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Concluding Remarks

The effects of financial deepening on economic growth have been extensively debated over the past decades. Several authors suggested different manners to measure this impact. In general, the literature estimates cross-country panel models and find reasonable short and long run effects.

This article proposed a different identification method to estimate the income per capita-credit elasticity, using a cross-section of Brazilian municipalities. For that matter, bank competition was used as an instrument for credit. There is an extensive literature on this subject, with ambiguous conclusions on the effects of bank competition and credit supply and, consequently, on growth. Moreover, a structural model was used in order to show that the number of banks is a good proxy for bank competition variability, paramount for the identification of credit in a growth regression.

The Bresnahan and Reiss (1991) model can be used to estimate such variation and its results suggest not only different competition levels in the Brazilian banking industry, but also a non-linearity to be explored in the number of banks. Increases in competition levels are not necessarily decreasing: more intense in the beginning and less in the end.

To conclude, with an adequate instrument, the growth regression with a non-linear instrument was estimated. The first stage regression reiterates the existence of a non-linear relationship between credit and number of banks. Credit is increasing in the number of banks in markets with at most seven or eight banks, as suggested in the estimates of Bresnahan and Reiss' (1991) model for the banking sector.

In addition, 2nd stage results indicate that the long-run impact of credit in income per capita is significantly positive, corroborating the results in the literature. Furthermore, significant changes in the credit distribution have noteworthy effects in the municipality's income per capita. Finally, comparison of the OLS and 2SLS results suggests, in general, that the identification strategy

served its purpose, since the reduced form estimate was larger than the 2SLS's. This result was expected because, since economic growth increases the amount of credit, the variables simultaneity would bring an upward bias. Besides, the results are robust to the inclusion of predetermined conditions.

Finally, in order to document the transmission mechanism of credit, it was verified how industrial, agropecuary and services sector are influenced by the dissemination of credit. The second sector presented the largest impact, while the third presented lower influence. In order to minimize any omitted variable bias induced by these variables, they are added as covariates in the growth regression and the same previous results persisted.