmetric information conditions, the wedge between cost of debt and cost of equity can be wide (in favour of the former). Hence, in equilibrium, there can be an optimal leverage level that minimises the overall external financing cost.

A direct inference from the above argument is that information asymmetry and leverage interact in a dynamic way to impact firm value. This is the novel path taken in this paper. Primarily, we examine the extent to which information asymmetry impacts firm value and the extent to which this relationship is conditional on the level of leverage. Also, we assess the marginal effect of leverage on firm value conditional on the severity of information asymmetry. Further, we condition the effect of information asymmetry on firm value on the pre- and post-crisis periods, as the marginal adverse selection costs can be expected to vary across the two periods.[1] Finally, we distinguish between the effects of information asymmetry on the value of firms with different growth opportunities. Firms with more growth opportunities can be expected to be more difficult to value and also to have more need for external finance (Core, 2001; D'Mello & Ferris, 2000; Krishnaswami and Subramaniam, 1999; McLaughlin, Safieddine, & Vasudevan, 1996).

The findings in this paper suggest that information asymmetry negatively impacts firm value and the adverse effect of information asymmetry on firm value is significantly moderated by the level of leverage. Further, we find that leverage has an adverse effect on firm value and that this effect is also moderated by asymmetric information. Overall, our findings are consistent with the main assumptions of the POT. We also show that the impact of information asymmetry on firm value is more severe in the post-crisis period than it is in the pre-crisis period. Finally, we show that the effect of information asymmetry is higher (lower) for firms with high (low) growth opportunities.

We contribute to the finance literature in three main ways. First, by conditioning the relationship between firm value and information asymmetry on firms' level of financial leverage, this paper provides first-hand evidence of the extent to which the underlying assumptions of the POT are value-enhancing. Second, by assessing the differential effect of information asymmetry on firm value pre- and post-crisis, this paper highlights the extent to which the 2007/09 financial crisis has improved (investors') awareness of, or attention to, risk-shifting behaviour and monitoring lapses. Finally, the paper provides evidence of the sensitivity of the firm value and information asymmetry relationship to growth opportunities. In doing so, we document that contracting and adverse selection costs are increasing in growth opportunities. Moreover, our study is part of a growing body of literature (e.g. Agarwal & O'Hara, 2007; Bharath et al., 2009; Drobetz et al., 2010; Lu et al., 2010; Tang, 2009; Shen, 2014) emphasising the role of information asymmetry in corporate finance research.

The remainder of this article is structured as follows: Section 2 reviews the related literature and derives testable hypotheses. In Section 3, we discuss the sample, empirical design and measurement of key variables. Section 4 presents regression results and offers robustness checks. Finally, Section 5 concludes.

2. Related literature and hypotheses

When corporate insiders are better informed than the outside investors, new equity issues tend to be undervalued, resulting in suboptimal investments (Ryen, Vasconcellos, & Kish, 1997). Hence, information asymmetry and its relationship with financing decisions and valuation receive significant attention in the finance literature (e.g., Bharath et al., 2009; Botosan, 1997; Dierkens, 1991; Myers, 1984; Myers & Majluf, 1984). In fact, the pecking order hypothesis (POT) of Myers (1984) and Myers and Majluf (1984) suggests that adverse selection costs arising from information asymmetry result in debt financing having priority over equity financing. This argument has received theoretical and empirical support. For example, information asymmetry has been linked to higher cost of equity capital (Botosan, 1997; Dierkens, 1991; He, Lepone, & Leung, 2013), high levels of financial leverage (Bharath et al., 2009; Gao & Zhu, 2015) and lower value of cash (Drobetz et al., 2010).

Botosan (1997) reports that cost of equity capital is lower for firms with greater disclosure level than for firms with lower disclosure level. Likewise, Dierkens (1991) observes that firms time their equity issuance announcement at a point when their information asymmetry is relatively low. He et al. (2013) find that the dispersion of analysts' forecasts increases ex-ante cost of capital. Shen (2014) observes that firms substitute equity capital with debt capital when information asymmetry increases.

Other scholarly developments have tested the impact of information asymmetry on capital structure. For instance, Bharath et al. (2009) find that the degree of firm-specific information asymmetry of some US firms is positively associated with debt finance. In a related study, Gao and Zhu (2015) add that firms with a high level of information asymmetry tend to use more debt in their capital structure, but less long-term debt. Relatedly, Krishnaswami, Spindt, and Subramaniam (1999) find that firms with favourable information about their value and future earnings may rely on private debt as opposed to public debt. These findings suggest that firms prefer securities that are less sensitive to information asymmetry. This conjecture is consistent with the POT.

Other empirical extensions in the literature have looked at the link between information asymmetry and agency cost as the latter increases managerial discretion and risk-shifting behaviour (Leary & Roberts, 2010; Saam, 2007). Agency costs arise from the conflict of interest between shareholders and managers (Jensen & Meckling, 1976). In relation to agency costs of information asymmetry, Fauver and Naranjo (2010) show that derivative usage leads to loss in firm value. Also, Drobetz et al. (2010) find that the marginal value of cash reduces with increasing severity of information asymmetry.

In response, and departing from extant literature, we contend that information asymmetry is an important determinant of firm value as it can exert a negative effect on firm value, and that this relationship can be moderated by the leverage level of the firm. Further, we argue that the information asymmetry and firm value relationship is moderated by growth opportunities and financial crisis.

2.1. Information asymmetry and firm value

It is generally argued that the existence of information asymmetry between managers of firms and their shareholders drive many corporate decisions (Myers, 1984; Myers & Majluf, 1984). For instance, when corporate insiders (managers) have more information than is publicly available about their firm's future performance, their prediction could be more realistic than that of the market. In keeping with this, new equity issue is likely to be under-priced and, therefore, shifts wealth from existing shareholders to the new ones. Consequently, the under-pricing would lead to existing shareholders rejecting projects that could generate a positive net present value (NPV). In this regard, the cost of external finance becomes excessive for information asymmetric firms.

There is evidence to support the above argument. Several empirical studies (Drobetz et al., 2010; Fauver & Naranjo, 2010; Ryen et al., 1997) have shown that information asymmetry is costly to firms since the adverse selection cost impedes firms from raising cheap external capital. In this case, the adverse selection cost compels firms to make

[1] As the crisis exposed significant risk-shifting behaviour and monitoring lapses (Begg, 2009), we can expect the lessons learnt, if any, to make firm value more sensitive to information asymmetry.