2

Improving the Private Investment Climate for Recovery and Growth

Economic growth is central to achieving the Millennium Development Goals (MDGs) and related development outcomes, and a vigorous private sector is vital for strong and sustainable growth. The private sector drives job creation, increases in productivity, and economic growth.[1] Private sector jobs provide most of the income in developing as well as developed countries. Revenues from private sector transactions and incomes pay for many of the public goods provided by governments. Competition can help spur technological advancements and productivity gains that are the key to sustained long-term growth.

Private-sector-led growth also benefits the poor. The expansion of job opportunities is identified as the single most important pathway out of poverty.[2] When average household incomes rise by 2 percent, poverty rates fall by about twice as much on average.[3] The poverty effects of income growth are often associated with a shift in employment from traditional sectors with low productivity to those with higher productivity growth, such as manufacturing, mining, and utilities. The poor also benefit from expanding public goods provision associated with higher revenue collection.

The current international financial crisis has sharpened the focus on the private sector. With credit hard to come by almost everywhere in the world, private firms are having to downsize, lay off workers, and delay if not cancel investment plans. Fear that economic hardships in the private sector could widen and lead to deeper recession globally has heightened the need to ensure that the private sector has the tools it needs and the fiscal and monetary policies that will make it grow. Addressing key constraints in the private sector is necessary to ensure that firms can respond and expand once the recovery is under way.

The agenda involves improving the enabling environment facing businesses of all types and sizes, from small farmers to sophisticated technology firms, and increasing the attractiveness of economies to investors, both foreign and domestic. This chapter assesses progress and the policy agenda regarding three key elements of the private investment climate: the regulatory and institutional environment; access to financial services; and access to infrastructure. The latter two elements are both important inputs to private sector development, and the private sector itself can play an important role in their provision.

The current crisis reinforces lessons from research on regulatory reform: the aim should be better, not necessarily fewer, regulations; and the quality of enforcement and broader governance matter greatly for

the effectiveness of regulations. The crisis underscores the need to pay special attention to the financial sector. It is also vitally important to protect infrastructure investment from the impact of the crisis as much as possible. Infrastructure investment can both help with economic recovery in the short term and strengthen foundations for future growth.

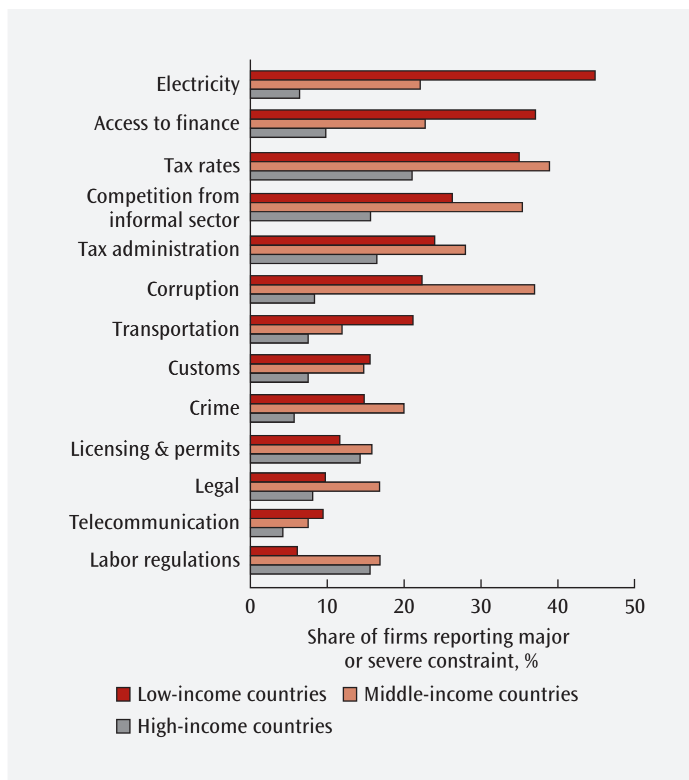
Quality of Investment Climate Key to Private Sector Contributions

The investment climate, or broader business environment, in which firms operate can be critical in shaping the incentives and opportunities for, and rewards from, investment and productive efforts. Taxation directly affects the return on investment, while regulations influence the types of activities one can or cannot engage in and who can engage in them. A firm's access to finance can determine the opportunities it can pursue. And the availability of infrastructure services can affect the costs of production and delivery of goods and services to consumers. Indeed, by influencing the barriers to entry, the risks, and the costs facing firms, the investment climate affects the scope for private sector growth and productivity.

The World Bank's Enterprise Surveys, now completed in over 100 countries, provide insights into the current investment climate. The information includes subjective rankings of constraints, which can be corroborated with more objective, quantitative measures. Thus, if firms report electricity to be a problem, information is also available on the frequency of outages, the costs of running a generator, and the production lost as a result of interruptions in the public grid.

Firm responses show that the regulatory environment, access to finance, and infrastructure are three key constraints affecting private business around the world.[4] Figure 2.1 illustrates a number of patterns shown in these surveys.

FIGURE 2.1 Key constraints on firms vary by country income level



Source: Enterprise Surveys database.

Firms in high-income countries report facing fewer constraints. The share of firms that see the various potential issues as a major or severe constraint to the growth of their business is much lower in high-income countries than it is in developing countries. The share is often half that of lower-income countries, with the exception of licenses and permits and labor regulations, where the share is only marginally lower than for middle-income countries. Because the objective conditions in higher-income countries are generally better—that is, electrical outages are less common, the financial system is more developed, and procedures to comply with regulations are often more streamlined—this finding is not too surprising.

Access to electricity and finance are the top two issues in low-income countries. The importance of these constraints decreases

dramatically as a country's income rises. This is true for the other infrastructure variables too—although telecommunications is not reported as a major constraint in any income category, thanks to rapid progress in this area in recent years.

Several areas related to regulations and governance are reported as most significant in middle-income countries. These are tax rates, tax administration, competition from the informal sector, and corruption. As discussed below, it is often the low-income countries that have the most regulatory procedures and time delays associated with compliance. As income rises, these tend to fall. However, enforcement of these regulations often strengthens as income rises. So, while the formal requirements may be decreasing, the greater enforcement could well explain why entrepreneurs in middle-income countries report being more constrained by regulation. The results also suggest that corruption and regulatory constraints may go together.

Many studies show that these areas of the investment climate—regulatory and institutional environment, finance, and infrastructure services—are closely associated with firm performance.[5] Weaknesses in the business environment have been shown to shift the size distribution of firms downward.[6] Interruptions in access to power are particularly significant in reducing the growth of large firms while encouraging the spread of small, more labor-intensive firms. A lack of access to finance lowers growth across the size distribution. Because the benefits of finance are particularly strong for small firms, a lack of access hurts them disproportionately.[7]

Regulatory and Institutional Environment for Private Sector Development

Regulations are generally justified as addressing market failures. A common one involves externalities, cases where activities have spillover effects on others that are not taken into account by the original actor. A second market failure is information asymmetry, where the producer, for example, may have more information about the safety or reliability of its products than the consumer. A third is monopoly power, market power that can be used to raise prices and lower output to maximize a firm's rents at the expense of the consumer.

These market failures drive a wedge between the private interests of firms and those of broader society. They can also inhibit productive investments and growth. Thus regulations can play a critical role in protecting society and consumers and in promoting greater equity and access to a level playing field for private sector development.

The challenge to governments, however, is that they not overreach in correcting these failures. While underregulation may fail to address social interests or externalities, overregulation can stifle the ability to pursue opportunities, curtailing growth. Government failures, from limited capacity or its own rent-seeking incentives, can also be harmful. Such risks reinforce the case for keeping regulations simple, transparent, and enforceable.

The goal is not simply to have fewer regulations. Rather it is to have better regulations. And one of the lessons of experience is that enforcement matters in assessing the quality of regulations. The effectiveness of regulations can depend on the capacity of local officials as well as on budget constraints. The broader quality of governance plays a role as well.

Substantial Scope Exists for Regulatory Improvements

Looking at what is known about regulations in practice, there appears to be substantial room for improvements without compromising broader public interests. Too often governments pursue regulations that fail to meet intended social interests or impose unnecessary costs, risks, or barriers to entry and

competition. Demonstrating a commitment to improve the regulatory environment can lead to substantial results—without requiring a perfect business environment. Examples from China to India to Uganda show how tackling regulatory costs and strengthening property rights can generate significant increases in investment and productivity.[8]

One source of data on regulations is the World Bank's Doing Business project, benchmarking specifically defined areas of business regulations in most countries of the world. The ability to compare formal requirements of regulatory compliance across countries can be useful in encouraging officials to undertake reforms. And the data can be used to analyze their associations with outcomes of interest, such as investment, job creation, and growth (see box 2.1 for a recent evaluation of the Doing Business project and follow-up actions).

The Doing Business measure of the ease of doing business covering 10 regulatory areas shows that the ease of doing bussiness varies widely across countries (figure 2.2).[9] Richer countries tend to have more efficient and streamlined regulations. But there is considerable variation in this relationship. What matters for the quality of the business environment is the quality of the regulations, including their enforceability, not just the number of regulating procedures. Enforceability is a particularly important consideration in poorer countries, which tend to have less control of corruption and more limited administrative capacities. A heavy

BOX 2.1 Independent Evaluation Group reviews Doing Business

In 2008 the World Bank's Independent Evaluation Group (IEG) released its report on the Doing Business project. The evaluation recognized that the project has been effective in spurring dialogue on reforms and motivating interest and action. "For country authorities, it sheds a bright, sometimes unflattering, light on regulatory aspects of their business climate. For business interests, it has helped to catalyze debates and dialogue about reform." However, the evaluation also found that business is affected not only by laws and regulations, but also by a host of other variables outside the scope of the Doing Business indicators. In response, the 2009 report on Doing Business is careful to strengthen the caveats about what the indicators do and do not capture.

The IEG evaluation found little evidence that the Doing Business indicators distorted policy priorities or encouraged policy makers to make superficial changes solely to improve rankings. It also concluded that a country's legal origin, whether civil or common law, does not determine its score in the Doing Business indicators. The evaluation's recommendations to further develop the transparency of the data collection, data revisions, and the respondent selection process have been accepted and are being implemented by the Doing Business team.

Within indicator areas, the IEG evaluation addressed concerns that the rankings may appear to reward less regulation without necessarily capturing the quality of the regulations or the social values they might reflect. The 2009 report clarifies Doing Business's focus on efficient, streamlined, and accessible regulation. In the case of labor regulation, Doing Business specifically endorses the International Labour Organization's (ILO) core labor standards, and the Employing Workers indicator is designed to be consistent with all relevant ILO conventions. No economy can achieve a better score by failing to comply with these conventions. The Paying Tax indicator generated more debate about whether to include the tax rates in addition to the administrative time and costs of paying taxes. The tax rates remain as an indicator, but it is noted that they reflect in part the social and political preferences of a country.

The IEG cautioned that the Bank Group, by so prominently recognizing highly ranked countries in the Doing Business index, may be inadvertently signaling that it values reduced regulatory burdens more than other development goals. The Bank Group's approach entails helping countries achieve a wide range of objectives, yet it has no comparable way of celebrating improvements in other important development outcomes. One response could be to apply cross-country rankings to spur dialogue and motivate interest in and action on other development issues—those for which actionable indicators can serve as proxies for the target outcomes and for which there is a clear consensus on what constitutes an improvement.

regulatory burden in situations of poor enforcement capacities can produce perverse outcomes, including undermining the credibility and effectiveness of the government.

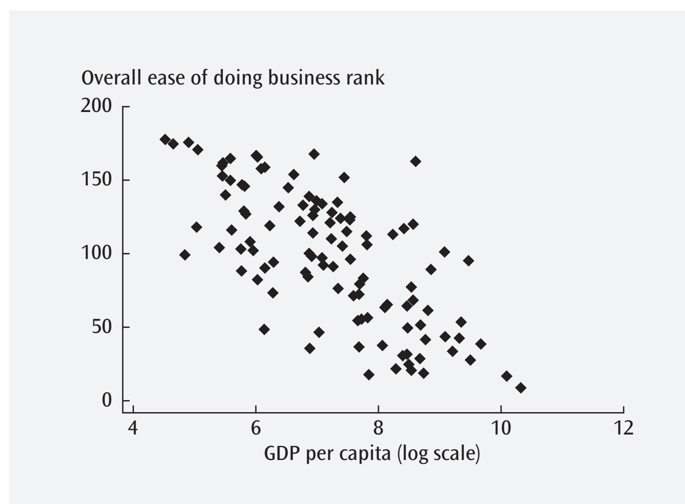
Improvements in Doing Business Indicators Are Common across Countries

A great many countries have seen improvements in their Doing Business indicators over time. Across all indicators and over the six years of data now available, 126 of the 178 economies for which there is at least two years of data register an improvement of 10 percent or more in at least one indicator. Fifty-two countries report such an improvement in more than three indicators. Only 18 countries report an overall reversal in an indicator.

Figure 2.3 shows the share of countries by region that report an improvement of 10 percent or more in an indicator. The Europe and Central Asia region has had a higher share of countries with improving indicators.[10] Sub-Saharan Africa has had a somewhat smaller improvement over time. However, the majority of countries there saw their indicators improve in 2007–08, and three of the world's top ten economies that reformed their business regulations were from the region: Botswana, Burkina Faso, and Senegal. Mauritius moved up to 24 in the global rankings on the regulatory ease of doing business. The runner-up in these overall rankings was South Africa at 32, followed by Botswana at 38. Other economies in Africa making the most reforms of business regulations include some postconflict countries, such as Liberia, Rwanda, and Sierra Leone.

