

## *Chapter 9*

# **Infrastructure and Financial Sector Development\***

\* This background document is based on Chapter 6 of the World Bank's 2005 World Development Report. It was prepared by Jonathan Coppel, Investment Division, OECD Directorate for Financial and Enterprise Affairs.

## 9.1. Introduction

Well functioning financial markets and good infrastructure promotes investment by connecting firms to their customers and suppliers and helping them to take advantage of modern production techniques and organisational structures. Conversely, inadequacies in infrastructure and financial services create barriers to opportunities and increase costs for all firms, from rural micro-entrepreneurs to multinational enterprises. By impeding new entry into markets (by either domestic or foreign firms), these inadequacies also limit competition, thus dulling incentives to innovate and to improve productivity.

One of the underlying problems often associated with investment in infrastructure can be traced to a specific market failure – market power associated with economies of scale. This has been the case with both private and public investment in infrastructure. In many cases, government attempts to overcome such market failures have made matters worse. Infrastructure investment has often been undermined by government use of state ownership or regulation to pursue objectives unrelated to efficient service delivery – typically favouring some groups over broader interests and introducing new sources of inefficiency. These problems usually hit smaller firms the hardest.

Governments have started confronting these issues. They are pursuing new approaches that recognise that infrastructure is a fundamental cornerstone of the investment climate. That is why many governments are taking steps to increase genuine competition among providers of infrastructure-related services (whether privately or publicly owned or controlled), securing property rights, and regulating providers in ways that recognise the potential for market failures to replace government failures, or *vice versa*. Governments are also working to improve management of public resources – to get more for their money when they finance or subsidize infrastructure services.<sup>1</sup>

This background document looks at experience in selected infrastructure areas: roads, ports, electricity, telecommunications, and water.<sup>2</sup> Although the chapter focuses on the impact of infrastructure services on the investment environment, improvements in the coverage and quality of these services also benefit households.

Well developed and functioning financial markets support the expansion of infrastructure investment, and play a pivotal role for the investment environment. Getting financial markets to work well, however, runs into market failures, associated with information asymmetries and problems of political economy. This chapter, therefore, also briefly considers selected aspects of financial market development policies. The focus is on the set of policies that help to foster macroeconomic stability, access to financial services and to the development of financial markets.

## 9.2. Common challenges in physical infrastructure

Building and maintaining roads, ports, electricity grids, telecommunications and water networks is expensive, so it is no surprise that infrastructure constitutes a significant economic bottleneck in many developing countries. However, the challenge of improving infrastructure is not just one of finding more money.

### *Market power, irreversible investments, and politics*

**What processes does the government use to evaluate its infrastructure investment needs? Does the national government work in co-operation with local and regional governments to establish infrastructure investment priorities? Does the government have clear guidelines and transparent procedures for the disbursement of public monies funding infrastructure projects? Are the regulatory agencies that oversee infrastructure investment and the operations of enterprises with infrastructure investments independent from undue political interference?**

The problem of infrastructure provision has its roots in the potential for market power that results from economies of scale. It rarely makes sense to have two competing roads between two points – or competing electricity grids. Indeed, all infrastructure activities were once thought to be “natural” monopolies, so that a particular market could be served at least cost by a single supplier. However, the potential abuse of market power in services that affect many consumers creates pressure for governments to intervene, either through intensive regulation of private suppliers or through provision by the public sector. Whether provision is public or private, governments tend to control tightly the prices that infrastructure providers charge and are often reluctant to allow prices to rise even when costs have.

This reluctance can create problems because of another feature of many infrastructure services – long-lived, immobile investments. Once built, a road or hydroelectric dam cannot sensibly be dismantled and moved elsewhere. Investors in infrastructure are often vulnerable, therefore, to shifts in government policies and changes to regulations, including those limiting prices. Before they invest, the government may promise them prices high enough to cover the costs of investment, but afterward the government, or subsequent governments may be tempted to please customers and voters by keeping prices low. So long as prices cover operating costs, the investors cannot credibly threaten to withdraw their services.

The underlying problem in the provision of much infrastructure is thus the combination of two concerns: customers fear that firms will use their market power to overcharge, and firms fear that governments will use their regulatory power to prevent them from covering their costs. Private firms originally created much of the world’s infrastructure, but the playing out of these fears, combined with a prevailing scepticism about markets and private ownership, led to widespread nationalisation of infrastructure after World War II.<sup>3</sup>

Under public provision, however, the problems re-emerged in different guises and were joined by others. Infrastructure services remained highly politicised, and

governments frequently kept prices below costs. The low prices were sometimes presented as necessary to help the poor, but the beneficiaries tended to be those who had access to services, so the poorest members of the community usually missed out. To take just one example, a study of the incidence of “lifeline” electricity tariffs in one Latin American country, under which the government subsidized the first block of household electricity consumption, found that about 80 per cent of the subsidies went to households that were not poor (Wodon, Ajwad and Siaens, 2003). Governments have also used their infrastructure agencies to channel assistance to particular regions and give jobs to favoured groups, increasing the agencies’ costs and frustrating attempts to hold them accountable for the efficient delivery of services. With high costs and low prices, agencies have often been unable to finance investment from their own cash flows or borrow on their own credit (Box 9.1).

#### Box 9.1. **The political economy of electricity in India**

Indian electricity utilities generally provide unsatisfactory service to their customers, whether firms or households. In a recent budget document the central government noted that electricity shortages routinely lead to outages and voltage fluctuations that disrupt all aspects of economic life and require substantial investments in voltage stabilizers, generators and new motors. Most electricity is generated and supplied by state-owned electricity boards, which are experiencing severe financial difficulties and draining state budgets. Before privatising its electric utility in 2002, for example, the Delhi government provided it with implicit subsidies of \$200 to \$300 million a year, in loans unlikely to be repaid. Even so, the company still faced financial problems and provided poor service: power cuts were common in summer and winter. The problems in Delhi, in other parts of India and indeed in much of the developing world are political. Under pressure from well-organized groups of voters, governments have kept average prices below average costs, allowing politically influential customers to pay especially low prices. Farmers often receive electricity for irrigation pumps at prices well below costs. The subsidies became popular in the late 1970s. In Andhra Pradesh the government offered flat-rate tariffs to farmers as an election promise. Soon after, in Tamil Nadu, demonstrations by the Agriculturalists Association led to the provision of free electricity to some farmers. Other states then followed with their own agricultural subsidy programs. Many of the recipients are fairly well off land-owning farmers. Farmers are not the only beneficiaries: many customers steal their electricity, costing suppliers an estimated \$4 billion a year. According to one report, utility employees who conspire in the theft of electricity can receive many times their annual salary in bribes. Although some farmers, employees, and politicians benefit, low prices discourage both the conservation of power and further investment in increasing supply and improving its reliability. That is why other users, including many firms, have to pay more.

*Source:* Agarwal, Alexander, and Tenenbaum (2003); Dubash and Rajan (2001); India – Ministry of Finance (2003); and Lal (2004).

As long as governments heavily subsidized public infrastructure agencies, the agencies could still operate and expand. Fiscal pressures and mounting dissatisfaction with public services, however, made governments reluctant to go on providing large subsidies. That, combined with a change in the prevailing views about markets and private ownership, led many governments to turn again to the private sector for at least some

infrastructure services. While public provision remains important, private participation has now spread throughout much of the developing world, playing a role in achieving the UN's Millennium Development Goals.

