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Stock Markets, Corporate Finance, and Economic Growth: An Overview

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World stock markets are booming, and emerging markets compose a disproportionately large amount of this boom. Over the past ten years, world stock market capitalization rose from $4.7 trillion to $15.2 trillion, and emerging market capitalization jumped from less than 4 to 13 percent of total world capitalization.[1] Trading in emerging markets also surged: the value of shares traded on emerging markets climbed from less than 3 percent of the $1.6 trillion world total in 1985 to 17 percent of the $9.6 trillion worth of shares traded on all of the world's exchanges in 1994. Furthermore, emerging markets have become more integrated with world capital markets. International investors have noticed and participated in this rapid development of emerging stock markets. Most notably, portfolio flows of equity investment to emerging markets soared to $39 billion in 1995 from a mere $0.1 billion in 1985.

The rapid development of emerging stock markets has also attracted the attention of academics and policymakers. Recent research has focused on the benefits for investors of holding a globally diversified portfolio and the benefits for countries of removing barriers to international capital flows (see, for example, *The World Bank Economic Review* January 1995 issue on stock markets). On the policy front, many countries have reformed their laws and regulations and removed capital controls and other barriers to attract foreign portfolio flows. While analysts have studied emerging stock markets, economists need to acquire more information to understand the linkages between the functioning of stock markets and economic development. The six articles in this symposium contribute to this knowledge by exploring the role of stock markets in economic development.[2]

The research presented here focuses on four issues. First, it constructs more measures or criteria of stock market development than any previous study. It compares liquidity, concentration, volatility, institutional development, and international integration across forty-four industrial and developing countries from

1. One trillion is equal to 1,000 billion.

2. These articles were originally prepared for the World Bank Conference on Stock Markets, Corporate Finance, and Economic Growth, held in Washington, D.C., February 16–17, 1995.

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1976 to 1993. Besides identifying general characteristics of these measures and defining stock market development empirically, these data facilitate further research into the relationship between stock market development and financial intermediaries, corporate finance decisions, and economic growth. These measures, ranked for each country, can be used for intercountry comparisons of the level of stock market development. In addition, the data provide a basis for gauging the success of capital market development projects using objective criteria.

Second, with these new data the research investigates the relationships between stock markets and financial intermediaries. Although bankers in many countries may worry that stock markets will steal business, the evidence points to the contrary. Countries with better-developed stock markets also have better-developed banks and nonbank financial intermediaries—such as finance companies, mutual funds, investment companies, brokerage houses, and pension funds—and countries with weak stock markets tend to have weak financial intermediaries. Thus, stock market development goes hand-in-hand with other aspects of financial development.

Third, the research analyzes the relationship between stock market development and long-run economic growth. New theoretical work shows how stock markets might boost long-run economic growth, and new empirical evidence supports this view. Specifically, the level of stock market development does a good job of predicting future economic growth. This aspect is important for the World Bank and policymakers in developing countries because it means that in many countries capital market reforms should be high on the reform agenda.

Fourth, the research studies the ties between stock market development and financing choices of firms. Surprisingly, this important issue has never been previously investigated. Researchers find that in many countries, improvement in the functioning of the stock market produces a higher debt-equity ratio in firms. While stock market development naturally implies greater use of equity markets in raising capital, it also stimulates greater use of bank finance, so corporate debt-to-equity ratios actually rise. Thus, for these countries, stock markets and banks are not substitute sources of corporate finance; stock market development actually tends to increase the quantity of bank loans. Complementing these empirical findings, the research also starts to build a theoretical framework for understanding the interactions among banks, equity markets, and corporate decisions.

This overview puts this research in context and reviews the main results of the study. Section I provides a brief review of the role of stock markets in economic development and documents the evolution of debt and equity markets during the growth process. Section II defines stock market development and presents summary data on the codevelopment of financial intermediaries and stock markets. Section III presents evidence on the effect of stock market development on economic growth. Section IV summarizes the empirical results on

how stock market development affects firm financing decisions. Section V concludes by discussing policy implications.