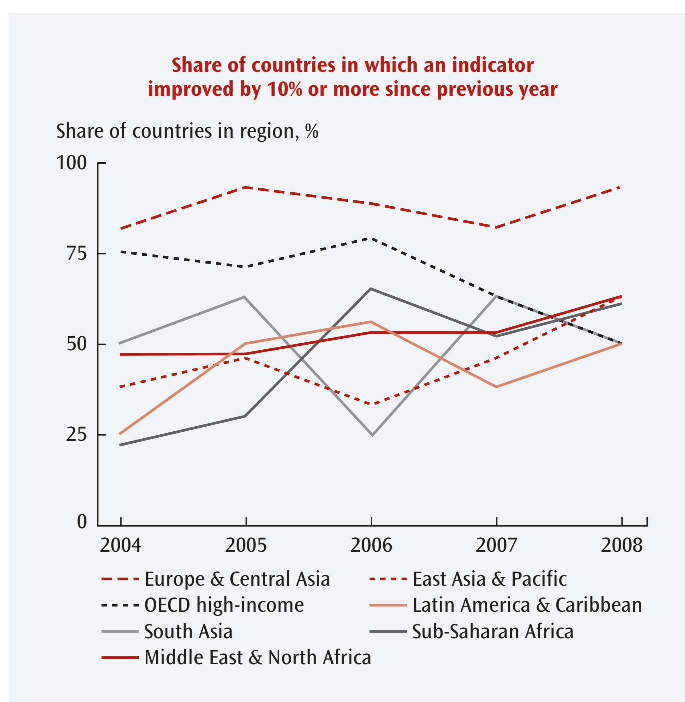
More specialized analysis of Arab countries illustrates that reforms can have an impact. Six months after the Arab Republic of Egypt reformed its property registry, title registrations increased and related revenue rose by 39 percent. Commercial registrations in Oman increased by 93 percent during the year after Oman implemented a one-stop shop for business start-ups. In Saudi Arabia, reducing minimum capital requirements led

FIGURE 2.2 The ease of doing business varies widely



Source: World Bank Doing Business database and World Development Indicators.

FIGURE 2.3 Most regions are improving their regulatory indicators over time



Source: World Bank, Doing Business database.
Note: Additional indicators were added in later years, contributing to the probability that an indicator would improve. The figure excludes coverage of credit registries that could be expanding without any reforms having been initiated. Cost variables are normalized as a share of GNI per capita. As countries grow, the same fixed cost will decline as a share. However, looking at annual changes (rather than the whole period), few countries would register an improvement based solely on growth.

to an 81 percent increase in new company registrations.[11]

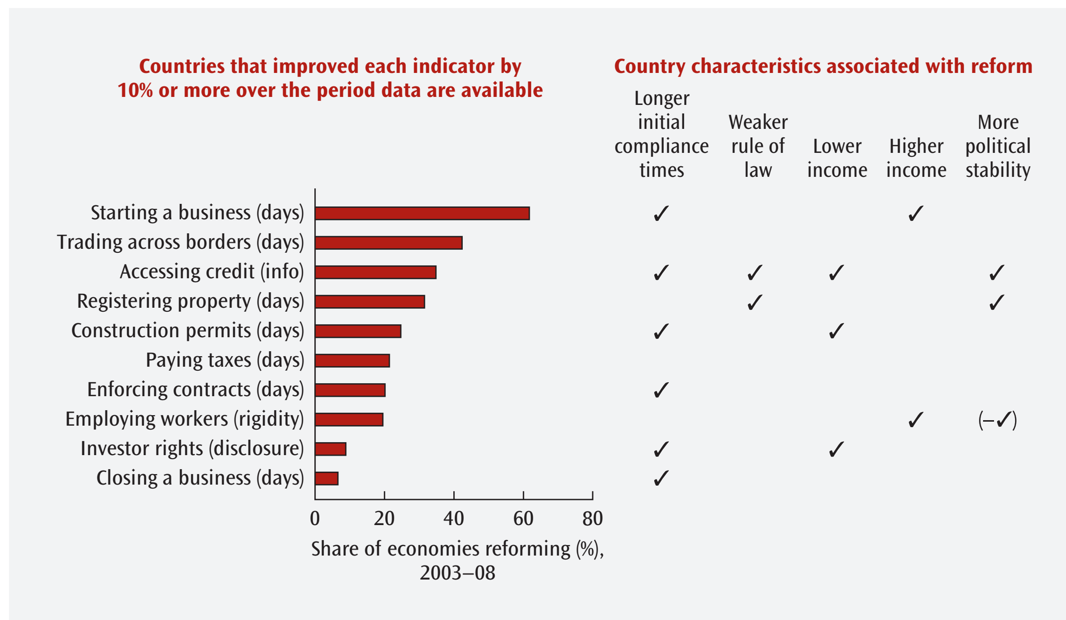
The analysis also shows that geographical challenges in many landlocked and small island economies are compounded by a bureaucratic regulatory environment that hinders business. More isolated, such countries need to make their business environments all the more attractive if they are to be successful in encouraging new investments. However, this is not always the approach taken in many such economies. Compared with coastal economies, landlocked countries tend to rank lower in starting a business, dealing with construction permits, getting credit, protecting investors, paying taxes, trading across borders, and closing a business. Overall, landlocked economies have an average ranking of 107 out of 181 economies covered by the global *Doing Business 2009* report. But again, improvements are possible. The Dominican Republic was the top small-island reformer in 2008, as well as a top-10 reformer globally.

An expanded number of countries, including China, Mexico, Nigeria, and the Philippines, have developed subnational indicators of regulations. This has allowed for more tailored messages, improved the ability to benchmark, and made it easier to demonstrate what is actually feasible within the country. In Mexico these subnational indicators have revealed wide differences from city to city and state to state. For example, the time to enforce a contract varies significantly from 248 days in Zacatecas to 560 days in Quintana Roo. Zacatecas and other states are reducing the backlog by creating specialized commercial courts. Other states are increasingly using electronic platforms to share information and manage cases.

But Reforms Are Not Equally Common across Regulatory Areas

In which areas of business regulation are reforms most common? With six years of data now available, it is possible to look in

FIGURE 2.4 Regulatory reform is more common in some areas than in others



Source: World Bank, Doing Business database.
Note: Not all indicators are covered for the full period of 2003–08. Property was introduced in 2004; construction permits, tax, investor rights, and trade indicators were introduced in 2005.

more detail at the trends. Figure 2.4 illustrates the share of countries that have posted an improvement of at least 10 percent in each indicator. The most common area is starting a business, followed by improving trading across borders and expanding access to credit.[12] In contrast, labor regulations, closing a business, and investor rights are areas experiencing more limited reform, in large part because political economy considerations are particularly challenging.

Figure 2.4 also shows those country characteristics that are associated with particular regulatory areas being reformed. Of particular interest is knowing whether countries that started out with weaker Doing Business indicators were more or less likely to reform in the subsequent years. For six of the areas, countries with longer initial times to complete the regulatory processes have been more likely to make subsequent reforms. This is encouraging; much of the motivation for providing the benchmarks is to encourage those with higher burdens to tackle them. Low-income countries have been more likely to reform access to credit, construction permits, and disclosure rules, while high-income countries have been relatively more focused on reforms regarding starting a business and employing workers. Other country characteristics do not show much pattern. The data on reform patterns over time show that countries that reform are more likely to have subsequent improvements too.[13] Less encouraging, there is no significant evidence that reformers are concentrated in countries that are improving their broader policy or political environments.[14]

The impact of these regulations and their reform has been a growing area of research—aided in part by the expanded coverage of the Doing Business indicators and Enterprise Surveys. The findings of this research underscore the importance of improving regulations and strengthening enforcement (box 2.2).

BOX 2.2 Business environment reforms matter

Numerous studies have found examples of regulations that hamper business and of reforms that have improved the business climate. Barseghyan (2008) looks at output per worker in 157 countries and total factor productivity in 97 countries. He finds that an increase in entry costs by 80 percent of income per capita, which is one half of their standard deviation in the sample, decreases total factor productivity and output per worker by 22 percent and 29 percent, respectively. The magnitudes are large: one reason may be that an increase in entry costs decreases entry pressure, allowing existing firms with lower productivity to survive.

Klapper, Laeven, and Rajan (2006) find that the difference in real growth rates of value added per worker between the retail and pulp wood industries in the Czech Republic (whose entry costs put it at the 25th percentile in the sample of 40 countries) is 0.7 percentage points higher than the difference in real growth rates between the same industries in Italy (which is at the 75th percentile in entry costs). In other words, moving from Italy to the Czech Republic benefits the growth rate of the high-entry retail sector relatively more. With the average real growth rate in value added per worker at 1 percent, this is a sizable magnitude.

Similar measures have been constructed and used to look at reforms within specific countries. Chari (2008) looks at the simplification of entry regulation in India in 1984–90 and finds that when entry costs were cut by approximately 65 percent, the resulting productivity increase was as much as 28 percent over the six years covered by the data, of which 16 percent was directly contributed by the entry reforms (the remainder results from reforms in licensing of already-established businesses).

Bruhn (2008) uses information on the simplification of entry regulations initiated in Mexico in 2002 to look at the effects of entry. She finds a 5 percent increase in entry in eligible industries. However, little of this effect was attributable to already-established informal firms registering for the first time. Rather, former wage earners opened new businesses. Moreover, employment in eligible industries went up by 2.8 percent, and the results imply that competition from new entrants lowered prices by 0.6 percent and decreased the income of incumbent businesses by 3.2 percent.

The Effects of Regulations Can Vary within a Country

Another strand of research analyzing the impact of regulations has focused on how effects can vary across firms, particularly by the size of the firm, whether the firm is formal or informal, and the gender of the entrepreneur. Lifting the burden from small firms, encouraging informal firms to become formal, and drawing more women into the marketplace can strengthen the private sector and promote growth and progress toward the MDGs.

Effects on firm size. Regulatory reform can make small businesses more effective participants in the economy. In many areas, small and medium (10 to 50 employees) enterprises, which typically are the main motor of job creation in an economy, are the most affected by weaknesses in the investment climate.[15] In contrast, microfirms—those with 10 or fewer employees—are often able to stay below the bureaucratic radar screen and avoid the costs of taxation and regulatory compliance. Larger firms, while hampered by weak property rights, often can provide their own solutions to problems such as weak infrastructure (by purchasing their own generator, for example) or limited local finance (by attracting a foreign partner or drawing on their larger volume of retained earnings). They are also often best positioned to negotiate favorable tax treatments.

Smaller firms face many fixed costs that are proportionally higher for them, resulting in greater constraints on their being able to do business. Smaller firms are also more likely to face difficulties accessing finance, because of the higher relative transaction costs and greater information uncertainty involved, although the evidence shows that small firms that do get access to finance benefit the most from it.[16]

Effects on formality. The regulatory burden faced by small firms has particular influence on a second dimension of differences across firms, namely, whether they operate in the formal or informal sectors. Cross-country correlations show that countries with more regulatory burdens often have large informal sectors. Onerous regulations can reinforce the incentives informal firms have to remain small and informal and thus prevent them from realizing their full potential. To encourage small firms to grow and to participate in the formal sector, it is important to strengthen those areas that will benefit formal firms. Improving property rights is one such benefit. This can reduce uncertainty, encourage transactions with a wider set of suppliers and customers, and, by strengthening control of collateral, expand access to credit.

Burdensome regulations can affect informality on another dimension—compliance. Noncompliance is higher where regulations are more stringent and also where enforcement is more lax. Reducing the time requirements and the costs of regulations is only part of the solution. Improving transparency about what is required and making sure the information is readily available are important steps. It is important too to overcome the "culture of informality."[17] Widespread noncompliance can undermine the legitimacy of the state and reduce the likelihood that reforms will be effective at changing behaviors of firms. A broader goal of improving the quality and fairness of state institutions and policies can help ensure specific reforms will be effective.

Effects on women's participation. One of the MDGs is women's economic empowerment, and greater participation of women in business is one indicator of that goal. Data from the Enterprise Surveys confirm that participation rates are lower for women than men. Women's participation as owners in formal firms varies across countries but generally ranges between 20 and 30 percent of firms. Participation rates, both as owners and as workers, are generally highest among the smallest firms and in the informal sector. These gaps signal an important untapped resource for economic growth.

Evidence suggests that as regulatory burdens fall, women's participation as entrepreneurs tends to rise.[18] Some of this may stem from decreases in practices that explicitly restrict women's economic rights. A new Gender Law Library documents where gender-differentiation exists in formal regulations around the world (box 2.3). More generally though, lower regulatory burdens make entry easier and can encourage more part-time businesses where women's participation is higher.

Effects of Broader Institutional Environment Can Undermine Regulatory Reforms

Regulatory reforms will have little impact on the economic outcomes of interest if the surrounding institutional and governance environment is weak, inefficient, and corrupt. The six years of available data indicate that associations between *changes* in individual Doing Business indicators and the economic outcomes of interest are stronger for countries that are well-governed (controlling for income).[19] That the governance of a country affects the impact of business reforms should not be surprising. Changing what is on the books is not likely to have much impact if there is a large gap between de jure and de facto regulations. With better governance, the changes are likely to be seen as credible and thus more likely to generate a response.

Data from the World Bank's Enterprise Surveys reinforce the importance of governance in implementing and enforcing regulations. These surveys are based on information firms themselves report and show the gaps that can exist between a regulation as it is meant to work and the actual experience on the ground.

