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Chapter 2

ROSS LEVINE

Financial Functions, Institutions, and Growth

In this chapter I first broadly discuss the relationship between financial sector development and economic growth and argue that a well-functioning financial system promotes long-run economic growth, so that implementing sound financial sector policies should be a high priority on policymakers' agendas. Next I present preliminary research results on comparative patterns of financial system development. In particular, I draw on my work with Asli Demirguc-Kunt that illustrates a similar cross-country pattern of financial development. We have found that as countries get richer, the credit-allocating function of central banks becomes less important, and private banks become more so. The fraction of credit allocated to private firms rises; later, stock markets blossom and nonbank financial intermediaries like insurance companies, mutual funds, and pension funds flourish.[1] This pattern, in turn, seems to imply a financial policy sequencing strategy: to follow the "natural" path of development, poorer countries should focus on implementing sound policies, regulations, and supervisory systems that encourage banks to develop, while middle-income countries should also construct an adequate policy, legal, and regulatory environment for capital market and nonbank development.

But this apparently logical sequence may be misleading. The link between the broad empirical trends observed in our study and the sequence of financial reforms that a country should pursue are not quite as simple as this pattern suggests. In the third part of this chapter I discuss the economics profession's understanding of the links in the chain from financial sector policies, to the structure and functioning of the financial system, and then to overall economic growth. Inadequate understanding makes it difficult for the profession to provide rigor-

ously grounded advice on an array of financial policy issues, especially regulatory ones.

FINANCE AND GROWTH

The importance of the financial system is often underappreciated. Although much influential work emphasizes the role of the financial system in economic development, financial development is frequently not a mainstay of development research nor the focus of development policy advice.[2] For example, in a recent survey of development economics, Nicholas Stern does not mention financial development.[3] Impressively, at the end of Stern's review, he lists numerous topics he lacked sufficient space to cover; finance is not even listed among those omitted. Also, a reader who browses through a development economics textbook will typically find only oblique references to financial sector issues. Many of these allusions involve the ties between the financial system and monetary policy, or the links between financial crises and economic performance. There is little discussion of the ties between the financial system and economic growth over decades.

This underemphasis ignores important recent theoretical and empirical work that stresses the relevance of the financial sector in economic growth. Consider the question of whether the level of financial development predicts future long-run economic growth. To address this, Robert King and I studied the growth experiences of about eighty countries over the period 1960–89.[4] We constructed many different measures of financial development. Because these financial development measures tell the same story, I simply present the results using the most widely used measure of financial development—DEPTH, which measures the overall size of the formal financial sector.[5] Specifically, DEPTH equals currency held outside financial institutions plus demand deposits and interest-bearing liabilities of banks and nonbank financial intermediaries, divided by gross domestic product (GDP).[6] The presumption underlying the use of this measure of financial development is that the size of the formal financial sector is positively associated with the provision of financial services. I define and discuss these services below.

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In our study we rank countries by the value of DEPTH in 1960, starting with countries with the smallest level of financial development and then those with the greatest financial development in 1960.[7] We then break the countries into four groups of twenty countries each. Countries with very small DEPTH measures fall into the first group; countries with huge financial development in 1960 fall into the fourth group. For each of these four groups of countries, figure 2-1 presents the rate of real per capita GDP growth over the next thirty years.

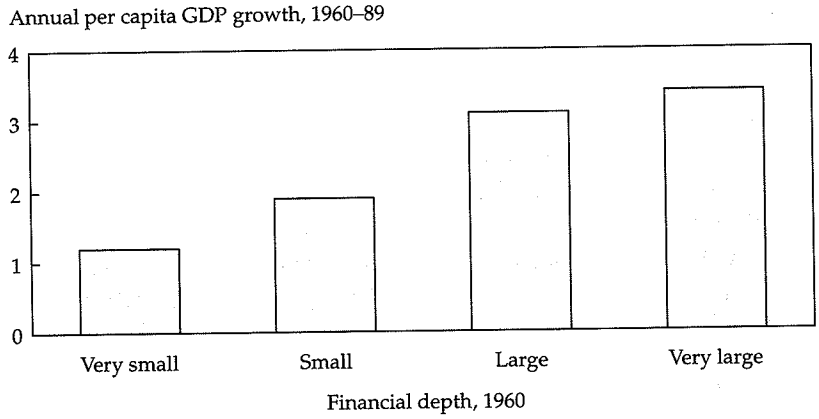
As illustrated, countries with larger financial systems in 1960 grew more quickly over the section of countries. Much more rigorous statistical analysis confirms the pattern in figure 2-1: level of financial development is a good predictor of overall economic growth over subsequent decades. I therefore read the evidence as strongly suggesting that, if we can derive good financial sector policies, we can stimulate sustained economic growth.

