Institutional foundations for financial markets

• Measuring the institutional foundations of financial markets is essential for understanding its determinants, and help design better policies

• Indices of the rule of law, creditor rights and information, business transparency, and the quality of infrastructure are associated with deeper and more efficient financial markets

• In banking and securities markets, characteristics related to private monitoring and enforcement drive development more than public enforcement measures

Defining the institutional environment

A strong institutional environment is necessary for the development of financial markets across all dimensions—size, access, efficiency, and stability. However, the term “institutional environment” is broad. It encompasses frameworks concerning information, regulations, contracts and the justice system, as well as the physical infrastructure of the financial system. To say that institutional environment matters for financial sector development is true, but so obvious that it becomes irrelevant for policy or for understanding the intricate and in-depth determinants of the process. Detailed indicators on specific aspects of the institutional framework are needed to answer what specific characteristics matter, and through what channels.

The Financial Sector Development Indicators (FSDI) project collects and organizes indicators that help understand and assess these specific aspects of the institutional environment. This provides focus to the broad and loosely employed definition of institutional environment and improves the intricate and in-depth understanding of the development of the financial sector. The FSDI institutional environment indicators are available for a wide cross-section of countries. Through these indicators, the institutional component of FSDI, the determinants of financial sector development can be better documented.

Breaking down the broad definition

The institutional environment can be best understood when divided into three levels, going from indicators that affect the general environment to indicators that are more relevant to specific sectors of the financial system. The organization of the institutional environment and some of the many indicators collected by FSDI, is presented in the table on the following page.

• General environment. The base of the table comprises indicators that make up the overall, or “system-wide”, institutional environment. Included in this category are indicators that refer to market (or country) wide institutional foundations, and affect all sectors of the financial system.

• Specific environment. This mid-tier level organizes information into four categories; investor environment, information infrastructure, business transparency and information, and systemic infrastructure. This way of organization helps understand the specific institutional chan-
nals through which the overall financial sector development is affected.

- **Sector-specific environment.** This top-tier level relates to indicators that are sector-specific, i.e., to banking and capital markets, which also form the rows in the “FSDI-matrix” (where the rows comprise the sectors and the columns comprise the dimensions of financial sector). Indicators relevant for each sector are listed in the table above.

This note discusses specific examples drawn from each level of institutional environment and highlights their relevance for financial sector development. In so doing, it helps establish the overall crucial role of institutional environment.

### The FSDI matrix

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<th>Sector</th>
<th>Size</th>
<th>Access</th>
<th>Efficiency</th>
<th>Stability</th>
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<tbody>
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<td>Banking</td>
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<td>Capital markets</td>
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The FSDI institutional component supports this matrix.
Necessary conditions for market development

An adequate overall institutional framework is necessary in order for financial markets to develop and operate efficiently. A large portion of financial transactions refer to future settlements that are also dependent on contingent circumstances. Alongside a stable macroeconomic framework, the quality of law and order in a country is a first-order determinant of financial market development. In order to establish a well-rounded view of the basic conditions affecting market development, FSDI provides data on the overall rule of law, the efficiency of the judiciary, and indices of the risk of repudiation of contracts by the government. As an example, the graphs above show that both banks and stock markets are positively correlated with the rule of law, i.e., better quality and enforcement of the rule of law leads to greater financial intermediation (as measured by the ratio of private credit to GDP), as well as deeper equity markets (as measured by the ratio of market capitalization to GDP).

Indicators referring to specific environment

The graphs on the next page highlight how the specific channels of the institutional environment are related to financial market development

Investor environment

Included here are indicators that gauge the strength of investor protection in a country. Strong investor (creditor and equity) rights are necessary for deep credit and equity markets, as they impart confidence regarding recovery of capital and interest. Strong investor rights ultimately also assist debtors by deepening financial markets and lowering the price of capital due to more competition among investors. Indicators for assessing both the creditor rights (for investors providing loans), and shareholder rights (for investors providing equity) are available in FSDI. The figure on the top-left of the next page shows that creditor rights are correlated with deeper financial systems, as measured by the ratio of private credit to GDP. For instance, the average private credit to GDP ratio is three-times higher at Creditor Legal Rights Index values between 5 and 10, compared to values between 0 and 4.
Creditors legal rights index
This index, reflecting the legal rights of lenders, measures the degree to which collateral and bankruptcy laws facilitate lending. It is based on data of collateral and insolvency laws, supported by the responses to a survey on secured transactions laws. The range is 0 to 10.

Earnings manipulation
This indicator is derived from certain characteristics of information reported in the balance sheet and income statements of companies, which can be indicative of manipulation of earnings. Firms scoring higher in this indicator are expected to more likely experience reinstatement of incomes in the future.

Credit information index
This index measures rules affecting the scope, accessibility and quality of credit information available through either public or private bureaus. The index ranges from 0 to 6, with higher values indicating that more credit information is available to facilitate lending decisions.

