Enhancing the assessment of stock markets

- The widely utilized measure of market capitalization is a limited assessment indicator
- Indicators on size, access, efficiency and stability enrich the analysis of markets

Market capitalization is commonly utilized for benchmarking stock markets across countries or across time. As a measure of the value of all stocks listed on an exchange, it intends to summarize the development of a market. However, this indicator gives only a partial glimpse of the various functions of stock markets and should be complemented with other data now available.

The Financial Sector Development Indicators (FSDI) project collects a wide array of indicators in all sectors of the financial system. This note focuses on indicators that complement market capitalization and that are available for a wide cross-section of countries. It covers the dimensions of size and access, while detailed indicators of efficiency and stability are discussed in a separate note (Financial Sector Indicators Note: 3)

Regional perspective
Market capitalization is only an approximation of the size of a market. By itself, without scaling, it is as informative as a comparison of the size of national economies. Still, when adjusting by Gross Domestic Product (GDP) it gives us an approximation of the relative size of stock markets.

There is wide dispersion in the size of markets across the world (chart, above). Altogether, the size of developing country stock markets was roughly a tenth ($3.4 trillion) of that of high-income countries ($35 trillion) at the end of 2004. When benchmarked against GDP, however, the compari-
son between the two sets becomes less stark. Market capitalization was 38 percent for developing countries and 110 percent for high-income economies.

The market capitalization for East Asia and Pacific, at $1.1 trillion, noticeably outpaces that of other regions. That for Middle-East and North Africa, at $0.1 trillion, is significantly smaller. There is wide concentration within regions as well: China accounts for 60 percent of the market capitalization of East Asia. As for the market cap over GDP ratio, only six developing countries from the sample of 70 have a ratio higher than one hundred percent. Among these, Chile, Jordan, Malaysia, and South Africa, account for most of their regional averages. This underscores the need to complement any single indicator for an overall view of market development.

Beyond market cap: how accessible is the market?
Market capitalization by itself does not give an indication of the degree of the accessibility of markets. Countries with medium or large market capitalizations sometimes have very few firms listed on the exchange. Even when there is a positive relationship between market size and the number of listed firms, the correlation is far from perfect (chart, left). In Egypt, Hungary and Malaysia, market-cap reflects a relatively small number of firms. In Brazil, Mexico, Russia and South Africa, market-cap is relatively more evenly distributed. Still, some of these countries rank low if we scale the number of listed firms to some measure of the size of the economy (population, for example).

**Relationship to new financing**
Access to finance is crucial for investment and growth. A primary function of a stock market is to give firms access to capital by allowing them to sell their shares. This permits firms to seek alternatives to bank and traditional sources of finance, improving the capital allocation process. A healthy market should exhibit a large market capitalization distributed over a large number of firms, with high turnover. In addition, it is necessary that the market permits new firms to raise capital.

One indicator of access is the number, and value, of Initial Public Offerings (IPOs). The figure below on the right shows both indicators in 2004 by region. Note that the number of IPOs is presented relative to the number of listed firms, and their value

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**Note**: China and India, whose market-cap and number of listed firms are $640 billion and 1384, and $388 billion and 4730, respectively are not shown. While China would adhere to the general trend, India reflects relatively small market-cap per firm.
is presented relative to market capitalization. This is just a snapshot as IPO activity varies greatly over time.

The figure above, taking a longer perspective, shows that larger markets tend to give more access to firms. Size is measured using the “FSDI Composite Size Indicator”, which summarizes diverse measures such as market capitalization, value traded and turnover. However, the relationship is not strong, suggesting other determinants of IPO activity in stock markets (such as the macroeconomic environment, industry composition, and firm characteristics).

Concentration in stock markets
The majority of stock markets in the world are concentrated. The FSDI include measures of market concentration over time and across countries. One indicator of market concentration, the share of the 10 largest firms in total market capitalization, is presented in the figure below at left. In all regions, except North America, the 10 largest firms account for more than 50 per cent of the market. In the case of Europe and Central Asia, Africa, and Latin America, the share of the 10 largest firms relative to the market is more than 70 per cent.

Concentration can not only be looked at from the market level, but also at the firm level. One such measure is the “fraction of closely held shares in the stock market”. It represents the proportion of shares held by insiders such as officers, directors, their families, large shareholders, and the like. A higher concentration indicates that a smaller percentage of the market is available to outsiders.

Note: Country averages for the years 1993-2004 (FSDI Size) and 2001-2004 (IPO Value).
The figure (bottom right, previous page) presents the “Closely Held” indicator by income group. Interestingly, there is an inverse U-shaped relationship. High income economies have stock markets more open to outsiders than emerging market economies, reflecting the better institutional environment regarding investor protection. What happens at lower levels of income is still an open question.

The turnover ratio and liquidity
The turnover ratio (the value of transactions in a year divided by end-of-year market capitalization) traditionally complements market capitalization as an indicator of market development. Turnover, and similar trade-based indicators, are frequently used to proxy for liquidity.

By analyzing market capitalization and the turnover ratio together, new insights are gained on the health of a stock market. For example, a market can be large but inactive, i.e., stocks trade infrequently. In addition, market capitalization is affected by a “price effect”: the value of all stocks in the market can rise (for example, on expectations of future performance), with no real change in the intermediation process. Since the turnover ratio includes prices in both the numerator and denominator, it is not affected by this effect. Any increase in the ratio reflects a real increase in trading activity.

The figure on the upper right shows the histogram of stock market turnover ratios across the world. The distribution is skewed to the left as the majority of stock markets across the world have low liquidity. Seventy countries have a turnover ratio lower than 40 percent. Only 14 countries (from the sample of 127) have a turnover ratio higher than 100 per cent. Among these are China, Germany, Spain, South Korea, Netherlands, and the United States.

Additional indicators for an enhanced assessment
FSDI organizes capital market indicators in four categories: size, access, efficiency, and stability. The indicators discussed in this note are part of the size and access dimensions of stock markets. The four dimensions represent actual outcomes of the markets: a detailed picture of their health at a point in time. We can, for example, benchmark the relative ranking of stock markets along these dimensions or at an aggregate level. However, outcome indicators still leave open the question of what are the determinants of market development? To that purpose FSDI also collects detailed indicators of the institutional characteristics of financial markets. Subsequent note will discuss the institutional foundation of stock markets and its relation to market development.

Availability of information through the FSDI Web site
Data on market capitalization, number of firms listed on stock exchanges and new equity issuance will be available through the FSDI Web site, currently under construction. Such indicators, along with various other variables, will form part of an overall framework for assessing capital markets and financial sectors. Provision of regional and country details in the Web site will offer users the flexibility of customizing information to their unique requirement.