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The evolution of debt policies: New evidence from business startups

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ABSTRACT

We investigate the evolution of entrepreneurial firms' debt policies over a period of 15 years after startup, considering leverage, debt specialization, debt maturity and debt granularity. Our analysis is based on a unique sample covering all non-financial Belgian firms founded between 1996 and 1998. We find that the debt policy of entrepreneurial firms is remarkably stable over time. The debt policy in the initial year of operation is a very important determinant of future debt policies, even after controlling for traditional contemporaneous determinants. The founder-CEO has an important impact on the stability of debt policies: the influence of initial debt policies on future debt policies is significantly reduced when the founder-CEO is replaced or when (s)he dies. Combined, our findings support imprinting theory.

1. Introduction

A number of studies have found that over time, the leverage ratio of listed firms (Lemmon et al., 2008; Welch, 2004; Wu and Yeung, 2012) and established private firms (Hanousek and Shamshur, 2011) contains an important stable component. If past leverage ratios have possible bearing on future leverage ratios, a logical place to start a study of the evolution of leverage is the earliest phase of a firm's existence, i.e., its founding. However, while startups rely on debt financing to a greater extent than often recognized (Cassar, 2004; Cumming, 2005; Robb and Robinson, 2014), no study has yet examined the evolution of leverage in early-stage firms. Moreover, we lack evidence as to whether findings on the dynamics of leverage have implications for a broader range of debt policies, including debt specialization (Colla et al., 2013), debt maturity (Scherr and Hulburt, 2001) and debt granularity (Choi et al., 2014). In sum, an investigation of the evolution of entrepreneurial firms' debt policies going back to startup is timely.

How the debt policies of entrepreneurial firms evolve over time remains ambiguous from a theoretical perspective. On the one hand, information-based theories on the evolution of entrepreneurial financing predict that debt policies will change as firms age because firms reveal more information to the market and establish relationships with private debt providers (Berger and Udell, 1995; Petersen and Rajan, 1994, 2002). For instance, Berger and Udell (1998) state that "different capital structures are optimal" (p. 613) and different "sources of finance become important at different points in the financial growth cycle" (p. 622). This view thus suggests that firms' debt policies at startup may have little bearing on their future debt policies. On the other hand, imprinting theory (Boeker, 1989; Stinchcombe, 1965)—which had its roots in the management literature but is also used in economics and finance research (Bertrand and Schoar, 2003; Rotemberg and Saloner, 2000)—suggests that (a) conditions at the time of founding define initial policies and create internal consensus around the initial policies of the firm, and (b) conditions subsequent to founding tend to preserve previously adopted policies. Imprinting theory thus suggests that firms' debt policies at startup have significant bearing on their future debt policies.

Consistent with imprinting theory, corporate finance research shows how CEOs "imprint their mark" on firms' financial policies, regardless of whether it is optimal (Bertrand and Schoar, 2003, p. 1175). Schoar and Zuo (2014), for instance, show how CEOs with recession experience display more conservative styles in their future career, including holding lower leverage ratios. We therefore consider the influence of founder-CEOs on the evolution of entrepreneurial firms' debt policies. We expect that firms' initial debt policies will exert less influence on future debt policies after the departure of the founder-CEO because entrepreneurial firms

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may break out of their initial path when new CEOs are appointed. Alternatively, founder-CEO departures may be a consequence of the need for financial reorganization. Using unique data on founder-CEO deaths—exogenous CEO departures unrelated to the need for financial reorganization (or any other unmeasured variable)—we can tease out these alternative explanations.

Scholars have been severely constrained in their efforts to study the evolution of entrepreneurial firms' debt policies from founding because the data required for such an investigation are generally not available (Robb and Robinson, 2014). Belgium, however, represents a unique "laboratory" to study the evolution of firms' debt policies because *all* non-financial firms, including startups, have a legal obligation to annually file detailed financial accounts with the Belgian National Bank. Consequently, we are able to construct a unique database from the population of non-financial firms founded between 1996 and 1998, for which we have detailed financial information for as long as 15 years after startup (i.e., until 2013). Moreover, firms are required to provide detailed information concerning their founding, capital increases, appointments and resignations and the like in the Belgian Law Gazette, and this information is externally validated by a notary. The Belgian Law Gazette provides unique information about the departure of founder-CEOs in early-stage entrepreneurial firms.

