Master's thesis in Banking and Finance «The Collateral channel effect of competition on financial leverage»

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Executive summary

Problem background

Redeployability of assets is one of the core topics in capital structure-related literature. Multiple studies show that assets facilitate borrowing only to the extent that they are redeployable or salable. I use a number of competition measures as proxies for secondary market capacity for tangible assets and study their effect on companies' capital structure through the collateral channel.

Prior studies show that the quantity of the borrower's peer firms that employ similar assets in their production process is positively related to the loans' recovery rates (Acharya et al. (2007)), debt tranche credit rating, and loan to collateral value ratio and is inversely related to the borrower's cost of debt (Benmelech and Bergman (2009)). In this thesis, I attempt to complement this body of literature by investigating whether these findings translate into higher financial leverage in high competition industries and geographical regions. Thus, I develop and test two hypotheses related to the collateral channel effect of product market competition on the company's capital structure. The first question I investigate is whether high industry competition positively affects the level of financial leverage through enhancing the salability of the borrower's tangible assets. Further, I look into how this effect transforms during a country-wide economic recession.

Methodology

I use panel data set consisting of quarterly accounting data (the period from 1970 till 2017) for the set of U.S. firms in the industries that employ specific assets in their production process: agriculture, forestry and fishing, mining, construction, manufacturing, transportation, communications, electric, gas, and sanitary services. I apply linear regression models with interaction terms, year- and firm-fixed effects and cluster standard errors by firms as recommended in Petersen (2009). My findings are robust to clustering standard errors by the industry as well. Further, I demean the tangibility variable for the interaction term in the regression model following the recommendation in Ozer-Balli and Sørensenn (2010). Finally, I investigate how the collateral channel effect of competition varies depending on the relative size of the company within the industry by dividing the observations into two groups, above and below the industry median, and studying them separately.

I test four competition measures that reflect different dimensions of competition:

HHI, HTI, number of competitors, and average rival's size. Based on these measures, I create dummy variables for high competition tertiles of observations on state and country levels in order to obtain more pronounced results and ease comparison and interpretation.

Results

The main results indicate that the collateral channel effect of competition is an important determinant of capital structure. It is particularly strong for relatively large companies as in the case of their default it is more problematic for the lenders to recover their funds unless there is enough market capacity to absorb a large pool of assets. Thus, while for low competition industries 1 percentage point increase in tangibility translates into a 0.09 percentage points increase in market leverage, for high competition industries the increase would be 0.20 percentage point. The effect of interest intensifies during the economic recession. In these periods tangible assets facilitate borrowing only if they are salable.

In the group of relatively small companies, the effect of interest can be found only if the location of the business operations of the studied companies can be approximately determined. In order to achieve that I limit my data set to the entities that report the same state as headquarters address and incorporation state. For this set of companies, I find a strong impact of a number of local competitors on the market and, especially, book leverage through the collateral channel during an economic crisis. At the same time, the direct negative effect of the competition is present for smaller companies during non-recession periods and is not significant for larger ones.

Overall, my findings indicate that a large number of peer companies increase the salability of industry assets and, hence, the level of industry fragmentation has an influence on the optimal capital structure of industry participants.