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Stock Markets, Economic Development, and Capital Control Liberalization

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SUMMARY

Recent studies suggest that, over the past two decades, stock market liquidity has been a catalyst for long-run growth in developing countries.¹ Without a liquid stock market, many profitable long-term investments would not be undertaken because savers would be reluctant to tie up their investments for long periods of time. In contrast, a liquid equity market allows savers to sell their shares easily, thereby permitting firms to raise equity capital on favorable terms. By facilitating longer-term, more profitable investments, a liquid market improves the allocation of capital and enhances prospects for long-term economic growth.

Findings from these studies show that countries with relatively liquid stock markets in 1976 grew much faster over the next 18 years than countries with illiquid markets, even after adjusting for differences in other factors that influence growth, such as education levels, inflation rates, and

openness to trade. The studies also indicate that, in promoting economic growth, a liquid stock market complements a strong banking system, suggesting that banks and stock markets provide different bundles of financial services to the economy.

Finally, the studies show that lowering of international investment barriers significantly enhances the liquidity of stock markets, with positive effects on economic growth. Although stock market volatility tends to rise for a few years after financial liberalization, greater openness to international capital has been associated with lower stock return volatility in the long run. Moreover, stock return volatility does not appear detrimental to long-run growth. Thus, if policymakers have the patience to weather some short-run volatility, liberalizing restrictions on international portfolio flows offers expanded opportunities for economic development.

INTRODUCTION

Stock markets in developing countries account for a disproportionately large share of the boom in global stock market activity. While the total value of outstanding publicly traded stocks worldwide surged from about \$6 trillion in 1986 to more than \$20 trillion in 1996, the proportion of worldwide stock market capitalization represented by emerging markets jumped more than threefold. Furthermore, the total value of stock transactions in emerging economies soared from about 2 percent of the world total in 1986 to 12 percent in 1996.²

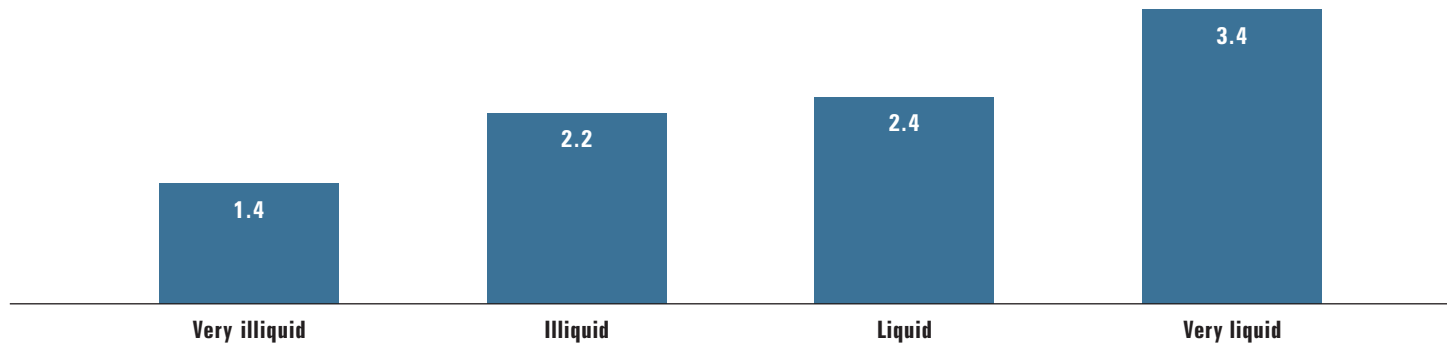
¹ See Ross Levine and Sara Zervos, "Stock Markets, Banks, and Economic Growth," *American Economic Review*, forthcoming; Raymond Atje and Boyan Jovanovic, "Stock Markets and Development," *European Economic Review*, April 1993, 37(2/3), pp. 632-40.

² These figures are from the International Finance Corporation's *Emerging Markets Facts Book* and use its classification of emerging and developed markets. Hong Kong and Singapore are classified as developed countries. Shifting them into the emerging market category makes the disproportionate boom in emerging markets even more noticeable.

