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Comment

Ross Levine

The paper by Professors Black and Moersch is a pleasure to read. From the bottom-line conclusion that it is difficult to say whether the German or Anglo-Saxon Model is better, to the empirical work that underlies this conclusion to the helpful organization of the theoretical literature on the ties between financial structure and economic activity, this paper provides a useful contribution to those interested in the links between financial systems and economic growth.

I organize my comments into three parts. After reviewing the theoretical framework underlying the paper, I mention some aspects of the empirical work that concern me. At the same time, I argue that these concerns are probably unimportant. Finally, I discuss some additional empirical work about financial structure and economic growth that complements and confirms Black and Moersch's analyses.

First, consider the conceptual framework linking financial structure with economic growth. Financial sector policies, regulations, the legal system and other official actions affect the structure of the financial system. This may involve overt actions like the Glass-Steagall Act in the United States or more subtle issues dealing with the definition and taxation of income or the legal ease with which financial instruments can be securitized. Also, the industrial organization and level of economic development of an economy may affect the type of financial structure that emerges.

The resultant financial structure – the mix of financial intermediaries, markets, and instruments – supplies financial services. That is, the resultant financial system researches firms, allocates capital, exerts corporate control, provides mechanisms for managing risk, and facilitates transactions.

In turn, these financial services affect saving rates and allocation decisions in ways that determine economic growth rates. Change in the nonfinancial economy can then feed back and alter the structure of the financial system.

This framework provides a useful definition of when a financial structure is "better." A better financial structure is a mixture of financial intermediaries, markets, and instruments that is more effective in obtaining information about firms, exerting corporate control, managing risk, and facilitating transactions than an alternative mix of intermediaries, markets, and instruments.

Although this framework is useful in organizing our thoughts about the relationship between the financial system and economic activity, it comes with some bad news. Basically, theory is ambiguous about which mix of intermediaries and markets is best at providing financial services. Thus, as nicely put by Professor Black and Moersch, ". . . theoretical models are not likely to provide a ranking of the two systems [bank–based versus market–based] . . ." Also, it

is worth noting here that the conceptual framework focuses on the long-run. We are really talking about long-run growth, not short-run business-cycles.

Now, I turn to the empirical analysis of the links between financial structure and economic growth. There are important difficulties in turning from the conceptual framework to data. Fundamentally, we do not have very good measures of the services provided by the financial system. It is very difficult to measure directly how well the financial system researches firms, exerts corporate control, provides risk management vehicles, and eases financial transactions. Therefore, it is very difficult to measure whether one financial structure is better than another since "better" is defined in terms of financial services that are so difficult to quantify.

This actually highlights one aspect of the paper that I thought the authors could easily improve. To measure stock market development the authors use market capitalization to GDP. The market capitalization ratio, however, does not measure financial services directly. Indeed, in my own work with Sara Zervos (Levine and Zervos 1996) on stock markets and growth, market capitalization is not strongly linked with economic growth in a broad cross-section of countries. In contrast, measures of the liquidity services provided by stock markets are strongly linked with economic growth. We measure the liquidity services using either the total value of stock transactions divided by GDP or the turnover ratio, which equals trading divided by market capitalization. As discussed in the paper, there are theoretical reasons for believing that stock market liquidity is important for economic growth. So, I would prefer to see an indicator of stock market development that measures financial services rather than a simple measure of stock market size.

I do not think this would make a large difference in this paper's results, however. This alternative measure of stock market development generally produces similar ratios to those employed in this paper. However, when stock market development is measured by the total value of transactions relative to domestic production, Germany's stock market is more developed than Australia's, which is classified as market based.

A second aspect of the empirical work that bothered me, but which is not easily corrected, is the use of annual data. The conceptual framework focuses on the links between financial services and long-run growth. Yet, the empirical work uses annual data that may reflect business cycle fluctuation. I do not have a helpful recommendation, and in my work on stock markets and growth annual data tends to produce similar results to purely cross-sectional analyses. But, I think readers should be aware of this tension between the theories underlying the analysis and the frequency of the data used to evaluate those theories.

Finally, I would like to refer to additional empirical work that confirms the findings by Professors Black and Moersch. The importance of complementing the current paper with a broader perspective can be made by the following observation. Germany and Austria had real per capita GDP's (as of 1991 in constant purchasing power parity terms) of about US$15,000 and US$14,000 respectively. The United States and the United Kingdom had real per capita GDP's of about US$20,000 and US$14,000 respectively. These countries are very similar. Thus, it is going to be exceedingly difficult to identify a link between differences in financial structure and differences in economic development because there is basically no difference in economic development (taken over a sufficiently long period).

Asli Demirguc-Kunt and I (Demirguc-Kunt and Levine 1996a,b) have looked at measures of financial structure for a broad cross-section of 50 countries. We find a few very noticeable patterns. First, countries with better developed banks, on average, also tend to have better

developed stock markets. Second, as countries get richer, banking development and stock market development both improve at least until they become upper-income countries. Third, Sara Zervos and I (Zervos and Levine 1996) recently showed that stock market indicators and bank development both predict economic growth in a cross-section of countries. Thus, I'm not always sure if it is helpful to think in terms of bank versus market based systems. It may be better to think in terms of financial systems that provide better financial services. Bank and stock market development seem to go hand in hand and they seem to provide independently important financial services. Thus, some broad cross-country studies support the much more refined empirical work by Professors Black and Moersch.

Also, recent company level studies by Demirguc-Kunt and Maksimovic (1996) further illustrate the potential complementarities between stock markets and banks. They show that in developing countries, company debt-equity ratios tend to rise significantly, not fall, when stock markets become better developed. Thus, there is not a substitution out of bank finance into equity finance as equity markets develop. Bank finance actually becomes relatively more important. This further suggests that banks and stock markets may provide different, though complementary financial services. Put differently, economies benefit from access to well functioning banks and stock markets. The policy perspective should not be an either or choice: countries should adopt policies that allow financial markets and intermediaries to flourish.

In sum, I think this work on Europe complements the picture that emerges from comparisons of a broader cross-section of countries and from firm-level studies.

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