I. Stock Markets and Economic Development

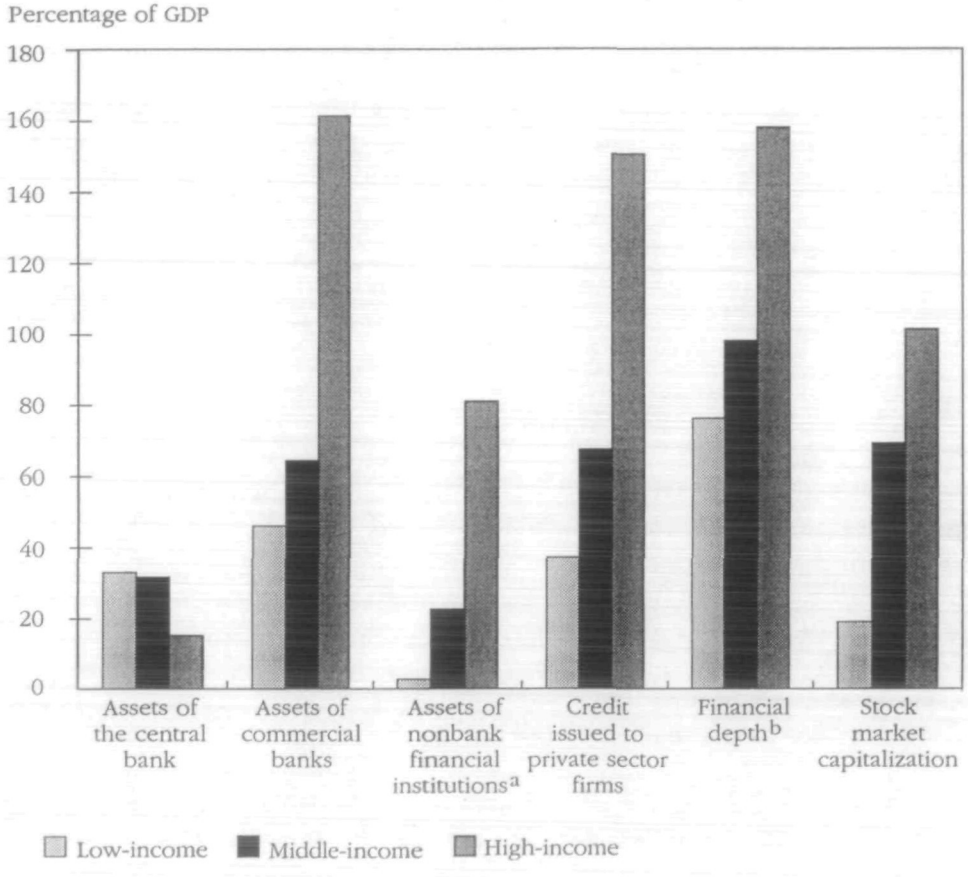
This section introduces and motivates the analysis of the role of stock markets in corporate financing decisions and economic development, and presents new information on the codevelopment of financial intermediaries and stock markets. Early observations by Gurley and Shaw (1955, 1960) and Goldsmith (1969) indicate that as economies develop, self-financed capital investment first gives way to bank-intermediated debt finance and later to the emergence of equity markets as an additional instrument for raising external funds. Financial structure—the mix of financial intermediaries and markets—changes as countries develop, as illustrated by differences in financial structure across countries and across time for individual countries.

Figure 1 illustrates how the financial structure of economies varies with their income. Moving from poorer to richer economies, commercial banks and nonbank financial institutions grow in importance, while the role of the central bank diminishes. Furthermore, the financial system allocates more credit to the private sector as a share of GDP in richer countries; and richer countries tend to have larger overall financial systems and stock markets as percentages of GDP than poorer countries.

Figure 2 shows how financial structure evolves over time. The data support Gurley and Shaw's view that at low levels of development commercial banks are the dominant financial institutions. As economies grow, however, specialized financial intermediaries and equity markets develop and prosper. Figure 2 traces the same set of low-, middle-, and high-income economies through time. The low-income economies had virtually no stock market activity or nonbank institutions in the 1970s. By 1990, however, both nonbanks and stock markets began to develop. The financial systems in middle- and high-income economies have evolved according to a similar pattern. The middle- and high-income economies are simply ahead of the low-income group.