COMPARATIVE PATTERNS OF FINANCIAL AND ECONOMIC DEVELOPMENT

Does the structure of the financial system differ systematically across countries with varying levels of income per capita? This question gave rise to Raymond Goldsmith's pathbreaking book *Financial Structure and Development*.[8] Demirguc-Kunt and I follow Goldsmith in defining financial structure as the combination of a country's financial institutions and financial markets.[9] Financial structures differ in the sense that various institutions and markets are differentially important across countries. The overall size of the financial system may also differ across countries.

Based on the approach Demirguc-Kunt and I took, five variables illustrate how the size and structure of financial systems differ across countries. The overall size of the financial system is first measured using DEPTH (which is defined as currency held outside financial institutions plus demand deposits and interest-bearing liabilities of banks and nonbank financial intermediaries divided by GDP). Second, the importance of banks—as opposed to the central bank—in allocating credit is assessed (using the concept of BANK SHARE, bank credit divided by bank credit plus central bank credit). The role of the

FIGURE 2-1. *Financial Depth in 1960 and Growth from 1960 to 1989*



financial system in allocating credit to private firms—as opposed to funding government deficits or public enterprises—is then measured using the variable PRIVATE SHARE (credit issued to private sector firms divided by total credit). Fourth, the role of nonbanks (insurance companies, pension funds, mutual funds, brokerage houses, and investment banks) is measured using the variable NONBANK SHARE (nonbank assets divided by GDP). Finally, the level of stock market development is measured by using a combination of variables designed to measure the size of the stock market relative to total economic activity, the liquidity of the market, and the degree of integration with world capital markets.

Figure 2-2 depicts a distinct pattern as we move from poorer to richer countries. The highlights of this figure include the following trends:

—Financial systems get larger;

—Banks grow in importance relative to the central bank in allocating credit;

—The financial system allocates a larger share of total credit to private firms;

—Nonbanks grow in importance; and

—Stock markets become more developed.

These results are subject to numerous data problems. For example, it is difficult to distinguish private from public banks and development

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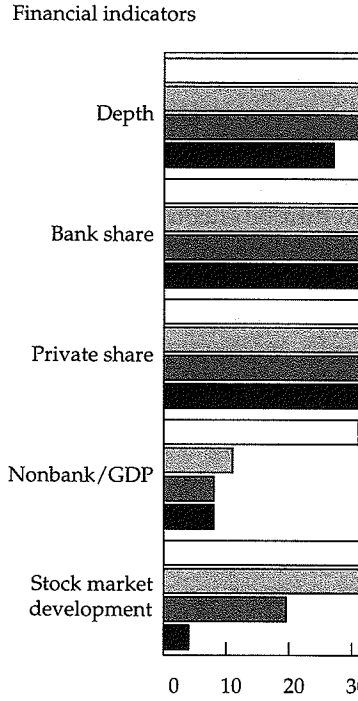

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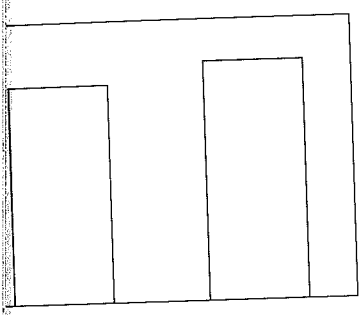