FIGURE 1

Economic Growth of Countries Between 1976 and 1993 by Stock Market Liquidity in 1976*

Annual Percent Growth Rate of Per Capita GDP (1976-1993)



* Stock market liquidity is measured as the ratio of the value of trade transactions to GDP in 1976. Thirty-eight countries are included (see footnote 8) and groups are formed by ranking the ratios from lowest to highest. The very illiquid group contains the first nine countries; the illiquid group contains the next ten countries; the liquid group contains the next ten countries; and the very liquid group, the final nine countries.

Source: International Finance Corporation's Emerging Markets Database

The rapid emergence of markets in developing countries was accompanied by an explosion in international capital flows, especially to those markets. Net private capital flows to developing nations jumped tenfold over the past decade and exceeded \$250 billion in 1996.³ Whereas equity flows represented a negligible part of capital flows to emerging markets a decade ago, equity flows now represent about 20 percent of private capital flows to developing nations.

These trends raise two critical questions for policymakers in developing countries. First, do developing countries themselves benefit from the rapid development of their stock exchanges? Second, does liberalizing international portfolio flows enhance stock market development and promote long-run economic growth?

STOCK MARKET LIQUIDITY ENHANCES ECONOMIC DEVELOPMENT

Stock markets contribute to economic development by enhancing the liquidity of capital investments.⁴ Many profitable investments require a long-term commitment of capital, but investors might not want to tie up their savings for such long periods. A liquid equity market allows savers to sell their shares easily if they so desire, thereby making shares relatively more attractive investments. As savers become comfortable with investing for the long term in equities, they are likely to rebalance their portfolios

toward equities and away from shorter-term financial investments. For firms, this rebalancing lowers the cost of shifting to more profitable—that is, more productive—longer-term projects. Higher-productivity capital, in turn, boosts economic growth. It also increases returns on investments in equity which may prompt individuals to save more, adding further to investment in physical capital and thus fueling economic growth.

However, some economists argue that very liquid markets hurt economic development. By allowing investors to sell stocks quickly, liquid markets may reduce investor commitment and reduce incentives of stock owners to exert corporate control by monitoring the performance of managers and firms.⁵ In other words, dissatisfied owners sell their shares instead of working to make the firm operate better. According to this view, greater stock market liquidity may impede economic growth by hindering corporate governance.

But recent evidence suggests that well-functioning equity markets accelerate economic growth.⁶ This

³ The capital flow figures are from the World Bank, *Private Capital Flows to Developing Countries*, Oxford University Press, 1997.

⁴ See Ross Levine, "Stock Markets, Growth, and Tax Policy," *Journal of Finance*, September 1991 and Ross Levine, "Financial Development and Economic Growth: Views and Agenda," *Journal of Economic Literature*, June 1997.

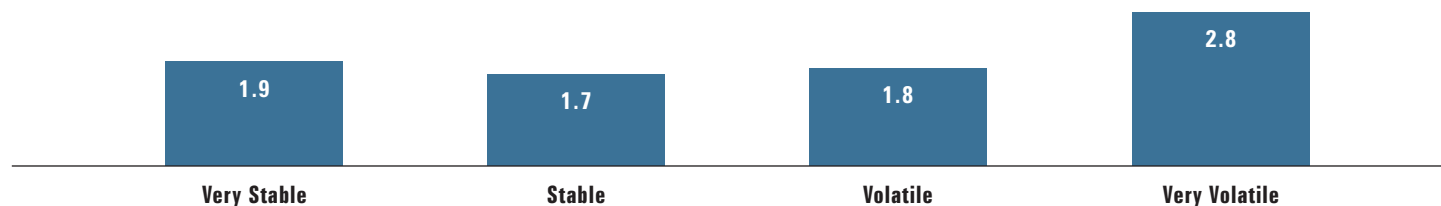
⁵ See Andrei Shleifer and Robert Vishny, "A Survey of Corporate Governance," *Journal of Finance*, September 1997.

⁶ See Levine and Zervos, "Stock Markets, Banks, and Economic Growth."