Although private provision has often, though not always been associated with lowered costs and improved services, political economy problems remain. Many customers have opposed privatization, believing it will do more to enrich business and its political allies than improve public services. At the same time, many infrastructure investors have been disappointed by their returns in both developed and developing countries, often believing that governments have broken their promises on regulation for fear of losing votes. In other cases, a need to improve the skills and capacity of government officials to design and negotiate complex contracts and to operate large-scale infrastructure projects has been identified. Partly because of these problems, the amount of investment in private infrastructure projects in many countries has declined in the last few years.

### *Encouraging private investment in infrastructure*

**What measures has the government adopted to uphold the principle of transparency and procedural fairness for all investors bidding for infrastructure contracts, to protect investors' rights from unilateral changes to contract terms and conditions? What steps have been taken to attract investors to supply infrastructure at fair and reasonable prices, to ensure that investor-state contracts serve the public interest and to maintain public support for private involvement in infrastructure?**

Addressing these problems requires recognition that the performance of infrastructure providers is shaped by their investment climate. In some respects, the concerns of infrastructure firms – whether private or publicly owned but commercially run – are no different from those of other firms. All firms worry about the security of their property rights and the burdens imposed by regulation, taxation, and corruption.<sup>4</sup>

The problems arising specifically from market power and immobile investments in infrastructure highlight the central role of secure property rights. Private infrastructure firms in particular are concerned not only about outright expropriation, but also about whether governments will progressively undermine their profitability by imposing ever more severe regulation. The problems affect small providers as well as multinationals (Box 9.2). Governments must therefore take care to craft rules and institutions that constrain market power without unduly weakening property rights.

With this aim, governments often set out regulations and infrastructure investors' rights in contracts that cannot be changed unilaterally and allow disputes to be brought to and settled by domestic courts, international arbitration panels or independent regulatory agencies.<sup>5</sup> Decision-making about the implementation of rules is often delegated to independent regulatory agencies more insulated than politicians from day-to-day political pressures and can help to allay investor concerns about posterior government decisions that impinge on the economic viability of infrastructure investment and about the dual role of governments as contractual parties and regulators in investor-state contracts (Phillips, 1993 and Smith, 1997). When stabilisation clauses are used, governments need to

### Box 9.2. Improving the investment climate for small private providers of infrastructure

Much private investment in infrastructure comes from multinationals from rich countries in Asia, Europe and North America. When concerns are expressed about the investment climate for infrastructure providers, it is these firms that most naturally come to mind. However, small (often informal) infrastructure providers are also important for electricity and telecommunications, especially in rural areas, and the investment climate for them matters, too.

For example, in Bangladesh, with one of the world's lowest telephone densities and waiting times of many years for a fixed connection, village phone operators, most of them women, provide mobile phone access to their rural neighbours. Benefiting in many cases from loans from the Grameen Bank, village phone operators are present in thousands of villages. At low cost they enable villagers to communicate with people in markets in neighbouring towns – avoiding the need to walk there to find out the prices of commodities. However, valuable services such as these have sometimes been hampered by the state-owned companies that perceive a threat to their position, even though they do not serve the market in question.

In Cambodia the biggest electricity supplier is the state-owned *Électricité du Cambodge*, which supplies Phnom Penh and a few towns. But several hundred small private providers supply electricity to more than 100 000 households and small firms in rural areas, sometimes by recharging batteries and sometimes through metered connections to small electricity grids. Although charging high prices, they supply customers who would otherwise have to supply themselves or go without. By law these private providers require licenses, which the government issues for a renewable term of three years. Because the capital invested in electricity grids can have a useful life of more than three years and the assets cannot be costlessly dismantled and moved elsewhere, uncertainty about license renewals creates a policy risk that can discourage investment and increase electricity prices. (It also encourages the substitution of easily moved investments for those less costly but less easily moved.) The providers do not know whether their license will be renewed – or what bribe they might be asked to pay to ensure its renewal. Most of the small providers are, in fact, unlicensed. They thus face a different policy risk: being prosecuted and closed down – or having to pay a bribe to avoid that. All providers are also vulnerable to a change in government policy that would give either *Électricité du Cambodge* or other providers exclusive rights to provide service. All are vulnerable to the possibility that, as they grow and become better established, the government will come under pressure to regulate the prices they charge in a way that undermines their profitability.

Source: PPIAF and World Bank (2002); Burr (2000); and Cohen (2001).

balance their usefulness against the risk of circumscribing host government's right to regulate.

To work well, however, the government's approach must not only secure investors' property rights on paper. To be credible to firms, the arrangement must be sustainable, which means it must be perceived as reasonably fair and legitimate by consumers. Arrangements widely perceived as legitimate and fair thus reduce risks faced by providers, lower the returns that commercial investors must be promised, and so lower the prices that customers must pay, for any given degree of legal protection.

One cause of popular resistance to private participation in infrastructure in the 1990s was the opacity of some procedures used to privatize infrastructure businesses and adjust the tariffs the privatized business could charge. In the absence of transparency, suspicions were reasonably raised about whether bribes or the public interest had motivated policy. Responding to these concerns, most countries have turned to transparent competitive bidding to award contracts. Such countries as Brazil, Panama, and Peru now publish many infrastructure concession contracts on the Internet.<sup>6</sup> In 2002 Mexico passed a freedom-of-information law that will require information about such contracts to be made public.

The creation of independent regulatory agencies can be viewed as an attempt to reconcile the partly competing demands for investor protection and public legitimacy. If legitimacy could be ignored, investors' property rights would be most secure if contractual tariff adjustment rules were interpreted by independent international experts and serious disputes resolved by international arbitration. Using national regulatory agencies, courts, or arbitration increases one type of risk for investors, because the national institutions are more susceptible to political pressures to keep prices below costs – but decisions made by national institutions may be viewed as more legitimate, enhancing the sustainability of the arrangements.

Competition has the power to transform infrastructure industries by increasing legitimacy and strengthening investors' property rights. It pushes firms to become more efficient and cut prices. As a result, it helps assure customers that they are getting a reasonable deal. This in turn reduces pressure on governments to regulate in ways that weaken investors' property rights. Where competition works, it can thus help infrastructure provision avoid the problems that have traditionally afflicted it under both public and private provision. Competitive market prices may mean for some users and in some locations that prices charged are too expensive. In these circumstances and when governments aim to ensure access to essential infrastructure at affordable prices as a social goal, programmes based on instruments that maintain an economic incentive to invest in infrastructure and achieve their objective at least cost are preferable.

Private participation is often advocated because it provides an alternative source of financing to governments that have limited resources. Such reasoning is flawed – and can encourage privatization with few real benefits.<sup>7</sup> The big problem is paying for services, not financing them, and though private investors may finance services, they do not pay for them (see, for example, Klein and Hadjimichael, 2003).

