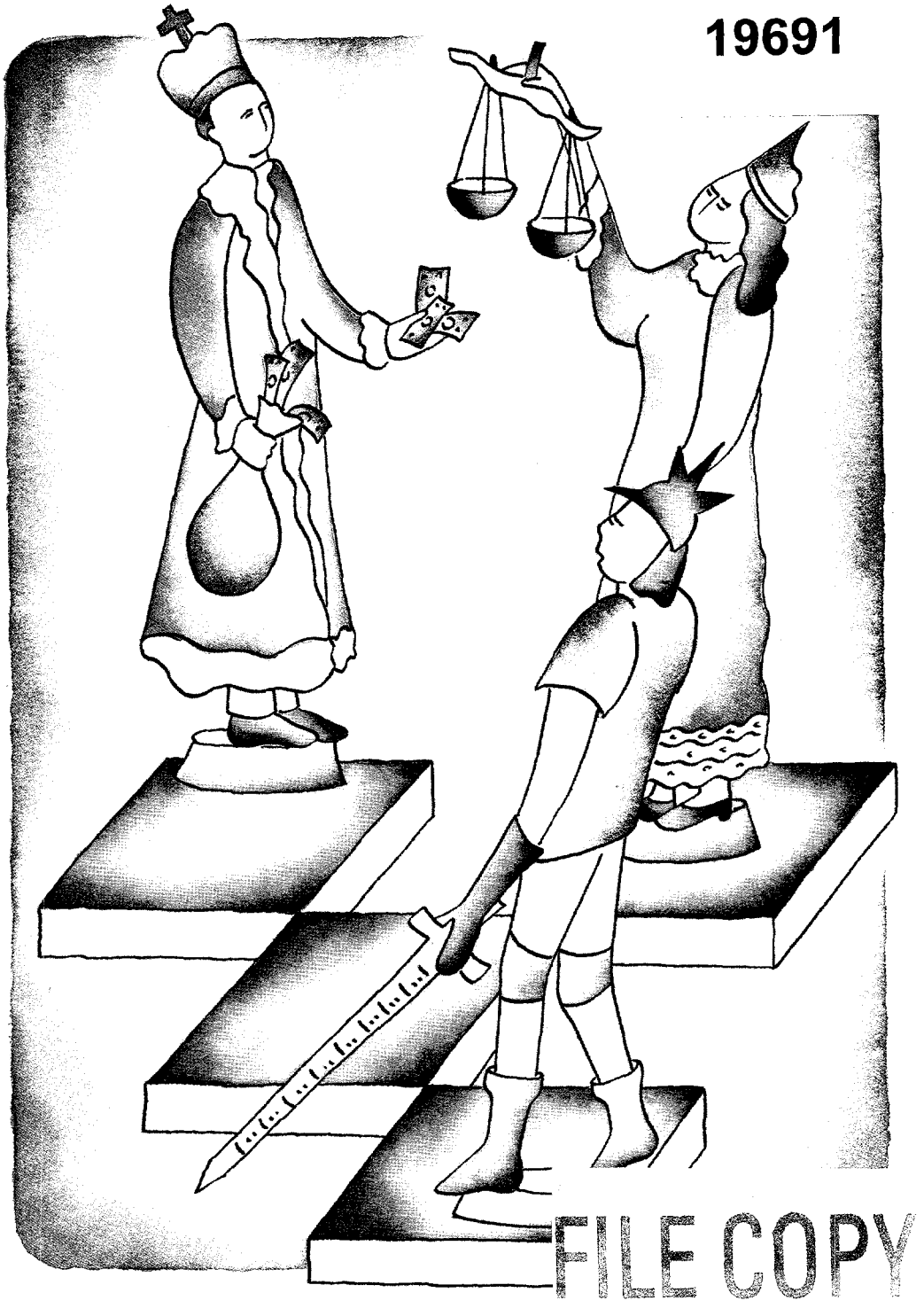
PUBLIC POLICY FOR THE SEPTEMBER 1999

Privatesector

GOVERNANCE

INFRASTRUCTURE



The World Bank Group ▪ Finance, Private Sector, and Infrastructure Network

Private Sector is an open forum intended to encourage dissemination of and debate on ideas, innovations, and best practices for expanding the private sector. The views published are those of the authors and should not be attributed to the World Bank or any of its affiliated organizations. Nor do any of the conclusions represent official policy of the World Bank or of its Executive Directors or the countries they represent.

Private Sector is a quarterly publication distributed free of charge. To subscribe, please send your name, mailing address, telephone number, and fax number to the editor (Suzanne Smith, The World Bank, 1818 H Street, NW, Washington, D.C. 20433, email: ssmith7@worldbank.org, fax: 202 522 2961, telephone: 202 458 1111).

Most Notes from *Private Sector* are also available on-line. There is full text in HTML format for on-screen viewing or a downloadable file in Adobe's PDF format (http://www.worldbank.org/html/fpd/notes/).

PUBLIC POLICY FOR THE

Private**sector**

For a free subscription please fill out this card

Return to Suzanne Smith, Managing Editor, Public Policy for the Private Sector, Room F11K-208, The World Bank, 1818 H Street, NW, Washington, DC 20433 (fax: 202 522 2961; email: ssmith7@worldbank.org)

FIRST NAME, LAST NAME

JOB TITLE

COMPANY

STREET ADDRESS

CITY STATE

POSTAL CODE COUNTRY

EMAIL

WORK PHONE WORK FAX

Please select topics of interest:

- ❑ utility regulation
- ❑ utility privatization
- ❑ energy markets
- ❑ water markets
- ❑ transport privatization
- ❑ information infrastructure
- ❑ project finance
- ❑ municipal finance
- ❑ capital market development
- ❑ bank restructuring
- ❑ sovereign risk management
- ❑ business law
- ❑ other

Affix
Postage
Here

PUBLIC POLICY FOR THE
Private sector

Suzanne Smith, Managing Editor
Room F11K-208
The World Bank
1818 H Street, NW
Washington, DC 20433 USA

Dear Readers,

This issue deals with two main topics—corporate governance in the context of the East Asian financial crisis and the potential for stiffer competition to improve infrastructure services.

The East Asian financial crisis has shown how systemic failure of corporate governance can exacerbate macroeconomic difficulties. Above all, the crisis highlights the dangers of poor financial disclosure, inconsistent accounting standards, perfunctory board oversight, excessive corporate leverage, bad banking practices, thin and unregulated capital markets, and lack of expeditious bankruptcy and takeover laws. Several Notes urge policymakers to make more use of market-based mechanisms to improve governance.