Weak and ineffective regulatory implementation and enforcement create incentives for firms to circumvent the regulations, by failing to report all their revenues to the tax authorities, for example, or by not registering all their employees with the social security office. As table 2.1 shows, there is indeed a range of responses to regulations across regions. One measure is the time managers have to spend with government officials dealing with regulatory requirements. The time varies across countries, but patterns also emerge across regions and income groups. These indicators corroborate the earlier findings from the subjective rankings that some of the regulatory burdens are felt most strongly in middle-income countries. Management time is highest in middle-income countries, particularly in Latin America and to a lesser extent in the Middle East and North Africa. Respondents in middle-income countries were also

BOX 2.3 Adding a gender dimension to the measures of regulation

Given the MDG on women's economic empowerment, and the recognition that some regulations are not neutral in their impact on men and women, the Gender Law Library was launched in October 2008 (http://www.doingbusiness.org/elibrarydata/elibrary.aspx?libID=1). Topics covered in the library include national legal statutes on property and inheritance rights, business registration, and employment. The library also identifies countries that are signatories of gender-related international conventions. This new resource is a starting point for governments, civil society, and researchers to gain a better picture of the legal framework shaping a woman's ability to do business.

According to World Bank studies, better economic opportunities for women are associated with higher incomes, higher literacy, better health, and faster economic growth.[a] While the empowerment of women is the subject of MDG 3, progress on this goal contributes to the achievement of all of the other MDGs.

a. Mason and King 2001; Buvinic and King 2007.

TABLE 2.1 Weak implementation and enforcement can increase the regulatory burden
percent

Income group or region	Management time with officials	Firms that report regulations are interpreted consistently	Firms that believe courts will uphold property rights	Firms that make payments to "get things done"
Low income	9.0	47.5	52.2	57.5
Middle income	10.6	40.5	55.2	30.4
High income	4.7	53.3	70.9	23.0
East Asia and Pacific	9.8	56.1	69.4	49.6
Europe and Central Asia	7.1	40.8	50.3	38.3
Europe high-income	3.4	56.6	75.0	20.7
Latin America and Caribbean	13.9	34.0	49.2	20.2
Middle East and North Africa	11.3	47.4	60.7	26.0
South Asia	10.8	57.5	52.3	72.7
Sub-Saharan Africa	7.9	42.0	56.5	44.6

Source: Enterprise Surveys database.

least likely to report that regulations were enforced consistently.

The importance of the quality of implementation in determining the impact of regulations and regulatory reforms raises questions about what optimal regulations would look like. Regulations that are simple rather than complex and that reduce the discretion of officials are likely to be more desirable in countries with lower enforcement capacity.

Improvements in the Broader Institutional Environment Are Possible

Better governance not only improves the climate for investment, but it also helps in the fight against poverty and the achievement of the MDGs more broadly. The World Bank's World Governance Indicators comprise indicators in six areas (voice, political stability, rule of law, government effectiveness, regulatory quality, and control of corruption) for 212 countries, beginning in 1996.[20] Research over the past decade shows that improved governance helps raise incomes. When governance is improved by one standard deviation, infant mortality declines by two-thirds and incomes rise about threefold in the long run. Such an improvement in governance is within reach.[21]

Good governance can be found at all income levels. Some emerging economies are even matching the performance of rich countries. More than a dozen emerging countries, including Botswana, Chile, Costa Rica, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Mauritius, Slovenia, and Uruguay score higher on key dimensions of governance than some industrial countries. And in many cases these differences are statistically significant.[22]

Improvements in governance can and do occur. From 1998 to 2007 countries in all regions have shown substantial improvements in governance, even if at times starting from a very low level. Examples include Ghana, Indonesia, Liberia, and Peru in voice and accountability; Algeria, Angola, and Rwanda in political stability and restoration of peace; Afghanistan, Ethiopia, and Serbia

in government effectiveness; the Democratic Republic of Congo and Georgia in regulatory quality; Tajikistan in rule of law; and Liberia and Serbia in control of corruption. Supporting and encouraging improved governance has broad benefits. As the research shows, it is an essential foundation for an investment climate conducive to private sector development and economic growth.

Moving Regulatory Reform Forward

The current financial crisis is rightly putting attention on appropriate regulatory oversight. While the case is particularly compelling in the financial sector, it would be a mistake to assume the lessons should be limited to the regulation of financial institutions. One broad lesson is that regulations need to be effective and that enforcement matters. While many countries are focusing their efforts on the immediate challenge of restoring financial stability, conditions that shape the growth of private sector activities will be important in affecting how well the private sector can cope with the downturn and take advantage of new opportunities as recovery begins.

The foregoing review of progress on the private sector regulatory and institutional environment suggests three areas of emphasis for future efforts:

- *Simplifying regulations while ensuring adequate protection of public interests*. Regulations are governments' way of protecting legitimate social interests. The objective of reform is not to remove regulations. Rather the goal is to ensure that regulations are indeed addressing the underlying public interests they are meant to safeguard. In many cases, streamlining requirements can actually help ensure greater compliance. Setting standards too high can mean not only that few firms meet them but that many are discouraged from even trying to comply. Simplification can also help close loopholes or exceptions that benefit only a few, more connected, firms, thus helping to level the playing field for all firms.
- *Strengthening broader governance environment and building capacity for enforcement*. The evidence on the impact of regulations stresses the importance of the broader governance environment for reform effectiveness. Changing formal regulations can have little impact in the face of weak governance and enforcement capacity. Building capacity by hiring and training officials can improve enforcement, an effort in which external assistance can help. But part of the solution can also be to reform implementation. In particular, reducing discretion in how regulations are implemented can lower uncertainty and address a significant concern reported by firms.
- *Expanding inclusive public-private dialogue in shaping reform priorities*. Members of the private sector can identify issues that they experience as most constraining. Clearly, all of their preferences cannot be automatically followed; they need to be weighed against public interests that may not align with their private ones. But tools like the Enterprise Surveys can highlight the extent of various constraints—and how they can vary across different actors (by size, location, and gender). The variation in impact within a country across different types of firms underscores the importance of making public-private dialogue inclusive. This approach can help target priorities for reform and better ensure results.

Financial Sector Development

Finance is an essential part of the development process. When financial markets work well, they provide opportunities for a wider set of market participants to take advantage of the best investments by channeling funds to their most productive uses, hence boosting growth, improving income distribution, and reducing poverty. When they do not work well, growth opportunities are missed, inequalities persist, risks and volatility rise, and in the extreme case crises follow with high fiscal and real costs.[23]

Improved Access to Finance Contributes to Reaching the MDGs

A growing body of evidence—country and cross-country studies and, more recently, experimental analyses—shows that access to financial services can contribute significantly to reaching the MDGs. Financial development and greater access to financial services lead not only to income growth but also to reductions in poverty and undernourishment; they are also associated with better health, education, and gender equality outcomes.

The most researched and arguably the most important direct effect of financial sector development is its impact on economic growth and poverty. Research implies that if India, for example, had increased its average ratio of private credit to gross domestic product (GDP)—a commonly used metric of financial sector development—from 19.5 percent to 25 percent (the mean value for developing countries), its average real annual GDP per capita growth would have accelerated by an additional 0.6 percentage point per year over the period 1960–95.[24] Another, more recent study finds that a 10 percentage point increase in the private-credit-to-GDP ratio reduces poverty ratios by 2.5 to 3 percentage points.[25] Similar effects have been found for the development of capital markets and other forms of nonbank financing as important drivers of economic growth.[26]

Financial development also affects the nonpoverty MDGs, both indirectly, through the income channel, and directly. For instance, a 1 percentage point increase in the private-credit-to-GDP ratio has been shown to reduce the prevalence of undernourishment by 0.22–2.45 percentage points.[27] These findings imply that much can be gained from financial sector development: the ratio of private credit to GDP is around 16 percent in low-income countries compared with 88 percent in high-income countries.

The relationships between financial development and health, education, and gender equality have not been researched much to date, but cross-country regression analyses show positive relationships, with some evidence of causal relationships, although the quality of data does not allow for strong tests. Supporting case-study evidence, using household and firm surveys and specific interventions, suggests, however, that financial development does have beneficial causal impacts on these MDGs.[28] The contribution of finance to MDGs relative to other policies is large: the evidence suggests that financial development accounts for one-quarter to one-half of the impact of GDP per capita on several of the MDG indicators (box 2.4).

Financial sector development is not without risks, however. The recent financial crisis underscores the need for appropriate regulation and supervision to ensure financial system soundness and stability.

Financial Sector Development Is Key for Private Sector Development

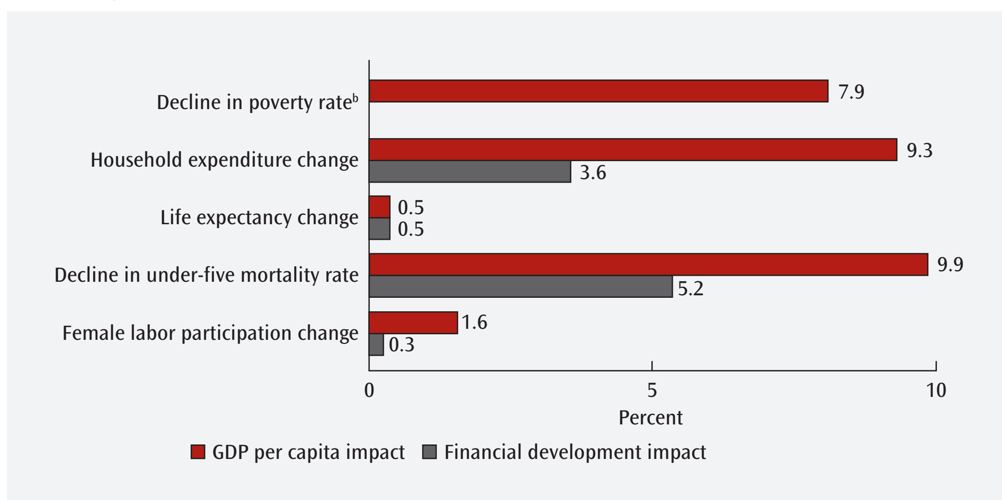
Finance is important for many key private sector activities. Investment, domestic and international trade, and other private sector activities all require financial services. Recent research using detailed firm-level data and survey information provides direct evidence on the role of access to finance in affecting firm growth. The Enterprise Surveys show that small and medium enterprises (SMEs) in low-income countries rank finance as an especially high barrier for growth (figure 2.5).

Corroborative evidence for this comes from the responses of some 10,000 firms in 80 countries to the World Business Environment Survey. Respondents who identified finance as a constraint are more likely to experience slow output growth.[29] Finance is a general obstacle to firm growth, but that growth is also significantly constrained by barriers that capture more specific aspects of financing, such as high interest payments, collateral requirements, bank paperwork and bureaucracy, as well as bank corruption. Other important business environment obstacles are often interrelated with finance. Even when controlling for these interactions,

BOX 2.4 Relative impact of economic and financial development on MDGs

To illustrate the significant impact of financial development on the MDGs, the chart below compares the impact of financial development, as measured by private credit as a percentage of GDP, and the impact of GDP per capita on several MDG indicators in 2015, the target date for the MDGs. In this analysis, both private credit and GDP per capita are assumed to follow their past growth trends of 1.6 and 1.1 percentage points per year, respectively.

Impact of financial development and GDP per capita on selected MDGs in 2015 when they follow their past growth trends[a]



Source: Claessens and Feijen 2006.
a. All analyses are based on elasticities calculated by using time series fixed-effects regressions. Elasticity of poverty and GDP per capita is taken from Besley and Burgess (2003). Educational variables are not shown for lack of sufficient time-series data.
b. There is insufficient data to calculate the impact of financial development on the poverty rate.

access to finance seems to emerge consistently as one of the most important and robust underlying factors constraining firm growth.[30] And some evidence also suggests that lack of finance makes other barriers more binding for firms.

Research shows that small firms benefit the most from financial development—both in terms of entry and in seeing their growth constraints relaxed. At any given level of financial development, smaller firms have more difficulty accessing external finance than larger ones. But with financial development and greater availability of external finance, those that were formerly excluded are given new opportunities.

Cross-country data also show innovation to be an important channel through which finance affects firm performance. A survey of some 17,000 firms in 47 countries found that firms' use of external finance was significantly associated with more innovation.[31] This finding was even more strongly evident when access to finance came from foreign banks.[32]

Where Are Countries Today in Their Financial Sector Development?

A country's financial sector development should be assessed on four dimensions—size, access, efficiency, and stability. Analysis

FIGURE 2.5 Access to finance varies by country income and size of firm

Source: Enterprise Surveys database.

of the effects of different aspects of financial sector development makes clear that all dimensions of financial sector development matter, but in different ways, for growth and development. This recognition is important because countries can vary in each of these dimensions. Although data are limited, the main finding is that while the size of the financial sector has grown in many countries, access generally remains weak.

