

SYMPOSIUM ON FINANCIAL STRUCTURE AND DEVELOPMENT

# Financial Structure and Economic Development: A Reassessment<sup>\*</sup>

*Robert Cull, Asli Demirgüç-Kunt, and Justin Yifu Lin*

While the literature on the effects of financial development is large, relatively few studies have examined whether and how financial structure—the mix of financial institutions and the services that they offer—matters for economic growth and inequality. Moreover, the literature has been largely silent about whether the relationships between financial structure and firm outcomes (performance and access to finance) change as a country develops. The group of papers published in this special section helps to fill those gaps in the literature. The four that appear here were part of a larger conference on “Financial Structure and Economic Development” that took place at the World Bank on June 16, 2011. Further information on the issue of financial structure in development can be found in other papers presented at the conference and available in World Bank Working Papers (Lin, Sun, and Jiang, 2009; Beck, Demirgüç-Kunt, and Singer, 2011; Kpodar and Singh, 2011).<sup>1</sup>

The first of the papers in this issue by Asli Demirgüç-Kunt, Erik Feyen, and Ross Levine, uses quantile regressions to assess the relationship between economic and financial development at each percentile of the distribution of economic development. Thus, the quantile regressions provide information on how the associations between economic development and both bank and securities market development change as countries grow richer.

<sup>\*</sup> Robert Cull (corresponding author; rcull@worldbank.org) is a Lead Economist in the Development Research Group of the World Bank. Asli Demirgüç-Kunt (ademirguckunt@worldbank.org) is Director, Development Policy, Development Economics Vice Presidency, and Chief Economist, Finance and Private Sector Development Network at the World Bank. Justin Yifu Lin (justinlin@ccer.pku.edu.cn) is Professor and Honorary Dean of the National School of Development at Peking University and former Chief Economist and Senior Vice President of the World Bank.

1. Lin, Sun, and Jiang study these issues through the lens of economic theory. Beck, Demirgüç-Kunt, and Singer offer new data and analysis that pushes beyond measures of financial structure based only on banks and stock markets to include credit unions, building societies, community banks, microfinance institutions, finance companies, and factoring companies. Kpodar and Singh examine the effects of financial structure on poverty and inequality.

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The main results are that as economies develop (1) both banks and markets become larger relative to the size of the overall economy; (2) the association between an increase in bank development and an increase in economic output becomes smaller; and (3) the association between an increase in securities market development and an increase in economic output becomes larger.

The quantile regressions suggest that financial structure changes—becoming more market-oriented—as economies develop. This is consistent with theoretical arguments that economic development increases the demand for the services provided by securities markets relative to services provided by banks (Allen and Gale, 2000; Boyd and Smith, 1998). Hence these findings support theoretical predictions that suggest securities markets become more important for economic activity and that banks become less important as countries develop economically. This finding is also of significant policy relevance. If the mixture of banks and markets should change as indicated as economies develop, then policy and institutional impediments to the evolution of the financial system can have significant costs for economic development.

In the next paper, Fenghua Song and Anjan Thakor provide a theoretical analysis to explain how banks and capital markets compete with each other to attract borrowers, but also complement each other and co-evolve over time. In their model, banks are superior to markets in credit analysis because they can more accurately certify borrowers that are worthy of credit. In contrast, capital markets hold the advantage in aggregating information. By providing a trading venue, informed investors' private information about project payoff enhancement opportunities is impounded into security prices, thereby reducing the probability that valuable investment opportunities are passed up. Banks and markets compete with each other to attract borrowers based on their relative advantages.

Their model also incorporates two novel features absent from other theories of financial system architecture: securitization and risk-based bank capital. Securitization creates a natural symbiosis by involving the bank in the origination and screening of loans and capital markets in the provision of financing. This, in turn, creates a positive feedback loop from bank development to market development. In addition, improvements in banks' screening that derive from banking sector evolution increase the confidence that capital market investors have in the quality of securitized borrowers, which stimulates greater informed trading in the capital market and thus capital market evolution.