Writing about private participation in infrastructure, several authors challenge reformers in developing countries to reconsider giving private providers exclusive rights to provide services in specified areas. Moving away from exclusivity is essential if the reformers are serious about improving service for very poor consumers, especially those living in slums and urban peripheries.

Suzanne Smith

Managing Editor

PUBLIC POLICY FOR THE
Private**sector**

Quarterly No. 18, September 1999

Managing Editor:
Suzanne Smith
The World Bank
1818 H Street, NW
Washington, D.C. 20433

Telephone: 202 458 7281
Fax: 202 522 2961
Email: ssmith7@
worldbank.org

Cover illustration by Ruth Sofair Ketler. Photo on page 4 by FPG International. Photos on pages 54 and 56 by 1994 Photodisc.

Printed on recycled paper.

Protecting Minority Shareholders in Closely Held Firms

Chad Leechor

In all but a few advanced countries most publicly listed corporations are closely held, with the main shareholder typically playing an active role in management. In emerging markets firms with active owner-managers provide effective business solutions where business environments are characterized by corruption and weak contract enforcement. But they also pose a significant risk of asset expropriation for minority shareholders. To promote investor confidence and develop successful securities markets, this risk must be mitigated. Some policy analysts argue that the way to do this is to restrict ownership concentration. Such a step could cause serious harm. This Note argues instead for mitigating risk by strengthening corporate laws to safeguard minority shareholdings, by ensuring that markets for corporate control work, and by enforcing disclosure requirements for firms and ethical standards for public officials.

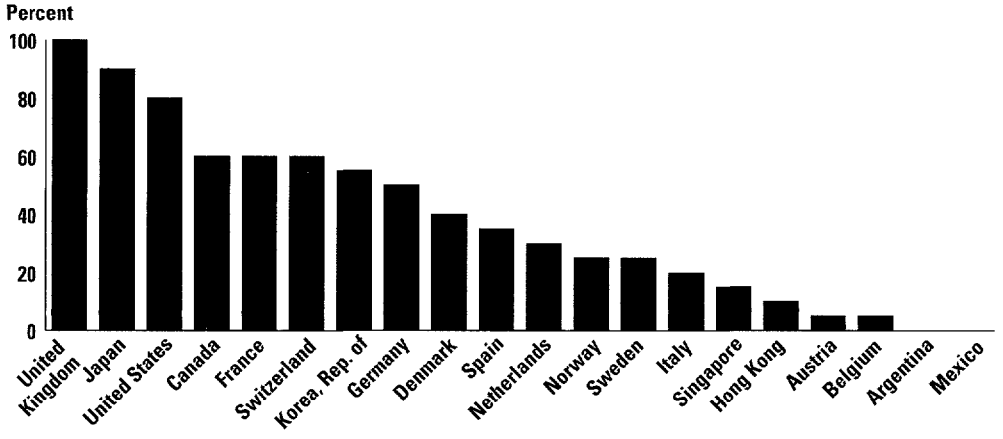
Modern publicly traded corporations are commonly perceived to have widely dispersed ownership and a separation of ownership and control, with the control delegated to professional managers. The owners of the firm rely on the board of directors to supervise the managers, voting only on major strategic decisions. The key issue of corporate governance in this situation is to ensure that managers act in the best interest of the shareholders. The board therefore plays a pivotal role.

In reality, in all but a few advanced markets most publicly traded firms are closely held, with the principal shareholder typically playing a very active role in management. The principal shareholder often serves as the chief executive officer or chairman of the board and has the decisive vote in major corporate decisions. In this setting the key issue of corporate governance is more complex: how to prevent the insiders—those who own a large stake and control the firm—from expropriating the assets of minority shareholders.

A study of the world's top twenty-seven stock markets finds that only 36 percent of the largest publicly traded firms are widely held—that is, with no shareholders controlling more than 20 percent of the votes (La Porta, Lopez-de-Silanes, and Shleifer 1999). Most of these widely held firms are concentrated in a few advanced markets, especially the United Kingdom, Japan, and the United States (figure 1). Most large publicly traded firms (64 percent) have a controlling shareholder, which may be a family (30 percent), the state (19 percent), or another firm (15 percent). Among smaller companies the share of closely held firms is higher still.

In most closely held firms ownership is not separated from control. For more than two-thirds (69 percent), a nominee or relative of the controlling shareholder ranks among the top executives (La Porta, Lopez-de-Silanes, and Shleifer 1999). In some emerging Asian markets (such as Indonesia, the Republic of Korea, and Malaysia) that share is about 80 percent (Claessens, Djankov,

FIGURE 1 SHARE OF WIDELY HELD FIRMS IN THE TOP TWENTY LISTED FIRMS, DECEMBER 1995



Source: La Porta, Lopez-de-Silanes, and Shleifer 1999.

and Lang 1999b). Insiders use a variety of instruments to acquire and entrench their position, including debt, pyramid schemes, cross-holdings of shares within a business group, and corporate poison pills (see page 9 in this issue).

The risk of insider expropriation

With ownership concentrated among a few large shareholders who also manage the firm, potential investors are naturally concerned about the risk of insider expropriation. The firm's business could be structured to serve the insiders' interest. The compensation paid to insiders could be excessive. Profits could be diverted to the insiders—easily done in most markets. And business transactions may not be at arm's length: sales to related parties might be underpriced, and purchases from them overpriced.

Some self-serving actions by insiders may be perfectly legal. For example, many jurisdictions allow freeze-outs of minority shares—where the controlling shareholder or an acquirer "takes the company private" and pays the minority shareholders a market price that does not reflect the new value arising from acquisition. Some jurisdictions allow the controlling shareholder to issue new shares through private placement and thereby dilute the voting power of outside shareholders.

In response to the risk of insider expropriation, outside investors refrain from investing in closely held firms, or demand a discount on the securities as compensation for the risk (Claessens, Djankov, and Lang 1999a). Where the risk is not adequately checked, the discount can be dramatic, ranging from 82 percent (Zingales 1994) to nearly 100 percent. In advanced securities markets with stronger protection for outside investors, the discount tends to be smaller but still significant (6 to 20 percent). Such discounts depress the valuation of firms' securities, increasing the cost of funds and weakening insiders' incentive to reduce their ownership stake.

The preponderance of closely held firms in most markets has important implications for the development of securities markets. Outside investors have few attractive investment options. In addition, with depressed securities valuation, the firms find it more attractive to rely on the banking system, where they can contain the cost of funds through collateral. Moreover, limited interest in marketable securities hampers the emergence of a deep and liquid market. So foreign investors, often large and prepared to deal with the risk, may nonetheless be unable to invest.

Targeting the risk, not ownership

Despite the risk, the ownership concentration in closely held firms is not necessarily a bad thing. Often it is a response to a variety of business and corporate governance problems.