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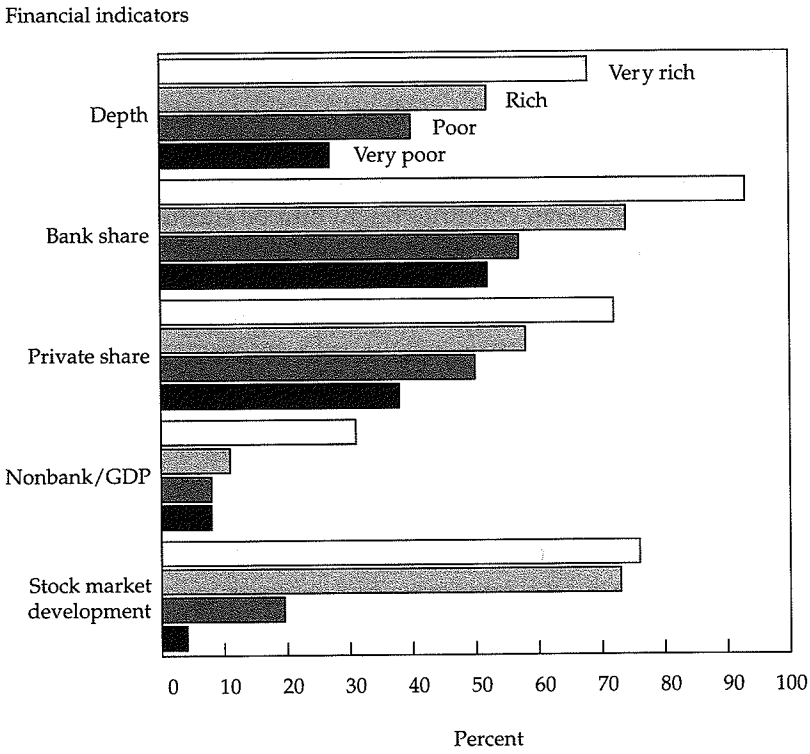

banks from commercial banks in many settings. Similarly, the definitions of a bank and of a nonbank are not always consistent across countries. It is also worth noting that many differences exist across countries at similar stages of economic development. For example, the assets of deposit banks accounted for 56 percent of financial system assets in France, while the comparable number in the United Kingdom was 35 percent. The assets of contractual savings institutions composed 26 percent of total financial system assets in the United Kingdom, while in France the figure was only 7 percent in 1985. Though there is a general trend involving financial structure and the level of GDP per capita, there are thus exceptions and differences within the categories presented in figure 2-2. One additional caveat must be noted: The lines of causation in these findings are unclear. Figure 2-2

is merely an indication of an association between financial structure and economic development. The figure does not imply that somehow changing the structure of the financial system in a particular pattern will result in countries becoming richer.

The link between financial structure and economic development depicted in figure 2-2 may, however, have policy interpretations. For example, if there is a pattern to financial development, then policymakers should recognize this pattern and incorporate it into financial reform programs. Poorer countries might thus be encouraged to focus on developing their banking systems first, while middle-income countries might adopt policies that facilitate stock market development. These conclusions may be plausible and even tempting, but I am cautious, particularly given my assessment of where the profession stands in terms of understanding the links between financial sector policies and the functioning of the financial system.

LINKS BETWEEN THE FINANCIAL SYSTEM AND ECONOMIC GROWTH

Are there policy reforms, sequenced in some particular order, that will promote the functioning of the financial system and thereby boost sustained economic growth? The question must be framed so as to focus on financial functions, services provided by the financial system, the real value the system adds, and what the system does. The focus of policy analyses should not be on particular financial institutions, markets, or instruments per se. Financial intermediaries and markets should be viewed as vehicles for providing financial services.

The challenge for economists is to explore how financial sector policies, regulations, and supervision affect financial institutions, markets, and instruments, and how these changes affect financial services and long-run economic growth. Resolving this challenge is critical for good country-specific policy advice. Because it is entirely likely in theory and clearly evident in practice that different financial structures—combinations of financial institutions and markets—can provide similar qualities and quantities of financial services, we must have an organized way of defining, measuring, and analyzing how

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In evaluating the economics profession's understanding of the links from financial policies to financial services and ultimately to economic growth, the focus of effort has traditionally been on the last link. Economists have defined the central functions performed by the financial system and dissected the conceptual linkages between these functions and economic activity. The five financial functions commonly discussed are (1) risk management, including managing liquidity risk; (2) researching and evaluating firms, projects, and managers; (3) corporate governance, or monitoring of managers and firms to whom money has been lent; (4) mobilizing savings in society; and (5) facilitating transactions. These financial functions may affect long-run economic growth through two channels: by influencing the savings rate and by affecting capital allocation.

First, economists have focused on two types of risk: liquidity risk and idiosyncratic or diversification-type risk. Liquidity risk is the risk associated with selling an asset: is there a market, is it easy to sell, and are executable prices readily available? Real estate, for example, is generally less liquid and experiences more liquidity risk than government Treasury bills. Idiosyncratic risk is the risk associated with a particular firm going bust, or an industry enduring losses, or the investments in a particular country all doing poorly. Some people generally do not like risk. Financial systems price risk and provide mechanisms for pooling, ameliorating, and trading it. Recent uses of options and futures contracts to hedge and trade interest rate and exchange rate risk have been well publicized.