Countries follow a financial development path that is not without its anomalies. Many differences in financial structure exist across countries at similar stages of economic development. For example, in the United Kingdom the assets of commercial banks composed 65 percent of financial system assets in 1990, but this figure was almost 80 percent in Germany. Similarly, the assets of nonbanks were 15 percent of the financial system assets in Germany, but they were over 30 percent in the United Kingdom. These anomalies apply to developing countries, too. In 1990 the share of nonbank assets in total financial assets was 18 percent in Malaysia and 28 percent in the Republic of Korea; private insurance and pension assets were 30 percent of financial assets in Chile and only 3 percent in Mexico. Thus, although there is a general trend involving financial structure and the level of GDP per capita,

Figure 1. *Financial Structure in Low-, Middle-, and High-Income Economies, 1990*



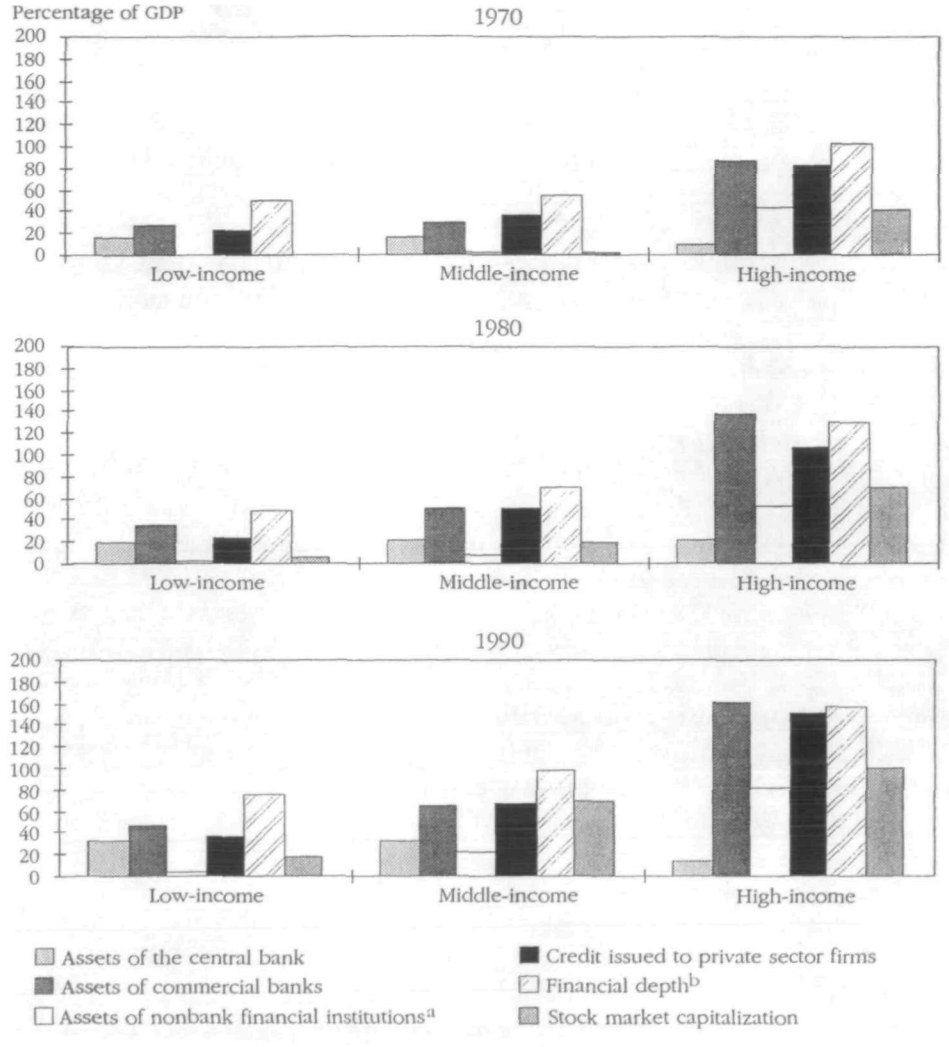
Note: The data are for twelve low-income economies (Bangladesh, Egypt, Ghana, Guyana, India, Indonesia, Kenya, Nigeria, Pakistan, Zaire, Zambia, and Zimbabwe), twenty-two middle-income economies (Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, the Dominican Republic, El Salvador, Greece, Guatemala, Jamaica, the Republic of Korea, Malaysia, Mexico, Paraguay, the Philippines, Taiwan (China), Thailand, Tunisia, Turkey, Uruguay, and Venezuela), and fourteen high-income economies (Australia, Canada, Denmark, Finland, France, Germany, Italy, Japan, the Netherlands, Singapore, Spain, Sweden, the United Kingdom, and the United States). In 1990, low-income economies had an average GDP per capita of $490; middle-income economies, $2,740; and high-income economies, $20,457.

a. Nonbank financial institutions include insurance companies, pension funds, mutual funds, brokerage houses, and investment banks.

b. Financial depth is measured by currency held outside financial institutions plus demand deposits and interest-bearing liabilities of banks and nonbank financial intermediaries (M3 money supply).