Ownership concentration eases the job of monitoring and directing corporate management.

With just a few large shareholders, changing management or strategic direction becomes more manageable. And in a difficult business environment—with a murky legal framework, uneven ethical standards among public officials, and inadequate transparency among business partners—direct operational involvement of the major shareholders can safeguard against losses.

Even in the most advanced markets concentrated ownership is found in many leading firms. Here ownership concentration can be important in facilitating corporate restructuring and industry consolidation, which seldom occur at the initiative of existing management, but more often through mergers and acquisitions (Jensen 1993). In addition, securities analysts generally regard significant share ownership by corporate insiders as a sign of commitment—an assessment that enhances the firm's value. Some of the world's most admired companies are closely held, including Microsoft and Berkshire Hathaway (*Fortune*, March 1, 1999).

The prevalence of closely held firms indicates the effectiveness of ownership concentration as a business solution. Thus as long as the risk of insider abuse can be controlled, outside shareholders stand to benefit. So closely held firms pose a policy challenge: the risk of insider abuse must be guarded against—while preserving the many advantages of ownership concentration.

Many policymakers and analysts have suggested that the risk should be controlled by restricting ownership concentration in publicly held firms. But that would be a costly mistake:

- The incentive of a large shareholder to provide intensive monitoring and early strategic redirection would be lost.
- Owners of firms in the dynamic growth phase, reluctant to give up a substantial ownership stake and control, might not sell shares to the public to raise funds for expansion.
- Most critical, restrictions on ownership concentration hamper the market for corporate control. Potential deal-makers might not be allowed, or might find it too costly, to acquire the ownership stake necessary to control and restructure target firms. The threat of a hostile takeover—an external source of discipline for management—would weaken. And corporate governance would suffer.

Experience shows that the risk of insider abuse can be mitigated without limiting ownership concentration.

How to reduce the risk

Mitigating the risk of insider abuse can make a difference—to the investor, the closely held firm, and the securities market. The prospect of more secure returns enhances investors' confidence. Securities markets become more viable, giving insiders an incentive to build the reputation their firm needs to access the markets. As more equities are issued to the public, ownership of firms becomes more dispersed.

Several mechanisms can reduce the risk of insider abuse.

Duty of loyalty

A key tool in reducing the risk is a legal presumption of the duty of loyalty owed by insiders to outside investors. Guided by this doctrine, the judiciary would expect corporate directors to put the interest of the firm, including its outside investors, before their personal interests. For example, no insiders would be allowed to vote on transactions in which they have a personal stake. The relationship between outside investors and corporate insiders is akin to a long-term contract in which the insiders' obligations cannot be precisely delineated in advance. The duty of loyalty addresses this basic difficulty.

This legal principle works best in an established legal system in which members of the judiciary are honest and competent. Developing such a legal system can take many years, but is nonetheless well worth the effort. The duty of loyalty, as a tool for enhancing corporate governance, can be strengthened by rigorous enforcement of contracts and bankruptcy procedures. Since all

business obligations represent more senior claims than those of shareholders, corporate insiders face strong external pressures to be prudent.

Market for corporate control

A functioning market for corporate control also provides a powerful tool for mitigating the risk of insider abuse. Dissatisfied shareholders, active institutional investors, and takeover specialists could all acquire an ownership stake sufficient to remove existing insiders. But the control market can be curbed by anti-takeover devices, including rights plans (poison pills), intercorporate cross-holdings of shares, restrictions on business combination, and control share rules (see page 9 in this issue). The policy challenge is to review the impact of anti-takeover tools and devise remedies.

Transparency

Another safeguard is transparency in corporate affairs, often achieved through disclosure requirements. Transparency helps investors make informed decisions and deters questionable actions by insiders. Adequate disclosure requires compliance with accepted financial accounting standards (IASC or FASB for firms listed on the New York Stock Exchange) and auditing standards, as well as the coverage of material facts, including significant changes in ultimate corporate ownership. But compliance is not always enforced.

Transparency requires the active participation of professional watchdogs and reputational agents, including securities analysts, credit rating agencies, and knowledgeable financial media. Where these services are not available domestically, they can often be imported by liberalizing the financial service industry, allowing local firms to be listed abroad, and permitting local asset managers to invest in foreign securities.

Strong ethical standards

The integrity and professional judgment of insiders are sometimes compromised by political influences. To comply with political directives, corporate insiders may make poor investment decisions or take excessive risks. Enforcing stringent ethical standards and conflict-of-interest laws applicable to public officials can help. In particular, public officials should be prohibited from deriving personal gains or giving preferential treatment to others through the exercise of official power. But this safeguard requires a strong legal tradition and democratic restraints (such as a free press) on the use of political power.

Market liberalization

In some cases ownership concentration reflects broader policy issues, such as protectionism and barriers to entry. These policy distortions could lead to misguided investment, market power, and unusual concentration of wealth. Policy reforms to correct these weaknesses—antimonopoly laws and liberalization of trade, foreign ownership, and market entry—can foster market competition and broaden the dispersion of wealth and corporate ownership.

References

Claessens, Stijn, Simeon Djankov, and Larry H. P. Lang. 1999a. "Expropriation of Minority Shareholders: Evidence from East Asia." Policy Research Working Paper 2088. World Bank, Financial Sector Practice Department, Washington, D.C.

———. 1999b. "Who Controls East Asian Corporations?" Policy Research Working Paper 2054. World Bank, Financial Sector Practice Department, Washington, D.C.

Fortune. 1999. "Most Admired Companies." March 1.

Jensen, Michael C. 1993. "The Modern Industrial Revolution, Exit, and the Failure of Internal Control Systems." *Journal of Finance* 48:831–80.

La Porta, Rafael, Florencio Lopez-de-Silanes, and Andrei Shleifer. 1999. "Corporate Ownership around the World." *Journal of Finance* 54:471–517.

Zingales, Luigi. 1994. "The Value of the Voting Right: A Study of the Milan Stock Exchange Experience." *Review of Financial Studies* 7:125–48.

Chad Leechor (cleechor@worldbank.org), Private Sector Development Department, Business Environment Unit

Reviving the Market for Corporate Control

Chad Leechor

Changes in corporate control—through mergers, takeovers, acquisitions, divestitures, and the like—enhance shareholders' value. They allow the businesses to be transferred to the control of new owners who can put business assets to work more efficiently. In most countries, however, the market for corporate control is significantly restricted by anti-takeover laws and business practices used to entrench management, such as poison pills, heavy debt, pyramid schemes, and cross-holdings of equity. The key to overcoming these obstacles is to restructure incentives—by requiring business groups to disclose intercorporate ownership and banks to limit connected lending, by ensuring that bankruptcy law allows effective transfer of control, and by removing regulatory barriers to takeovers.