At a more basic level, financial institutions transform asset and liability maturities to satisfy savers and investors. The securities most useful to businesses—equities, bonds, bills of exchange—may not have the liquidity, security, and risk avoidance characteristics that savers desire. By offering attractive financial instruments to savers—liquid demand deposits and mutual funds diversified across firms, industries, and countries—financial intermediaries can tailor financial instruments for different clients and thereby manage risk for individuals. By facilitating the management, trading, and pooling of risk, financial systems can ease the interactions between savers and investors.

Financial systems that provide risk management services and financial markets that reduce liquidity risk will encourage efficient resource allocation. For example, Bencivenga and Smith, Levine, and Obstfeld have shown that on average financial instruments, markets, and institutions that minimize risk will tend to cause savings to flow toward these higher-return, innovation-producing investments.[10] The effects on the savings rate are commonly ambiguous in these models because of the unknown effects of uncertainty on savings. An historical example involving liquidity risk illustrates the importance of risk management. One of the first joint stock companies in England was formed in 1609. What was remarkable about this company was that the owners originally gave their capital to the company but could not ask for it back later! For this to be attractive to potential equity holders, there had to a reasonably liquid secondary market to sell shares. The development of secondary equity markets in England thus helped promote the growth of companies with secure, permanent capital bases.

In addition, economists have analyzed the individual financial system's capacity to obtain information, evaluate firms, and allocate capital. Because firms, projects, and managers are difficult to evaluate, savers may not have the time, resources, or means to collect and process information on a wide array of enterprises, markets, managers, and economic conditions. Financial intermediaries can therefore obtain and evaluate information and allocate capital based on these assessments. Many firms and entrepreneurs will solicit capital; financial intermediaries that are better at selecting the most promising firms and managers will spur economic growth by fostering a more efficient allocation of capital.

We have formally modeled this intuition.[11] This view, however, goes back at least to Walter Bagehot, editor of the *Economist*, who observed of Lombard Street, London's financial center, almost one hundred twenty-five years ago: "[England's financial] organization is so useful because it is so easily adjusted. Political economists say that capital sets towards the most profitable trades, and that it rapidly leaves the less profitable and non-paying trades. But in ordinary countries this is a slow process. . . . In England, however, . . . capital runs as surely and instantly where it is most wanted, and where there is most to be made of it, as water runs to find its level."[12] Bagehot was describ-

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ing in the mid-1800s one of the factors behind England's comparative economic success: the ability of England's financial system to identify and fund the most profitable industries more quickly than other countries' financial systems could.

Financial intermediaries also provide an important dimension of corporate governance through the time-consuming and costly function of evaluating the performance of firm managers. Consequently, financial intermediaries often compel managers to act in the best interests of stock-, debt-, and loanholders. In brief, financial intermediaries help resolve the principal-agent problem by enhancing the limited capacity of claimholders to oversee the actions of their managers.

Without this role in corporate governance, managers would allocate firm resources in accord with their own interests, not the interests of shareholders and debtholders. Recourse allocation would be less efficient and economies would grow more slowly. In addition, in the absence of sound corporate governance, savers would be less willing to invest in large corporations. This reluctance could lower overall savings or encourage smaller, more easily monitored firms, which would mean less economic efficiency. Effective financial systems will prompt managers to allocate resources more efficiently, thereby promoting long-run growth.

In addition to risk amelioration, resource allocation, and corporate governance, financial systems also serve to mobilize resources within society for productive ends. Some worthwhile investment projects may require large capital inputs, and many projects enjoy economics of scale. By agglomerating savings, financial intermediaries aid markets and enlarge the set of feasible investment projects and thus encourage economic efficiency. Greenwood and Smith have formally modeled this intuition.[13] However, once again they observe that this critical role for the financial system was noted much earlier by Bagehot: "We have entirely lost the idea that any undertaking likely to pay, and seen to be likely, can perish for want of money; yet no idea was more familiar to our ancestors, or is more common in most countries. A citizen of Long in Queen Elizabeth's time . . . would have thought that it was no use inventing railways (if he could have understood what a railway meant), for you would have not been able to collect the capital with which to make them. At this moment, in colonies and all rude countries, there is no large sum of transferable

money; there is not fund from which you can borrow, and out of which you can make immense works."[14]

By effectively mobilizing resources for sound investment projects, the financial system may play a crucial role in permitting the adoption of better technologies, thus promoting economic development. However, this function of resource mobilization is only one of many, and its significance should not be exaggerated. For example, analysts have argued that stock markets are less important than banks, because not much corporate capital is raised through stock markets, even in countries where they are well developed. One weakness of this argument is that stock markets may provide other functions (such as risk management opportunities) that promote growth.[15] The point is that resource mobilization is one of several important functions performed by the financial systems.