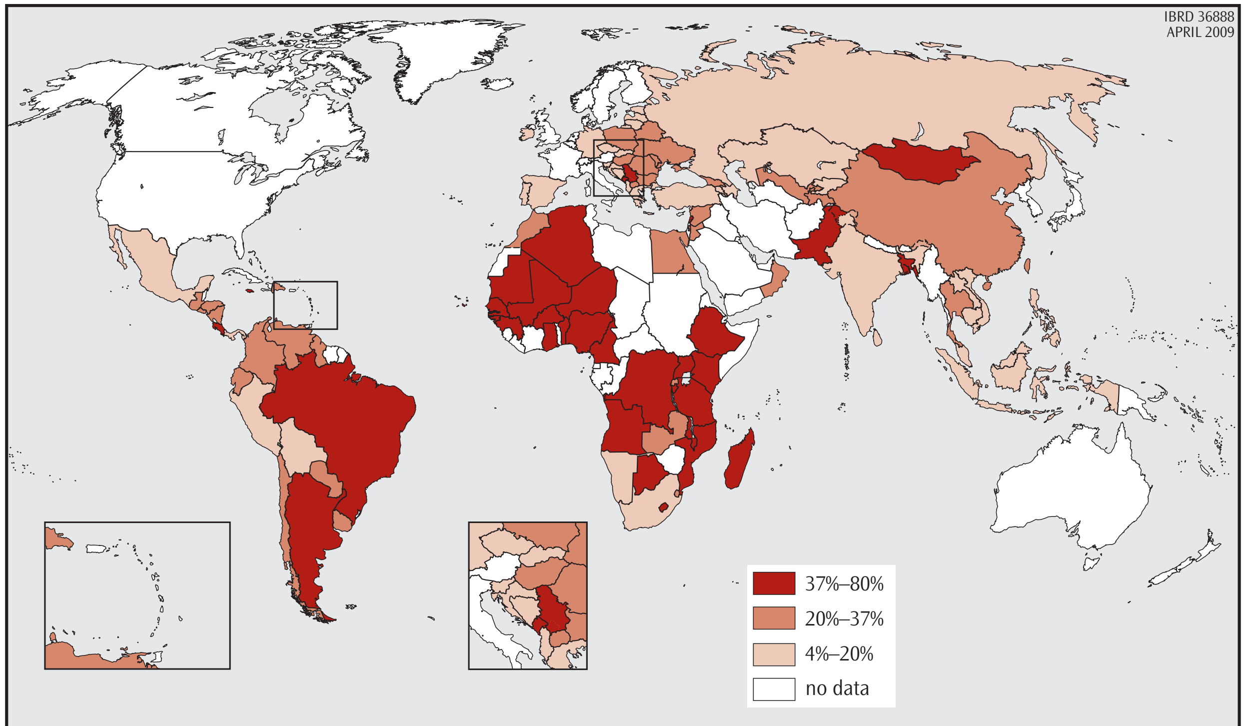
In most of Sub-Saharan Africa, fewer than 20 percent of households have an account in a financial institution, and this figure is less than 50 percent in many other developing countries. While business access to financial services is less of a constraint in some regions, in almost all developing countries in Sub-Saharan Africa, more than 50 percent of firms complain about lack of finance (figure 2.6).

All forms of finance matter for firms' access. Bank finance is typically the major source of external finance for firms of all sizes, no matter how small. Nonbank finance remains much less important in most developing countries, but it can play an important role in improving the price and availability of longer-term credit to smaller borrowers. Leasing and other forms of collateral-based lending can be of particular importance for getting small firms going. And nonbank financing can be a source of competition for banking systems that often favor lending to large, connected enterprises. Bond finance can provide a useful alternative to bank finance. Supply of external equity (including portfolio equity investments, foreign direct investment, and private equity) requires strong investor rights; where these are present, a country that opens itself to capital inflows can improve access and lower the cost for large firms, with spillover effects for smaller firms.

While the depth and efficiency of financial systems are good indicators of overall development, they do not necessarily capture access. Comparing the use of financial services (by households) with financial depth indicators shows a positive but imperfect correlation (figure 2.7a). Economic development does not guarantee access to finance for households (figure 2.7b). Similar patterns exist for comparisons of access to financial services for small firms with financial depth. For instance, low-income countries in South Asia typically have a higher proportion of use of financial services than low-income countries in Sub-Saharan Africa.

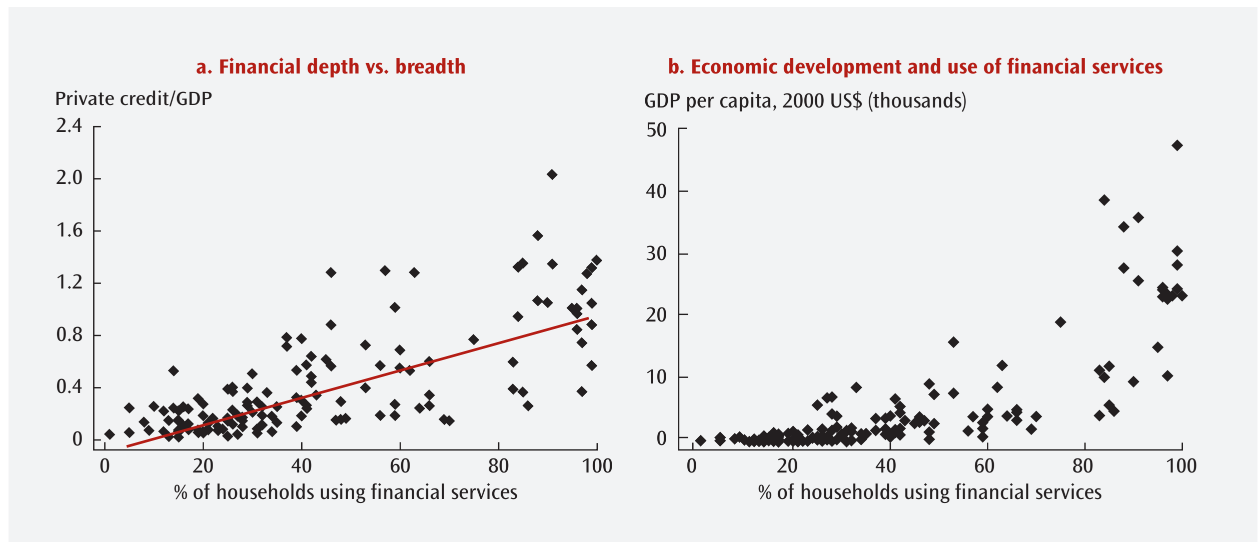
There is some evidence that access to finance in developing countries is increasing. On the household side, data on the use of microfinance suggest an expansion of the use of financial services (box 2.5). Some evidence also suggests increasing financial service provision by commercial banks, as competitive forces and technology lead them to reach the lower-income segments of the population. Examples in developing countries include the ICICI Bank and the SHG Bank Linkage program in India and commercial banks in Brazil and South Africa. On the firm side, the evidence on increased access to credit and other financial services is more mixed. It appears to

FIGURE 2.6 Many firms say lack of access to financing hampers their growth
percentage of firms



Source: Enterprise Surveys database.

FIGURE 2.7 Financial and economic development does not guarantee access to finance



Source: World Bank 2008a.

BOX 2.5 Microfinance: reaching out to the poor but with limits

Thirty years after the establishment of Grameen Bank, the microfinance movement has attained a certain maturity. Yet there remains a lack of scale in microfinance; only in eight countries do microfinance borrowers account for more than 2 percent of the population. One reason is that these programs can be very costly to operate, making many of them dependent on subsidies and not sustainable on their own. Indeed, in a sample of 124 microfinance institutions (MFIs) in 49 countries representing around half of all microfinance clients around the globe, only half were profitable and self-sustainable.

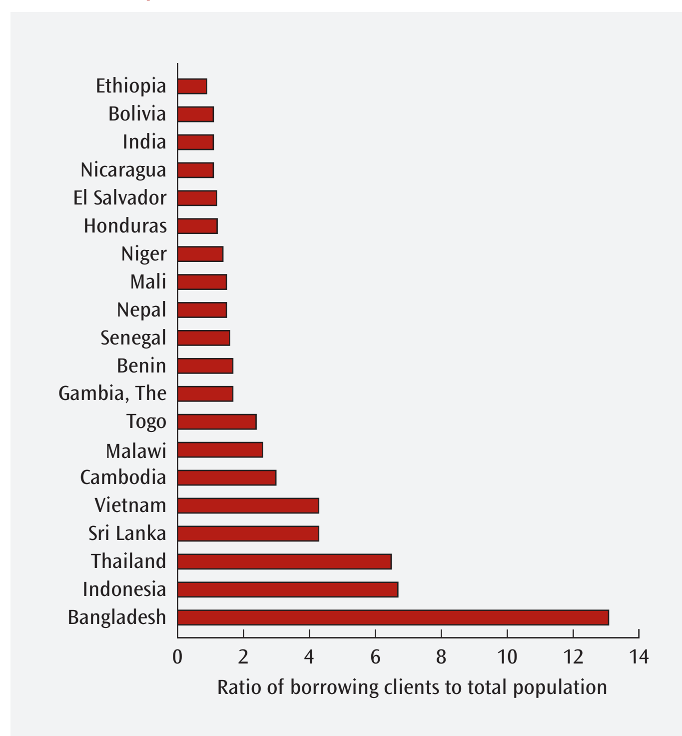
The lack of self-sustainability might result from scale. Many MFIs have found that the poorest of the poor are difficult to reach even with a subsidy. Also, focusing on finance for the very poor shifts the attention to subsidies and charity, which hurts the quality of services. As a result many MFIs remain small. At the same time, those MFIs that grow and mature seem to focus less on the poor, which could be interpreted either as a success story for their borrowers or as mission drift. In any case, broadening access to the middle class makes it more likely that promotion of access will receive higher political priority.

More generally, shifting the focus to building inclusive financial systems and improving access for all underserved groups is likely to have a greater impact on development outcomes. Indeed, the attention of the development community has shifted to focus not only on microcredit institutions but on an array of other financial institutions, such as postal savings banks, consumer credit institutions, and most importantly the banking system. Here a broader approach is taken, focusing on overall financial system efficiency and outreach to the whole population. In this process, it will remain important, however, to apply the valuable lessons of the microcredit movement on technologies and methodologies.

The characteristics of microcredit lending most cited for their contributions to success include dynamic incentives, repayment in public, forced savings, notional collateral, and targeting of women (85 percent of the poorest 93 million MFI clients are women). Dynamic incentives, such as the promise of repeat lending, has been a mechanism to overcome moral hazard in lender relationships with risky and high-transaction-cost borrowers. Repayment in public is said to increase social pressure and the threat of stigma while at the same time reducing transaction costs for lenders. The requirement to keep a certain fraction of the credit as savings with the microfinance institution, and the use of assets with "notional" rather than resale or salvage value, such as refrigerators and televisions, have often been cited as success factors but have not yet been evaluated properly. Targeting women has not only contributed to women's greater economic empowerment, but studies have shown wider contributions to expanding health and educational outcomes.

Source: Honohan 2004; Cull, Demirgüç-Kunt, and Morduch 2007; Armendariz de Aghion and Morduch 2005; World Bank 2007a.

Microfinance penetration across countries



Source: Honohan 2004.
Note: This figure shows the ratio of borrowing clients to total population for the 20 countries with the highest microfinance penetration.

be increasing in some countries, but mostly in consumer finance forms and less so in credit to SMEs.[33]

Increasing access to financial services to low-income groups is not easy and can involve risks. Increased competition can, for example, lead to more access but also to weaker lending standards. Furthermore, when amplified through opaque financial engineering, problems with even a small segment of the financial system can have devastating effects on confidence in the overall financial system. Recent experiences with the subprime lending market in the United States underline the importance of designing regulation and supervision in developing countries in such a way as to allow for increased access in a sustainable manner (box 2.6).

Why Is Access to Finance Still Limited in Developing Countries?

What are the most important barriers to access, and how can they be reduced? The barriers derive from the size and reach of the financial system, institutional constraints, ownership structures, technology hurdles, and political economy constraints.

BOX 2.6 Access to financial services: evidence from the subprime mortgage market

The recent global financial crisis has placed the U.S. subprime mortgage industry in the spotlight. Over the last decade, this market expanded rapidly and witnessed the entry of major players, evolving from a small niche segment to a major portion of the U.S. mortgage market. Evidence suggests that this growth was accompanied by a decline in credit standards and excessive risk taking by lenders. Indeed, major mortgage lenders are experiencing increased delinquency rates of subprime mortgages and insolvency problems.

Analysis using data from over 50 million individual mortgage applications in the United States combined with information on local and national economic variables shows that the credit expansion in the subprime mortgage market led to a decrease in lending standards, as measured by a decline in application denial rates and an increase in loan-to-income ratios not explained by an improvement in the underlying economic fundamentals. Specifically, denial rates declined more and loan-to-income ratios rose more in areas where the number of loan applications rose faster. These areas subsequently experienced a sharper increase in delinquency rates. Also, changes in market structure affected lending standards, with denial rates declining more in areas with a larger number of competitors, evidence that local lenders cut lending standards when facing competition from new entrants. But evidence also shows that lax regulation and supervision, in part attributable to the lobbying efforts of firms involved in subprime lending, led to poor lending, with the effectiveness of laws in place suffering as a result of such industry actions.

Obviously, more households were able to get financing for their homes but in many cases on unaffordable terms. And when the bubble burst, mortgage defaults fed a vicious cycle that led to a downward spiral in housing prices. What does this mean for overall welfare? Analysis of the impact of mortgage market transformation on the well-being of households is difficult. Before the crisis, the perception was that the developments were welfare-enhancing because they increased households' access to housing finance. A widely cited statistic was the home ownership ratio that hit an all-time high in 2006. Many viewed the fact that home ownership rose faster among households that historically had difficulty gaining access to credit as a sign of benefits associated with financial innovation and fast growth in mortgage credit. However, many also warned that these mortgages were going to be problematic.

Following the increase in delinquency rates and a wave of foreclosures, however, more questions on the optimality of the mortgage credit boom, the opaqueness and risks associated with the increasingly complex financial instruments, and the very existence of public institutions supporting mortgage credit have been raised. A better assessment of lending quality and overall exposures and risks of the financial system is needed, and these will be important areas of focus for future financial sector regulations.

Source: Dell'Ariccia and others 2008; Igan and Okada 2009.