Many studies of mergers, takeovers, acquisitions, and divestitures have confirmed that these control transactions generally maximize shareholders' value (Jensen and Ruback 1983). The gain in value is most visible in target firms' stock prices following announcements of takeover attempts or merger agreements. Even in the most advanced markets, where control transactions are common, stock prices increase 20 to 30 percent on average, depending on the type of transaction (Jarrell, Brickley, and Netter 1988). This gain represents one part of the increased business value that the acquirer is prepared to share with the target firm.

The increase in value primarily reflects improved operational efficiency and governance. The combined firm gains economies of scale and scope, or "synergy." Fixed costs, such as plant and overhead, may be spread over larger output, and such resources as sales and financing organizations can be combined. Some mergers reduce capacity, as in the oil industry in the 1980s. In other cases the change of control is designed to focus operations on core competencies through spin-offs of noncore business. Some acquisitions are done by venture funds and buyout specialists with business ideas but no operating facilities. Some control transactions bring new management, directors, and compensation, as well as increased ownership by corporate insiders. These changes tighten the monitoring of the firm's business and link managers' incentives to those of the owners. But not all control transactions are good for shareholders or the economy in general. This may be the case when monopolies are involved or when managers are motivated mainly by a desire to expand their control over corporate resources.

Despite its important role in corporate performance, the market for corporate control remains highly restricted in most countries. Even in such countries as Japan and the United States, regulatory impediments and business shields to prevent takeovers are widespread (see for example Jensen 1993 and Morck and Nakamura 1999). In part this reflects public distrust of big business. But it also reflects the success of corporate managers in lobbying legislators for protection.

Impediments in control markets

In most countries until recently, efforts to reform control markets have focused on anti-takeover laws. Now there is a broader perspective recognizing that firms have developed techniques that help them resist takeovers, even if they are in the interests of the firm and outside shareholders.

Firm-level devices

At the firm level, management and controlling shareholders can use devices to deter or reject a proposed control bid.

Poison pills. Poison pills are rights, generally given to management, to buy additional shares of the firm at a discount once any person owns more than a specified block of equity (often 20 percent). Poison pills dilute the interest of the bidder and make it necessary to buy more shares to get control. In effect, they allow managers to reject a bid without shareholders' approval.

Debt. Managers—as well as controlling shareholders—can thwart takeover attempts by borrowing to increase their ownership stake. Management-led leveraged buyouts represent an extreme case. Debt allows managers to retain control over more resources without putting additional equity at risk.

The main restraint on leverage is the risk of losing control through bankruptcy. In many countries, however, this threat is weak. Legal frameworks are often dated and do not apply to contract and securities transactions. Even when the laws are relevant, the judiciary may be inefficient or corrupt. Since debtors can often prolong the litigation or pay the judge for a favorable ruling, default does not necessarily mean a loss of control. In these circumstances the use of debt becomes irresistible. In East Asia in 1996, corporate debt averaged 200 percent of equity in Indonesia, 240 percent in Thailand, and 350 percent in the Republic of Korea (Kawai 1999).

Pyramid schemes. Large shareholders or managers of a firm may also enhance their control through a pyramid scheme, which allows them to fortify their control of a firm or extend the reach of their control. As with leverage, pyramid schemes do not rule out takeovers. But the entrenched position of management signals that any takeover attempt may be costly.

Pyramid schemes generally involve using control of a publicly held firm to gain control of others. Suppose firm A owns 50 percent of firm B. Under a pyramid scheme firm A might use firm B's assets to buy 50 percent of firm C. Firm A would then have effective control of firm C. Managers of firm A could also fortify their control of firm A by directing firms B and C to buy shares of it.

Cross-holdings. Intercorporate cross-holdings of equity—where firms hold shares in others in a group—are widespread in such countries as Japan and Korea and in continental Europe. Cross-holdings generally occur within a group of firms with family or business affinity, including producers of consumer products and suppliers of parts or raw materials. The ownership stakes held by individual firms may be relatively small, but they help to align the business interests of the group members.

It is sometimes suggested that with stable ownership, these arrangements promote long-term perspectives among firms. But if such groups are common, they can sharply restrict the scope for control transactions. Since members of the group generally act together, they can outvote nonmembers, including takeover bidders. Evidence suggests that in Japan the key reason for joining a business group—*keiretsu*—is to protect the managers from takeovers (Morck and Nakamura 1999). But as the performance of Japanese firms in the 1990s shows, stable intercorporate ownership does not ensure long-term profitability or shareholders' value.

Regulatory barriers

Some regulatory rules inadvertently restrict the control market. Others are designed to deter

control transactions, usually to protect jobs and stakeholders' interests. But the main result is to entrench the position of management and corporate insiders.

Tax disincentives. In many developing countries tax considerations make control transactions financially unattractive. Business reorganizations, including mergers and acquisitions, are treated as taxable events involving realized capital gains or losses. The target firm's shareholders do not have the option of a tax-free exchange of securities. For the sellers, the transaction could produce a tax liability for which they have no cash to pay. For the bidder, the taxes represent an extra cost and make it necessary to offer cash as part of the deal.

Control share rules. In some jurisdictions the ownership rights of a takeover bidder are restricted. Often the shares purchased within a certain period (usually twelve months) of a control contest have no voting rights. This rule makes it easier for management to defeat takeover bids, even if the bids are in the interest of the firm and minority shareholders. In many emerging markets foreigners face rules, both formal and implicit, that limit their participation in the control market.

Auctions for control. Some jurisdictions encourage auctions for the target firm by delaying the completion of takeover bids. The delay may be mandated as a waiting period or through premerger notification and reporting requirements. In the interim the information revealed in the original offer makes a new bid, possibly at a higher offer price, far more likely. Such rules are supposed to favor shareholders. In practice, however, they deter takeover attempts by increasing uncertainty and the cost of acquisition.

Nonshareholder interests. Many jurisdictions require or allow boards of directors to consider the interests of stakeholders other than shareholders. Thus directors might reject a takeover bid if conditions set by workers and the community are not met, such as conditions ruling out plant closings and layoffs. But the main beneficiaries are again management and insiders. Management becomes more immune to shareholders' lawsuits for opposing value-enhancing offers. And the restrictions on the restructuring of the target firm reduce the value of control (Romano 1992).

Reviving control transactions

While the reform measures differ, revitalizing the control market is similar to liberalizing markets for goods and services. Success depends on an informed climate of opinion to create the political support needed to overcome resistance by vested interests. In addition, growing global competition and the search for efficiency can add impetus to the reform.

