Debt financing among newborn and young Swedish businesses: Empirical evidence from Swedish data

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This study empirically investigates potential differences in the use of bank loans between young and newborn micro businesses. The analysis examined a sample of young firms (founded in the first half of 2005) and newborn firms (founded in the first half of 2008). Binary logistic regression analysis was performed to analyse firm-level data. The results suggest that young firms use bank loans significantly less than do their newborn counterparts. No significant differences were found between the two firm categories in terms of other financing sources. Moreover, firm size and industry affiliation affect young and newborn firms' use of bank loans.

Introduction

The significance of small and medium-sized enterprises (SMEs) for economic growth and creation of jobs is well known, and capital availability is considered a precondition for SME investment and survival (Carpenter and Petersen, 2002; Beck, Demirgüç-Kunt, and Maksimovic, 2005; Fagiolo and Luzzi, 2006; Hutchinson and Xavier, 2006; Oliveira and Fortunato, 2006). At the same time, financing constraints are considered a main barrier to firm growth (Holtz-Eakin, Joulfaian, and Rosen, 1994; Chittenden, Hall, and Hutchinson, 1996; Cooley and Quadrini, 2001; Becchetti and Trovato, 2002; Reid, 2003). As demonstrated by Mach and Wolken (2011), credit-constrained SMEs are significantly more likely to exit the market than are unconstrained ones. In the same vein, Rajan and Zingales (1995) found that firms with better access to external capital grow faster, and Coad, Segarra, and Teruel, (2013) argued that the ability to obtain external financing is an important factor in firm development.

The existence of financial constraints among SMEs has been explained by capital market imperfections (Stiglitz and Weiss, 1981). High costs related to information asymmetry and moral hazard agency conflicts often force small businesses to use capital generated internally (Myers, 1984, 2001; Carpenter and Petersen, 2002). According to Irwin and Scott (2010), firms suffer from information asymmetry and agency conflict costs primarily during the start-up stage because of their lack of track records. Accessing debt financing is therefore a challenge for small businesses at this early stage (Barton and Matthews, 1989; Hamilton and Fox, 1998). In particular, small newborn firms typically experience more difficulties than do their older counterparts in accessing initial debt capital (Cavalluzzo and Cavalluzzo, 1998; Cavalluzzo, Cavalluzzo, and Wolken, 2002; Blanchflower, Levine, and Zimmerman, 2003). In addition, Klapper, Laeven, and Rajan, R. (2010) demonstrated that younger businesses, under four years old, tend to rely far less on bank loans than do older firms.

Serrasqueiro and Nunes (2012) and Martin and Daniel (2013), among others, suggest that firm age is an influential factor affecting firms' access to external capital. Simultaneously, it is suggested that the relationship between firm age and capital structure is still largely unexplored and warrants further attention (Coad, Segarra, and Teruel, 2013; mac an Bhaird and Lucey, 2014). Previous studies have used various samples, methods, and measures, but they have seldom compared firms in the earliest life cycle stages. In response to calls for further studies, and to the fact that financing behaviour is context dependent, the present study

contributes to the literature by examining potential differences in financing patterns between young and newborn SMEs, focusing particularly on bank loans.

In line with previous research, this study also considers other firm characteristic variables (i.e. firm size and industry affiliation). For example, mac an Bhaird and Lucey (2010) identified a relationship between firm size and bank loan availability, and mac an Bhaird and Lucey (2014) found that differences in industry affiliation influence firms' financing patterns.

Theoretical framework, previous empirical studies, and hypotheses

Firms change steadily over their life cycle stages, determined by both internal and external factors (Anthony and Ramesh, 1992). Of particular importance is that firms' needs and access to financing sources vary over these stages (Berger and Udell, 1998; Frielinghaus, Mostert, and Firer, 2005).

According to pecking order theory, a firm's characteristics are linked to its capital structure (Myers, 1984). Young firms tend to prioritize internal sources of funding, such as retained earnings (Timmons and Spinelli, 2004). If the retained earnings are less than the investments planned and further capital is required, firms choose low-risk debt and hybrids, such as convertibles and equities, only as a last resort. Empirical studies have confirmed that young firms' main source of capital is internal, and if the amount of capital is insufficient, that they use short-term debt (for example García-Teruel and Martínez-Solano, 2007; La Rocca, La Rocca, and Cariola, 2011).

Taken together, and in line with the findings of Berger and Udell (1998), La Rocca, La Rocca, and Cariola, (2011), and Sánchez Vidal and Martin Ugedo (2012) that older SMEs on average had lower debt ratios than did younger ones, the following hypothesis is formulated:

H1: Young firms rely less on bank loans than do newborn firms.

According to previous studies, variables other than age, i.e. size and industry affiliation, have been identified as influencing firm use of bank loans. These two variables are used as control variables in the present study.

