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Corporate Access to External Financing

Access to external finance, such as bank loans or trade credit, is a key determinant of a firm's ability to develop, operate, and expand. Economic researchers have studied how various macroeconomic and microeconomic factors influence such access; for example, it has been shown to depend on the macroeconomic environment, since economic downturns tend to limit firms' ability to borrow and banks' willingness to lend. This "credit channel" research argues that corporate access to credit is the principal mechanism linking monetary policy and the real economy. At the micro level, research has shown that characteristics specific to a firm influence the degree to which macroeconomic changes affect its access to external financing; specifically, firms that are more vulnerable financially—such as smaller, younger, riskier, and more indebted firms—are found to be more affected by tighter monetary policy.

This *Economic Letter* summarizes research by Lago González, Lopez, and Saurina (LLS, 2007) that expands this literature using unique data sets available for the Spanish banking system. One data set is the Spanish credit register, which contains information on all corporate loans granted by Spanish banks, and the other data set contains firm-level accounting information. By combining the data sets, the authors examine access by Spanish firms to external financing from bank and non-bank sources over the period from 1992 to 2002 and their results provide further insights into the determinants of firms' borrowing efforts in Spain and more broadly. For example, they find that Spanish firms are quite dependent on short-term, nonbank financing, which is less sensitive to firm characteristics than bank financing. Yet, short-term bank financing is accessed more frequently during economic expansions, suggesting that firms substitute away from more expensive forms of non-bank financing as their conditions improve. The authors confirm that smaller, younger, riskier, and more indebted firms rely more on external credit than on internal financing, such as retained earnings and other equity, and they expand these results by showing that the nature of firms' banking relationships, such as the number of banks borrowed

from and whether collateral is required for the loans, also influences access to external finance.

Spanish banking data

While much of the research on corporate access to external financing has focused on macroeconomic issues, the LLS study is grounded more in the microeconomic approach by using firm-level data. One data set used in this study of Spanish firms is Informa, which contains firms' annual balance sheet and income information that are filed with the Spanish government; while the data set does not include all Spanish firms, it provides a representative sample that has increased to over 50% of registered firms by the end of the sample period.

The other data set is the CIR, which is the Spanish central bank's credit register. This banking data set is published monthly, but only year-end data were used to match the Informa data set. Since the minimum loan amount for inclusion in the CIR has been €6,000 since 1996, the database is effectively a census of Spanish corporate bank lending. The CIR includes information on the characteristics of each loan, such as its amount, maturity, and collateral status, as well as certain information on the borrower, such as industry sector and province of headquarters. For this study, loan-level data were aggregated up to the firm level, since a firm can have multiple loans with a single bank or across several banks.

The empirical analysis is based on the set of firms appearing in both data sets and meeting certain sample criteria, such as requiring that a firm's banking debt recorded in the CIR data set be higher than its total debt as recorded in the Informa data set. The sample available after matching the two data sets contains almost 60,000 firms for the period 1992 to 2002. Approximately 56% of the firms in the sample have fewer than three years of consecutive observations, and their average age is eight years with the median age at six years. The sample basically consists of small firms, as indicated by the fact that the smallest firm in the sample has €82,000 in total assets, the median firm has €615,000 in assets, and the 95th percentile is

€5.4 million in assets. These characteristics of the sample firms should not unduly influence the analysis, since smaller and younger firms are typically more dependent on external finance.

Measures of external financing

The LLS study is based on four related measures of corporate access to external finance. The first measure is the ratio of short-term debt (i.e., with less than one year to maturity) to total debt. The second and third financing measures decompose the short-term debt measure into its bank and nonbank (particularly, trade credit) components. The fourth measure is simply the ratio of total bank debt, regardless of maturity, to total debt.