Dealing with firm-level impediments

Although such business practices as leveraging, pyramid schemes, and cross-holdings impede control transactions, they often serve useful purposes. Heavy-handed regulation to end them may impose economic costs that outweigh the benefits. The key to addressing these impediments is to restructure incentives so that firms will change their practices voluntarily.

Bankruptcy systems. In weak bankruptcy systems borrowers seldom lose control to creditors, even under default and insolvency. But when the consequences of default are swift and certain, borrowers' incentives change significantly. They must weigh the threat of takeovers against the risk of bankruptcy, each of which involves a loss of control.

Although bankruptcy provisions vary from one country to another, the essential features are efficient procedures and predictable outcomes. Also critical are honest and knowledgeable judges and professional insolvency practitioners, lawyers, and accountants. In some countries it may take many years of institution and capacity building before the insolvency regime becomes effective.

Prudent banking practices. Where prudential regulation fails to maintain adequate lending

standards, bank finance becomes a convenient tool for entrenching management and preventing takeovers. Many commercial firms own banks and use the deposits to expand business and increase the insiders' ownership stake. To restrain these practices, prudential rules should ban bank ownership by commercial firms and require disclosure of lending to connected parties.

Transparency. Publicly held firms' policy on control transactions is important to their investors. It is essential that these firms reveal not only their basic financial position (including debt and loan guarantees for other firms), but also the extent to which they own or are owned by other firms (pyramiding and cross-holdings), their principal shareholders, and their membership in a business group. In addition, each member of a group should be required to make a statement about its investment principles and the extent to which its membership in a group affects the way it exercises rights of ownership in its investee companies. Such disclosure serves two key purposes. First, it informs investors about the limited scope for value-enhancing control transactions, and may depress securities prices. Second, it affects the reputations of insiders. This can raise the cost of financing, making it costly for managers to shield themselves against takeovers.

Requiring disclosure does not ensure its reliability, however. Equally important are the process and the incentives of the parties involved. Management must be held accountable for any misrepresentation, with criminal sanctions for fraud. Accountants and auditors found to be negligent should face disciplinary action as well as the risk of liability. Transparency improves in the presence of reputational agents such as investment bankers, securities analysts, credit rating agencies, and free financial media. Where these agents are missing, their services initially may need to be imported.

Repealing regulatory barriers

There is a clear case for abolishing regulations and tax rules that erode shareholders' value. The reforms needed vary from one country to another. In many developing countries the priority may be to allow tax-free exchanges of securities for legitimate business reorganization. Some of the more advanced markets may need to reverse laws designed to deter control transactions. They should remove any control share rules that discriminate against new or foreign shareholders; allow boards to fulfill their fiduciary responsibility to shareholders in considering takeover bids, unhindered by conditions set by other stakeholders; and do away with waiting periods for completing control transactions. In some countries new legislation or court decisions may be needed to curb the use of poison pills designed to reduce the scope for control transactions.

References

Easterbrook, F.H., and D.R. Fischel. 1991. *The Economic Structure of Corporate Law*. Cambridge, Mass.: Harvard University Press.

Garvey, G.T., and G. Hanka. 1999. "Capital Structure and Corporate Control: The Effect of Anti-Takeover Statutes on Firm Leverage." *Journal of Finance* 54(2):519–46.

Hart, O., and J. Moore. 1995. "Debt and Seniority: An Analysis of the Role of Hard Claims in Constraining Management." *American Economic Review* 85:566–85.

Jarrell, G.A., J.A. Brickley, and J.M. Netter. 1988. "The Market for Corporate Control: The Evidence since 1980." *Journal of Economic Perspectives* 2:49–68.

Jensen, M.C. 1993. "The Modern Industrial Revolution, Exit, and the Failure of Internal Control Systems." *Journal of Finance* 48:831–80.

Jensen, M.C., and R.S. Ruback. 1983. "The Market for Corporate Control: The Scientific Evidence." *Journal of Finance* 11(5):5–50.

Karpoff, J.M., and P.H. Malatesta. 1995. "State Takeover Legislation and Share Values: The Wealth Effects of Pennsylvania's Act 36." *Journal of Corporate Finance* 1:367–82.

Kawai, M. 1999. *A Comparative Study of Financial and Corporate Restructuring in East Asia*. Washington, D.C.: World Bank.

Morck, R., and M. Nakamura. 1999. "Banks and Corporate Control in Japan." *Journal of Finance* 54(1):319–39.

Romano, R. 1992. "A Guide to Takeovers: Theory, Evidence and Regulation." *Yale Journal on Regulation* 9:119–81.

Chad Leechor (cleechor@worldbank.org), Private Sector Development Department, Business Environment Unit

Innovations in Bankruptcy—Prioritizing Creditors Using Options Markets

Chad Leechor

Following the wave of recent financial turmoil, many developing countries have learned the value of an effective bankruptcy system in deterring excessive use of debt and providing an orderly way to resolve a debt crisis. As a result, they are now reforming their bankruptcy systems, generally modeling them on those of advanced countries. But there is dissatisfaction with bankruptcy frameworks in advanced countries too. Some alternatives have been proposed. One is an options-based approach that provides an objective way of pricing creditor claims according to priority. With allowances for local conditions, this approach offers developing countries a chance to leapfrog existing bankruptcy practices and their limitations.

Effective bankruptcy systems have implications for corporate governance and for securities markets. For corporate managers and controlling shareholders, the cost of bankruptcy includes the loss of corporate control and the risk of personal liability. This threat serves as a restraint on the use of debt. In the event of default an efficient and orderly transfer of corporate control to creditors reduces the likelihood of asset stripping and looting by insiders. For creditors, legal recourse makes it possible to extend credit at a reasonable cost. And in a cyclical downturn or in the face of financial distress, creditors are less likely to panic and liquidate securities on a massive scale.

An effective framework for bankruptcy should do the following:

- It should facilitate the discovery of the best option for the firm, including preserving the value of assets and finding any value the firm may have as a going concern.
- It should preserve the absolute priority of claims. Senior creditors should be fully paid off before junior creditors are paid.
- It should be procedurally fair and efficient, leaving little scope for strategic behavior (holdouts and tactical delays).

Existing insolvency systems seldom meet these tests. Because many give control of the firm and the reorganization agenda to a particular party, often management or senior creditors, there is little scope for the best option to emerge. Existing owners or managers are likely to propose restructuring and keep the firm in business, while creditors who have a limited stake and do not share in the gains when a firm recovers would tend to liquidate too many firms.