The real advantage of well-designed private participation is different and deeper: it lies in changing the political economy of infrastructure provision. First, when the government is no longer a provider of services, it can more easily allow genuine competition. Private participation can be part of a strategy to help garner the benefits of competition – reducing costs and the property-rights problems of intensive regulation. Second, to attract private investment, a government needs to make a credible commitment to allow prices to cover costs and not interfere in commercial operations – a commitment it cannot make under public provision, because it can renege on commitments to public agencies with impunity. If a government can credibly make this commitment to investors by using the policies described above – and simultaneously persuade customers that their interests are being protected – it will have gone much of the way toward creating a good investment climate for infrastructure providers, thereby doing much to provide good infrastructure services to all firms and to their broader societies.<sup>8</sup>

### *Improving public management*

Although private participation plays a powerful role, governments remain major financiers and providers of much infrastructure, especially roads. Even in sectors where a good deal of investment is private, complementary public investment in the parts of the sector owned by the government is often important. When governments do not provide or finance infrastructure, they often subsidize it – sometimes directly, sometimes indirectly through guarantees and other instruments. Because government budgets are always more limited than the plans of project proponents, governments need ways of deciding how much to spend on infrastructure, how to allocate that spending, both geographically and in the case of transportation networks across the different possible modes and how to administer it.

The questions are both technically difficult and politically charged. For example, if the government can afford to construct and maintain just one more transportation project in the next year, should it connect a poor rural area to the capital, or should it strengthen the network around a congested and more prosperous commercial centre, and should priority be given to the construction of roads, railways or other transportation modes, without ignoring the integration of transport networks? Answering requires technical capability to undertake cost-benefit analyses; financial reporting that reasonably reflects the true costs of different policies, and decision-making processes that give weight to the results of those analyses while allowing a socially acceptable balancing of competing interests.

When governments provide infrastructure, they need to think about the best way to organize themselves in order to do it. Traditionally, governments provided services through ministries, but a desire to free service providers from some of the constraints of bureaucratic procedures, to give them operational independence from ministers, and increase their accountability for results has led many governments to establish legally independent, though still wholly government-owned, infrastructure agencies.

Some governments have taken extra steps, such as making the state-owned agency subject to company law, appointing as directors people outside the government with commercial experience, and requiring the agency to prepare audited financial reports according to high-quality accounting standards. In South Africa, for example, the state-owned electricity agency, Eskom, is now a company with mainly outside directors with business experience, which reports according to international accounting standards. Even when all these steps are taken, however, it can be difficult for governments to resist political pressures to interfere in business decisions and keep prices below costs. This is part of the reason why many governments undertaking these reforms have eventually turned to private participation.

### **9.3. Infrastructure: connecting firms and expanding opportunities for investment**

Firms with access to modern telecommunications services, reliable electricity supply, dependable water and sanitation services and efficient transport links stand out from firms without them. They invest more, and their investments are more productive. Yet in many countries, firms find themselves having to cope with infrastructure that fails to meet their needs. The problems, as expressed by firms, vary by region. They also tend to vary by infrastructure service and firm size – electricity is often the biggest problem, and larger firms express more concerns than smaller firms about all services.

The following sections examine six sectors that have a particularly important bearing on the investment climate: roads, ports, electricity, telecommunications and, water. The last section, as noted in the introduction, considers selected aspects of financial market development policy.

### 9.3.1. Telecommunications – competition makes the difference

**In the telecommunications sector, does the government assess market access for potential investors and the extent of competition among operators? Does the government evaluate whether telecommunication pricing policies are competitive, favouring investment in industries that depend on reliable and affordable telecommunications?**

Modern telecommunications are vital to the investment climate and have become more important to firms of all kinds. Telecommunication services allow enterprises to communicate rapidly and cheaply with distant suppliers and customers, to access the Internet, they underpin modern financial markets, and they help governments communicate with firms and citizens. In Bangladesh, China, Ethiopia, and India the World Bank's Investment Climate Surveys found that garment manufacturers are more productive, pay higher wages, and grow more quickly when telecommunications services are better (Dollar, Hallward-Driemeier and Mengistae, 2003). Among developed countries, investments in telecommunications in the last 20 years appear not only to have followed growth, but also to have fuelled it (Röller and Waverman, 2001). In Latin America, a 10 per cent increase in the number of main phone lines per worker has been estimated to increase output per worker by about 1.5 per cent (Calderón and Servén, 2003).

The extent to which telecommunications services meet firms' needs varies greatly from country to country, as well as within countries. A three-minute call to the United States costs \$0.17 from Finland, but up to \$9 in some African countries, where some governments cross-subsidize local calls and other services through higher prices on international calls. Getting a new phone line takes only a couple of days in Lithuania, but up to a year in parts of Sub-Saharan Africa.

On average, however, telecommunications services have improved dramatically. Over the last 20 years, prices have fallen at an average of 7 per cent a year, while the number of phone subscribers per capita in low-income countries has quintupled (Rossotto, Lewin, Gomez and Wellenius, 2003). The changes have been driven by changes in technology and by changes in policy. Most governments have at least partly privatized their country's main phone company and allowed at least some competition. The policy changes mean lower prices, shorter waiting times for connections and faster expansion of services (see, for example, Wallsten, 2001 and Boylaud and Nicoletti, 2001).

Although challenges remain, including the extension of access in rural areas (Box 9.3), the combination of technological change and liberalisation has transformed telecommunications. Providers need no longer be monopolies, and with the advent of wireless telecommunication services new investments are needed. Coupled with a predictable and independent industry regulator, these developments reduce the policy-

**Box 9.3. Expanding rural access to electricity and telecommunications**

For many years governments in developing countries relied on state-owned monopolies to bring electricity and telecommunications services to rural areas. Typically they required the monopolies to charge the same price in rural and urban areas, even though the costs were higher in the rural area. Because that made the rural services unprofitable, governments gave the monopolies budgetary subsidies and allowed them to benefit from cross-subsidies from low-cost, high-revenue customers. In many countries, however, the subsidies have been too small to finance rapid expansion. Even when expansion was affordable, the monopolies had a financial incentive to go slow. An alternative that some governments have used, especially in the last decade, is to rely on a combination of liberal regulation and well-targeted, output-based subsidies. Removing legal barriers to entry by new providers of electricity and telecommunications services helps ensure that profitable opportunities to extend service in areas un-served by the incumbent are seized quickly (as illustrated by Cambodia in Box 9.2). Liberal entry rules may not by themselves cause access to increase as fast as governments want. In such a case, governments may find carefully targeted direct subsidies more effective than cross-subsidies or subsidies aimed only at keeping providers afloat. Peru, for example, has used a least-subsidy approach to bring pay phone service to targeted rural areas. Some of the subsidy is paid up front, the rest in half-yearly instalments, conditional on the operator meeting its performance targets. Although the operators are struggling financially even with the subsidies, most results from the pilot project appear promising. For the scheme's beneficiaries the average distance to the nearest pay phone fell by more than 90 per cent. In addition, competitive bidding led to a subsidy 41 per cent lower than the government had budgeted for and 74 per cent lower than the subsidy previously requested by the incumbent. Similar schemes have been used for rural electrification in Argentina, Chile, and Guatemala.

Source: Cannock (2001); Harris (2002); Tomkins (2001); Wellenius (1997); and Jadresic (2000).

related risks of investments in the telecommunication sector and raise the scope to inject greater competition among operators.