For the sample period, short-term debt accounts for about 77% of a Spanish firm's total debt, on average. Bank debt and nonbank debt constitute roughly 12% and 65% of total short-term debt, respectively. Bank debt was found to make up about 42% of total debt, which implies that long-term bank debt constitutes roughly 30% of total debt. Since, on average, the summed shares of short-term debt (i.e., 77%) and long-term bank debt (i.e., 30%) exceed 100% of total debt, long-term nonbank debt financing is basically non-existent in this sample. This conclusion is in line with the development of the nascent corporate debt markets in Spain and the smaller size of the sample firms.

To examine how macroeconomic and particularly microeconomic factors impact these different measures of external financing, the LLS study uses dynamic panel estimation methods that account for heterogeneity across firms. Specifically, the financing measures are regressed on three sets of variables. The first set of explanatory variables is related to accounting variables drawn from the Informa data set, such as a firm's size, age, tangible assets available as collateral, return on equity, leverage (measured as the ratio of total debt to shareholder equity), and liquidity (measured as the ratio of liquid assets to current liabilities). The second set of explanatory variables is macroeconomic in nature, including measures of economic growth and the level of Spanish interest rates, defined here as the three-month interbank rate.

The third set of explanatory variables contains information on firms' banking relationships, which can be easily derived from the CIR database. The first CIR variable is the number of banking relationships a firm has established. In theory, having more banking relationships could be seen as a

measure of firm transparency and thus a proxy for ability to access external financing. However, having more bank relationships could also be seen as a sign of poor firm performance. The average number of bank relationships for sample firms was 3.2, while the median value was 3. The second CIR explanatory variable is the weighted length of firms' banking relationships, using as weights the loan percentages in relation to firms' total bank financing. Since longer banking relationships should alleviate some of the standard information-sharing problems between lenders and borrowers, such firms might be expected to have greater access to both bank and nonbank financing options. The average and median lengths of a firm-bank relationship in the sample were almost three years. The third CIR variable is the percentage of the borrower's outstanding loans for which collateral was required. Only about 20% of loans recorded in the CIR data set are collateralized.

In the regression analysis, the impact of these relationship variables is examined in light of a firm's general funding costs; that is, these variables enter the regression after being multiplied by the Spanish interest rate variable. The primary reason for this specification is that the relationship variables probably impact a firm's access to external financing most directly through its borrowing costs. For instance, having more or longer bank relationships should more directly impact a firm's borrowing costs than its access to bank credit.

Summary of empirical results

Turning first to the firm-specific accounting variables, the LLS study finds that smaller firms require more external financing for their ongoing operations. With respect to firm age, older firms are more reliant on bank financing overall and are more likely to avail themselves of short-term bank debt. At the same time, the age of a firm does not appear to be a factor when it comes to accessing short-term debt from nonbank sources, suggesting that trade credit is accessed by Spanish firms regardless of age. The greater use of bank credit by older firms could be viewed as support for the theory that banks' monitoring advantages increase with the length of a firm's track record in general or perhaps with the duration of a firm's relationships with particular lenders. Conversely, it may be that, for relatively new firms, the suppliers (those extending trade credit) have a competitive advantage (relative to banks) in monitoring the firm's financial condition and its ability to repay its debts.

With respect to tangible assets available for collateral, the empirical results suggest a negative relationship with short-term nonbank and overall short-term debt measures, but a positive relationship with total bank debt. This result suggests that firms with greater access to collateral generally do not require as much short-term debt financing and can rely more on long-term bank debt. The empirical results suggest that firms that are more profitable (i.e., have a higher return on equity) and more liquid have less need for bank financing, but that these factors do not influence their nonbank financing. These results, in conjunction with the finding that more leveraged firms access less bank financing and more trade credit, reinforce the conclusion that use of the latter financing source is less sensitive to firm characteristics.

With respect to macroeconomic variables, the LLS study found that total short-term debt falls when economic growth increases. This decline is due to a drop in nonbank short-term financing (i.e., trade credit), since short-term bank financing and total bank debt increase. This result suggests that firms use bank credit more during economic expansions, but that they turn more to trade credit when bank credit is less available, such as during recessions. The results for the level of Spanish interest rates suggest that total short-term debt falls when rates rise, again mainly due to a substitution away from nonbank debt toward bank debt.