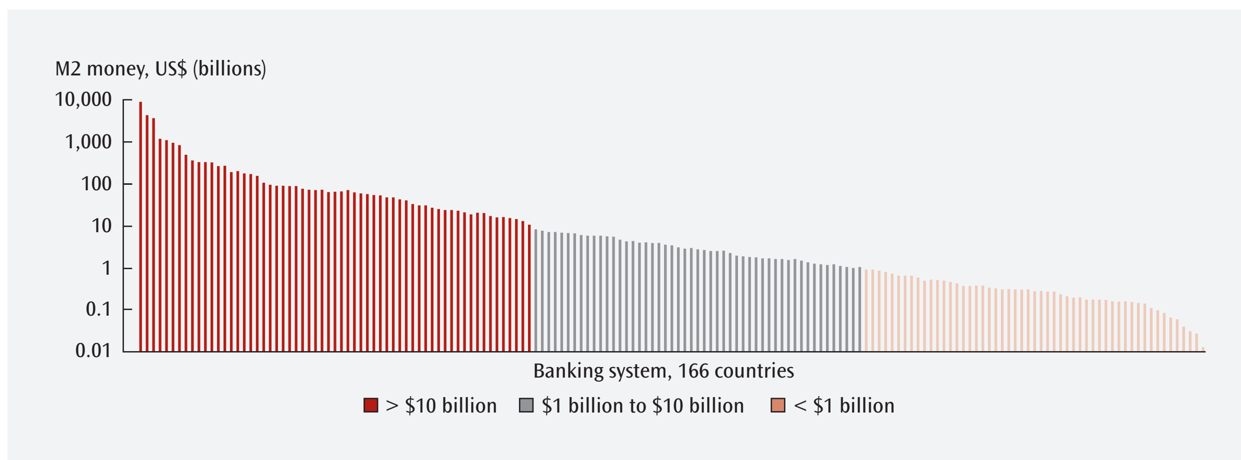
Many financial systems are too small—in absolute and relative terms—and lack outreach to poorer households and smaller firms. Indeed, many systems are smaller than a small bank in most advanced economies—thus lacking the scale to operate more efficiently (figure 2.8). In financially less-developed countries with limited outreach, poorer households and smaller firms use fewer financial services than richer households and larger firms do. As a consequence, smaller firms experience higher obstacles to growth than larger firms do.

Policy and institutional environment barriers also play important roles. Macroeconomic instability, a weak institutional environment, extensive government intervention, and a lack of competition can act as barriers to accessing financial services or make financial services more expensive or incapable of being provided in a viable way. Analysis of the wide variation across countries shows that barriers are lower for both households and firms in countries with more open and competitive banking systems characterized by private ownership of banks and foreign entry; stronger legal, information, and physical infrastructures; regulatory and supervisory approaches that reinforce market discipline; and greater transparency and freedom for the media.[34]

The ownership structures of the banking system can matter as well. Evidence shows that state-owned banks can reduce overall financial sector development, leading to lower efficiency and reduced access to financial services. The performance of state-owned banks in subsidized lending aimed at enhancing access has tended to be poor as well.[35] Governments with greater checks and balances and better institutional development might be expected to have more positive results from state ownership.

The balance of a large body of evidence suggests that opening to foreign banks improves access for SMEs. Even if foreign banks often confine their lending to large firms and governments, they can enhance access to SMEs through competitive pressures. Indeed, firms in countries with more foreign banks are less likely to rate high interest rates and access to long-term loans as major obstacles. An analysis of borrowers' perceptions across 36 countries finds that financing obstacles are lower in countries with higher levels of foreign bank penetration.[36] While at times the internationalization of financial services can

FIGURE 2.8 Most financial systems are small



Source: World Bank 2007a.
Note: M2 money is a measure of the money supply. It includes currency in circulation plus demand deposits or checking accounts and net time deposits.

introduce more volatility, in the long run, the gains in access are significant.

Supply and demand mismatches can also hinder access. From the supply side, financial services providers often do not target the poor and small firms because of problems of information, high transaction costs, and poor enforcement of contracts. From the demand side, poor households and smaller firms often lack financial sophistication and literacy, do not trust financial institutions, simply do not realize their need for financial services, or think that products offered can be ill suited to their needs. But technological improvements and competition are broadening the access frontier, as evidenced by the rapid expansion of specialized microfinance firms.[37]

The largest barriers to broadening access may be the influence of special interests. Powerful insiders may oppose financial development because it creates a level playing field and enables newcomers to finance and implement their ideas and defy the economic status quo.[38]

Improving Access to Finance

The recent financial crisis has reconfirmed some old lessons in how to develop sound financial systems that expand access to finance in a sustainable manner. But it has also provided some new lessons, particularly in how to manage risks.[39] In many developing countries, achieving broad-based access requires deep institutional reforms. Because expanding access remains an important challenge even in some developed economies, it is likely that governments everywhere have an important role to play in building inclusive financial systems.

Reforms should foremost ensure security of property rights against expropriation by the state. This will typically be a longer-term challenge. Prioritizing institutional reforms, however, would help focus reform efforts and could produce impact in the short to medium term. Recent evidence suggests that, in low-income countries, it is the information infrastructures that generally matter most, while enforcement of creditor rights is more important in high-income countries.[40]

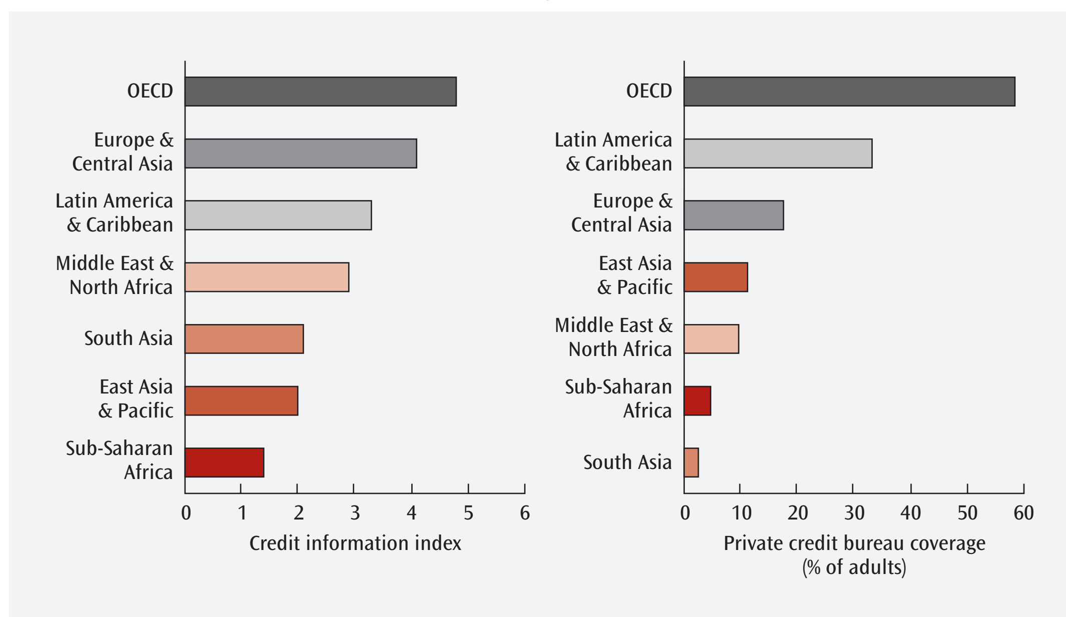
Another finding is that in relatively underdeveloped institutional environments, procedures that enable the individual lenders to recover on debt contracts (for example, those related to collateral) are much more important in boosting bank lending than procedures such as bankruptcy codes that are mainly concerned with resolving conflicts between multiple claimants. These are important findings because building credit registries and reforming procedures related to collateral are potentially easier to achieve than making lasting improvements in the enforcement of creditor rights and bankruptcy codes.

Consequently, encouraging specific infrastructures, particularly in information and debt recovery, can be particularly important, given the large deficiencies today in many countries (figure 2.9). Institutional reforms that can lower transaction costs include establishing credit registries or issuing individual identification numbers to establish credit histories, reducing costs of registering or repossessing collateral, and introducing specific legislation to underpin modern financial technology—from leasing and factoring to electronic finance and mobile finance.

Encouraging openness and competition, including by internationalization of financial services, is an essential part of broadening access because it encourages incumbent institutions to seek out profitable ways of providing services to previously excluded segments of the population and increases the speed with which access-improving new technologies are adopted. Achieving the full gains from increased competition and internationalization of financial services does, however, often require some convergence of regulations and legal and other institutional infrastructure.

In this process, providing the private sector with the right incentives is key; hence the

FIGURE 2.9 Availability of credit information varies greatly



Source: World Bank 2008b.
Note: The number of individuals or firms listed by the private credit bureau with current information on repayment history, unpaid debts, or credit outstanding.

importance of good prudential regulations. Competition that helps foster access can also result in reckless or improper expansion if not accompanied by proper regulatory and supervisory framework (see box 2.6). At the same time, the increasingly complex international regulations imposed on banks to help minimize the risk of costly bank failures should not inadvertently penalize small borrowers.

The scope for beneficial direct government interventions in improving access must be carefully assessed. A large body of evidence suggests that interventions to provide credit through government-owned subsidiaries have generally not been successful.[41] In nonlending services, the experience has been more mixed. A handful of government financial institutions have moved away from credit and evolved into providers of more complex financial services, entering into public-private partnerships to help overcome coordination failures, first-mover disincentives, and obstacles to risk sharing and distribution. Ultimately private capital can take over the successful initiatives, but the state can have a useful role in jump-starting these services.[42]

Direct intervention through taxes and subsidies can be effective in certain circumstances. If poorly designed and implemented, however, it can have large unintended consequences. The government-underwritten credit guarantees for SME lending are a good example. Experience shows that these are often poorly structured, embody hidden subsidies, and benefit mainly those who do not need the subsidy. With direct and directed lending programs having generally performed less well, partial credit guarantees have been the direct intervention mechanism of choice for SME credit in recent years.[43] In the absence of thorough economic evaluations, however, the net effects of many such schemes in cost-benefit terms remain unclear.

Finally, as noted, political economy concerns are key in implementing policies to expand access. If the interest of powerful incumbents is threatened by the emergence of new entrants financed by a system that has improved access and outreach, lobbying

by those incumbents can block the needed reforms. A comprehensive approach to financial sector reform aiming at better access must take these political realities into account. Given that challenges of financial inclusion and benefits from broader access go well beyond ensuring financial services for the poor, defining the access agenda more broadly to include the middle class will help mobilize greater political support.

Infrastructure

Cost-effective, reliable, and affordable infrastructure services are critical for private sector development and economic growth. The role electricity and transport play in economic activity is well understood, yet infrastructure services in many developing countries remain woefully inadequate. Progress in closing the infrastructure gap has been made in the past decade, but many challenges remain. A lack of financial resources is only part of the story. Equally important is the need to address below-cost price structures that make revenue streams insufficient to support even the operation and maintenance of existing assets, weak governance and regulatory frameworks that lead to misuse of resources, and inadequate sector policies and planning and implementation capacities that slow investment programs. Both financial and nonfinancial factors must be part of an integrated strategy for infrastructure development.

Infrastructure Is Important for Growth and the MDGs

Infrastructure directly affects progress in achieving MDG 7, part of which is to "halve, by 2015, the proportion of the population without sustainable access to safe drinking water and basic sanitation." Indirectly, infrastructure influences the achievement of most MDGs, be they health, education, gender equality, or income poverty, through its effect on household opportunities. Each year 529,000 women die from childbirth complications. Most of these deaths could be prevented through timely access to essential childbirth-related care, but to physically reach that care, an adequate road network is crucial.[44] The construction of an all-weather road in Morocco increased school attendance by girls from 28 percent to 68 percent; in parallel, the quality of education improved, because it became possible to recruit teachers to staff the schools, and absenteeism of both teachers and students dropped.[45] Every year 1.8 million people die from diarrheal diseases, including cholera. Improved water supply reduces diarrheal morbidity by 21 percent, improved sanitation by 37.5 percent.[46]

An adequate supply of infrastructure has long been viewed as a key ingredient for economic development.[47] By one estimate, raising infrastructure services of all Sub-Saharan countries to the level of the regional leader Mauritius could add 2.2 percentage points to per capita growth. Catching up to the level in the Republic of Korea would raise economic growth per capita by up to 2.6 percent percentage points per year.[48] Infrastructure has also received much attention in the context of reducing poverty and inequality.[49] In rural Ethiopia, improvements in access to quality roads increased consumption growth by an estimated 16 percent and reduced poverty by 7 percent.[50]

Infrastructure is an important part of the investment climate enabling the emergence and success of private entrepreneurs. Many case studies provide evidence of the beneficial impact of infrastructure on business performance. After an upgrade of the highway system connecting the four largest cities in India, firms in the beneficiary cities reported that they encountered fewer transportation obstacles to production, that they were able to reduce their average stock of input inventories by about a week's worth of production, and that they had greater flexibility in choosing their primary input suppliers.[51]

Yet Infrastructure Needs Remain Large

Since the start of this decade, there has been a renewed focus on infrastructure. For

example, World Bank financing for the infrastructure sectors totaled $33 billion for the 2004–07 period, compared with $22 billion over the preceding four-year period.[52] Nonetheless, large infrastructure gaps remain in areas crucial for the MDGs: 1.1 billion people are without safe access to water, 1.6 billion without electricity, 2.4 billion without sanitation, and more than 1 billion without access to telephones (table 2.2). South Asia and Sub-Saharan Africa confront the largest gaps in essential infrastructure for households and businesses.