Existing practices generally provide little incentive to find an efficient solution. In some cases creditors and shareholders have an opportunity to vote on competing reorganization plans. All claimants carry the same weight in the voting process, regardless of their seniority. Junior claimants, hoping for a concession from more senior creditors, have an incentive to delay the process. To save time and expenses, some senior claimants may allow junior claimants a greater share of the proceeds than warranted by the rule of absolute priority. Where the necessary majority is not achieved, the process can become protracted. In some cases judges must intervene by applying the cram-down rule, often for the sake of expediency rather than efficiency.

Consider a simple example. An insolvent firm has two classes of creditors. Senior creditors—say banks—are owed US$1,000, and junior creditors—say trade creditors—are owed US$600. Suppose the expected value of the firm under the best proposed liquidation plan is US$1,000. If the bank creditors set the agenda, they would call for a quick liquidation, an efficient outcome. But the trade creditors would opt for reorganization, which would give them a small chance of partial recovery. If the trade creditors have a vote on the firm's future, the bank creditors may be unable to implement the liquidation or may have to share the proceeds with the trade creditors. The outcome would be inefficient and would violate absolute priority.

Now assume that if the firm is restructured and kept as a going concern for a year, its expected value is US$1,300. The efficient solution would be to keep the firm in business. The bank creditors would receive full payment plus interest, and the trade creditors partial payment. The bank creditors are unlikely to want to keep the firm in business, however, since they have no stake in the upside potential. The trade creditors would correctly argue for reorganization. But since the banks have more votes, based on their larger claims, the liquidation plan may prevail, although the banks might have to share the proceeds with the trade creditors. Once again, the outcome protects neither efficiency nor absolute priority.

A new approach

In recent years bankruptcy specialists have come up with new ideas to address the concerns. One approach is to use prepackaged bankruptcy procedures like those of the United States; this approach saves time and money for all participants, but does not resolve the underlying conflicts of interest.

Another promising new approach seeks to realign the interests of the claimants so that they have an incentive to choose the value-maximizing plan (Bebchuk 1988; Aghion, Hart, and Moore 1995). A key innovation of this approach is its procedure for pricing claims so that absolute priority is protected.

Some aspects of this approach resemble existing bankruptcy procedures. To begin with, the court would grant a stay of, say, three months on all outstanding claims. The court would also appoint an administrator responsible for drawing up a list of all claims against the firm and soliciting reorganization plans from participants and the general public. These steps are much like existing practices, though somewhat more open. The new features deal with how to decide on the future of the firm and how to preserve the priority of claims.

After all claims are registered, the administrator would determine relative seniority among them according to established norms. The administrator would also issue, say, 100 reorganization rights, which would entitle the holders to vote on the reorganization plan. Initially the administrator would give the claimants call options to buy a share of the rights proportional to their claims. These calls would have different strike prices, depending on the seniority of the claims. In addition, each claimant would have an obligation to give up his or her reorganization rights if the next class of claimants choose to exercise their options. Thus the options would have the characteristics of a call spread (box 1).

The strike prices would play a crucial part in protecting the priority of claims. The most senior creditors would have a strike price of zero, since they would have the first claim on the firm's assets. The next class of creditors would have a strike price set so that the proceeds would be sufficient to pay off more senior debt. In general, the strike price would rise as the seniority of claims declines. As residual claimants, the shareholders would receive options with the highest strike price.

Consider an example based on the previous one. The banks (owed US$1,000) would have the right to get the reorganization rights for free, and an obligation to sell them to the trade creditors at US$10 a piece. Selling 100 rights at US$10 a piece would produce US$1,000, enough to pay

BOX 1 CALL IT A SPREAD

Options are simple once you know a few basic rules. A *call option* gives you the right to buy the underlying security, say a common stock, at a stipulated price—the *strike price,* or *strike.* When the stock price rises, the value of your call goes up, and when it falls, the value goes down. Owning a call is therefore similar to owning a stock. If you have sold, or shorted, a call, you have an obligation to sell the stock. With a short call, you gain when the stock price falls and lose when it goes up. The strike price of the call determines what price you pay or receive for the stock.

Unlike stocks, options have an expiration date. If you own an American call, you can exercise your right to buy the underlying stock at any time before its expiration. If you have sold a call, you may be assigned (or compelled) to deliver the stock at any time. A European call, however, allows the holder to exercise his or her right only at its expiration.

Call options have different strike prices. Suppose Microsoft stock is trading at US$100 a share. Active calls on Microsoft might have strike prices of US$95, US$100, or US$105. A Microsoft call with a strike of US$95 is worth more than a call with a strike of US$100 or US$105.

You can buy a call option with one strike and sell a call on the same security with another strike. This position is a *call spread.* Suppose you buy a Microsoft call at a US$95 strike for, say, US$6 and at the same time sell a Microsoft call with a US$100 strike for, say, US$3. You then own a call spread at a net price of US$3. If the stock price is above US$100 when the options expire, the call you own lets you buy a share of Microsoft at US$95. But you also have to sell a share of Microsoft at US$100 because of the call you sold. Your revenue is US$5 and your profit US$2. If the stock price is below US$95 when the options expire, you lose your investment of US$3.

Call spreads provide a low-cost and flexible position for securities trading and are very popular among professional options traders. They could also be a powerful tool for pricing creditors' claims in an insolvency proceeding.

On September 30, 1999, this call option might have a value of US$10

Symbol: ***MSQ = GT***
Underlying security: ***Microsoft Corporation***
Strike price: ***US$95***
Expiration date: ***12/17/1999***
Options exchange: ***Chicago Board***

off the bank creditors in full. The trade creditors would have the right to buy the 100 reorganization rights at US$10 a piece, and an obligation to sell them at US$16 a piece to the next class of claimants, the shareholders. The proceeds from that sale (US$1,600) would pay off all the debt.

Trading in the options on reorganization rights would be permitted before the stay period expires. The original claimants could sell options to any interested buyers, including those who have submitted a proposed reorganization plan. The value of these options would depend on the perceived value of the firm as well as the strike price of each option. For example, if the firm is perceived to be worth US$500, the trade creditors' option, with a strike price of US$10 to get 1 percent of the firm, would have little or no value. But if the expected value of the firm is US$2,000, even shareholders' options, with a strike price of US$16, would have considerable value.

At the end of the trading period the 100 reorganization rights would go to those who exercise their options, and the party or coalition holding a majority of the rights (fifty-one) would control the firm's future. The reorganization plan selected by those holding reorganization rights might lead to a liquidation or a restructuring of the firm. The holders of the rights might become the new owners of the firm or might sell the rights to the party that submitted the winning proposal. As the reorganization plan is implemented, the creditors would be paid through the sale of their reorganization rights and the firm would emerge from bankruptcy.

Where to use the new approach?