**9.3.2. Electricity – competition is not as easy but possible**

**Has the government developed a strategy to ensure reliable access to electricity services by users, and economic incentives to invest and supply electricity? What programmes exist to ensure on a least-cost basis access to electricity services by a wide range of users. Are these programmes time-bound and based upon clear performance targets?**

Access to a reliable electricity supply at a reasonable price is vital for most firms – from small factories in rural areas to multinational firms. Most urban firms are served by utilities, but firms in small towns and rural areas in developing countries may have to supply themselves (Komives, Whittington and Wu, 2003). Firms with access to grid electricity seldom get good service. Temporary losses of supply are frequent in many countries, especially in Africa and South Asia, as are fluctuations in voltage that damage machinery. According to World Bank Investment Climate Surveys, firms in some regions

have estimated that such outages cause them to lose on average around 5 per cent of their annual sales. Limited access in rural areas and poor quality in cities cause many firms to rely on self-supply, which is generally more expensive than a regular supply from a utility.

Many firms also pay higher than necessary prices for electricity, as governments direct utilities to hold down prices for (often middle class) households and effectively tax firms to make up some of the difference. The largest industrial users sometimes have enough influence to avoid such levies, leaving small- and medium-sized firms to bear most of the burden. In one Indian state, industrial users pay twice as much per kilowatt-hour as households, but commercial users – offices and shops – pay nearly twice as much again (World Energy Council, 2001).

Poor electricity supply makes existing investments less productive and discourages new investment. In Uganda firms that experienced fewer problems of supply from the Uganda Electricity Board invested less in self-supply and more in their own productive capacity (Reinikka and Svensson, 2002). In Bangladesh, China, Ethiopia, and Pakistan the World Bank's Investment Climate Surveys found that more reliable power supply increases garment manufacturers' total factor productivity and the growth rates of their output and employment (Roller, Hallward-Driemeier and Mengistae, 2003). In Latin America, a 10 per cent increase in electricity-generating capacity per worker has been estimated to increase GDP per worker by around 1.5 per cent (Calderón and Servén, 2003).

As in telecommunications, changes in technology, coupled with dissatisfaction with monopoly provision by state-owned enterprises, have led many governments to progressively liberalise – typically starting with supply to companies where fewer clients makes it easier to manage – and to introduce private participation. Economies of scale in generation declined in the 1980s, allowing more countries to have enough generating stations to make competition in the generation of electricity workable (Hunt and Shuttleworth, 1996). Countries that can distribute electricity to their neighbours have further opportunities.<sup>9</sup> Enabling the inter-connection of networks, where feasible, is also a possible solution to local shortages.

Almost all countries in the developed world and most in Latin America now allow at least some firms to choose their electricity supplier. Elsewhere the picture is mixed. Many countries have allowed a sort of competition in generation under which a state-owned utility contracts out the financing, construction, and operation of new power stations to privately owned independent power producers. The state-owned utility, however, usually retains a monopoly on selling electricity to customers, limiting the benefits of such competition. In addition, such projects can create disguised government debt.

Getting competition to work in electricity is harder than in telecommunications, as high profile problems in recent years in California have shown (see, for example, Besant-Jones and Tenenbaum, 2001). Many small countries have too few generators to allow real competition, while in larger countries, individual electricity companies may still have market power if they own many generation plants. Even when electricity generators do not have market power at most times of the day, they may have it when demand peaks, and like sellers in many markets, they may collude to increase prices. Competition is fostered by separating generation from transmission, and distribution from retail supply, so that the owners of the transmission and distribution lines cannot use their monopoly in these industry segments to stifle competition in generation.<sup>10</sup> But such unbundling makes it harder to coordinate investments among these segments of the industry, including

investment to maintain and improve the grid infrastructure itself. It also requires an efficient and effective regulator of the grid.

Overall, the evidence suggests that competition (usually combined with commercial provision and new forms of regulation) has led to better service. Countries that early on introduced competition, private provision, and new forms of regulation – such as Argentina, Chile, and the United Kingdom – have benefited from lower prices and higher quality (see, for example, Pollitt, 2003 and Galal, Jones, Tandon and Vogelsang, 1994). In Chile, wholesale prices fell by 37 per cent and retail prices by 17 per cent between 1986 and 1996. Private companies were sufficiently confident in the market to invest in hydroelectric generation, transmission, and distribution (World Bank, 2004). More generally, competition in electricity has been found to increase labour productivity and generating capacity per capita (Zhang, Parker and Kirkpatrick, 2002). Competition also tends to lower prices for small- and medium-sized firms because they need no longer buy from a utility that overcharges them.

### 9.3.3. Transport – the dwindling importance of distance

**What processes are followed to inform decisions on the development of new transport facilities, as well as the maintenance of existing investment in transport infrastructure? Are the requirements for all modes of transport regularly reviewed, taking into consideration investor needs and the links between different modes of transport infrastructure?**

Transport infrastructure creates opportunities for firms to buy and sell not only in neighbouring markets but also in the entire world. As governments eliminate import quotas and reduce import tariffs, transport becomes more important as a source of further gains in trade. Although global transport costs have been falling over the long term, further progress is important. For Chile and Ecuador transport costs to the United States are now 20 times larger than US tariffs (Clark, Dollar and Micco, 2002). If they could reduce their transport costs by 10 per cent, they could expect to increase their trade by 20 per cent (Limão and Venables, 2001). Other evidence suggests that they would also grow faster (Radelet and Sachs, 1998).

Transport costs depend on distance, so countries far from rich markets in Europe, North America, and East Asia face a disadvantage they can do nothing about. Yet poor infrastructure has been found to account for 40 per cent of the cost of transport in the average country and 60 per cent in landlocked countries. So while distance accounts for much of transport costs, shipping goods from efficient ports, such as those in Hamburg and Rotterdam – or inland cities benefiting from good infrastructure, such as Ankara and Vienna – is cheap for the distance. According to one study a country could lower its transport costs by an amount equivalent to moving several thousand kilometres closer to other countries if it could improve its transport (and telecommunications) infrastructure from the median to the 75th percentile (Limão and Venables, 2001).

Reducing transport costs requires paying attention to particular transport modes, such as ports and roads. Yet governments should not lose sight of the links among different modes: ports and airports, for example, become more valuable when served by good roads

and railways. Transport costs are also affected by factors other than transport infrastructure, such as whether telecommunications systems allow companies to track their goods in transit and how quickly goods are cleared through customs.

### **Ports – many types of competition**

More than 80 per cent by weight of the trade of developing countries goes through ports (World Bank, 2004). The efficiency of those ports affects exporters and importers directly and almost all firms indirectly. Improving one measure of port efficiency from the 25th to the 75th percentile – achievable in part by reducing the influence of organised crime – has been found to reduce shipping costs by more than 12 per cent (Clark, Dollar and Micco, 2002). As with improvements in other transport infrastructure, the reduction in costs is equivalent to moving thousands of kilometres closer to trading partners (Inter-American Development Bank, 2001).

Unlike the customers of electricity and telecommunications utilities, port customers are mainly firms, not households, which makes tariff setting less politicized. Ports, however, require immobile investments and often have market power, so they face many of the challenges common to infrastructure services. Under public ownership and restrictions on competition within and sometimes between ports, they have tended to be overstaffed, have restrictive labour practices, act as a magnet for corruption – and as a result offer slow and expensive service to firms (see, for example, Estache and Carbajo, 1996).