Competition and technology developments have reduced the costs associated with some infrastructure development. Gas-fired combined-cycle gas turbines and the emergence of smaller, more modular technologies have decreased the capital cost of power plants and the time needed to plan and build them. The generation sector has seen growth and private entry by independent power producers in many developing countries.[53] But it is in the information and communications technology sector that the role of technological progress has had the largest impact. In the mid-1990s, installing a satellite telephone cost $60,000, whereas in 2002 it cost between $2,000 and $4,000.[54] As a consequence, mobile usage and associated information services, such as Internet access, have increased exponentially in all developing regions (figure 2.10). In Africa infrastructure improvements added nearly one percentage point to per capita economic growth between 1990 and 2005, almost entirely attributable to advances in the penetration of telecommunication services.[55]

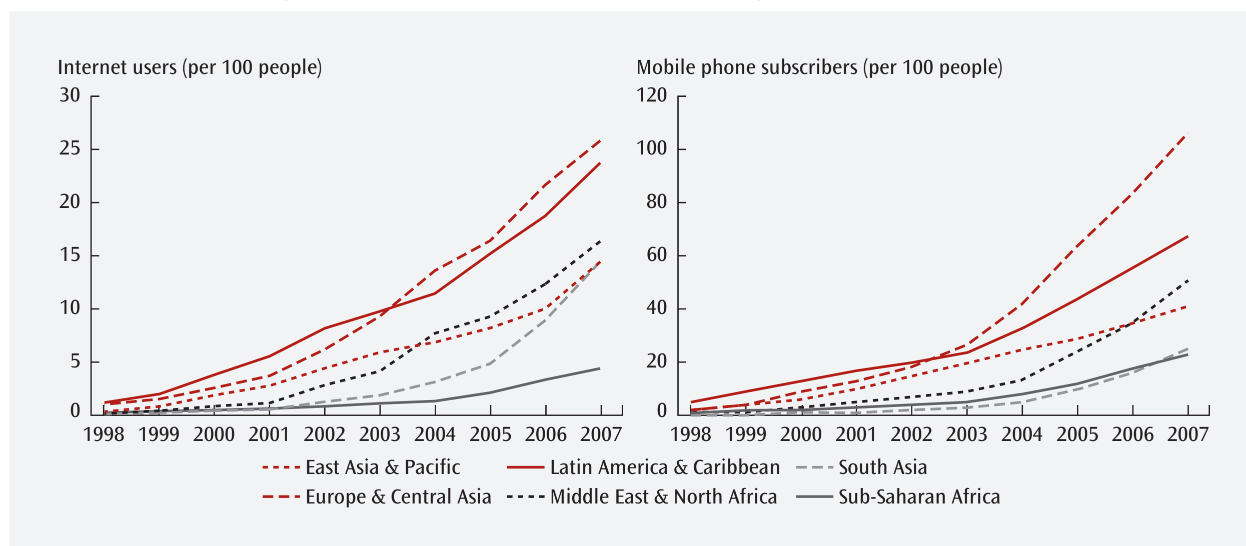
Despite progress in recent years, the region with the greatest infrastructure challenge remains Sub-Saharan Africa (table 2.3). It lags behind other low- and middle-income countries in infrastructure coverage for paved roads, telephone mainlines,

TABLE 2.2 Access to infrastructure is improving but still lags seriously in some regions
percent of population unless otherwise indicated

	East Asia & Pacific		Europe & Central Asia		Latin America & Caribbean		Middle East & North Africa		South Asia		Sub-Saharan Africa	
Type of infrastructure	**2000**	**2006**	**2000**	**2006**	**2000**	**2006**	**2000**	**2006**	**2000**	**2006**	**2000**	**2006**
Access to electricity	87	89	—	99	87	90	—	78	41	52	23	26
Access to improved water supply	80	87	93	95	89	91	89	89	81	87	55	58
Urban	*95*	*96*	*98*	*99*	*96*	*97*	*96*	*95*	*93*	*94*	*81*	*81*
Rural	*72*	*81*	*85*	*88*	*69*	*73*	*80*	*81*	*77*	*84*	*42*	*46*
Access to improved sanitation	60	66	89	89	75	78	74	75	27	33	29	31
Urban	*71*	*75*	*94*	*94*	*85*	*86*	*86*	*89*	*54*	*57*	*41*	*42*
Rural	*52*	*59*	*79*	*79*	*47*	*51*	*58*	*59*	*17*	*23*	*22*	*24*
Access to rural transport	—	90	—	82	—	59	—	59	—	57	—	34
Mainline telephone density (per 100 people)	0.0	3.0	—	3.0	0.0	2.6	—	—	0.0	0.2	—	—

Source: For water and sanitation, World Energy Outlook 2002 for 2000 figures; International Energy Agency for 2006. China is included in data for East Asia and Pacific; North African countries are excluded from data for the Middle East and North Africa. For access to rural transport, see Joint Monitoring Program database (wssinfo.org), 2004 data.
Note: — = Not available.

FIGURE 2.10 Exponential growth of telecommunications services in all regions



Source: World Development Indicators.

and power generation capacity. The Africa Infrastructure Country Diagnostic reports that for these three key infrastructures, Africa has been expanding stocks much more slowly than other developing regions, implying a widening gap over time.[56] In 1970 Sub-Saharan Africa had almost three times as much generating capacity per million people as South Asia, a region with similar per capita income. Three decades later, in 2000, South Asia had left Sub-Saharan Africa far behind: it now has almost twice the generation capacity per million people. Similarly, in 1970 Sub-Saharan Africa had twice the mainline telephone density of South Asia, but by 2000 the two regions had drawn even.

Geography and population patterns play a role in the particularly challenging situation of infrastructure in Africa. The low economic density of the continent makes transport networks and power grids, which exhibit economies of scale and density, more expensive to build and maintain.[57] According to one report, the national power systems in 21 of 48 Sub-Saharan countries fall below the minimum efficient scale of 200 megawatts for electricity generation.[58] As a result, their operating costs are nearly double those found in the continent's larger power systems. Geography also matters in the transport area: Africa has a large number of landlocked countries, which are home to about 40 percent of the region's population. Poor infrastructure compounds the growth challenge

TABLE 2.3 Africa's infrastructure deficit is widening compared with other regions

	Low-income countries	
Normalized units	Sub-Saharan Africa	Other
Paved road density	31	134
Total road density	137	211
Mainline telephone density	10	78
Mobile telephone density	55	76
Internet density	2	3
Generation capacity	37	326
Electricity coverage	16	41
Improved water	60	72
Improved sanitation	34	51

Source: AICD 2009.
Note: Road density is in kilometers of road per thousand square kilometers; telephone density is in lines per thousand population; generation capacity is in megawatts per million population; electricity, water and sanitation coverages are in percentage of population.

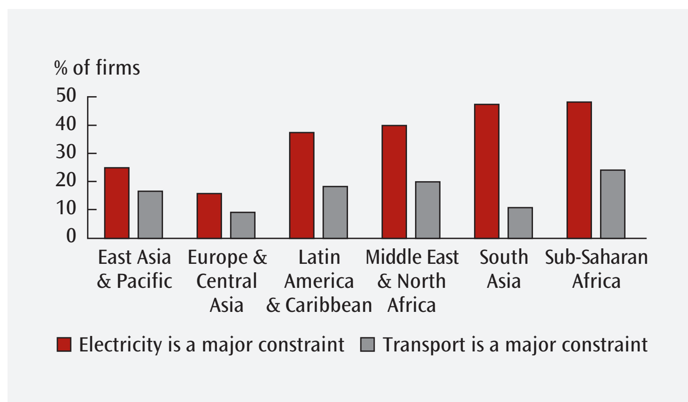
for these countries, because it results in high transport costs that hamper trade both within and outside the region. One recent estimate suggests that a feasible upgrading of the transnational road network in Sub-Saharan Africa would increase overland trade from $10 billion annually to $30 billion.[59] Over a 15-year period, this research suggests the region would gain $250 billion in additional intra-African trade at a cost of $32 billion (upgrade and annual maintenance).

Infrastructure Gaps Hinder Private Sector Growth

Enterprise Surveys show that firms in developing countries often rate infrastructure as one of their biggest problems (figure 2.11). In African countries the infrastructure constraint on doing business is found to be associated with 40 percent lower firm productivity.[60] For most countries the negative impact of deficient infrastructure is at least as large as that associated with crime, red tape, corruption, and financial market constraints.

Enterprise Surveys underscore the importance of unreliable power as a major obstacle to growth and business development. Businesses in East Asia, South Asia, and Sub-Saharan Africa report numerous power outages per month. The unreliability of service leads a majority of firms in low-income countries to generate their own power, thus missing out on the efficiencies, cost savings, and environmental benefits that a well-designed and centrally operated power network brings (figure 2.12). On average, African firms report losing more than 5 percent of their sales as a result of frequent power outages; this rises to 20 percent for informal sector firms unable to afford backup generation facilities.[61]

FIGURE 2.11 Inadequate infrastructure constrains business



Source: Enterprise Surveys database.

The Lack of Financial Resources Is a Major Constraint

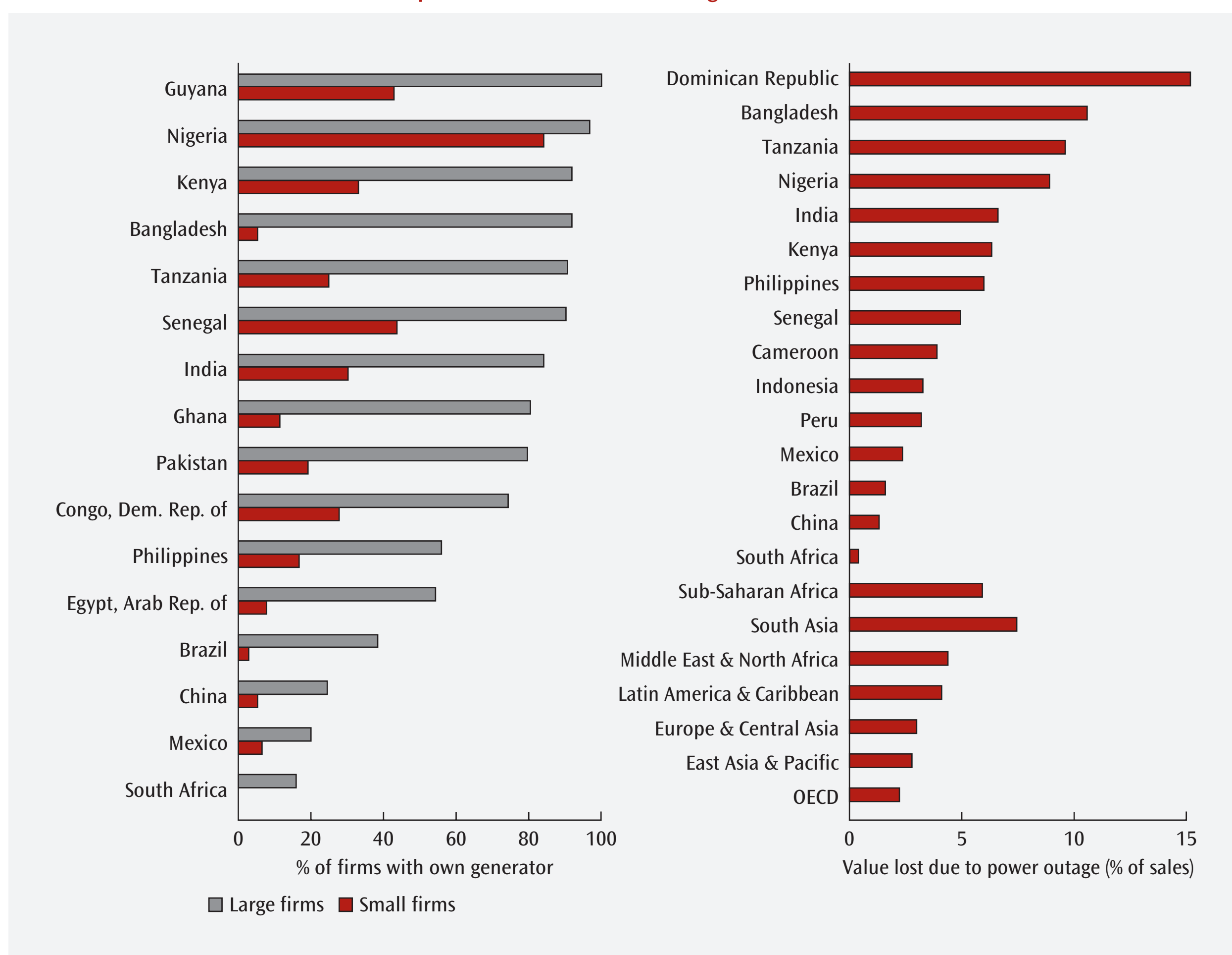
The gaps in infrastructure coverage reflect a large unmet need for infrastructure investment in developing countries. This in turn is often attributed to a lack of financial resources to fund these investments.

Estimates of "required" future spending on infrastructure are very large. Each year developing countries require around $900 billion (7–9 percent of their GDP) both to maintain existing infrastructure and to undertake new projects, yet only half of the required amount is actually spent.[62] By one estimate, the investment effort implicit in catching up would require as much as 15 percent of GDP in the low-income countries of East and Central Africa.[63] Trade-offs are inescapable in countries with limited resources: more money spent on infrastructure means less money spent on health, education, and other valuable services.

Inadequate Investment Is Not the Only Challenge

Financial constraints are a part of the story, but they are far from the whole story. Several factors other than investment have emerged as important in designing a strategy for sustainable infrastructure provision in developing countries. Addressing them would lower the unit costs of supply, free resources for increasing capacity, and improve the business environment. Among the most important issues to be tackled are below-cost tariffs, ill-targeted subsidies, weak governance and regulatory frameworks, systematic

FIGURE 2.12 The business cost of inadequate infrastructure can be high



Source: Enterprise Surveys database.

inefficiencies, and inadequate sector policies and planning capacities.