FIGURE 2

Economic Growth of Countries Between 1976 and 1993 by Stock Market Volatility in 1976*

Annual Percent Growth Rate of Per Capita GDP (1976-1993)



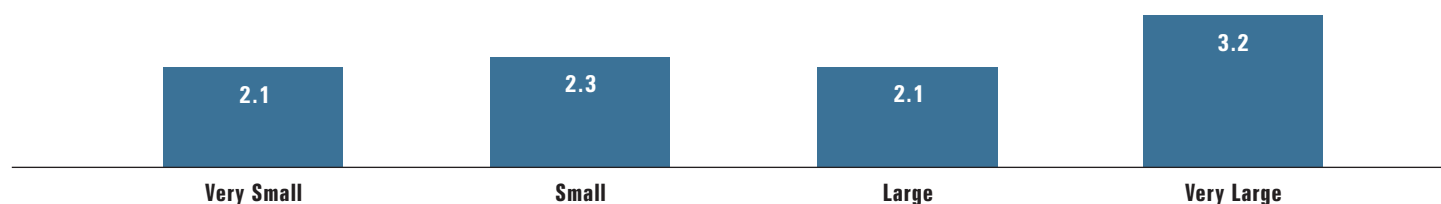
* Stock market volatility is measured as a twelve-month rolling standard deviation that cleanses the stock market return series of monthly means and twelve months of autocorrelations as defined by William Schwert, "Why Does Stock Market Volatility Change Over Time?" *Journal of Finance*, December 1989, 49(5), pp. 1115-53. Thirty-eight countries are included (see footnote 8) and groups are formed by ranking the measure of volatility from lowest to highest. The very stable group contains the first nine countries; the stable group contains the next ten countries; the volatile group contains the next ten countries; and the very volatile group, the final nine countries.

Source: Levine and Zervos, "Stock Markets, Banks, and Economic Growth."

FIGURE 3

Economic Growth of Countries Between 1976 and 1993 by Stock Market Size in 1976*

Annual Percent Growth Rate of Per Capita GDP (1976-1993)



* Stock market size is measured by the market capitalization divided by GDP. Thirty-eight countries are included (see footnote 8) and groups are formed by ranking the ratios from lowest to highest. The very small group contains the first nine countries; the small group contains the next ten countries; the large group contains the next ten countries; and the very large group, the final nine countries.

Source: International Finance Corporation's *Emerging Markets Database*

evidence is based upon the relationship between indicators of stock market liquidity and economic growth.⁷ Consider, for example, the total value of the trading volume of a country's stock exchanges expressed as a share of the country's gross domestic product (GDP). This value-traded ratio does not directly measure the costs of buying and selling securities at posted prices. Yet, averaged over a long time, the value-traded ratio is likely to vary with market liquidity, that is, with the ease of trading. If it is costly and risky to trade, there will tend to be less trading.

Using this value-traded ratio for 38 countries,⁸ Figure 1 groups the countries by the liquidity of their stock markets. The first group has the nine most illiquid markets; the second group has the next 10 most illiquid markets; the third group has the next 10; and the final group has the nine countries with the largest value-traded ratios. Those countries with relatively liquid stock markets in 1976 experienced GDP growth that was much faster over the subsequent 18 years than countries with illiquid markets. Moreover, countries with the most liquid stock markets in 1976 both accumulated more capital and enjoyed faster productivity growth over the next 18 years. Liquidity thus boosts both the quantity and productivity of capital investment, both of which accelerate economic growth.

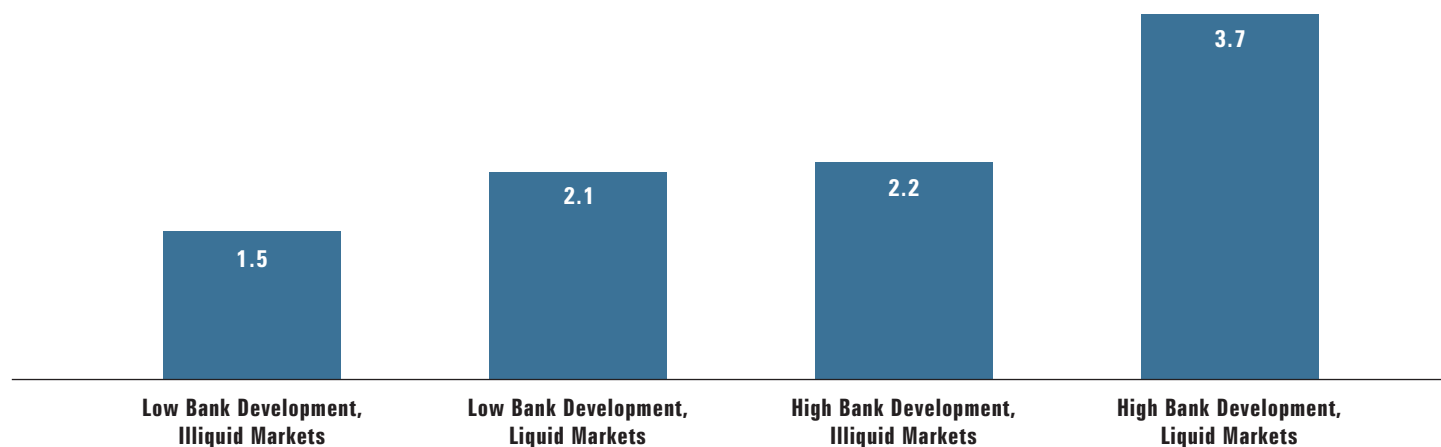
⁷ Data are from the International Finance Corporation's *Emerging Markets Data Base* (electronic version) and the International Monetary Fund's *International Financial Statistics* (various issues).