Finally, financial systems facilitate trade. At the most rudimentary level, money minimizes the need for barter and encourages commerce and specialization, as Adam Smith argued more than two hundred years ago. At a more sophisticated level, checks, credit cards, and the entire payments and clearance mechanisms simplify a wide array of economic interactions. In most industrialized economies, individuals and businesses take the ability to write and settle financial transactions for granted. But the absence of a reliable means for conducting trade significantly impedes economic activity and slows economic growth. This is exemplified most notably in transitional socialist economies, where insufficiently developed payments and clearance systems have stymied economic interactions. In sum, financial systems make trade and commerce easy, foster economic activity, and promote economic growth by encouraging and supporting the more efficient allocation of resources.

POLICY, LEGAL, AND REGULATORY FRAMEWORK

Although economists have been relatively successful at rigorously dissecting the links between the services provided by the financial system and economic growth, the profession has had varying degrees of success in fully articulating the ties between an array of financial

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In contrast, economists have no correspondingly extensive set of theories on how regulations governing capital requirements, restrictions on the range of activities performed by particular intermediaries, insurance of financial intermediary liabilities, investor protection laws, or information disclosure requirements affect long-run economic growth.

In terms of empirical work on financial liberalization, there are both weaknesses and some notable strengths cited in the literature. With regard to weaknesses, our inability to achieve precise definitions and qualitative measurements of financial functions makes it difficult to assess how financial liberalization affects the functioning of the financial system. However, there have been advances in illustrating some of the benefits and pitfalls of financial liberalization. In a book edited by Caprio, firm-level evidence from Ecuador and Indonesia shows that following financial liberalization, banks redirected the flow of credit from firms that were less efficient to those that are more efficient.[17] Although there was little change in the savings rate in Ecuador and Indonesia, there was a more efficient allocation of savings following liberalization.

In books by Caprio, Vittas, and Brock, case studies more generally suggest one further significant finding regarding the connection between liberalization and financial reform.[18] Financial liberalization, it appears, will succeed (that is, will promote the provision of high-quality financial services) only when it is accompanied by a sound regulatory and supervisory system. Although not always defined explicitly, regulatory and supervisory systems are frequently referred to

as "sound" when official supervisors and regulators have the incentives and capabilities to monitor rigorously the investment and financing activities of financial intermediaries, and when supervisory and regulatory policies also create incentives—and reduce disincentives—for private sector participants to also monitor financial intermediaries. These authors argue that financial liberalization in the absence of a sound regulatory and supervisory system has typically set the stage for future financial crises. The upgrading of regulatory and supervisory systems is therefore suggested as a prerequisite for financial liberalization. A major weakness of this conclusion is that we do not have sufficiently detailed empirical measures of what constitutes a sound regulatory and supervisory system.

CONCLUSIONS

Clearly, a country's general legal framework will influence the structure and functioning of financial intermediaries and markets. For example, it would be difficult to have an options market if these contracts were not defined as binding legal obligations within the context of a national legal system. Similarly, Mexico's legal and regulatory system defines a holding company structure such that banks, insurance companies, brokerage firms, and the like may be included as subsidiaries under the financial holding company. A different legal and regulatory system would create another financial structure. This much is clear. However, when addressing the next part of the chain—the effect of different financial structures on the provision and quality of financial functions—the analytical terrain becomes murky. Are universal banks better at providing financial services, or is a holding company structure superior?

Similarly, we are still searching for satisfying answers to questions associated with the effects of different regulatory policies on the provision of financial services. What effects do different types of deposit insurance—or other types of implicit and explicit government guarantees on pension funds, insurance companies, mutual funds, and so on—have on the provision of financial services? What is the effect on financial services when a government tries to boost its domestic stock market, versus allowing domestic firms to list in New York, or London, or Tokyo? The effects of v
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system, to services provided by
nomic growth. The weakest link
of the financial system and the
understanding of the effects of
the financial structure and hov
affects key financial functions is
and promoting sustained econo

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rs and regulators have the incen-
rously the investment and financ-
aries, and when supervisory and
ives—and reduce disincentives—
monitor financial intermediaries.
liberalization in the absence of a
system has typically set the stage
ading of regulatory and supervi-
d as a prerequisite for financial
this conclusion is that we do not
measures of what constitutes a
stem.