To improve the efficiency of ports, governments have tried to expose them to more competition, often while introducing private participation (Box 9.4). Colombia and

#### **Box 9.4. Port reform in Colombia and India**

Colombia and India show two ways of confronting the challenges posed by port reform. In Colombia port efficiency had become a major issue by the early 1990s. Early proposals involved the re organisation of Colpuertos, the state-owned company, but not private participation. President Gaviria, however, favoured a bolder approach and raised the issue in his inaugural address in 1990. Legislation to allow private participation in ports, including severance packages for workers, passed within 60 days. The overall program – liquidating Colpuertos, establishing new policymaking and regulatory bodies, concessioning the five major ports to private firms, and introducing competition in stevedoring in each port – was completed in three years. The combination of competition and private participation led to impressive improvements in performance.

India approached port reform differently from Columbia. Each of the 12 major ports in India is administered by a Port Trust representing various interest groups. Port reform began with the issuance of a new policy framework in 1994 and guidelines for private participation in 1996. Private participation was to start with the concessioning of the container terminal at Jawaharlal Nehru Port, established in 1989 as a satellite port to Mumbai. The implementation of reforms was left to the ports, and the Jawaharlal Nehru Port Trust (the majority of whose trustees represented the government or labour) chose to engage the main stakeholders in the reform process and to protect the interests of labour by keeping the existing port under public ownership. But they did allow a new private terminal to compete with it. The competition improved performance, with pre-berthing and turnaround time falling from around 11 days in 1996 to less than 3 days in 2002.

Source: Navarrete (2004) and Ray (2004).

Argentina split their national state-owned companies into several separate companies that compete with each other for some services. Governments can also create competition within a single port in services not inherently monopolistic: different terminals in a port can sometimes compete with each other, and different stevedoring companies can sometimes compete at the same terminal.<sup>11</sup>

The combination of private participation and increased competition has led to better services (Galal, Jones, Tandon and Vogelsang, 1994). In Colombia average vessel waiting time fell from 10 days before privatization and competition to a matter of hours afterward, throughput per hour increased, and the ports moved to all-year, all-day operation (Gaviria, 1998). In Argentina, the average stay fell from 72 hours to 33, throughput per worker rose from 900 tons to 4 850, and capacity increased fivefold (Trujillo and Serebriskey, 2003).

### Roads

Almost all goods are transported by road at some stage, making a country's road network a critical part of its infrastructure and the investment climate (Box 9.5). Not surprisingly, the extent of the network has been found in many studies to be associated with better economic performance. In Latin America, a 10 per cent increase in the length of roads per worker has been estimated to increase GDP per worker by nearly 2 per cent (Calderón and Servén, 2003). Not all roads are equally valuable, of course; in the United States the interstate road building of the 1950s and 1960s seems to have significantly

#### Box 9.5. The benefits of rural roads in Morocco and elsewhere

When built in the right locations (and not “roads to nowhere”), good roads can create substantial new opportunities for entrepreneurs in rural areas and small towns, as illustrated by a Moroccan government program to pave gravel roads and dirt tracks. Upgrading the roads meant they were usable all year round, causing less damage to the vehicles using them. The new roads allowed farms and other firms to move their goods more often and more cheaply. In some cases the time it took to get to rural markets fell by half. The cost of shipping a truckload of merchandise also fell by half. In the areas benefiting from the road upgrading, the land is more productive, and the volume and value of agricultural produce is higher. As it became easier to ship produce quickly without damaging it, farmers shifted from low-value cereals to high-value fruit. As the price of bringing goods to the farms fell, farmers used more fertiliser. Improvements in the agricultural economy spurred the growth of other business. Off-farm employment grew twice as fast as in areas not benefiting from road improvement. The estimated economic rate of return to the projects ranged from 16 to 30 per cent. As is often the case, the improvement in infrastructure did not benefit only firms. It made it easier for children to go to school and, by making the delivery of butane more affordable, reduced the need for women and girls to collect firewood. After the road improvements, primary school enrolment rose from 28 per cent to 68 per cent. The Moroccan experience is not an isolated case. Recent work by the International Food Policy Research Institute suggests that Uganda's investment in rural feeder roads connecting farmers to otherwise remote markets has high returns in agricultural growth and rural poverty reduction. In China investment in rural roads is socially profitable. In India such investment is the most socially productive form of public investment in reducing poverty.

Source: World Bank (1996); Fan, Hazell, and Thorat (1999); Fan, Zhang, and Rao (2004); Fan, Zhang, and Zhang (2002).

boosted productivity, while recent spending on roads has had only modest benefits (Fernald, 1999). Even so, the evidence suggests that governments should pay close attention to the extent and quality of their road networks. The challenges relate to planning appropriate network expansion, executing the required investment and maintenance, and working out how best to pay for it.

All the typical challenges are more difficult because the transaction costs of imposing user fees (tolls) to fund roads are high, at least on city streets and rural roads. Even on intercity highways, where the transaction costs are lower, user fees remain uncommon. So prices rarely ration demand on congested roads, cover the costs of maintenance, or signal that new capacity is needed. One avenue for tackling these problems is thus to increase the use of tolls. The advent of electronic tolls and related information technology is making direct pricing feasible on more roads and, in the long term, it may make the road industry much more like other utilities. In the near future, however, only a small proportion of roads will have tolls. Therefore, many governments focus on using other sources of revenue linked to road use to pay for roads, such as use-related license fees and especially fuel taxes.

Many governments are assigning funds from fuel taxes and other sources to a road fund that operates with some autonomy from ministers. The funds are allocated to investment and maintenance projects according to a set of principles established by political authorities. Road users may be represented on the agency, and the agency may consult with road users and others on the allocation of funds. As in other areas, designing a system that gives the managers of the road fund the information, incentives, and capability to make decisions aligned with the public interest is crucial.

Developing countries often spend too little on maintenance compared with investment, perhaps because of donors' traditional preference for subsidizing capital rather than outputs, and perhaps because large investment projects offer opportunities for politicians to cut more ribbons or for decision makers to collect bigger bribes. Countries afflicted with higher levels of corruption seem to spend more on public investment in roads and other infrastructure, but less on maintenance, and seem accordingly to have poorer quality roads (Tanzi and Davoodi, 1997). There is no simple answer, but an emphasis on making decision-making more transparent can help reduce corruption and improve decisions. Governments can consult on, publish, and explain the principles for allocating funds and the decisions implementing those principles, and they can use open and transparent processes for awarding contracts to do the work.

Road agencies that decide on the allocation of funds need not build or maintain roads themselves. More road agencies now contract out such work to private firms, under output-based contracts. In Argentina, the highway authority maintains many roads by letting long-term maintenance contracts that require private firms to maintain roads to a defined standard. One review concludes that the program reduced the proportion of roads in poor condition from 25 per cent to less than 5 per cent, reducing road users' costs by more than 10 per cent (Liavtaud, 2001).

### 9.3.4. Financing investment in water<sup>12</sup>

**Has the government evaluated the investment needs in water required to support its development goals? To what extent is the private sector involved in water management, supply and infrastructure financing?**

From the perspective of a country's investment climate, water matters for three reasons. First (and foremost), water is essential for a healthy population. Second, water serves as a direct input for certain businesses (e.g. soft drinks). Third, the water industry itself is an important destination for investments, public and private, domestic and foreign. The Millennium and Johannesburg Summits, and the publication of the "Camdessus Report", have helped to raise the profile of the water sector. However, other political and economic trends have worked in the opposite direction. Continued low incomes have impeded many developing countries from increasing investment in the water sector. Official Development Assistance flows have continued to decline, and are now at their lowest level in recent years. Commercial lending and private investment have also been scaled back significantly as the private sector has become more risk averse vis-à-vis the water sector, following a range of high-profile disputes on contract terms between the private sector and public sector agencies.