The main advantage of this proposed approach is the opportunity it creates to discover and implement the best possible plan for the insolvent firm. The new owners choose the plan, not parties with narrow or conflicting goals. Equally important, the approach preserves absolute priority. No claimants receive a payment until those with more seniority are paid in full.

In addition, the approach provides no incentive for holdouts, a particularly difficult problem under existing insolvency practices. Junior claimants, such as shareholders or unsecured creditors, have

no say in the firm's future unless they are willing to pay off more senior creditors. At the same time the firm is not held hostage to senior creditors with a limited stake. These senior creditors must give up their control if a party with a better idea pays them off by exercising the call options. Arbitrary decisions, like a cram-down or forced continuation of a nonviable business, become unnecessary.

But the approach is not universally applicable. Its design presupposes a well-functioning capital market and a well-established legal system, features lacking in most developing countries. Changes in the design are generally needed to suit local conditions.

Without a well-functioning capital market, the prospective buyer of the insolvent firm may lack access to the liquidity needed to achieve control. The financing method, a part of the proposed reorganization plan, typically includes cash needed to pay off creditors. If some of the final holders of reorganization rights are willing to hold the securities issued under the winning reorganization plan, the need for external financing may be mitigated.

Another possible constraint is lack of familiarity with options. Options markets tend to develop well after securities markets do. But a full-fledged options market is not essential. What is needed is an adequate understanding of the basic rules among the participants. An important variant of this approach proposes using auctions in place of options in pricing and allocating reorganization rights (Hart and others 1997). Auctions have the appeal of being widely understood. But they can replace only the trading in options. The basic pricing rules and the obligation to give up the reorganization rights at the stipulated prices remain necessary.

Even where these constraints do not exist, the options-based approach may have little relevance in many cases. Where there is a consensus that the firm's value is significantly less than its outstanding debt, the procedure should move immediately to liquidation. There is no need to allocate and trade options. Where the value of secured debt is large relative to total claims, the approach also might not apply. Secured creditors have a contractual right to seize the collateral and may be uninterested in the options. But if the value of the collateral is less than the debt, the secured creditors may want options to cover the shortfall.

Look before you leap

The options-based approach to bankruptcy has strong intellectual appeal. But while well known to specialists, these new ideas have not yet been implemented. The U.K. Treasury has received a proposal for bankruptcy reform based on this approach and has commissioned a detailed review. The Mexican government has received a similar proposal but has not yet made a decision on it. By adopting this approach, adapted to local circumstances, a developing country that lacks a viable bankruptcy framework may be able to leapfrog existing bankruptcy practices and their well-documented shortcomings.

References

Aghion, P., O. Hart, and J. Moore. 1995. "Insolvency Reform in the UK: A Revised Proposal." *Insolvency Law and Practice* 11:67–74.

Bebchuk, L.A. 1988. "A New Approach to Corporate Reorganization." *Harvard Law Review* 101:775–804.

G-22 Working Party. 1998. "Recommendations on Managing Financial Crises." International Monetary Fund, Washington, D.C.

Hart, O., R.L.P. Drago, F. Lopez-de-Silanes, and J. Moore. 1997. *A New Bankruptcy Procedure That Uses Multiple Auctions.* NBER Working Paper 6278. Cambridge, Mass.: National Bureau of Economic Research.

Hotchkiss, E.S. 1995. "Post-Bankruptcy Performance and Management Turnover." *Journal of Finance* 50:3–21.

Weiss, L.A. 1990. "Bankruptcy Resolution: Direct Costs and Violation of Absolute Priority." *Journal of Financial Economics* 27:285–314.

Weiss, L.A., and K.H. Wruck. 1998. "Information Problems, Conflicts of Interest and Asset Stripping: Chapter 11's Failure in the Case of Eastern Airlines." *Journal of Financial Economics* 48:55–97.

Chad Leechor (cleechor@worldbank.org),
Private Sector Development Department,
Business Environment Unit

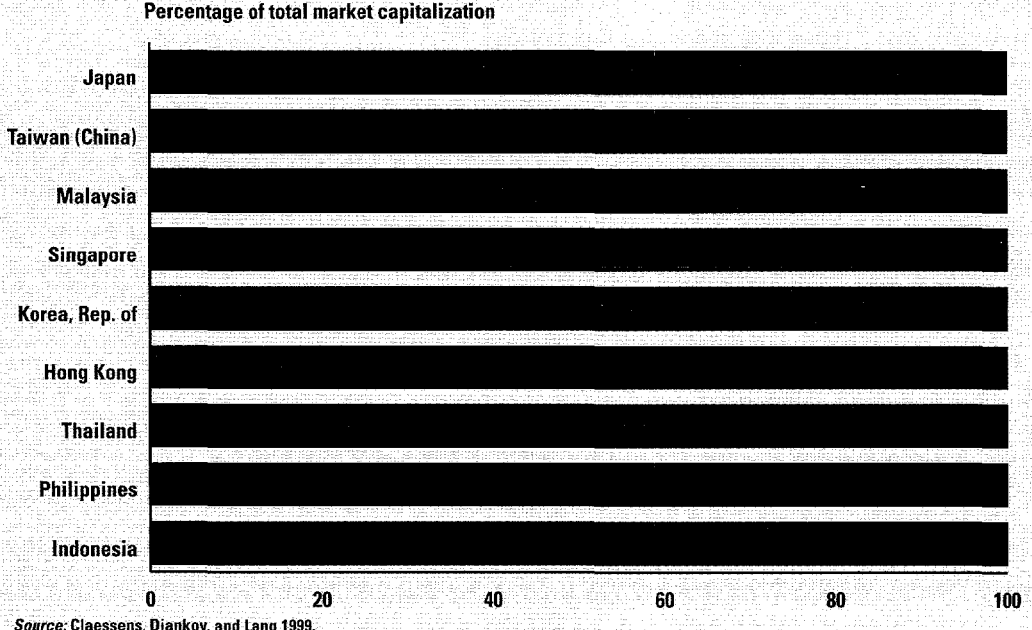
Who Controls East Asian Corporations—and the Implications for Legal Reform

Stijn Claessens, Simeon Djankov, and Larry H. P. Lang

This Note reports an analysis of ultimate control in nearly 3,000 publicly traded companies in December 1996—before the financial crisis—in nine East Asian economies: Hong Kong, Indonesia, Japan, the Republic of Korea, Malaysia, the Philippines, Singapore, Taiwan (China), and Thailand. The analysis shows that the ten largest families in Indonesia, the Philippines, and Thailand control half the corporate sector (in terms of market capitalization), while the ten largest in Hong Kong and Korea control about a third (figure 1). More extreme, in Indonesia and the Philippines ultimate control of about 17 percent of market capitalization can be traced to a single family.

