Evolution in the market power of financial intermediation services in Argentina: a structural empirical analysis (2005:q1 - 2007:q1)

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Summary

The low depth of the Argentinian financial system has motivated doubts about the potential of development, even under relatively favorable macroeconomic expectations. Contributing to the analysis of this key industry, the current paper develops a methodology to measure the evolution of the financial intermediaries’ market power. Financial intermediation services have been scarcely developed in Argentina, which can be attributed to different structural domestic factors, such as the persistent uncertainty about the growth sustainability. Consequently, the period taken into account (2005:q1 – 2007:q1) was proposed in order to capture relatively stable financial circumstances and favorable macroeconomic perspectives.

The structural model follows the guidelines of the «New Empirical Industrial Organization» (NEIO) and the «discrete choice» literature, which study industries with differentiated products. Given that the market share is not an accurate

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measure to evaluate the market power in those cases when firms offer differentiated products, an alternative framework is proposed to calculate Lerner indexes. Therefore, market power is affected by the degree of substitution among the relevant products. Accordingly, a structural model of the banking industry was developed, considering an oligopolistic price setting competition. Dick (2002), Nakane, M. et al (2006), Molnár J. et al (2006) and Adams, R. M. (2007) have also developed estimations using similar methodologies for the banking sector. However, there are no similar studies for the Argentinian economy and accordingly the structural model and its variables have been adapted to obtain an acceptable representation of the domestic data.

First of all, theoretical preferences are aggregated into a market-level demand system whose parameters are estimated through a log transformation of the multinomial logit function. Therefore, two different groups of demands are estimated, on one hand the demands for services of financial investments and, on the other hand, the demands for loans. Furthermore, both of them are considered products offered by the industry of financial intermediaries. The reason explaining why deposits and other services of financial investment are not inputs is related to the possibilities of small investors to invest in the financial market without restrictions on the minimal amount required. Moreover, the own existence of this services requires the subsistence of a differential between the passive interest rates received by consumers and the interest rates obtained by non restricted agents when buying low risk assets in the financial market (such as bonds issued by the domestic Central Bank).

In addition, the variables taken into account to model the market shares in the market of financial investment services are related to the implicit interest rate paid by the entities for the credit resources, the lag of the correspondingly market share, the ratio of non-performing loans over assets, the quantity of branches, the ratio of branches over the number of provinces where they have commercial presence, the ratio of ATMs, amount of expenses on developments and employees over the number of branches, and other transformations of variables such as the change in the ownership of the entity, the implicit percentage for commissions and the ratios of certain general products on the whole portfolio. Additionally, the variables included in the demand equations of loans are similar, except for the rate of interest which was replaced for the implicit interest rate for loans.
The estimation strategy of the demand functions involves different instrumental variables in order to avoid the simultaneity problem, given that the interest rates, the benefits and the concentration in the market are determined all together. Therefore, the methodology of estimation is the generalized method of moments over the differenced model (to eliminate the idiosyncratic constants), using a broadly representative domestic panel data set from 2005:q1 to 2007:q1.

On the supply side, a functional form of the profits of the entities together with their balance sheet constraint were proposed. The former takes into account the opportunity cost of the resources obtained directly from the agents for those entities which are mainly financed through sources of liquidity obtained as intermediaries. Thus, incomes coming from the investment services of the financial intermediaries are calculated per unit of money as the difference between the implicit interest rate of the bonds issued by the Central Bank and the implicit interest rate which is paid for the financial sources by each entity.

Furthermore, when entities have to finance within the market their lack of resources in order to give loans, the interest rate of reference is supposed to be the interbank rate. Thus, incomes from loans are taken as the difference between the interest rate of the loans and the interbank rate.

These measures attempt to control for the opportunity cost of the money related to the differences in the commercial activity of the financial entities, and consequently the peculiarities in their way of generating added value. Additionally, the profit functions also include implicit prices for commissions (as percentages of associated loans or sources of financing) and linear cost functions.

Moreover, it is assumed that the observed data comes from market equilibriums where firms and consumers optimize their objective functions, profits and utilities. Therefore, the FOC of the firm’s problems are calculated assuming that the marginal costs are independent of the produced quantities. Thus, the FOC are obtained from a Nash-Bertrand equilibrium, as a result each firm considers the consequences of changing its price assuming that its competitors do not modify their own prices.

Under the existence of an interior equilibrium of pure strategy and prices strictly positive, the FOC of the entities’ objective functions provide the pricing rules, which combined with the demand estimates, enable the calculus of constant
marginal costs. Besides, the sensibility of the demand functions can be calculated using the parameters estimated through the multinomial logit model. Therefore, the necessary information to construct the Lerner Index of each entity is available, which represents the percentage of the price above the marginal costs.

Concluding, this paper attempts to provide new elements to the applied literature on the local financial market. The proposed alternative framework models the industry production, taking into account the duality of the financial intermediation business. Among the obtained results, some evidence was found supporting the presence of market power in the financial intermediation industry. Especially, the above mentioned is true for the loan market, where the price-cost margins of 50% of the entities exceed the 15%.

Nevertheless, some signals of increase in the degree of competition were found. During the time period under study, 2005:q1 - 2007:q1, it was estimated an average reduction of approximately 3 percentage points in the margins calculated for the credit market. Likewise, despite the inferior levels of the margins in the financial investment services, its average also decreased (though at a lower rate). These trends can be related to strategies developed under circumstances of relative macroeconomic stability, after approximately five years of steady growth. Furthermore, though the expectations of prosperity of a country with a history of high uncertainty might be peculiar, it is possible that the macroeconomic circumstances have made such trends feasible. In this sense, promoting the financial stability appears to be one of the foundations to encourage changes in the structure of competition in the financial intermediation industry.

JEL: G21, L11, L13, C8, C33.

Key Words: bank services, financial services, demand, bank competition, Argentina’s banking, financial entities, market power.