The tariff challenge: getting prices right. The essential nature of infrastructure services and their monopoly provision make tariff setting political, and politics as well as affordability concerns often keep tariffs below costs. Tariff revenues that do not cover costs result in a vicious cycle of underperformance, low-quality services, and ensuing lack of goodwill among the population for tariff increases. Because their fundamentals are unsound, infrastructure service providers often lack the cash flow and creditworthiness needed to secure investment commitments.

The underpricing of utility services is not a phenomenon of low-income countries alone. Even in upper-middle-income countries, a significant portion of water services are priced too low to cover basic operations and maintenance (O&M) costs (table 2.4).[64]

Subsidies to service providers, in particular to state-owned enterprises, can fill the revenue gap left by low tariffs (and are particularly important when the infrastructure creates positive externalities, as in the case of sanitation), but their costs often compromise the fiscal position of low-income countries. Evidence from Europe and Central Asia shows that the hidden costs of electricity tariffs set below cost recovery totaled

TABLE 2.4 Water and electricity services are often underpriced
percent

Country income level	Water tariffs		Electricity tariffs	
	Too low to cover basic O&M	Covers O&M and partial capital	Too low to cover basic O&M	Covers O&M and partial capital
High	8	50	0	83
Upper-middle	39	39	0	29
Lower-middle	37	22	27	23
Low	89	3	31	25

Source: Foster and Yepes 2006.
Note: Figures are the percent of countries at an income level that fall in each category.

$10.6 billion in 2003, or 2.6 percent of GDP; the figure for the gas sector was 0.6 percent of GDP, and for water 0.4–0.5 percent of GDP.[65] In Indonesia, the government's explicit subsidy to PLN, the state-owned power company, to cover the gap between electricity tariffs and actual costs reached 1.4 percent of GDP in 2005 (not including the additional subsidy received in the form of below-cost fuel for generation).[66]

On the demand side, price subsidies are often poorly targeted and regressive. Although tariffs are lowest for the low-voltage connections typically used by the poorest consumers, the poorest consumers also purchase only small quantities of electricity. The subsidy design thus gives the poorest consumers relatively less of the total subsidy than the richest consumers, whose consumption is greater.[67] An in-depth study of 22 cases of quantity-based subsidies in water and electricity across developing regions concluded that not a single case achieved a progressive, or even neutral, subsidy distribution.[68]

The high cost of corruption, red tape, and operational inefficiency. Corruption in infrastructure reduces the funds available for essential services as well as the returns from investments. The characteristics of infrastructure sectors such as transport, which relies heavily on construction services, and utility sectors, which are regulated natural monopolies with significant fixed costs and which award complex contracts through nonstandard procedures, suggest that there are many opportunities for corruption and that it is relatively easy to hide the crime.[69] For example, the Business Environment and Enterprise Performance Survey (BEEPS), which covers 4,000 firms in 22 transition countries, provides evidence that construction firms pay considerably more than the average firm in bribes, with a focus on bypassing regulation and obtaining government contracts.[70] One study finds corruption to be the most important explanatory factor behind variation in efficiency among 80 electricity distribution companies in Latin America.[71]

The three key components of hidden costs affecting infrastructure—poor bill collection rates, excessive losses resulting from inefficient operations or theft from networks, and tariffs set below cost-recovery rates—averaged 4.4 percent of GDP in 2003 in the power sector in Europe and Central Asia, down from double that figure in 2000. Hidden costs in the gas and water sectors were 1 percent and 1.2 percent of GDP respectively in 2003, with little change since 2000.[72] In Bangladesh and the Indian state of Orissa, an estimated 45 percent of generated power is lost to technical and commercial inefficiencies.[73] The Africa Infrastructure Country Diagnostic finds that addressing existing system inefficiencies would almost halve the

amount of funding required for Sub-Saharan Africa to close its infrastructure gap (table 2.5).[74]

Recent research into landlocked countries in Africa shows that physical constraints are not the only source of high transportation costs: widespread rent-seeking activities and flaws in the implementation of the transit systems also prevent the emergence of reliable logistics services.[75] One report on transport services in West Africa reveals that trucking wares from Bamako, the capital of Mali, to a port in Ghana over 2,000 kilometers away costs about $200 in bribes to various groups of officials, including police, customs, and gendarmerie.[76] The nearly 50 stops along the way delay the journey by almost four hours (figure 2.13). The situation is not unique to Africa; during the 637 kilometer trip from Medan to Meulaboh in Aceh province, Indonesia, one study found that drivers typically passed through 27 checkpoints and paid a total of $23 in bribes, representing roughly 13 percent of the cost of the trip and more than the wages of those driving the truck.[77]

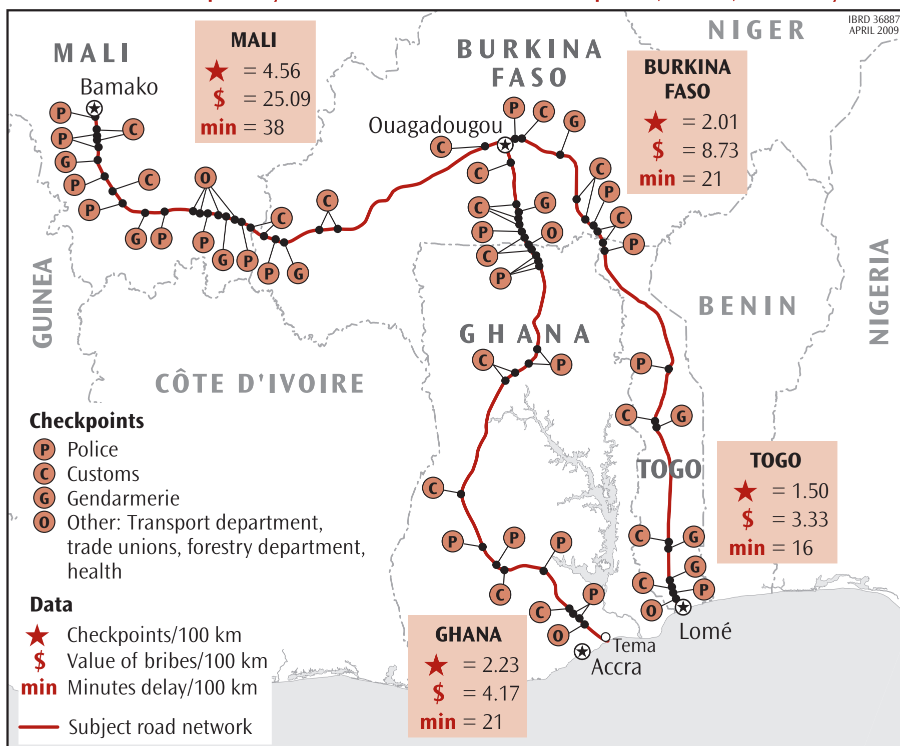
Such findings have helped to focus attention on the governance agenda in improving

TABLE 2.5 Closing the infrastructure financing gap in Sub-Saharan Africa

	US$ (billions) annually
Financing gap	+40
Reallocate spending across categories	–8
Raise capital budget execution	–3
Reduce operating inefficiencies	–3
Improve cost recovery	–4
Remaining gap	+22

Source: AICD 2009.

FIGURE 2.13 First priority corridors in West Africa: Checkpoints, bribes, and delays



Source: West Africa Trade Hub 2007.

the quality of public spending on infrastructure. Strategic medium- and long-term planning and transparent procedures for the identification and implementation of projects have emerged as critical in improving the performance of public investment. Public expenditure reviews and budget tracking procedures improve the monitoring of spending against identified needs. The performance of state-owner enterprises (SOEs) plays a key role in improving infrastructure service delivery. SOE governance and financial management are receiving increasing attention, including appropriate incentive and control mechanisms to strengthen performance and reduce the risk of misallocation of funds. Reforms span benchmarking approaches, corporatization, and improvements in internal governance.[78]

Private Participation in Infrastructure

Considering the persistent investment gap, many governments see the private sector as a solution. However, private financing, while offering additional resources, does not change the fundamentals of infrastructure provision: customers or taxpayers (domestic or foreign) must ultimately pay for the investments; and cost-covering tariffs (and well-targeted subsidies) remain the centerpiece of all sustainable infrastructure provision, public or private. Indeed, private provision reinforces the need to address governance issues around contracting and concession decisions.

In addition to financing, mitigating the efficiency gap observed in service delivery is another benefit offered by the private sector. A recent global study comparing public and private operators in water and electricity distribution found that private operators provided significant efficiency gains over comparable public enterprises, including a 12 percent increase in residential connections for water utilities, a 19 percent increase in residential coverage for sanitation services, a 45 percent increase in electricity bill collection rates, an 11 percent reduction in distribution losses, as well as significant improvements in labor productivity.[79] Table 2.6 summarizes experience with private sector participation in different infrastructure sectors in Africa.

During the 1990s, there were widespread expectations that the private sector would play a much larger role in financing infrastructure in the developing world. While private investment in infrastructure has risen, it has fallen short of these expectations. The volume of investments with private sector involvement in developing countries expanded in the 1990s, reaching a peak of about $140 billion in 1997 (figure 2.14). However, private financing flows were concentrated in relatively few countries and sectors, with telecommunications absorbing 46 percent of investment and energy 33 percent.[80] During the period of optimism in the 1990s, bilateral official development assistance (ODA) for infrastructure declined and, in parallel, World Bank lending dropped from $10.6 billion in 1993 to $5.4 billion in 2003.[81] Following the Latin American financial crisis and then the Asian crisis, as well as the Enron and other corporate scandals, private investment in infrastructure declined sharply, even in developing countries previously successful in attracting capital.

In recent years, however, a resurgence of private participation in infrastructure has been observed.[82] Investment commitments in developing countries grew in real terms over several years, reaching a level in 2007 that was 10 percent higher than the previous peak 10 years earlier. Still, private funding of infrastructure remains limited: 70 percent of infrastructure investment in the 2000–05 period originated from governments and state-owned enterprises, 22 percent from the private sector, and 8 percent from ODA. In International Development Association (IDA)-eligible countries, only 10 percent of infrastructure was funded from the private sector in 2007, and the number is likely to fall in the immediate future in light of the current financial crisis.

TABLE 2.6 Overview of experience with private participation in infrastructure in Sub-Saharan Africa

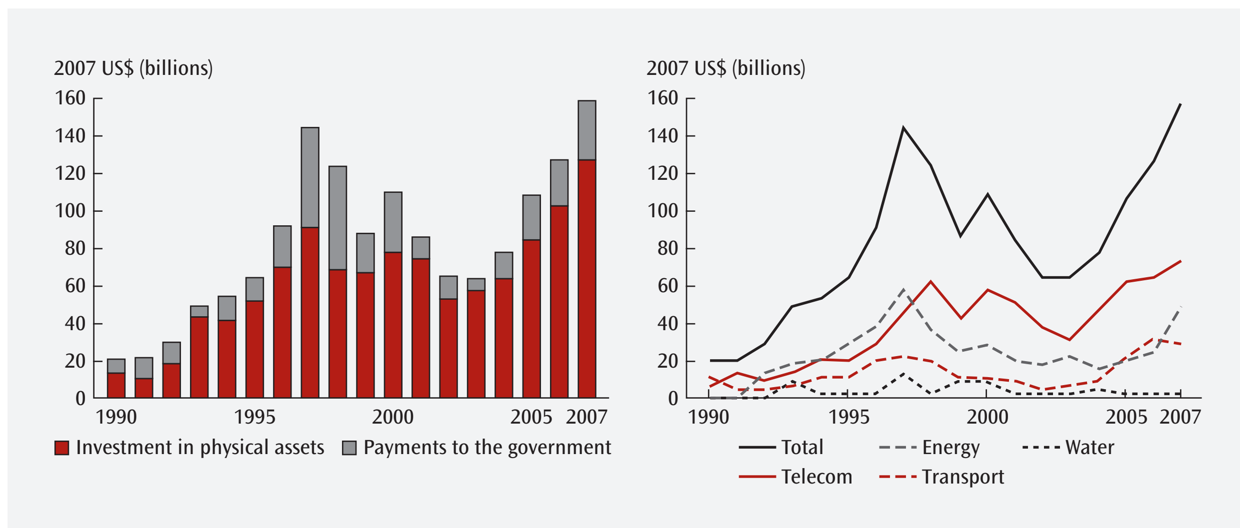
	Extent of PPI	Nature of experience	Prospects
ICT			
Mobile telephony	Over 90 percent of countries have licensed multiple mobile operators	Extremely beneficial with exponential increase in coverage and penetration	A number of countries still have potential to grant additional licenses
Fixed telephony	60 percent of countries have undergone divestiture of SOE telecom incumbent	Controversial in some cases, but has helped to improve overall sector efficiency	A number of countries still have potential to undertake divestitures
Power			
Power generation	34 IPPs provide 3,000 MW of new capacity investing US$2.5 billion	Few cancellations but frequent renegotiations, PPA have proved costly for utilities	Likely to continue given huge unsatisfied demands and limited public sector capacity
Power distribution	16 concessions and distribution; 17 management or lease contracts in 24 countries	Problematic and controversial with one quarter of contracts cancelled before completion	Movement toward hybrid models involving local private sector in similar frameworks
Transport			
Airports	4 airport concessions, investing <US$0.1 billion, plus some divestitures	No cancellations but some lessons learned	Limited number of additional airports viable for concessions
Ports	26 container terminal concessions, investing US$1.3 billion	Processes can be controversial but cancellations have been few and results positive	Good potential to continue
Railroads	14 railroad concessions, investing US$0.4 billion	Frequent renegotiations, low traffic and costly PSOs keep investment below expectations	Likely to continue but model needs to be adapted
Roads	10 toll road projects almost all in RSA, investing US$1.6 billion	No cancellations reported	Limited as only 8 percent of road network meets minimum traffic threshold, almost all in RSA
Water			
Water	26 transactions, mainly management or lease contracts	Problematic and controversial with 40 percent of contracts cancelled before completion	Movement toward hybrid models involving local private sector in similar frameworks

Source: AICD 2009.