Source: IMF (various issues) and individual country reports by central banks, banking commissions, and stock exchanges.

Figure 2. *Evolution of Financial Structure in Low-, Middle-, and High-Income Economies, 1970, 1980, and 1990*



Note: The data are for twelve low-income economies (Bangladesh, Egypt, Ghana, Guyana, India, Indonesia, Kenya, Nigeria, Pakistan, Zaire, Zambia, and Zimbabwe), twenty-two middle-income economies (Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, the Dominican Republic, El Salvador, Greece, Guatemala, Jamaica, the Republic of Korea, Malaysia, Mexico, Paraguay, the Philippines, Taiwan (China), Thailand, Tunisia, Turkey, Uruguay, and Venezuela), and fourteen high-income economies (Australia, Canada, Denmark, Finland, France, Germany, Italy, Japan, the Netherlands, Singapore, Spain, Sweden, the United Kingdom, and the United States). Average GDP per capita for low-income economies was $200 in 1970, $430 in 1980, and $490 in 1990; for middle-income economies it was $510 in 1970, $1,980 in 1980, and $2,740 in 1990; and for high-income economies it was $3,048 in 1970, $10,616 in 1980, and $20,457 in 1990.

a. Nonbank financial institutions include insurance companies, pension funds, mutual funds, brokerage houses, and investment banks.

b. Financial depth is measured by currency held outside financial institutions plus demand deposits and interest-bearing liabilities of banks and nonbank financial intermediaries (M3 money supply).

Source: IMF (various issues) and individual country reports by central banks, banking commissions, and stock exchanges.

there are exceptions and differences within the categories presented in figures 1 and 2.

Research on Financial Intermediaries

Although financial structure evolves with economic development and stock market development is a part of this evolution, research on the ties between financial development and economic growth focuses almost exclusively on financial intermediaries. Empirically, as illustrated in figure 1, central and commercial banks compose the vast majority of the financial systems of developing countries. Thus, development economists have focused on the ties between banks and economic growth. Moreover, statistics on central and commercial banks are readily available, but there were few data on stock markets in developing countries until recently.

Theoretical reasons also underlie the profession's focus on financial intermediaries (see Gertler 1988; Levine 1996a, 1996b; Mishkin, forthcoming; and Stiglitz 1994). As argued by Diamond (1984), Stiglitz and Weiss (1981), and others, banks and other financial intermediaries have important advantages over securities markets in reducing the information asymmetries that produce adverse selection problems and in ameliorating the inefficiencies created by information differences. For example, information asymmetries may create an adverse selection problem in securities markets (Akerlof 1970; Greenwald, Stiglitz, and Weiss 1984; and Myers and Majluf 1984). If potential investors cannot distinguish high-quality from low-quality firms, then outside purchasers of securities will only pay a price that reflects the average value of firms issuing securities. This average price may be attractive to low-quality firms but unattractive to high-quality firms, so that the latter will not want to issue securities at going prices. Thus, some theories emphasize the importance of financial intermediaries and the weakness of security markets in effectively allocating capital.

The research on the ties between financial intermediation and growth has produced useful information. Using data on thirty-five countries from 1860 to 1963 (when available), Goldsmith (1969) found that (a) the size of financial intermediaries as a share of GDP tends to rise with per capita income and (b) when a country grows faster than normal, the ratio of financial system assets to GDP also tends to experience above-average growth. McKinnon (1973) argued that appropriate financial sector reforms expedite growth-inducing financial development. More recently, King and Levine (1993a, 1993b) have examined the empirical ties between financial intermediation and long-run economic growth using data on eighty countries from 1960 to 1989. The major findings from this research are that, after controlling for many other factors associated with long-run growth, the level of financial intermediary development is strongly linked to long-run growth and finance does not simply follow economic growth. The predetermined component of financial development is a good predictor of future economic growth. King and Levine (1993a, 1993b) use instrumental variables and other techniques to show that the strong link between financial development

and the rate of long-run economic growth does not merely reflect contemporaneous shocks that affect both financial development and economic growth.