⁸ The 38 countries are Argentina, Australia, Austria, Belgium, Brazil, Canada, Chile, Columbia, Denmark, Finland, France, Germany, Greece, Hong Kong, India, Indonesia, Israel, Italy, Japan, Jordan, Korea, Luxembourg, Malaysia, Mexico, the Netherlands, Nigeria, Norway, Philippines, Portugal, Singapore, Spain, Sweden, Taiwan, Thailand, United Kingdom, United States, Venezuela, and Zimbabwe.

FIGURE 4

Economic Growth of Countries Between 1976 and 1993 by Banking Sector Development and Stock Market Liquidity in 1976*

Annual Percent Growth Rate of Per Capita GDP (1976-1993)



* Banking sector development is measured by bank credit divided by GDP in 1976. The thirty-eight countries (see footnote 8) are divided into four groups. The first had greater-than-median stock market liquidity (as measured in Figure 1) and greater-than-median banking development in 1976. Group two had liquid stock markets in 1976 but less-than-median banking development. Group three had less-than-median stock market liquidity in 1976 but well-developed banks. Group four had illiquid stock markets in 1976 and less-than-median banking development.

Source: International Finance Corporation's Emerging Markets Database and the International Monetary Fund's International Statistics

Alternative measures of stock market liquidity tell the same story. For instance, the turnover ratio, which equals the total value of shares traded as a share of market capitalization, is also a good forecaster of economic growth. Liquidity also can be measured as the value-traded ratio divided by stock price volatility. More liquid markets should be able to handle high volumes of trading without large price swings. This measure of liquidity also shows that countries with more liquid stock markets tend to grow faster.

Other measures of stock market development appear not to account for economic growth as well as liquidity. There is no evidence that higher stock market volatility adversely affects growth (Figure 2). Nor does there seem to be a strong link between the size of the stock market in a country, as measured by market capitalization divided by GDP, and economic growth (Figure 3).⁹ Liquidity—the ability to buy and sell equities easily—exhibits the strongest connection to long-run growth.

The link between liquidity and economic growth is not simply the result of liquidity serving as a proxy for other sources of growth. For example, the relationship between liquidity and growth remains strong even after controlling for inflation, fiscal policy, political stability, educa-

tion, the efficiency of the legal system, exchange rate policy, and openness to international trade. Thus, raising stock market liquidity may independently produce sizable growth dividends. To illustrate, statistical analyses imply that if Mexico's value-traded ratio in 1976 had been the average of all 38 countries (0.06 instead of 0.01), the average Mexican's income would be 8 percent greater today.¹⁰ This forecast must be viewed cautiously, however, since it does not specify how to enhance liquidity. Nevertheless, the example does illustrate the potentially large economic costs of policy, regulatory, and legal impediments to stock market development.

STOCK MARKETS AND BANKS WORK TOGETHER TO FOSTER GROWTH

Traditionally, development specialists have focused on banks and viewed stock markets as unimportant.¹¹

⁹ Regression results fail to show a significant statistical relationship between market volatility and economic growth. A significant positive relationship between stock market size and economic growth is found, but these results depend crucially on the inclusion of three countries; significance disappears if these countries are omitted from the sample. See Levine and Zervos, "Stock Markets, Banks, and Economic Growth."

¹⁰ See Levine and Zervos, "Stock Markets, Banks, and Economic Growth."