An association between firm size and moral hazard and bankruptcy costs has been recognized (Rajan and Zingales, 1995; Chittenden, Hall, and Hutchinson, 1996; Cassar, 2004; López-Gracia and Sánchez-Andújar, 2007). Previous research has also noted that the smaller the firm, the higher the information asymmetry and monitoring costs (Rajan and Zingales, 1995; Chittenden, Hall, and Hutchinson, 1996; Cassar, 2004). To avoid these costs, small firms mostly prefer to finance their investments using internal financing. Accordingly, firm size is positively related to the availability of bank loans (Rajan and Zingales, 1995; Cassar, 2004; Bougheas, Mizen, and Yalcin, 2005; López-Gracia and Sánchez-Andújar, 2007; Talberg, Winge, Frydenberg, and Westgaard, 2008; Ngoc, Le, and Nguyen, 2009; mac an Bhaird and Lucey, 2010). The related hypothesis is formulated as follows:

H2: Firm size is positively related to firm reliance on bank loans.

The relationship between industry affiliation and debt ratio has been observed in several previous studies (Myers, 1984; Harris and Raviv, 1991; Talberg, Winge, Frydenberg, and Westgaard, 2008; Sánchez Vidal and Martin Ugedo, 2012; mac an Bhaird and Lucey, 2014). Firms in an industry with high fixed assets were found to have more bank debt than other firms (Gupta, 1969).

H3: Firm industry affiliation is related to firm reliance on bank loans.

Data sample, variables, data analysis, and model specification

Data sample

The present study is based on Swedish data. The Swedish economy is a small, export-oriented open economy (Swedish Central Bank, 2013) in which small businesses play a vital developmental role. There are over one million businesses in Sweden and nearly 97% of them are small firms with fewer than 10 employees (Statistics Sweden, 2014). The sample was obtained from the database of Swedish Foundation for Small Business Research (FSF). The dataset includes all small firms founded in the first half of 2005 and in the first half of 2008 in four regions in south-east Sweden. The preliminary dataset contained 2832 firms. While the firms founded in the first half of 2005 were classified as young ones, the firms founded three

years later were labelled newborn firms. As the firms investigated averaged fewer than five employees at the end of 2008, they were classified as micro firms according to Statistics Sweden (2014).

Variables, data analysis, and model specification

Debt financing is the dependent variable and firm age is the main independent variable. As in several previous studies, debt financing (bank loans : both short- and long-term) are defined as debt repayable within and beyond one year (for example for example Chittenden, Hall, and Hutchinson 1996). In agreement with previous studies (for example Petersen and Rajan, 1994; Chittenden, Hall, and Hutchinson 1996), firm age is measured as the number of years a firm has existed. In line with Serrasqueiro and Nunes (2012), the present study divides the firms into two age categories: young and newborn ones.

Empirical results

Descriptive analysis

Table I presents the descriptive statistics for the key characteristics of the sampled firms. Approximately 36% of the firms were founded in 2005 (i.e., young firms), while the remaining 64% were founded in 2008 (i.e., newborn firms). The firms averaged just over two employees. Furthermore, 57% of the firms are classified as consulting and other service firms, 18% as manufacturing firms, and 12% as retail and wholesale firms; together, the three remaining firm categories account for 13% of the firms. When comparing the two age groups of firms, the young firms tend, on average, to be smaller and to operate in the service sectors. The latter is the case because the corresponding value of the industry dummy variable is, on average, lower for young than for newborn firms.

Taken together, the findings indicate that the firm characteristics investigated influence firm use of bank loans. The main independent variable, age category, plays a significant role in explaining the difference between young and newborn firms, the former being less likely to rely on bank loans than are the latter. This finding supports H1 and is in line with a number of previous studies with a similar focus (Berger and Udell, 1998; La Rocca, La Rocca, and Cariola, 2011; Sánchez Vidal and Martin Ugedo, 2012). Moreover, consistent with H2 and H3, firm use of bank loans is influenced by size and industry affiliation, confirming previous

findings, for example, of Talberg, Winge, Frydenberg, and Westgaard, (2008), mac an Bhaird and Lucey (2010), and mac an Bhaird and Lucey (2014).

5. Concluding remarks

This paper empirically examines hypotheses drawn from pecking order theory regarding the impact of firm age, size, and industry affiliation on firm reliance on bank loans. Given that the accessibility and employment of capital are main preconditions for SME investment, growth, and survival, this study focuses on how young and newborn firms use financing sources, bank loans in particular. Using binary logistic regression, a significant difference was found in the use of bank loans between the two age categories investigated. Three-year-old firms tend to rely less on bank loans than do newborn firms. This may be because older firms realize opportunities to use internal financing sources more than do their newborn counterparts (Gregory, Rutherford, Oswald, and Gardiner, 2005; mac an Bhaird and Lucey, 2010; Yazdanfar, 2012). Due to costs related to agency conflicts, SME owners and managers prefer to be autonomous and retain control over their firms. They therefore follow a hierarchy (i.e., pecking order) in using capital, preferring internal capital to external capital sources.

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