We find that leverage, debt specialization, debt maturity and debt granularity policies in the initial year of operation are statistically and economically significant determinants of future debt policies—even after controlling for traditional contemporaneous determinants. Moreover, variance decomposition analyses show that the variation captured by models that include traditional capital and debt structure determinants is substantially lower than the variation captured by models that only include firm fixed effects. This finding implies that time-invariant and unobservable firm-specific factors present at startup drive the debt policies of entrepreneurial firms to a large extent. We highlight one factor: the founder-CEO. We find that the influence of initial debt policies on entrepreneurial firms' future debt policies significantly declines after the departure of founder-CEOs. To address potential endogeneity of new CEO appointments, we investigate how the death of the founder-CEO affects the evolution of entrepreneurial firms' debt policies. The results indicate that the impact of initial debt policies of entrepreneurial firms on their future debt policies significantly declines after the death of founder-CEOs.

Our study contributes to the finance literature in several ways. First, extant research focuses on cross-sectional heterogeneity in the capital structure of entrepreneurial firms by relying on cross-sectional survey data (Cassar, 2004; Cosh et al., 2009) or on comparatively short time series of financial data (Robb and Robinson, 2014). We provide unique evidence on the evolution of entrepreneurial firms' debt policies in the 15 years after founding. Second, while an increasing body of research shows the importance of debt financing for new entrepreneurial firms (e.g., Robb and Robinson, 2014), research has only skimmed the surface in terms of exploring the ways new entrepreneurial firms rely on debt financing (Robinson, 2012). We provide first-time evidence on debt specialization, debt maturity and debt granularity choices and their dynamics in very early stage firms. Third, we also contribute to the literature by investigating the effect of founder-CEOs on firm policies (e.g., Bertrand and Schoar, 2003). While several studies have examined the impact of a CEO and of CEO departures on firm policies, especially in large public firms (e.g., Malmendier et al., 2011; Fee et al., 2013), to the best of our knowledge, we are the first to examine the impact of founder-CEO departures (and deaths) on the evolution of entrepreneurial firms' debt policies.

Finally, our study has important ramifications for capital structure theory. New entrepreneurial firms are arguably the most informationally opaque firms (Berger and Udell, 1998). Consequently, we would expect the pecking order theory to be especially relevant in our context because this theory states that the existence of information asymmetry leads to a financing hierarchy. However, the stable component of capital structure cannot be explained by the pecking order theory (Dennis, 2012). Moreover, the static trade-off theory is also unable to explain the stable component of the debt policies because this theory predicts that the financial structure will be rebalanced when it deviates too much from its target (Lambrecht and Myers, 2014). While scholars have used dynamic models to explain the stable component of financial policies in mature public firms by incorporating manager-shareholder agency conflicts (Lambrecht and Myers, 2014; Morellec et al., 2012), such models are less suitable for new entrepreneurial firms, in which principal and agents are likely to be the same individuals (Fama and Jensen, 1983). However, the observed stable component of debt policies in entrepreneurial firms is in line with imprinting theory, which argues that important predictors of firms' current financing policies are their financing policies at founding.

The remainder of the paper is organized as follows. Section 2 discusses the research setting. Section 3 describes the data. Section 4 presents the empirical results. Section 5 discusses possible alternative explanations for the findings as well as several extended analyses on subsamples. Section 6 concludes.

2. Research setting

Belgium is a typical example of a Continental European, bank-based financial system in which banks play a central role in mobilizing savings and allocating capital (Demirgüç-Kunt and Levine, 1999). While the Belgian banking sector is well developed, public equity and debt markets play only a minor role in corporate financing. As in other Continental European countries, few firms are quoted on a stock exchange and initial public offerings are rare events. Public debt markets are only accessible for large and mature firms, which are not the focus of this study. The venture capital and private equity market is quite developed in Belgium, compared to other Continental European venture capital and private equity markets (Groh et al., 2010)—although less developed than the U.S. and U.K. markets.

During the timeframe of our paper, several important events occurred that may have had a significant impact on the financing of Belgian firms. First, in the period 1997–2003, Belgium experienced a significant wave of bank mergers (e.g., Degryse et al., 2011), resulting in a heavily concentrated credit market in which four banks provide nearly 80% of total outstanding credit. Second, in 2005 the Belgian government introduced a new tax measure (which was effective from 2006) to reduce the tax advantage of debt financing (e.g., Panier et al., 2013). The "notional interest deduction" allows firms subject to Belgian corporate taxes to deduct from their taxable income an amount equal to the interest they would have paid on their "corrected" equity capital if that capital were to be viewed as long-term debt financing. Third, the financial crisis had a negative impact on the Belgian banks. After the collapse of Lehman Brothers in 2008, Fortis Bank—the largest Belgian bank—had to be bailed out by the Belgian, Luxembourg, and Dutch governments. Subsequently, the other three major Belgian banks had to be rescued by the government. A survey conducted by the Belgian National Bank shows that this led to a net tightening in credit volume, general credit conditions, costs and required collateral for firms.[3]

[3] More information on the survey is available at: http://www.nbb.be/DOC/DQ/kredObs/fr/data/KO_tarifs.htm.