¹¹ See the discussion in the World Bank's *World Development Report*, 1989.

They note that much more corporate capital is raised from banks than from equity issues. This traditional view, however, fails to recognize that stock markets and banks may provide different financial services. Stock markets may positively affect economic development even though firms obtain the bulk of their capital elsewhere.

Empirically, the effect of stock markets on growth can be distinguished from the effect of banking development. To demonstrate this, the 38 countries discussed above were divided into the four groups shown in Figure 4. The first group had greater-than-median stock market liquidity (as measured by the value-traded ratio) in 1976 and greater-than-median banking development, where banking development is

defined as bank credit divided by GDP. Group two had liquid stock markets in 1976 but less-than-median banking development. Group three had less-than-median stock market liquidity in 1976 but well-developed banks. Group four had illiquid stock markets in 1976 and less-than-median banking development.

Countries with both liquid stock markets and well-developed banks grew faster than countries with both illiquid markets and underdeveloped banks (Figure 4). More interestingly, greater stock market liquidity implies faster growth no matter what the level of banking development. Similarly, greater banking development implies faster growth regardless of the level of stock market liquidity. Thus, it is not stock markets versus banks; it is stock markets and banks. Each of these components of the financial system is an independently strong predictor of growth.

Clearly, stock markets offer something to the economy that banks do not. As suggested above, stock markets may play a prominent role in

FIGURE 5

Changes in Stock Market Liquidity and Volatility Following Liberalization of Controls on International Portfolio Flows

Country	Year of Liberalization	Changes in Liquidity	Changes in Volatility
Argentina	1989	+	+
Brazil	1983		+
Chile	1988	+	
Columbia	1989–91	+	+
India	1990–92	+	+
Jordan	1987	+	
Korea	1981–92	+	
Malaysia	1986		NA
Pakistan	1990	+	+
Philippines	1988	+	
Portugal	1988	+	NA
Thailand	1988	+	+
Turkey	1990	+	NA
Venezuela	1988	+	+

Note: "+" indicates significant increase; blank space indicates no significant change; NA indicates data not available.
Source: Ross Levine and Sara Zervos, "Capital Control Liberalization and Stock Market Development," World Development, forthcoming.

expanding opportunities for trading risk and boosting liquidity. In contrast, banks may focus more on establishing long-term relationships with firms, so that they can acquire information about managers and firm prospects. To grow, economies need both liquidity and information about firms. Thus, if stock markets provide the liquidity and banks the information, then banks and stock markets would each independently be associated with growth.

But there is overlap. Like markets, banks help savers diversify risk and provide liquid deposits. Similarly, like banks, stock markets stimulate the acquisition of information about firms. Liquid markets encourage the acquisition of information about firms because investors want to make a profit by identifying undervalued stocks and exploiting this information. While overlap undoubtedly exists, the empirical findings show that stock markets provide a sufficiently distinctive bundle of financial services, such that bank and stock market development each enjoy an independently strong link with long-run economic growth.

Moreover, research indicates that banks and equity markets work together. A well-functioning equity market enables entrepreneurs to make long-term, more productive investments in physical capital because they have access to longer-term sources of funds. More productive capital implies higher returns for investors; thus, lenders as well as equity investors more confidently advance funds to these entrepreneurs. Information that flows from trading of companies' shares also boosts lenders' understanding of and confidence in the prospects of these firms. Greater stock market liquidity in emerging market economies thus is associated with an increase in the amount of funds raised through bond offerings and bank loans. Indeed, most capital accumulation is financed through bond offerings and bank loans.¹² As a result, corporate debt-equity ratios actually rise with greater stock market liquidity.¹³ Accordingly, the data strongly suggest that

stock market development in emerging market economies tends to complement rather than replace bank lending.

CAPITAL MARKET LIBERALIZATION OFFERS POTENTIALLY LARGE GROWTH DIVIDENDS

Should developing countries reduce impediments to international capital flows?¹⁴ This might involve easing restrictions on capital inflows or reducing limitations on repatriating dividends or capital. In either case, lowering barriers to cross-border capital flows affects the functioning of emerging stock markets. Fewer impediments for foreign investors will enhance market integration with world capital markets and therefore affect the pricing of domestic securities. Domestic firms, in seeking foreign investment, will often have to upgrade the information disclosed to investors. As more foreign investors enter the market, pressure will be applied to upgrade trading systems and modify legal frameworks to support a greater variety of financial instruments.