Although existing evidence suggests that well-developed financial intermediaries assist economic development, there is little evidence on the role of stock markets in economic growth. This empirical gap is notable because the data suggest that stock markets are an integral part of financial development. Thus, to have a comprehensive view of the ties between financial and economic development, the profession must conceptually and empirically explore the relationship between the functioning of equity markets and economic growth more fully than it has.

The Role of Stock Markets in Economic Growth

Although stock market development is a common feature of financial and economic development, many analysts view stock markets in developing countries as "casinos" that have little positive—and potentially a large negative—impact on economic growth. Other analysts argue that, because not much corporate investment is financed through the issuance of equity (Mayer 1988), stock markets are unimportant for economic growth. Various conceptual arguments emphasize the potentially positive, neutral, or even negative implications of stock market development for economic growth.

As shown by Levine (1991) and Bencivenga, Smith, and Starr (this issue), stock markets may affect economic activity through the creation of liquidity. Many profitable investments require a long-term commitment of capital, but investors are often reluctant to relinquish control of their savings for long periods. Liquid equity markets make investment less risky and more attractive because they allow savers to acquire an asset—equity—and to sell it quickly and cheaply if they need access to their savings or want to alter their portfolios. At the same time, companies enjoy permanent access to capital raised through equity issues. By facilitating longer-term, more profitable investments, liquid markets improve the allocation of capital and enhance prospects for long-term economic growth. Further, by making investment less risky and more profitable, stock market liquidity can also lead to more savings and investment. Investors will come if they can leave.

The critical role of financial market liquidity in affecting the efficiency of physical production enjoys historical support. According to Hicks (1969), new technological inventions did not ignite the industrial revolution in England in the eighteenth century. Most of the innovations that characterized the early phases of the industrial revolution had been invented much earlier. Rather, more liquid financial markets made it possible to develop projects that required large capital injections for long periods before the projects ultimately yielded profits. Without liquid capital markets, savers would have been less willing to invest in the large, long-term projects that characterized the industrial revolution; "the industrial revolution therefore had to wait for the financial revolution," as Bencivenga, Smith, and Starr note on page 243.

There are alternative views about the effect of liquidity on long-term economic growth, however. Increased liquidity can deter growth through at least three channels. First, by increasing the returns to investment, greater stock market liquidity may reduce saving rates through income and substitution effects. If saving rates fall enough and if there is an externality attached to capital accumulation, greater stock market liquidity could slow economic growth. Second, by reducing the uncertainty associated with investment, greater stock market liquidity may reduce saving rates because of the ambiguous effects of uncertainty on savings. While less uncertainty makes an investment more attractive to risk-averse agents, less uncertainty also lowers demand for precautionary savings. Thus, the ultimate impact of lower uncertainty on saving rates, produced by greater stock market liquidity, is uncertain. Third, stock market liquidity may adversely affect corporate governance. Very liquid markets may encourage investor myopia. Because more liquid markets make it easy for dissatisfied investors to sell quickly, liquid markets may weaken investors' commitment and reduce investors' incentives to exert corporate control by overseeing managers and monitoring firm performance and potential. According to this view, enhanced stock market liquidity may actually hurt economic growth.

Risk diversification through internationally integrated stock markets is another vehicle through which stock markets can affect economic growth. Because high-return projects also tend to be comparatively risky, stock markets that facilitate risk diversification encourage a shift to higher-return projects (Obstfeld 1994). Thus, better-functioning, more internationally integrated stock markets boost economic growth by shifting society's savings into higher-return investments, all else being equal. But, all else is not necessarily equal. As noted above, greater risk sharing—a reduction in uncertainty—can reduce the need for precautionary saving, reduce saving rates, and thereby retard economic growth. As a result, theory is ambiguous about the ultimate effects of greater risk sharing through internationally integrated stock markets on economic growth.

Stock markets may also affect incentives for investors to acquire information about firms. Larger, more liquid markets make it easier for an investor who has obtained information about a firm to trade at posted prices. Thus, the investor can make money before the information becomes widely available and prices change (Kyle 1984). If investors can profit from obtaining information, they will be more likely to research and monitor firms. To the extent that larger, more liquid stock markets increase incentives to research firms, the improved information will improve resource allocation and accelerate economic growth. By contrast, Stiglitz (1985, 1994) argues that developed stock markets quickly reveal information through price changes. This quick public revelation creates a free-rider problem; it reduces incentives for investors to expend lots of resources in obtaining information about firms because investors can get this information by observing prices.