Capital market evolution also affects bank lending through its effects on bank capital. As informed trading through markets increases, the costs of equity capital declines for firms, including banks. By raising additional capital at reduced cost, banks can extend more credit, lending to riskier borrowers who were previously excluded from credit markets. Expansion into riskier market segments provides an incentive for banks to improve the precision of their screening efforts. Thus, capital markets improvements spur banking sector development through bank capital. The analysis can therefore account not only for competition and complementarity between bank and market financing, but also their co-evolution.

Their theoretical framework can also account for political intervention in financial sector development where the political goal is to expand credit availability. By giving politicians a choice in how to intervene in the financial system, the authors endogenize the manner of political intervention at different stages of financial development. There are two methods of intervention: equity capital subsidies in exchange for government ownership of banks (as we see in many emerging economies), and direct-lending regulations that force banks to increase their lending to low-quality borrowers that banks would not extend credit to in the absence of regulation. By contrast, regulations do not subsidize banks, and in fact impose a cost on them.

In the early stages of development, capital is very expensive due to less developed financial markets. Banks therefore find the capital subsidy attractive, and are willing to increase size by lending to low-quality borrowers in order to obtain it. Direct-lending regulations do not work well because banks are making low profits in the early development stage, so they will not incur losses by lending to more borrowers (of lower quality) without some form of compensation. At the intermediate development stage, capital becomes sufficiently cheap that the capital subsidy no longer works well as an inducement to expand lending to lower-quality borrowers. At the same time, directed-lending regulations also do not work well, because bank profits are still not sufficiently high. Thus, there is no political intervention to promote expanded credit availability.

At the advanced stage of financial development, capital becomes even cheaper, so capital subsidies continue to not to be effective in inducing banks to expand lending. What is left is for politicians to directly push/force the banks to expand lending to low-quality borrowers, which imposes costs on the banks. Regulation becomes more effective in the advanced stage because banks are making enough profits to cover these additional costs. Banks will obey the regulations, because failing to do so would result in revocation of the banking license and the loss of large future profit streams. In summary, the model predicts a U-shaped pattern of political intervention: It is highest in the early and advanced stages of financial development, though in different forms, but lowest in the intermediate stage.

The main reason for this stage-dependent intervention is that the value of capital subsidies depends on the cost of equity capital for banks, which in turn depends on the level of development of the capital market. While direct empirical tests of these hypotheses are not pursued, the paper provides insights as to how the incentives of financial services providers, borrowers, and politicians shape the structure of the financial sector, and how that changes over time.

In the third paper, Augusto de la Torre, Erik Feyen, and Alain Ize use a battery of sixteen indicators of the size, depth, and efficiency of financial sectors to describe the path of development across countries over the past 35 years, and to benchmark that development using regressions that control for each country's stage of economic development and other arguably exogenous factors (such as population size and density). The authors then view these

paths of financial development through the lens of the frictions that hindered financial contracting. They define two broad categories of frictions. The first set restricts agents' capacity to establish and enforce bilateral contracts (so-called agency frictions), while the second impedes agents' capacity to participate and coordinate their financial activities in collectively desirable ways (collective frictions). The authors go on to argue that the arc of financial development reflects countries' efforts to find the path of least resistance around those frictions.

Data on financial structure support the notion that the sequencing of financial services broadly conformed with what one would expect based on the gradual grinding down of the frictions along the paths of least resistance. For example, agency frictions associated with the costs of information and contract enforcement meant that bank deposits preceded bank credit, credit to governments developed before credit to private actors, and the full development of credit markets lagged that for bank credit. With regard to collective action frictions and network effects, the cross-country patterns show that external funding of the government preceded domestic funding, and wholesale (non-deposit) funding lagged retail deposit funding, but often took off rapidly once minimum thresholds had been reached. Finally, the development of capital markets showed large returns to scale reflecting network effects, and interconnectedness within the financial system and globalization exploded as financial systems matured.

