Financial Deepening and Bank productivity in Latin America

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Discussant

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1. Aims of the study

- The paper analyses the link between financial deepening and banking productivity in Latin American and the direction of causality.
- Specifically, this paper addresses two main questions:
  - whether financial deepening affects banking productivity in Latin America and
  - if there exists channels of reverse causality between the two variables.

2. Research design

The authors apply a three step analysis:

1. they employ the DEA-like Malmquist Index to measure banking productivity. The authors follow the intermediation approach and employ one input (the sum of: personnel expenses, interest rate expenses and other operating expenses) and two outputs (the amount of loans and other earning assets). After calculating the productivity index, its components are also obtained, namely the Technical Change (TC) and the Technical Efficiency Change (TE).

2. Subsequently, the authors consider panel data and obtain estimates using the Arellano and Bover (1995) GMM *system estimator* to test the direction of causality between financial deepening and banking productivity. The authors use the TFP as the dependent variable.

3. In final, the authors analyse the reverse causality: the Credit to the private sector in terms of GDP (PCR) is used as the dependent variable and the TFP is the explanatory variable.

3. Main results

- The authors show that the increasing financial deepening is an important stimulator of greater banking productivity. While the region has still low levels of financial deepening, the latter displays an increasing trend in the recent years. An expansion of credit to the private sector may be an important determinant of further banking productivity in the future.

- The author find weak evidence of reverse causality suggesting the existence of a virtuous circle where promoting financial deepening can create conditions favourable for the productivity of financial institutions, which in turn can further boost financial deepening itself.

- Therefore, policy oriented measures in the region should take in consideration the positive causality between financial deepening and banking productivity and try to increase the level of credit to the private sector as a stimulant of economic growth.

4. Contribution

- This is an interesting paper that has been put together carefully.
- There are no similar studies for Latin America
- Large sample: 973 bank observations from nine Latin American countries (Argentina, Brazil, Chile, Costa Rica, Colombia, Paraguay, Peru, Uruguay, and Venezuela) over the period 2000-2006.
- Excellent research design and variable selection (i.e. the degree of financial deepening measured with a AR(2) lag structure, the inflation rate, the degree of openness, the government expenditure, the exchange rate, GDP per capita, credit to the private sector)
- Interesting results

5. Suggestions

- Robustness checks:
  - Use alternative inputs and outputs definition: e.g. why using a single input (the sum of personnel expenses, interest rate expenses and other operating expenses)
  - Run a bootstrapping procedure, e.g. the approach proposed by Simar and Wilson (JE2007) for two stage approaches: (p. 33. "*A more serious problem in all of the two-stage studies that we have found arises from the fact that DEA efficiency estimates are serially correlated*).
  - Test the role of environmental differences in the TFP estimation.
  - Use a two-step system *GMM* estimator with Windmeijer (20005) corrected standard error. The estimated asymptotic standard errors of the efficient two-step *GMM* estimator can be severely downward biased.
  - The authors uses credit to the private sector in terms of GDP as a proxy of financial deepening (credit deepening). Why not accounting for M2/GDP and stock exchange market variables (e.g. market capitalisation) in the econometric model?