Yet some policymakers fear that opening up domestic stock markets to foreign investors increases the risk that share prices will become more volatile as cash fluctuates with good or bad economic news.¹⁵ Such gyrations would complicate macroeconomics and exchange rate policies, while potentially deterring local companies from making long-term investments.

¹² See Colin Mayer, "New Issues in Corporate Finance," *European Economic Review*, June 1988.

¹³ See Asli Demirguc-Kunt and Vojislav Maksimovic, "Stock Market Development and Financing Choices of Firms," *World Bank Economic Review*, May 1996.

¹⁴ Many factors influence the functioning of stock markets, including legal, regulatory, accounting, tax, supervisory, policy, and political conditions. A full discussion of these factors is beyond the scope of this article. For an analysis of the legal determinants of securities market development, see Rafael LaPorta, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert Vishny, "Legal Determinants of External Finance," *Journal of Finance*, July 1997.

¹⁵ These fears would appear to be misplaced with respect to the behavior of foreign institutional investors with long-term investment objectives, such as U.S. mutual funds. See John Rea, "U.S. Emerging Market Funds: Hot Money or Stable Source of Investment Capital?" Investment Company Institute, *Perspective*, Volume 2, Number 6, December 1996. This study examined the behavior of shareholders and portfolio managers of U.S. mutual funds that invest in emerging markets. The study found that neither shareholders nor portfolio managers behaved in a way that would exacerbate a financial crisis or contribute to increased market volatility.

The evidence suggests, however, that lowering international investment barriers encourages stock market development, with positive effects on economic growth.¹⁶ Figure 5 lists 14 countries that liberalized controls on international portfolio flows. In 12 of the 14 countries, stock market liquidity rose significantly following the liberalization of international investment restrictions. For example, in January of 1988, Chile liberalized restrictions on the repatriation of dividends and enjoyed a subsequent rise in market liquidity.¹⁷ None of the 14 countries experienced a statistically significant fall in liquidity following liberalization. Combined with the earlier finding that market liquidity boosts economic growth, these results suggest that liberalizing international capital flow restrictions can accelerate economic growth by enhancing stock market liquidity.

It is also true that stock market volatility rose in 7 out of 11 cases for a few years following liberalization (Figure 5). Volatility did not fall significantly in any of the cases. Thus, while raising stock market liquidity, capital control liberalization tends to be associated with increased volatility. In the long run, however, greater openness to international capital is associated with lower stock return volatility.¹⁸ So, the jump in volatility following liberalization is a transitory phenomenon. In addition, volatility is not asso-

ciated with long-run growth, while greater liquidity is strongly linked to faster growth. Thus, if policymakers have the patience to weather some short-run volatility, liberalizing restrictions on international portfolio flows offers expanded opportunities for economic development.

Every country does not necessarily need its own active stock market. Conceptually, both firms and savers benefit from easy access to liquid stock markets. It is the ability to trade and issue securities easily that facilitates long-term growth, not the geographical location of the market. In other words, there is little reason to believe that California would grow faster if the New York Stock Exchange moved to Los Angeles. This emphasizes the two-sided nature of capital control liberalization: it allows firms and savers to more readily use the most helpful market, wherever it is. Thus, capital control liberalization may improve the ability of firms to raise capital, both by improving the liquidity of domestic exchanges and by providing greater access to foreign exchanges.

In summary, the evidence suggests that policymakers in emerging markets should take steps to provide greater access to their equity markets because it will enhance the likelihood that their citizens will enjoy better living conditions in the future. While it is true that stock market development does not represent a financial elixir for economic growth, liquid stock markets can be an important contributor to growth, and liberalizing restrictions on international portfolio flows is an effective way of improving access to well-functioning equity markets.

¹⁶ See Ross Levine and Sara Zervos, "Capital Control Liberalization and Stock Market Development," *World Development*, forthcoming.

¹⁷ While dividends now may be repatriated freely, Chile continues to restrict repatriation of capital contributions by foreign investors.

¹⁸ See Asli Demirguc-Kunt and Ross Levine, "Stock Market Development and Financial Intermediaries: Stylized Facts," *World Bank Economic Review*, May 1996.

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