GSCS Settlement benchmark and transaction costs
The settlement benchmark compares the efficiency of different markets by incorporating average trade size, local market interest rates, the proportion of trades that fail, and the length of time for which they fail. Transaction costs take into account the impact on stock prices due to large trades, information asymmetry and direct costs. Information in daily stock price movements is exploited to derive trading costs.
Information infrastructure
Availability of reliable information is crucial for deep and well-functioning of financial markets. When creditors have access to increased debtor information, including on creditworthiness, credit histories and balance sheets, deeper markets follow. An example of this is exhibited by the correlation between the credit information index and private credit to GDP (top right chart, previous page). The depth of markets consistently increases with increased availability of information, with market depth at highest levels of credit index (value of 6) being four times than that at the lowest level.

Business transparency
There is a specific subset of indicators that is particularly important for the development of financial markets. This refers to information on firms, corporations and the quality of monitoring. Indicators relating to the quality of corporate governance, accounting, and auditing are included in this category. Such information is critical for both bank lending and capital market financing (although the requirements for business transparency and information are greater for capital markets than for bank lending due to the different characteristics of the two forms of financing). With transparency in perspective, the figure on the bottom-left on the previous page shows that compliance with accounting standards reduce the probability of corporations' earnings manipulation. In other words, greater compliance is associated with more transparent capital markets.

Systemic infrastructure
Not all characteristics relating to the institutional environment governing financial markets are intangible, such as the rule of law. Factors that form the “physical” infrastructure for financial markets are equally important. To gauge the development of infrastructure, indicators related to the payments system and the clearing and settlement of securities are collected and reported. A more efficient settlement system for securities (as measured by an index produced by the private company GSCS) is correlated with lower transaction costs in trading, highlighting the importance of physical infrastructure in promoting market efficiency (chart, lower-right, previous page).

Sector-specific indicators
Assessment of the institutional environment specific to a sector in the financial system can be had from indicators focused particularly on that sector, such as indicators of supervision and regulation and sector-specific laws.

Banking sector
The sector-specific component for the banking sector includes indicators on the supervision and regulation of banks, capital stringency, and indices related to the financial safety net (from Barth, Caprio and Levine, 2006). Such data can be used to explore causal links between the quality and style of regulation and the performance of banking systems across the world. It shows that an independent supervisor is associated with an increase in private credit to GDP (left chart, next page). Among other inferences, the data highlight that too much reliance on discretionary powers vested with government officials for the safe-keeping, soundness and efficiency of the banking system, may be misguided. In contrast, bank intermediation (as measured by the private credit to GDP ratio) is strongly related to the “private monitoring index”, as shown in the figure on the right (next page). What matters in the regulation of banks is not the powers and extent of the public supervisor, but the information and means that the private sector has to discipline banks.

Capital markets
Based on recent research, regulations more conducive to deepening of capital markets, as well as characteristics of the securities market law most effective for market development can be identified. This can be exemplified with the following example. Laws governing securities’ markets lay out provisions regarding disclosure requirements in the prospectus of a public offering of a security,
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as well as procedures available in the event of defrauding of investors by the issuer or the underwriter. Such provisions in the law can be broadly classified in two categories: (i) those that relate to a public enforcement mechanism, i.e., where the law gives the regulator the responsibility to gather information and pursue the offense; and (ii) provisions that refer to a private enforcement mechanism, i.e., the responsibility and the means are provided to the private parties involved to sue and recoup losses in a court of law. Stock market development is strongly correlated with private enforcement, but not much with public enforcement (left chart, next page).

Another set of characteristics of securities' laws are those related to "self-dealing", i.e., the expropriation of investors by managers or controlling shareholders. Here again, the laws include provisions that can be classified as either of a private or public enforcement nature. The figure on the right (next page) shows that stock market development is correlated with self-dealing measures, especially those that relate to private enforcement.

Summary
The discussion above identifies that the set up of institutional environment is intricate and complex. Comparison across countries and across various dimensions of the institutional framework can be revealing. For example, Germany fares quite high (top ten) in terms of creditor rights, but ranks low in terms of private sector enforcement mechanism in the capital market sector (table, next page). Benchmarking can aid in the assessment, as well as formulation of policies relating to institutional environment.
Prospectus and Self-Dealing Indices
These indices measure the strength of investors to sue for poor information and of minority shareholders' protection against directors' misuse of corporate assets for personal gain.

“Prospectus” is an index that summarizes the number of features in a securities market law that give the means to private parties to sue in a court of law if there is fraud related to the prospectus.

“Self-Dealing” summarizes those features in the law that provide transparency of transactions, liability for directors, and ability of shareholders to sue officers or directors for misconduct.

The data come from a survey of corporate lawyers and are based on company laws, codes of civil procedure and securities regulations. See La Porta, et al (2006) and Djankov et al (2005) for details.

Select references