Finally, stock markets may impact economic growth through changes in incentives for corporate control. As noted above, greater stock market liquidity may generate investor myopia and diffuse ownership that reduce incentives for investors to monitor carefully (Shleifer and Vishny 1995). A countervailing argument is that stock markets that accurately value firms improve the efficacy of tying manager compensation to stock: if stock prices rise, both the managers and the owners benefit, so that managers will have incentives to maximize firm value (Jensen and Murphy 1990). Thus, well-developed stock markets can help align the interests of owners and managers and thereby spur efficient resource allocation and economic growth.

II. Stock Market Development and Financial Intermediaries: Stylized Facts

What is the conceptual definition of stock market development? How can stock market development be empirically measured? Theory does not provide a unique concept of stock market development to guide empirical research. Existing models suggest that stock market development is a multifaceted concept, involving issues of market size, market liquidity, and integration with world capital markets.

Numerous papers test whether emerging stock markets are integrated into the world markets (Errunza and Losq 1989; Bekaert 1995; Buckberg 1995; Harvey 1995; and Tesar and Werner 1995). To examine whether integration is important for economic development requires country-specific measures of the degree of integration. If markets are financially integrated, capital should flow across borders to equalize the price of risk. However, if the markets are not integrated, possibly because of capital controls or other barriers, then the price of risk may differ across markets. Korajczyk (this issue) estimates deviations from the law of one price of risk using the International Arbitrage Pricing Model (IAPM). He finds that market segmentation is larger for emerging markets than developed markets. Also, market segmentation decreases through time for many countries, suggesting a reduction in the barriers to capital flows.

Using Korajczyk's measure of market integration, as well as measures of stock market size, liquidity, volatility, concentration, and institutional development for forty-four developed and emerging markets from 1986 to 1993, Demirgüç-Kunt and Levine (this issue) find that large markets tend to be less volatile, more liquid, and less concentrated in a few stocks than smaller markets. In addition, internationally integrated markets tend to be less volatile. Furthermore, institutionally developed markets with strong information disclosure laws, international accounting standards, and unrestricted capital flows have larger, more liquid markets. Another finding of the article is that Indonesia, Turkey, Portugal, and Venezuela have experienced explosive stock market development. The fact that all four countries liberalized restrictions on portfolio and dividend flows

hints at the importance of policy in affecting stock market development. Levine and Zervos (1995), for example, show that countries which liberalized restrictions on capital and dividend flows showed a marked improvement in the functioning of their stock exchanges.

Levine and Zervos (1995) explore the effects of liberalization of capital controls. They identify fourteen countries that significantly reduced barriers to international capital and dividend flows in the 1980s. They show that these countries enjoyed rapid improvements in the functioning of their stock markets following liberalization. Table 1 summarizes these results. Interestingly, while the results in the table suggest that stock return volatility rises immediately following capital control liberalization, the analysis by Demirgüç-Kunt and Levine implies that, in the long term, stock return volatility is lower in countries with more open capital markets.

Demirgüç-Kunt and Levine also examine the interaction between stock market development and financial intermediaries. They find that as countries grow and reach middle income (about $2,000 per capita in 1990), stock markets and nonbank financial intermediaries develop rapidly. As stock markets and nonbanks grow in importance, banks represent a correspondingly smaller share of the overall financial system. However, the ratio of bank assets to GDP continues to grow as stock markets and nonbanks prosper.

After constructing individual measures of bank, nonbank, and financial system development, Demirgüç-Kunt and Levine also construct aggregate indexes of financial intermediary development based on the individual measures of bank and nonbank development. They find that across countries the level of stock

Table 1. *Changes in Stock Market Variables after Capital Market Liberalization in Fourteen Countries in the 1980s*

Country	*Size*	*Liquidity*	*Volatility*
Argentina	increase	increase	increase
Brazil	no change	no change	increase
Chile	no change	increase	no change
Colombia	no change	increase	increase
India	increase	increase	increase
Jordan	no change	increase	no change
Korea, Rep. of	no change	increase	no change
Malaysia	no change	no change	—
Pakistan	increase	increase	increase
Philippines	no change	increase	no change
Portugal	increase	increase	—
Thailand	no change	increase	increase
Turkey	increase	increase	—
Venezuela	no change	increase	increase

— Not available.

Note: Size represents the market capitalization to GDP; liquidity is the stock market turnover or total value traded to GDP; and volatility is the twelve-month rolling standard deviation estimate based on market returns.