National governments are likely to remain the major source of finance, particularly capital investments: in the mid 1990s, they accounted for about two-thirds of such investments in the water sector. However this has a number of perverse effects, and shifting the financing burden from taxpayers to users would have several advantages: it would reduce demand and hence investment needs; it would help put the sector on a more financially sustainable basis; and it would promote better governance by enhancing accountability. The user pay principle does not forsake a government's ability to put in place policies designed to ensure access to water as a social goal. Devolution of responsibility, as well as the (financial) means to fulfil that responsibility, is also crucial. This is complex, but successful devolution is associated with transparent local government budgets and financial statements by water utilities, a multi year framework for annual budgets of local governments, a mid-term rolling investment plan, project selection based on clear rules, good creditworthiness that facilitates access to local capital and financial markets, and the ability to manage debt. Independent assessments of public investment programmes can help to enhance their credibility, and help attract additional finance.

For the foreseeable future, private sector operators are more likely to be a source of managerial and technical know-how rather than investors in the water sector in developing countries. However, more could be done to engage the private sector in other ways, particularly by improving municipalities' access to capital and financial markets. This was the approach followed in many OECD countries where borrowing from commercial banks (Europe) or issuing municipal bonds (North America) were important mechanisms for developing municipal infrastructure, including water and sanitation. Some interesting experience is developing with the use of municipal development funds in developing countries that blend capital from domestic and external sources for on-lending, thereby contributing to the deepening of local credit markets. Such approaches facilitate the transition to municipalities borrowing from banks directly or issuing bonds. The

lessons learned from the US Development Credit Agency, for example, should be reviewed with a view to replicating successes more widely.

There is no “magic bullet” to solve the problem of financing water. Although reform and innovation is needed in financial architecture, a “paradigm shift” is unlikely. All existing financial sources will need to increase if the internationally agreed targets are to be realised. Different sources of finance will, however, need to be blended in “smart” ways to enhance synergies, avoid crowding out other sources, and to maximise leverage on the total flows.

Useful tools to facilitate smart blending of potential financial sources and instruments have recently been developed and applied with positive results. The FEASIBLE model developed jointly by the OECD/EAP Task Force and Denmark is a tool to help rationalise financing strategies of the water sector in several regions and countries in Central and Eastern Europe, Central Asia and China. At a project level, USAID has experience in financing water infrastructure using partial loan guarantees and technical assistance for pooled projects, which has helped these projects tap debt markets in local currency.

The elaboration of financing strategies should not be regarded as a one-off exercise; nor is it purely an analytical exercise. It should be treated as an iterative process, refined and modified in the light of data and experience, enabling decision-makers to make more informed trade-offs. All the main stakeholders should be involved in the process, and there should be regular feedback between policy makers and those involved in implementation and financing, especially if specific policy changes are needed.

### **9.3.5. Financial services: a special form of infrastructure**

**What process does the government use to evaluate the capacity of the financial sector, including the quality of its regulatory framework, to support effectively enterprise development? What steps has the government taken to remove obstacles, including restrictions on participation by foreign institutions, to private investment in the development of the financial sector?**

Developed financial sectors provide payment services, mobilize savings, and allocate financing to firms wishing to invest. When they work well, they give firms of all types the ability to seize promising investment opportunities. They reduce firms’ reliance on internally generated cash flows and money from family and friends – giving them access to external equity and debt, something that smaller firms in particular often lack. They allow poor entrepreneurs to grow their businesses, even though they have little money themselves. Well-functioning financial sectors also impose discipline on firms to perform, driving efficiency, both directly and by facilitating new entry into product markets. And they create opportunities for firms and households to manage risks. As a result, financial sector development leads to faster growth in productivity and output. Doubling private credit as a share of GDP is associated with an increase in average long-term growth of almost two percentage points.<sup>13</sup> Developed financial sectors also reduce poverty – directly and through their role in economic growth (Li, Squire and Zou, 1998).

Governments are learning from the past to overcome the problems holding back the development of financial sectors and taking new approaches that involve five key elements:

- ensuring macroeconomic stability;
- fostering competition;
- securing the rights of borrowers, creditors, and shareholders;
- transparency and facilitating the flow of information;
- controlling risk taking.

### ***Ensuring macroeconomic stability***

Macroeconomic stability – more specifically, low inflation, sustainable debt, and realistic exchange rates – is fundamental to the effective functioning of the financial sector. Macroeconomic instability increases the volatility of interest rates, exchange rates, and relative prices, imposing additional costs and risks on financial institutions and their clients. High inflation erodes the capital of financial institutions and makes it difficult to mobilize savings or to expand services. High fiscal deficits increase interest rates and spreads. The increase in holdings of government paper by banks, mutual funds, and investment funds crowds out credit to the private sector, because these providers of finance find it more profitable to hold government securities than to make loans to firms.

### ***Fostering competition***

Restrictions on competition between providers of finance can mean slower economic growth, reduced employment growth, and slower exit of mature firms in concentrated bank markets (see, for example, Black and Strahan, 2002 and Cetorelli, 2003). Policies that impede competition – such as entry restrictions, restrictions on foreign banks, and state ownership of banks – hurt the financial system and economic performance. In markets where the financial system is established and the institutions responsible for financial sector regulation function well, removing barriers to competition has been shown to improve banking stability, reduce interest margins, and expand access to finance (Demirgüç-Kunt, Laeven and Levine, 2003). In a more competitive financial sector environment, the organisation and functions of the regulation institutions themselves may also require some modifications.

One way to foster competition is to prudently issue new domestic banking licenses. In the United States the wave of mergers and acquisitions in the 1980s and 1990s created large banks, which may have reduced lending to new and small firms. Yet fairly liberal licensing policies allowed new banks to form in the United States to help offset any lack of supply and keep interest margins low (Berger, Demirgüç-Kunt, Levine and Haubrich, 2004). Competition is also benefiting from technological innovation, as in India's rural areas (Box 9.6).

Policymakers are sometimes concerned that the competition from foreign banks will weaken the banking system. However, evidence shows that foreign banks improve the efficiency and performance of domestic banks and reduce interest rate margins. This is what happened when the Philippines allowed more foreign bank competition – interest rate spreads fell and the efficiency of domestic banks increased (Unite and Sullivan, 2003). Foreign banks can also use their cross-border experience to introduce innovations. Citibank responded to the scarcity of good credit information on individual firms in many

**Box 9.6. Expanding access to finance in rural areas: new approaches in India**

Firms operating in rural areas often have a hard time getting financing, but financial innovations and new technology are making a difference, as India shows. The agricultural agency model uses a third-party intermediary to coordinate the financing of inputs, the delivery of produce to the end buyer, and the repayment to the bank before the farmer receives the proceeds. The intermediary improves information by advising farmers on crop decisions that affect the quantity and quality of the produce. The intermediary can also negotiate better prices on final goods than individual farmers can. The Kisan Credit Card, offered by commercial, rural, and cooperative banks, is a technological innovation in providing credit to the agriculture sector in India, including small farmers. Since its introduction in 1998-99, some 31.6 million cards had been issued by April 2003. Though not truly credit cards, the cards have advantages for borrowers and lenders. They make it easier to get credit and renew loans, once the initial screening has been done. They reduce the number of visits to branches, and they increase the operation of accounts at designated supply branches. The increasing sophistication of financial markets is helping farmers smooth their incomes in the face of fluctuating prices and harvests. Fledgling futures markets are allowing them to fix the prices they will receive in advance. Innovations in insurance are allowing them to protect themselves from losses caused by poor weather. The payouts are based on an index measuring local weather, which allows an objective determination of the payout and maintains farmers' incentives to maximize their output despite poor weather.