Countries often deviated from their development paths as predicted by the benchmark regressions and, though the regressions summarize strong central tendencies, lower income countries generally have not retraced the past steps taken by high income countries. The authors therefore speculate that across-the-board innovations (that lifted all countries, regardless of their stage of development) and path dependencies reflecting dynamic interactions between financial and economic development both have factored in the financial development experiences of individual countries.

The paper concludes with an empirical analysis of factors that could potentially account for some countries' large deviations from benchmark development paths. They show that deviations were linked to policy-related variables that affected the enabling environment for financial contracting such as enforcement costs, creditor and property rights, and the quality of credit information, though contractual rather than informational frictions explain a larger share of the policy-induced development differences across countries. The authors also point out that contractual frictions are likely to be more difficult to resolve because they tend to require reform of local institutions, whereas many informational frictions could conceivably be eased through technological innovations. Not surprisingly, deviations from benchmark development paths were also strongly linked to financial crashes. And the associated lags in financial development were long-lived and evident across a large number of indicators. However, because the empirical analysis is based on cross-country regressions, it does not lend itself to identifying the best policies to avert financial crashes.

In the final paper of the collection, Robert Cull and Colin Xu use firm-level data from 89 countries to test whether financial structure affects labor growth rates. One of the predictions of New Structural Economics is that, because labor is more abundant than capital in poor countries, labor-intensive industries should characterize the early stages of development. Businesses in labor-intensive industries tend to start out small, and small, local banks are likely to be better positioned than large banks and stock markets to collect the soft information and undertake the sustained monitoring that enables financial institutions to lend to small businesses.<sup>2</sup> The authors find that labor growth is in fact swifter in low-income countries that have a higher level of private credit/GDP, consistent with the predictions from new structural economics. There is also evidence from a variety of instrumental variables regressions that the relationship is causal. In high-income countries, labor growth rates are increasing in the level of stock market capitalization, also consistent with predictions from new structural economics, though the authors are unable to provide evidence that the association is causal. The authors find no evidence that small-scale firms in low-income countries benefit most from private credit market development. Rather, the labor growth rates of large firms increase more with the level of private credit market development, a finding consistent with the history-based political economy view that banking systems in low-income countries serve the interests of the elite, rather than providing broad-based access to financial services (see [Calomiris and Haber, 2011](#)).

A limitation of the study is that the measure of banking sector development, private credit/GDP, does not provide information on the size distribution of banks, making it impossible to test fully all of the predictions from new structural economics regarding the suitability of financial structures at different stages of development. Still, the results do suggest that larger firms are capturing a disproportionately large share of the credit in poor countries with relatively well-developed banks.

Though the methods vary, all four papers in this special section provide evidence or arguments that financial structure should vary with the stage of economic development, a point which has been under-emphasized in the literature to date. Implicit or explicit in those analyses is the notion that bank-based structures are likely to be better at promoting growth during the early stages of development, and that they gradually give way to capital markets as economies develop. Another theme from these papers that has been underplayed in the literature is the dynamic interplay between banks and capital markets that leads to their co-evolution. While the papers are successful in describing the development of financial systems from both theoretical and empirical perspectives, more research is needed to identify the triggers and catalysts that ignite the interplay between banks and markets. The paper by de la Torre, Feyen and Ize provides important clues about the types of financial market frictions have

2. See [Lin, Sun, and Wu \(2012\)](#) for a more detailed development of these themes.

been easiest to resolve at different stages of economic development and Song and Thakor offer a theory that shows how political interventions shape financial structure at different development stages. But these are only a beginning. Identifying specific policy priorities for different stages of development and explaining why some countries pursue suitable paths while other do not remains a challenge. Our guess is that many of the reasons why countries adopt seemingly inappropriate financial sector policies are rooted in political economy, both at the national and international levels, but much more work is needed to establish that conjecture in a meaningful, actionable way. Our overall hope is that these papers provide a fresh perspective on an under-researched, but potentially important issue to a wide audience of readers.

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