

Comparative Analysis of Enterprise Data (CAED) 2012 Submission

Title: The Determinants of Leverage for Canadian Private and Public Firms

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Extended Abstract

A firm's capital structure choice depends on several factors. A large body of empirical literature has confirmed that firm size, profitability, tangibility and growth opportunities help explain cross-sectional differences in leverage ratios. These factors describe the demand conditions for capital. However, a firm's access to finance depends on the willingness of others to supply finance. Asymmetric information problems create limits to the financing options available to small, young and private firms. These private firms are expected to have limited access to equity, because equity finance is the source of financing most sensitive to the availability of information about a firm. Due to data limitations on private firms, little attention has been given to determinants of leverage for private firms.

This paper examines how the degree of information asymmetry between public and private firms affect their leverage choice. Following the theories of financial intermediation that emphasize the advantage of banks to mitigate asymmetric information problems by acquiring and analyzing information about the borrower, we expect firms that are opaque to be more likely to borrow from banks (e.g., Diamond (1984)). To the extent that these firms cannot access the public equity markets but rely mainly on debt financing through banks and other creditors, they may be viewed as credit constrained. Using a tax data set of Canadian corporate firms, we study leverage choices of both private and publicly-traded firms. Two main questions are addressed. First, how does a firm's access to external equity markets affect its choice between financing through debt or equity? Access to public equity markets allows firms a broader range of equity substitutes for debt. Further, we assume that access to equity markets is associated with lower information symmetry, which potentially lowers the cost of debt holding all other things equal. Thus, public firms are expected to have lower leverage values. We find leverage values are lower for public firms, which indicates that access to the public equity market provides a substitute for debt in the firm's financing choice.

To further examine financing differences, we allow the impact of firm size, profitability tangibility and growth opportunities to vary between private and public firms. There are two main distinctions between public and private firms. For both public and private firms, there is a negative relationship between

profitability and leverage. However, the sensitivity is much larger for private firms than it is for public firms. This result suggests that private firms are more credit constrained. Profits allow private firms internal financing opportunities through retained earnings, which reduces their leverage ratio by increasing equity and/or decreasing debt. The second distinction between public and private firms is that previous sales growth, the measure of a firm's growth opportunities, has a positive effect on leverage for private firms but a negative effect on leverage for public firms. Strong growth opportunities may indicate a high quality and productive firm and productivity firms tend to be larger. Alternatively, a firm with strong growth opportunities may choose lower debt levels in order to have financing available in the future for the growth opportunities. These contrasting effects offer an explanation for the opposite impact of sales growth on leverage for private and public firms. Private firms likely rely on mainly debt for financing, so must increase their debt and thus, leverage to become larger; while public firms may limit debt when good growth opportunities are a possibility.

The second question is "how do aggregate industry conditions within an industry affect firm leverage?" The analysis begins by examining the impact of the variance of sales growth or sales growth volatility within an industry during a given year on firm leverage. We find that industries with higher sales volatility at a given time have higher leverage ratios. Sales growth volatility could be thought of as a measure of risk within an industry. Firms faced with riskier conditions may have a leverage ratio on average as a way to diversify and transfer the risk to creditors. Further, the sensitivity of leverage to sales growth volatility is lower for private firms, who probably have fewer opportunities to diversify any risk due to credit constraints.

Data Description

This research uses the GIFIT2LEAP database. GIFIT2LEAP, created and maintained by Statistics Canada, is a unique firm-level database that is the universe of incorporated firms that file a tax return and hire employees in Canada. The GIFIT2LEAP has two administrative data sources: (i) the GIFIT2 corporate income tax files containing tax and balance sheet information on firms; and (ii) the Longitudinal Employment Analysis Program (LEAP) database containing firm payroll and employment information. The GIFIT2LEAP database was created by merging the Longitudinal Employment Analysis Program (LEAP) and the General Index of Financial Information-Corporate Tax Return File (GIFIT2) for the period 1984 to 2008. LEAP is an administrative database and contains payroll information for each employer identification number (firm) registered with the government tax agency, Revenue Canada. LEAP contains total payroll and employment for all businesses, incorporated or unincorporated. The GIFIT2 database tracks all incorporated firms that file a T2 form with Revenue Canada at the four-digit NAICS industry level. This database is used to assess firm specific annual financial variables such as profit, total debt, short-term debt, long-term debt, equity, total assets, current assets, capital assets, sales and location. Measured by either output or employment, the GIFIT2LEAP database includes almost the entire Canadian private sector. The omitted components are non-incorporated enterprises and corporations that hired no employees.

An important advantage of the GIFIT2LEAP data is its complete coverage of all incorporated Canadian firms. It comprises both publicly-traded and privately-held firms (which consist of a larger portion of the Canadian business sector). The dataset not only contains manufacturing but also firms from all sectors of the economy. The inclusion of other sectors provides us a rare opportunity to examine their behaviour and to make comparison between the various sectors of the economy. In addition, the inclusion of small, young and private firms makes it possible to analyze the financial position of such firms. The information in the GIFIT2LEAP database allows the researchers to examine determinants of

firm leverage in greater detail. The database is a recent creation by Statistics Canada. A previous version of the dataset, known as T2LEAP, contained similar information and coverage of firms. GIFI-T2LEAP contains the following improvements over T2LEAP necessary to address the research questions in this paper. First, the General Index of Financial Information (GIFI) has been included. GIFI contains much more detailed balance sheet and financial information on firms, such as a breakdown of total assets into current, long-term and capital assets, and total debt into short-term and long-term debt. The additional information from the GIFI form also provides measures of tangibility and profitability necessary to analyze determinants of firm leverage. Second, the coverage period has been extended from 1984-1997 for the T2LEAP database to 1984-2008 for the GIFI-T2LEAP database. This extension allows the researchers to track firms for a longer period.

The use of GIFI-T2LEAP database has several advantages over other potential datasets available. First, GIFI-T2LEAP is a firm level database. Therefore, any study using the GIFI-T2LEAP database makes no assumptions regarding the aggregation of firms. For example, the cause of the Canadian recession in the early 1990s has been looked at by Fortin (1996) and Freedman and Macklem (1998). Both studies use aggregate data to document findings. Firms are heterogeneous. Internal decisions, such as debt-equity financing breakdown, vary greatly across firms in response to external fluctuations. Analyzing differential impacts across firms should give us a better understanding of determinants of financial structure. Second, the GIFI-T2LEAP database contains the majority of firms operating in Canada. No other comparable dataset has as broad a sample of the firms as the GIFI-T2LEAP. Finally, age, size and financial information about the firm are available in the GIFI-T2LEAP database. These firm level variables, which other databases such as Compustat do not completely contain, enable us to address the questions we propose in this study. Thus, the GIFI-T2LEAP data are ideal for identifying firm entry and exit because of its universal coverage.