Source: Hess and Klapper (2003) and World Bank (2004).

developing countries by finding other ways to assess creditworthiness. The company identifies industry segments with the potential to grow quickly and then seeks out borrowers in those segments. In India it has about 500 customers in 15 selected industrial segments.

A second concern is that foreign entry might reduce access to financing by small and medium firms, due to the adoption of different credit standards, also known as "cherry picking" (see, for example, Strahan and Weston, 1998). But there is also evidence that foreign banks do not discriminate against SMEs. In Chile and Peru, foreign banks loaned more to small firms than domestic banks did, and in Argentina and Chile, real growth in lending to small firms was higher for foreign banks.<sup>14</sup>

While bank-to-bank competition is important, other sources of finance can also strengthen competition. For example, firms with access to public bond financing have 35 per cent more debt (after controlling for other firm characteristics) (Faulkender and Petersen, 2003). Non-bank financial intermediaries can also broaden financial markets. For example, leasing companies and finance companies often finance start-up firms unable to raise funds from banks. As non-bank financial intermediaries develop, they often securitize their assets, further deepening securities markets (Carmichael and Pomerleano, 2002). Pension funds and contractual savings can also compete to supply funds, increasing banking efficiency and lowering the cost of capital (Impavido, 2001). Finally, commercial microfinance is beginning to have an impact on financial services for micro-entrepreneurs and poor households (Box 9.7).

How, then, to encourage the development of non-bank lenders? By not over-regulating lenders that do not take deposits, and by harmonising the tax treatment of financial

### Box 9.7. Commercial micro-financiers enter the market

Micro-financiers provide thrift, credit, and other financial services of very small amounts, mainly to the poor, in both rural and urban areas. They offer an alternative to banks, which in most developing countries serve only 5-20 per cent of the population. They use non-collateralised loans to deliver short-term working capital to micro-entrepreneurs and households. One of the key characteristics of microfinance, pioneered by Grameen Bank in Bangladesh and now replicated throughout the developing world, is substituting joint liability, access to future loans, and frequent repayment periods for traditional collateral. These alternatives to collateral are especially important for borrowers who do not have assets to pledge – and for lenders who operate in countries with weak secured-lending laws and enforcement. Microfinance has demonstrated its success in reducing poverty. By 2002 more than 1 000 microfinance programs around the world had reached about 30 million borrowers, lending about \$3.5 billion, with an average loan size of \$280. Microfinance has helped the poor increase household income, build viable businesses, and reduce their vulnerability to external shocks. It can also empower the poor, especially women. Subsidised microfinance relying on donors, however, is unlikely to be big enough to reach all potential borrowers. That will require commercial microfinance that mobilises the savings of the general public, raising questions about the appropriate role for governments. Governments are sometimes tempted to mandate below-market interest rates, but this usually causes more problems than it solves. The removal of interest rate controls in Indonesia in 1983 allowed Bank Rakyat Indonesia to experiment with new financial products, most notably market-priced working capital and investment capital loans. By 1986 its microfinance business had turned from a chronic loss-maker to a profitable department. Governments can also eliminate unfair competition from public institutions and change regulations to facilitate competition on a level playing field. In particular, they can allow micro-finance institutions to transform themselves into licensed financial institutions and facilitate the provision of microfinance by commercial banks. In 1992 ProDem, a microfinance nongovernmental organisation (NGO), became BancoSol, the first commercial bank in Latin America dedicated to microfinance. The transformation enabled the expansion from 14 300 clients to 70 000 within five years of commercialisation, and by 1998 BancoSol was the most profitable licensed bank in Bolivia. As in other segments of the credit market, allowing the sharing of credit information among micro-lenders can foster microfinance lending, especially by commercial lenders that may not have pre-existing relationships with borrowers in rural areas. South Africa has two private credit bureaus operating in the microfinance sector. Information can be obtained by touch-tone phone, and the microfinance bureaus charge much lower fees than larger bureaus – making them affordable even for small micro-lenders.

*Source:* Ghatak and Guinnane (1999); Morduch (1997); Morduch, Littlefield, and Hashemi (2003); Hubka and Zaide (2004); CGAP (1997); Klapper and Kraus (2002); and [www.mixmarket.org](http://www.mixmarket.org).

products. In Turkey, factoring companies pay a 5 per cent transaction tax while banks pay only 1 per cent (Ekmekcioglu, 2003). Pension rules can also be liberalised as capital markets mature and regulatory systems develop. For instance, investment in more asset classes, such as equities, can be allowed. Better insurance regulations can also encourage insurance providers to innovate and operate efficiently – and to create a competitive market open to new firms and the exit of insolvent firms (Impavido, 2001). Mutual funds can be developed under strong accounting and auditing rules and strict disclosure requirements.

## *Securing the rights of borrowers and creditors*

**What laws and regulations are in place to protect the rights of borrowers and creditors and are these rights adequately balanced? Is a registry system in place to support the use of property as collateral and to expand business access to external sources of credit? What data protection and credit reporting laws have been enacted to facilitate the flow of information and improve financial sector stability, thereby enhancing the investment environment?**

Governments can mitigate the problems for creditors and shareholders – and increase their willingness to provide finance – by ensuring that the parties have clearly defined rights and can enforce them (see, for example, Black, Jang and Kim, 2003). A strong legal environment and strong enforcement are important for access to external finance and the development of financial sectors. When creditor rights are weak, financial institutions will be less willing to extend credit to firms that have a high risk of default. When shareholders' rights are weak, investors will be less willing to provide firms with equity (Shleifer and Wolfenzohn, 2002).

Securing borrowers' property rights to assets they can pledge as collateral (including land) can increase access to financing and investment.<sup>15</sup> Secure property rights also allow firms to borrow longer-term and encourage more foreign lending (see, for example, Claessens and Laeven, 2003). The cost of external financing is also lower in countries with stronger property rights protection and less corruption. A study of 37 countries found that if a country improved its property rights protection from the 25th to the 75th percentile, loan spreads would decline by 87 basis points (Bae and Goyal, 2003).

Strong creditor rights – stemming, say, from laws guaranteeing secured creditors' priority in the case of default – allow lenders to reduce their risk of future losses, therefore encouraging them to make more loans. For example, one explanation offered for the low level of private credit in Mexico is that many social constituencies must be repaid before secured creditors, often leaving creditors with few assets to back their claims. Studies in the United States show that small firms are 25 per cent more likely to be denied credit if they are in states that provide creditors with less protection when the borrower is bankrupt (Berkovitz and White, 2002). The effectiveness of creditor rights also depends on strong enforcement of the laws. Russia, for example, has “imported” strong laws protecting shareholder and creditor rights, but the lack of an effective legal system to enforce these laws has been a big impediment (Claessens and Laeven, 2003). Laws and registries permitting the collateralisation of movable property can offer even greater benefits to smaller firms that are less likely to have fixed assets (Box 9.8).