An interesting feature of recent private investment in infrastructure is that many more of the transactions are "South-South," with private investors coming from Brazil, China, India, the Philippines, and the Russian Federation. A recent survey of emerging market investors and operators, defined as companies domiciled or incorporated in low- and middle-income countries, found that their role has been steadily increasing. For infrastructure projects reaching financial closure in 1998–2006, these investors mobilized about 44 percent of private funds.[83]

Research confirms that institutional factors matter greatly in the success of the private sector in infrastructure. Studies suggest that market reform, governance, and regulatory framework play an important part in attracting private investment and ensuring its effectiveness. Straub documents that ex

FIGURE 2.14 The rise and fall of private investment in infrastructure
investment commitments in infrastructure projects with private participation in developing countries



Source: World Bank and PPIAF, PPI Project database.

ante market restructuring makes privatization more successful.[84] In the case of the telecommunications sector, for example, regulatory and institutional arrangements such as transparency and autonomy increase the efficiency gains brought by the private sector.[85] The introduction of competition where feasible is one of the key means for governments to leverage the benefits of private investment in infrastructure.

Crisis Increases Challenge of Meeting Infrastructure Needs

Addressing the infrastructure challenge is made more difficult by the current financial crisis. Previous crises have shown that infrastructure is among the expenditure categories cut most severely by governments under financial stress. In Latin America, some 50 percent of the fiscal adjustment in the 1990s was borne by cuts in public infrastructure spending. According to one study, lack of infrastructure investment in the 1990s in Latin America reduced long-term growth by an estimated 1–3 percent.[86] The Asian crisis also resulted in precipitous declines in infrastructure spending in many countries, forced the postponement of long-gestation infrastructure projects, and significantly retarded economic growth—leading to what is often referred to as the "lost decade" for many Asian countries. Indonesia's total public investment in infrastructure dropped from about 7 percent of GDP in 1995–97 to 2 percent in 2000; private investment fell from 2.5 percent of GDP to 0.09 percent during the same period.

Such responses come at great developmental cost as subsequent rehabilitation of facilities is exponentially more costly than regular maintenance. In the medium and long term, inadequate infrastructure slows economic development and hinders poverty reduction. In its response to the current crisis, the World Bank is strengthening its existing instruments to help maintain spending in the infrastructure sectors and is establishing new facilities to assist governments and private investors to refinance infrastructure projects. At the same time, safety nets to help the poorest absorb the current shocks are being developed and existing subsidy schemes scaled up.

In the current crisis situation, governments and international financial institutions are facing exponentially increasing requests for public assistance. While a few countries with deep financial markets are turning to domestic debt, most private infrastructure projects in developing countries are facing financing constraints in reaching closure and rolling over debt. The rate of closure on such projects was already 15 percent lower in the latter half of 2008 than in the same period in 2007. The crisis is likely to reinforce the importance of institutional quality in determining which developing countries will receive rarified private capital. Because around 80 percent of infrastructure spending in the developing world is done by the public sector, much of the attention, certainly in the short run, is on how to support the sector's ability to maintain needed infrastructure spending.

Yet a number of countries are interested in going further and increasing spending on infrastructure. Indeed, infrastructure spending has been identified as an important means of addressing the crisis itself. Expanding infrastructure spending can provide an important countercyclical stimulus by boosting demand and employment while also supporting longer-term growth. China's $586 billion spending package announced at the end of 2008, the largest stimulus plan in China's history, specifically targets infrastructure investment. India's infrastructure sector is recognized as a major employment generator in the country, accounting for 12 percent of total jobs created during the first three months of fiscal 2008–09.[87]

Through its recent Infrastructure Recovery and Assets (INFRA) Platform initiative, the World Bank response aims at both addressing immediate needs and strengthening an asset base for the future. It includes the protection of existing infrastructure assets and the preservation of the project pipeline and priority projects. Jointly with the International Finance Corporation's Infrastructure Crisis Facility, resources are being made available to support and refinance public-private partnerships at risk.

The concern with crisis response, however, should not distract attention from the broader goals of addressing the institutional and regulatory framework governing infrastructure. Indeed, extraordinary circumstances, such as an emergency situation triggered by the financial crisis, often increase the risk of misallocation of resources and corruption. To avoid inefficient spending, the challenge of combining quick decisions with sound policy solutions needs to be faced. Indeed, the crisis can even be used as an opportunity to strengthen the legal, regulatory, and contracting frameworks.

Looking Forward

Addressing the infrastructure challenge in the developing world means mobilizing additional funds for capital and maintenance spending. However, it also requires tackling inefficiencies in current spending. The revenue gap in infrastructure delivery needs to be made transparent and tariff policy reviewed to address the often regressive nature of tariffs. Explicit performance or output-based subsidies can be used to provide essential services to the poor in situations where cost-covering tariffs are economically undesirable or politically difficult. Better-targeted subsidies mean either lower subsidy budgets or larger discounts or transfers for the poorest people. Efforts to strengthen the regulatory and institutional framework for public-private partnerships, including attention to fiscal issues related to such partnerships, need to continue.

Sustainable development and long-term environmental objectives must continue to play an important role. Going forward, climate change will be increasingly important in driving the infrastructure agenda, with the private sector playing a key role in innovation and financing. Beyond concerns generated by the current crisis, the recent momentum on the promotion of sustainable

development solutions and the integration of long-term environmental concerns in policies and programs must be sustained. Indeed, globally, the crisis offers a win-win opportunity—investment in green technology and energy-efficient infrastructure would not only provide a short-run stimulus but also help with longer-term environmental goals (a "green recovery").[88]

The World Bank is actively engaged with countries in climate change mitigation and plans to expand its instruments aimed at fostering clean technology, renewable energy, and energy efficiency. The newly established Climate Investment Funds aim to support innovative solutions in mitigation and adaptation to a changing world climate.

Regional collaboration is an attractive answer to lowering unit costs and pooling scarce resources in some of the poorest developing regions. Regional projects have emerged in a wide variety of infrastructure sectors, spanning regional power markets (such as in Central America or the West African Power Pool), regional gas trading (such as in Central and Eastern Europe or the Middle East), regional transport corridors (in Sub-Saharan Africa), and regional telecom agreements (mobile phone systems in Africa and the Caribbean). Regional infrastructure initiatives allow countries to pool their limited resources and achieve economies of scale in markets. However, the political dimension of regional projects and the challenge posed by aligning national objectives and policies and harmonizing regulations is not to be underestimated.

Notes

1. World Bank 2004.
2. Narayan 2000.
3. Ravallion 2001.
4. Firm responses need to be interpreted with caution—they are subjective measures and do not necessarily reflect social interests. They can also be affected by differences in reference points used and by the firm's own characteristics. But they do provide insights into what private sector actors are thinking. The relative ranking of issues can be particularly informative in this regard. They certainly corroborate the importance of the three areas highlighted here.
5. World Bank 2004; Dollar, Hallward-Driemeier, and Mengistae 2005, and numerous Investment Climate Assessments.
6. Aterido, Hallward-Driemeier, and Pages 2008.
7. Beck, Demirgüç-Kunt, and Maksimovic 2004.
8. World Bank 2004.
9. Two new measures are under development. An infrastructure measure contains two sets of indicators, one on potential consumers (namely, the time and procedures necessary to access the public grid), and one for potential distributors of electricity. A transparency measure captures the disclosure rules for elected officials.
10. The stronger performance of the Europe and Central Asia region on the regulatory indicators in part reflects the concentration of transition economies in the region that faced an especially challenging agenda of regulatory reform at the start of the transition process.
11. World Bank 2008c.
12. The bankruptcy recovery rate is also high but reflects in part some fixed costs that will decline as incomes rise.
13. Hallward-Driemeier and Li 2009.
14. Eifert 2009. The ICRG and Freedom House ratings were used as indicators.
15. Aterido, Hallward-Driemeier, and Pages 2008.
16. Beck and others 2006; World Bank 2008a.
17. Perry and others 2007.
18. World Bank 2008b.
19. Eifert 2009.
20. www.govindicators.org.
21. Kaufmann, Kraay, and Mastruzzi 2008.
22. Ibid.
23. This section draws heavily on World Bank (2007a) and Claessens and Feijen (2006).
24. This is a big effect because per capita growth in India only averaged about 1.6 percentage points per year over this period. See Levine, Loayza, and Beck 2000.
25. Beck, Demirgüç-Kunt, and Levine 2007. See also Honohan 2004.
26. Levine and Zervos 2004. Simultaneity bias is already addressed in these estimates.
27. Claessens and Feijen 2007.

28. Claessens and Feijen 2006.

29. Beck, Demirgüç-Kunt, and Maksimovic 2005. Surveyed businesses were asked (among other things) to rate financing in general as well as some specific financing issues on a scale from 1 (no obstacle) to 4 (major obstacle). The median response was 3 for financing in general, as well as for collateral requirements and lack of availability of long-term loans, and the median response for "high interest rates" was 4. Most of the other specific financing issues—paperwork, the need for special connections, banks' lack of money to lend, credit information, access to foreign banks, to equity, to export finance and to leasing—yielded a median response of "2". For a subset of 56 countries, additional data, including the growth rate of firms' sales, was available, Beck, Demirgüç-Kunt, and Maksimovic show that a firm's response on 7 of 13 perceived financial barriers is negatively and significantly correlated with that firm's growth rate.

30. Ayyagari, Demirgüç-Kunt, and Maksimovic 2006.

31. Ayyagari, Demirgüç-Kunt, and Maksimovic (2007). Specifically, respondents were asked whether they had developed a major new product line; upgraded an existing product line; introduced new technology that has substantially changed the way that the main product is produced; discontinued at least one product (not production) line; opened a new plant; closed at least one existing plant or outlet; agreed to a new joint venture with a foreign partner; obtained a new licensing agreement; outsourced a major production activity that was previously conducted in-house; or brought inhouse a major production activity that was previously outsourced.

32. Giannetti and Ongena 2005.

33. de la Torre, Martinez Peria, and Schmukler 2007.

34. Beck, Demirgüç-Kunt, and Martinez Peria 2007.

35. La Porta and others 2003; Caprio and others 2004; Barth, Caprio, and Levine 2006.

36. Cull, Clarke, and Martinez Peria 2001.

37. de la Torre, Gozzi, and Schmukler 2007; de la Torre, Martinez Peria, and Schmukler 2007.

38. Claessens and Perotti 2007.

39. See World Bank (2001) for an overview of the determinants of financial sector development. See IMF (2009) for a discussion of lessons for financial sector policy from the recent crisis. The focus in this section is on improving access to finance; regulatory issues relating to financial sector stability are discussed in more detail in chapter 1.

40. Djankov, McLiesh, and Shleifer 2008.

41. For early evidence, see Caprio and Demirgüç-Kunt 1997.

42. de la Torre, Gozzi, and Schmukler (2007) provide some examples.

43. See further Conference on Partial Credit Guarantee Schemes: Experiences and Lessons, The World Bank, Washington DC, March 13–14, 2008.

44. Wagstaff and Cleason 2004.

45. IEG 1996.

46. WHO 2004.

47. A recent survey of 64 empirical papers on the link between infrastructure and growth in developing countries finds that in two thirds of the specifications used a positive and significant link between infrastructure and growth is supported by the data; see Straub 2008.

48. Calderón and Servén 2008.

49. See for example, Estache Foster, and Wodon 2002.

50. Dercon and others 2007.

51. Datta 2008.

52. World Bank Group 2008.

53. Eberhard and Gratwick (2006) count about 40 IPP independent power provider projects in 15 African countries alone.

54. Galdo and Torero 2006.

55. Calderón and Servén 2008.

56. AICD 2009.

57. Ramachandran, Gelb, and Shah 2009.

58. Eberhard and others 2008.

59. Buys, Deichman, and Wheeler 2006.

60. Escribano, Guasch, and Pena 2008.

61. Eberhard and others 2008.

62. World Bank Group 2008.

63. Calderón and Servén 2008.

64. Foster and Yepes 2006.

65. Ebinger 2006.

66. World Bank 2007b.

67. See World Bank 2007b for a detailed discussion in the case of Indonesia.

68. Komives and others 2005.

69. Kenny 2006; Kenny and Soreide 2008.

70. Kenny 2007.

71. Dal Bo and Rossi 2007.

72. Ebinger 2006.

73. Gulati and Rao 2006.

74. AICD 2009.

75. Arvis, Raballand, and Marteau 2007.

76. West Africa Trade Hub 2007.

77. Olken and Barron 2007.
78. See, for example, Vagliasindi 2008.
79. Gassner, Popov, and Pushak 2008.
80. The top five recipients of private infrastructure investment—Argentina, Brazil, China, Malaysia, and Mexico—received 49 percent of all private investment in 1984–2004. Less than 10 percent of private investment has been made in low-income countries.
81. World Bank Group 2008.
82. PPIAF 2008.
83. Von Klaudy Sanghi, and Dellacha 2008.
84. Straub 2008.
85. Andres and others 2008.
86. Calderón and Servén 2003.
87. *Business Standard*, New Delhi, December 3, 2008.
88. Stiglitz and Stern 2009.