mework will influence the struc-
rmediaries and markets. For ex-
an options market if these con-
gal obligations within the context
, Mexico's legal and regulatory
structure such that banks, insur-
nd the like may be included as
ding company. A different legal
another financial structure. This
ssing the next part of the chain—
ires on the provision and quality
terrain becomes murky. Are uni-
ancial services, or is a holding

satisfying answers to questions
t regulatory policies on the pro-
cts do different types of deposit
nd explicit government guaran-
mpanies, mutual funds, and so
l services? What is the effect on
tries to boost its domestic stock
ms to list in New York, or Lon-

don, or Tokyo? The effects of various types of financial reform on the financial structure and how the resultant change in the financial structure affects the provision of key financial functions are difficult to assess. The research community is still struggling to clarify these issues and to define its research agenda.

Because financial sector development appears to be an important predictor of future economic growth, financial sector policy issues should be of great interest to policy analysts and policymakers. A pattern of joint financial and economic development is also discernible across a broad range of countries, whereby central banks shrink in importance and banks rise in importance as countries get richer; subsequently, nonbanks and stock markets blossom. However, this joint financial and economic development pattern does not suggest that countries can accelerate economic growth by changing the structure of their financial systems.

In addition, researchers are starting to piece together answers regarding the links from financial sector policies to the structure of the financial system, to services provided by the financial system, and finally to economic growth. The weakest link in the chain is that between the structure of the financial system and the services provided by it. Gaining a better understanding of the effects of various types of financial regulation on the financial structure and how the resultant change in this structure affects key financial functions is critical to improving our policy advice and promoting sustained economic development.

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NOTES

1. Demirguc-Kunt and Levine (1996).

2. See Schumpeter (1912/1932); Cameron and others (1967); Goldsmith (1969); Shaw (1973); McKinnon (1973); Fry (1988).

3. Stern (1989).

4. King and Levine (1993a, 199

5. In King and Levine (1993a, money bank domestic assets divi plus central bank domestic asse intermediaries—central banks or mediation. Banks probably prov banks so that this measure sho economic growth.

In this study we also analyze prises divided by credit issues t issued to public and private ent private enterprises divided by G credit to public enterprises and g cial services than financial syster two measures are also positively growth.

6. This measure equals "*M3*" Statistics; or when 551 is not av equals "*M2*."

7. King and Levine (1993b).

8. Goldsmith (1969).

9. Demirguc-Kunt and Levine (

10. Bencivenga and Smith (199

11. King and Levine (1993b).

12. Bagehot (1873/1962, p. 53).

13. Greenwood and Smith (fort

14. Bagehot (1873/1962, pp. 3–

15. Levine (1991); Levine and Z

16. Roubini and Sala-I-Martin (

17. See the article by Schiantare

18. Caprio and others (1994); V

4. King and Levine (1993a, 1993b).

5. In King and Levine (1993a, 1993b) we also study the ratio of deposit money bank domestic assets divided by deposit money bank domestic assets plus central bank domestic assets. This measure attempts to isolate which intermediaries—central banks or deposit money banks—are doing the intermediation. Banks probably provide better intermediary services than central banks so that this measure should be—and is—positively associated with economic growth.

In this study we also analyze 1) the ratio of credit issued to private enterprises divided by credit issues to central and local governments plus credit issued to public and private enterprises, and 2) the ratio of credit issued to private enterprises divided by GDP. Financial systems that primarily funnel credit to public enterprises and government probably provided fewer financial services than financial systems that allocate credit to private firms. These two measures are also positively and significantly associated with long-run growth.

6. This measure equals "*M3*" or line 551 from the International Financial Statistics; or when 551 is not available, we use line 34 plus line 35, which equals "*M2*."

7. King and Levine (1993b).

8. Goldsmith (1969).

9. Demirguc-Kunt and Levine (1996).

10. Bencivenga and Smith (1991); Levine (1991); Obstfeld (forthcoming).

11. King and Levine (1993b).

12. Bagehot (1873/1962, p. 53).

13. Greenwood and Smith (forthcoming).

14. Bagehot (1873/1962, pp. 3–4).

15. Levine (1991); Levine and Zervos (1996).

16. Roubini and Sala-I-Martin (1992); Bencivenga and Smith (1992).

17. See the article by Schiantarelli and others in Caprio and others (1994).

18. Caprio and others (1994); Vittas (1992); Brock (1992).