### *Transparency and facilitating the flow of information*

One way lenders can address their information disadvantage is to collect information about their customers directly through costly screening and monitoring. Lenders in most developed countries – and more now in developing countries – can also rely on reports from credit information bureaus. These reports include loan payment histories that allow lenders to use information on how borrowers met past loan obligations to predict better future loan performance. Credit reporting also improves borrowers' incentives to repay

**Box 9.8. Establishing a registry for movable collateral in Romania**

Legal impediments previously restricted the use of movable property as collateral in Romania and thereby limited the access to credit. First, the system did not allow lenders to access information on whether other creditors or lenders had claims on the same goods. Second, the enforcement of agreements and repossession of collateralised goods was a long process (often exceeding the economic life of the movable good). A new law, adopted in 1999, introduced a system for registering security interests. The registration, valid for five years, is required to secure new collateral. The law provides for both stronger enforcement and a new electronic archive of outstanding liens. This online collateral registry includes all registered security interests. Ten operators and 366 agents are licensed to register collateral in the electronic archive. The supervisory authority provides guidelines on the archive's operation and clarifies rules and regulations. The archive functions efficiently, allowing financial intermediaries to access information about creditors, debtors, or assets securing a commercial or civil transaction in the country. This information, accessible by people all over the world, presents huge cost-saving and time-saving opportunities – improving the investment climate.

Source: Fleisig (1998) and Stoica and Stoica (2002).

loans promptly, because late payment with one lender can result in sanctions by many institutions (Miller, 2003).

Credit bureaus can increase bank lending and reduce default rates. They also benefit small and new firms by alleviating credit rationing based on the lack of a credit history (Galindo and Miller, 2001). In one survey more than half the credit bureaus indicated that credit history information reduced the processing time, costs, and default rates in their country by more than 25 per cent (World Bank, 2003). On average, countries without credit registries have a private credit-to-GDP ratio of about 16 per cent, those with publicly owned credit registries about 40 per cent, and those with private bureaus about 67 per cent (Love and Mylenko, 2003).

Governments can create a supportive environment for credit bureaus by enacting and enforcing data protection and credit reporting laws that allow the sharing of credit information. The laws can safeguard consumer rights by allowing consumers to obtain data about themselves, requiring disclosure of information on who gets the credit report, and providing mechanisms for resolving disputes and correcting erroneous information. Laws that allow the sharing of both positive and negative information do more to improve lenders' information and thus facilitate more lending. Credit reports that contain only negative information (such as cases of late payment) have less predictive power than reports with both positive and negative information (see, for example, Barron and Staten, 2003). Because credit reports are more important for borrowers with limited collateral, limits on data collection disproportionately harm smaller borrowers.

**Controlling risk-taking**

Governments limit risk-taking by banks and other financial institutions for various reasons. Limited liability can cause banks to take excessive risks and, unlike in other industries, such problems can lead to systemic crises – failure of one bank can lead to a run on other banks, undermining the payments and credit system. Deposit insurance can reduce the risk of bank runs. But unrealistic expectations of government bailouts from

explicit or implicit deposit insurance can make the problem worse, by causing depositors and others to monitor banks less carefully.

Prudential oversight limits the financial risks banks can take by requiring them to diversify and maintain at least a minimum ratio of capital to loans. Prudential supervisors who monitor banks on behalf of depositors in accordance with international standards can take action to avert problems. Prudential oversight thus reduces the risk of government bailouts and systemic banking crises, but doesn't always work in practice. Host countries' authorities should also take advantage of information sharing arrangements to facilitate adequate supervision of foreign financial institutions operating in the countries.

As in other areas, choosing appropriate regulations and administering them properly requires financial resources and technical capacity that is often scarce. Further, effectively regulating risk-taking calls for a cautious approach, adapting it to fit the institutional features of the country at hand. Some studies have cast doubt on the effectiveness of prudential regulation and supervision, identifying problems with corruption and clientelism. In these situations, intensive official supervision may put a premium on the need for political connections in order to get finance, rather than the credit worthiness of the investment opportunity (see, for example, Rajan and Zingales, 2003).

Options exist that strike a balance between prudential oversight and market mechanisms that strengthen the ability of depositors and other stakeholders to monitor banks directly – for instance, through “sunshine” regulations that force information disclosure. The effectiveness of private monitoring depends on how well information disclosure regulations are enforced, whether rating agencies compete with each other, the proportion of state ownership of banks, and the nature of deposit insurance (Caprio and Hanohan, 2003).

Commercial rating companies now provide some form of rating for 439 banks in 50 developing countries. There is also evidence that market discipline can work well in developing countries. However, information constraints in many developing countries raise questions about how well market monitoring can work (Stiglitz and Yusuf, 2001) and underscore the need for prudential oversight and a focus on maintaining systemic stability.

## Notes

1. The chapter on tax policy highlights the potential for a virtuous circle between private and public investment, namely that good infrastructure attracts private investment, which in turn contributes to government tax revenues, which in turn can be used to finance more efficient infrastructure. The critical question for governments is how to “break into” this virtuous circle.
2. Maritime and air transport are not discussed in this paper.
3. For a discussion of the problem and the history of private infrastructure provision, see, for example, Gomez-Ibanez and Meyer, 1993.
4. These issues are dealt with in greater detail in the chapters on investment policy, public governance, and tax policy. For empirical evidence of the effect of various features of the investment climate on infrastructure, see, for example, Bergara, Henisz and Spille, 1998; Henisz, 2002 and Henisz and Zelner, 2001.
5. On this issue, see also the chapter on investment policy.
6. See also the chapter on investment promotion and facilitation on the use of the Internet to promote transparency.
7. The chapter on competition policy deals with this issue in more detail in the context of “exclusivity” as a form of investment incentive.

8. Additional benefits of well designed private participation can also include bringing in areas of expertise in which the private sector usually has a clear comparative advantage, and more effective allocation of the various risks associated with the planning, construction and operation of the infrastructure, which are often crucial in determining whether a project is built or not, and how successfully it is operated.
9. The issue of trade in services is dealt with more extensively in the chapter on trade policy.
10. For more information on the role that competition authorities can play in avoiding abuse of dominant positions, see the chapter on competition policy.
11. See World Bank and PPIAF, 2003 for a discussion of these options.
12. For further information on this issue, see OECD (2004), *Financing Water and Environmental Infrastructure for All: Some Key Issues*, available at [www.oecd.org/dataoecd/36/53/30589212.pdf](http://www.oecd.org/dataoecd/36/53/30589212.pdf). Additional resources are available at <http://webdomino1.oecd.org/COMNET/DCD/PovNet.nsf>.
13. See Caprio and Honohan (2003), The authors acknowledge that credit bubbles can have a negative impact on growth.
14. Clark, Cull, Peria and Sanchez (2003), Also, BIS (2004), synthesise the empirical literature on this and other issues associated with foreign bank entry.
15. This issue is further explored in the chapter on investment policy.

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