Source: Levine and Zervos (1995).

market development is positively correlated with the development of financial intermediaries. Thus, stock markets and financial institutions are generally complements; they grow simultaneously.

III. Stock Market Development and Long-Run Economic Growth

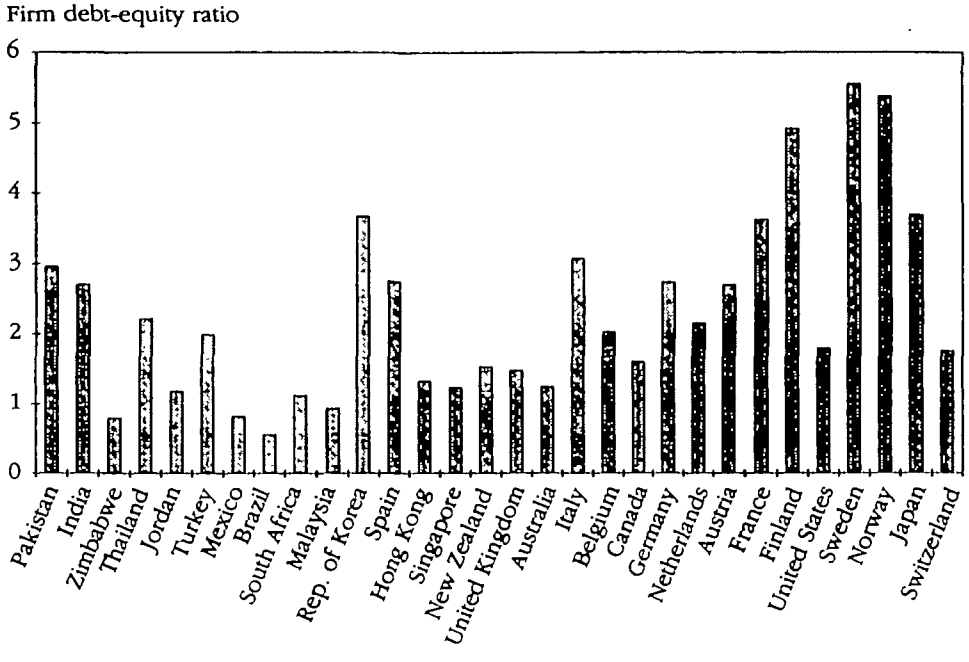
Levine and Zervos (this issue) examine the empirical relationship between measures of stock market development and long-run growth rates. They construct aggregate indexes of overall stock market development that combine information on stock market size, liquidity, and international integration. Levine and Zervos use instrumental variables procedures and control for many other variables associated with economic growth to assess the strength of the empirical relationship between economic growth and stock market development (see also Levine and Renelt 1992). After controlling for the initial level of GDP per capita, initial investment in human capital, political stability, the level of banking development, and measures of monetary, fiscal, and exchange rate policy, the predetermined component of stock market development remains positively and significantly correlated with long-run economic growth.

The strong correlation between overall stock market development and long-run economic growth seems economically important. For example, the coefficients indicate that if Brazil and Mexico (in the middle of the sample in terms of stock market development) had had the same level of stock market development as Malaysia (in the top third of the sample), then Brazil and Mexico would have enjoyed 1.6 percent faster per capita growth each year. Although these types of conceptual experiments should be viewed with caution, this illustration suggests a potentially large economic relationship between stock market development and economic growth. Much work remains, but the results are consistent with theories and historical analyses that imply a positive relationship between stock market development and economic performance. Haber (1991), for example, documents the positive impact of capital market development and capital market reform on competition and industrialization using evidence from Brazil, Mexico, and the United States during the nineteenth and early twentieth centuries.

IV. Stock Market Development and the Financing Decisions of Firms

Finance theory suggests that firms decide which securities to issue—debt or equity—on the basis of taxes and other market imperfections (see Harris and Raviv 1991 and Demirgüç-Kunt 1992 for a review of the literature). Although Rajan and Zingales (1994) and Demirgüç-Kunt and Maksimovic (1994) study international differences in capital structures, they analyze the impact of firm characteristics on financing choices of firms within individual countries. However, differences among firms can explain only part of the great cross-country variation in firm debt-equity ratios (see figure 3).

Figure 3. *Average Total Firm Debt-Equity Ratios for Thirty Economies, 1980–91*



Note: Economies are ranked according to their 1991 GDP per capita, from lowest (Pakistan) to highest (Switzerland).