As discussed earlier, the relationship variables derived from the CIR data set are examined with respect to their impact on firms' external financing via their impact on the cost of funding. Looking first at the number of banking relationships, the interacted term has a negative relationship with the ratios of total short-term debt and short-term nonbank debt, but a positive relationship with bank debt, regardless of maturity. This result suggests that for a given interest rate level, a firm's reliance on bank financing would increase if it had more banking relationships, while its access to short-term, nonbank financing would decrease. On the whole, these results are in line with the notion that trade credit is more expensive than bank credit and would lead firms to borrow from banks whenever possible.

On a related note, for a given level of interest rates, firms with longer banking relationships are found to be less likely to access short term debt and more likely to increase their total bank debt. This result suggests that firms may be able to take advantage of their banking relationships to access longer-term financing. Finally, for a given level of interest rates, firms that have pledged collateral typically access less short-term debt and more bank debt, especially longer-term bank debt. These results are in line with the theory that collateral allows a borrower to access longer-term funding because it assuages banks' concerns about default losses.

Conclusion

Empirical analysis of the macroeconomic and microeconomic determinants of corporate access to external financing provides useful information on how firms and their lenders respond to economic fluctuations. The recent LLS study on Spanish corporate borrowing provides general insights into this question, as well as some specific insights about the Spanish banking system. For example, Spanish firms are found to be quite dependent on short-term nonbank financing, which is less sensitive to firm characteristics than short-term bank financing. However, the study also finds that short-term bank debt is accessed more during economic expansions, which may suggest a substitution away from nonbank financing as firm conditions improve. Finally, the findings that lending relationships influence how firms access external finance provide additional microeconomic insight into the macroeconomic transmission mechanism.

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Reference

Lago González, Raquel, Jose A. Lopez, and Jesus Saurina. 2007. "Determinants of Access to External Finance: Evidence from Spanish Firms." FRBSF Working Paper 2007-22. <http://www.frbsf.org/publications/economics/papers/2007/wp07-22bk.pdf>

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Index to Recent Issues of *FRBSF Economic Letter*

DATE	NUMBER	TITLE	AUTHOR
4/6	07-09	Will Fast Productivity Growth Persist?	Fernald/Thipphavong/Trehan
4/13	07-10	Do Monetary Aggregates Help Forecast Inflation?	Hale/Jordà
5/4	07-11	U.S. Supervisory Standards for Operational Risk Management	Lopez
5/25	07-12	Monetary Policy, Transparency, and Credibility: Conference Summary	Dennis/Williams
6/1	07-13	Anxious Workers	Valletta
6/8	07-14	House Prices and Subprime Mortgage Delinquencies	Doms/Furlong/Krainer
6/15	07-15	On Forecasting Future Monetary Policy	Kwan
6/22	07-16	Credit Unions, Conversions, and Capital	Wilcox
6/29	07-17	The Narrowing of the Male-Female Wage Gap	Doms/Lewis
7/6	07-18	The Costs and Value of New Medical Technologies: Symposium Summary	Valletta
7/13	07-19-20	The U.S. Economy and Monetary Policy	Yellen
7/20	07-21	What We Do and Don't Know about the Term Premium	Swanson
7/27	07-22	Regional Economic Conditions and Community Bank Performance	Furlong/Krainer
8/3	07-23	Trends in Bay Area IT Employment	Hsueh
8/10	07-24	Are Global Prices Converging or Diverging?	Glick
8/31	07-25	Changing Productivity Trends	Trehan
9/14	07-26-27	Recent Financial Developments and the U.S. Economic Outlook	Yellen
9/21	07-28	Changes in Income Inequality across the U.S.	Regev/Wilson
9/28	07-29	Internal Risk Models and the Estimation of Default Probabilities	Christensen
10/5	07-30	Relative Comparisons and Economics: Empirical Evidence	Daly/Wilson

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