Source. IFC's Corporate Finance Data Base and Global Vantage Data Base.

The existing literature overlooks an important factor influencing financing choices of firms: the level of stock market development. For the first time in the research, Demirgüç-Kunt and Maksimovic (this issue) empirically explore the effect of financial market development, particularly stock market development, on financing choices of firms. Looking at a sample of thirty industrial and developing economies, they observe that the effect of stock market development on firm debt-equity ratios depends on the initial level of stock market development. Firms in countries with underdeveloped stock markets first increase their debt-equity ratios as their stock markets develop. Thus, not only do they issue new equity, but they also borrow more. This relationship changes as stock markets develop. Firms in countries with relatively developed stock markets substitute equity for debt as stock markets develop further. These findings are consistent with the view that at early stages of market development, improvement in stock market functioning tends to improve information quality, monitoring, and corporate control, such that these improvements induce creditors to lend more. For these firms, debt and equity finance are complementary.

Boyd and Smith (this issue) develop a theoretical framework that helps explain important aspects of the Demirgüç-Kunt and Maksimovic findings on corporate finance and financial market development. Boyd and Smith construct a model in which firms finance capital accumulation externally through a combination of debt and equity, and in which the level of development of debt and equity markets interacts with physical capital investment decisions. The model predicts that as an economy moves along its growth path, the use of more specialized and complex technologies will become more common. This will lead to a rise in the relative cost of monitoring, so that firms will reduce their investments in projects with high returns and high monitoring costs. Because these investments are generally associated with debt, the model predicts that richer countries tend to use more equity and less debt finance. In the model, plausible parameter values suggest that at low levels of economic development, agents do not use equity markets. However, savers and firms begin to use stock markets once the economy attains a critical level of real per capita income. Furthermore, the Boyd and Smith model suggests that stock markets and banks may act as complements rather than as substitute sources of capital.

V. Conclusions and Policy Implications

Recognizing the importance of financial services for economic development, the World Bank in the 1980s began devoting an increasing effort toward (a) improving the financial systems of countries to stimulate economic development and (b) coping with financial crises that threaten economic prosperity. Throughout this period, the World Bank mostly focused on banking systems—removing interest rate controls, reducing government involvement in credit allocation, minimizing taxation of financial intermediaries, managing bank insolvencies, and training bank managers and supervisors. More recently, World Bank programs have stressed the development of capital markets in general and stock markets in particular. The research presented in this symposium seeks to substantively boost knowledge of the relationship between stock markets and economic development to thereby improve policy advice.

The project findings are being released at a time when emerging markets, formerly the darling of international investors, have taken a beating in the wake of the steep devaluation of the Mexican peso and the subsequent economic crisis in that country. As a result, some economists are reconsidering the extent to which developing countries should rely on the highly liquid investments that stock markets typically attract. Although the research presented here was largely completed before recent events in Mexico, the findings suggest that Mexico's experience should not cause countries to adopt more restrictive policies toward international capital flows. As noted above, Levine and Zervos (1995) show that countries which reduce barriers to international capital flows enjoy rapid improvements in the functioning of their stock markets. Although stock return volatility may rise in the short term following capital control liberalization, coun-

tries that are more open to international capital flows tend to have less volatile markets in the long run than those with tighter capital controls, as shown by Demirgüç-Kunt and Levine.

Although the research contained in this symposium sheds light on the role of stock markets in economic development, the articles do not study individual country cases, or analyze when countries are ready for stock market development. For information on specific country experiences with stock market development, see El-Erian and Kumar (1995), Claessens (1995), and Morgenstern (1995). For comparisons of market trading and information systems in developing countries, see Glen (1995).

It is not clear that every country needs its own active stock market. Theory and evidence do suggest that countries benefit from easy access to well-functioning stock markets where residents and domestic firms can buy, sell, and issue securities. However, the geographical location of the market is not necessarily important. In other words, there is little reason to believe, for example, that California would grow faster if the New York Stock Exchange moved to Los Angeles. Thus, future research could examine the effects of the cross-listing and cross-trading of shares.

Finally, the research in this symposium does not suggest that policymakers should push stock market development. The available information suggests that policymakers should remove impediments to stock markets, such as tax, legal, and regulatory barriers. But no strong evidence supports interventionist policies, such as tax incentives, that artificially boost stock market size and activity. Future research could focus more on what policies appropriately facilitate healthy stock market development.

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