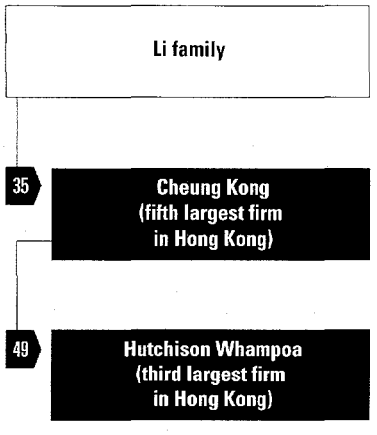
While the analysis shows that ownership concentration in these countries is in keeping with levels in other developing and some industrial countries, its findings shed light on the viability and vulnerability of corporate governance structures in East Asia. The concentration of corporate wealth and the tight links between corporations and government may have impeded legal and regulatory development, directly or indirectly. To create incentives for better governance, East Asian governments may have to promote more competition, even by breaking up conglomerates, and curtail related-party lending by restricting ownership of banks.

FIGURE 1 MARKET CAPITALIZATION CONTROLLED BY TOP TEN FAMILIES, 1996



Source: Claessens, Djankov, and Lang 1999.

FIGURE 2 A PYRAMID OWNERSHIP STRUCTURE



Note: Numbers refer to percentage ownership shares.
Source: La Porta, Lopez-de-Silanes, and Shleifer 1999.

Ultimate control

Control is defined as 20 percent of voting rights (as in the methodology developed in La Porta, Lopez-de-Silanes, and Shleifer 1999). Corporations are divided into two categories: those widely held and those with ultimate owners. A widely held corporation is one in which no owners have significant control rights. Ultimate owners are of four categories: families (including individuals with large stakes), the state, widely held corporations, and widely held financial institutions such as banks and insurance companies.

The results of the analysis show family control in more than half the corporations in East Asia (table 1). But significant cross-country differences exist. In Japan corporations are generally widely held, while in Indonesia and Thailand they are mostly family controlled. And state control is significant in Indonesia, Korea, Malaysia, Singapore, and Thailand.

The analysis shows that in many East Asian economies control is enhanced through pyramid structures and cross-holdings, and voting rights consequently exceed formal cash flow rights (table 2). Pyramid schemes generally involve using control of a publicly held firm to gain control of others (as in figure 2). Management is rarely separated from ownership control, and in two-thirds of firms that are not widely held, the managers are related to the controlling shareholder.

Patterns of controlling ownership stakes differ across countries, with ownership concentration generally diminishing with the level of economic and institutional development. This negative association suggests that companies gravitate toward less concentrated control as their countries become wealthier.

Some of the differences in ownership patterns arise from differences in company and securities laws across countries. Various rules determine the ownership stake needed to exercise effective control, such as the minimum percentage of shareholdings required to block major decisions or to call an extraordinary shareholders meeting. In Korea restrictions on the voting rights of institutional investors in listed companies and high minimum percentages required to file class action suits (30 percent of the vote) imply that relatively small ownership stakes can result in effective control.

A possible factor in the degree to which corporations are widely held is the evolution of capital markets. In Thailand a formal stock market was established only in 1975—and in Indonesia, in 1977—while the stock market in Japan has existed since 1878, and the Stock Exchange of Hong Kong since 1891. Furthermore, in Japan following World War II, the Occupational Forces pursued a deliberate policy of dispersing ownership (Aoki 1990).

Family control

Perhaps a more meaningful focus of analysis, particularly if the concerns are market entry, access to financing, and government policy, is the pattern of control by family groups. To

TABLE 1 CONTROL OF PUBLICLY TRADED COMPANIES IN EAST ASIA, 1996
Percent, except where otherwise specified

Economy	Number of corporations in sample	Widely held corporations	Corporations with ultimate owner: Family	State	Widely held financial institution	Widely held corporation
Hong Kong	330	7.0	71.5	4.8	5.9	10.8
Indonesia	178	6.6	67.3	15.2	2.5	8.4
Japan	1,240	85.5	4.1	7.3	1.5	1.6
Korea, Rep. of	345	51.1	24.6	19.9	0.2	4.3
Malaysia	238	16.2	42.6	34.8	1.1	5.3
Philippines	120	28.5	46.4	3.2	8.4	13.7
Singapore	221	7.6	44.8	40.1	2.7	4.8
Taiwan (China)	141	28.0	45.5	3.3	5.4	17.8
Thailand	167	8.2	51.9	24.1	6.3	9.5

Note: Weighted by market capitalization.
Source: Claessens, Djankov, and Lang 1999.

TABLE 2 MEANS OF ENHANCING CONTROL IN EAST ASIAN CORPORATIONS, 1996
Percentage of sample

Economy	Cap = 20%V	Pyramids with ultimate owners	Cross-holdings	Controlling owner alone	Management
Hong Kong	18.84	25.1	9.3	69.1	53.4
Indonesia	19.17	66.9	1.3	53.4	84.6
Japan	19.89	36.4	11.6	87.2	37.2
Korea, Rep. of	19.64	42.6	9.4	76.7	80.7
Malaysia	18.11	39.3	14.9	40.4	85.0
Philippines	18.71	40.2	7.1	35.8	42.3
Singapore	19.91	55.0	15.7	37.6	69.9
Taiwan (China)	19.61	49.0	8.6	43.3	79.8
Thailand	19.22	12.7	0.8	40.1	67.5
All	19.46	38.7	10.1	67.8	57.1

Note: Cap = 20%V refers to the average percentage of book value of common equity required to control 20 percent of the vote. *Controlling owner alone* means that there is no second owner holding at least 10 percent. *Management* means that the chief executive officer, board chairman, or vice chairman is a member of the controlling family.
Source: Claessens, Djankov, and Lang 1999.

TABLE 3 HOW CONCENTRATED IS FAMILY CONTROL?

Economy	Average number of firms per family	Percentage of total market capitalization controlled: Top family	Percentage of total market capitalization controlled: Top ten families
Hong Kong	2.36	6.5	32.1
Indonesia	4.09	16.6	57.7
Japan	1.04	0.5	2.4
Korea, Rep. of	2.07	11.4	26.8
Malaysia	1.97	7.4	24.8
Philippines	2.68	17.1	52.5
Singapore	1.26	6.4	26.6
Taiwan (China)	1.17	4.0	18.4
Thailand	1.68	9.4	46.2

Note: Data refer to 1996.
Source: Claessens, Djankov, and Lang 1999.

capture this, the analysis looked first at the average number of firms in the sample controlled by a single family. That number is largest in Indonesia—more than four—and smallest in Japan—about one (table 3).

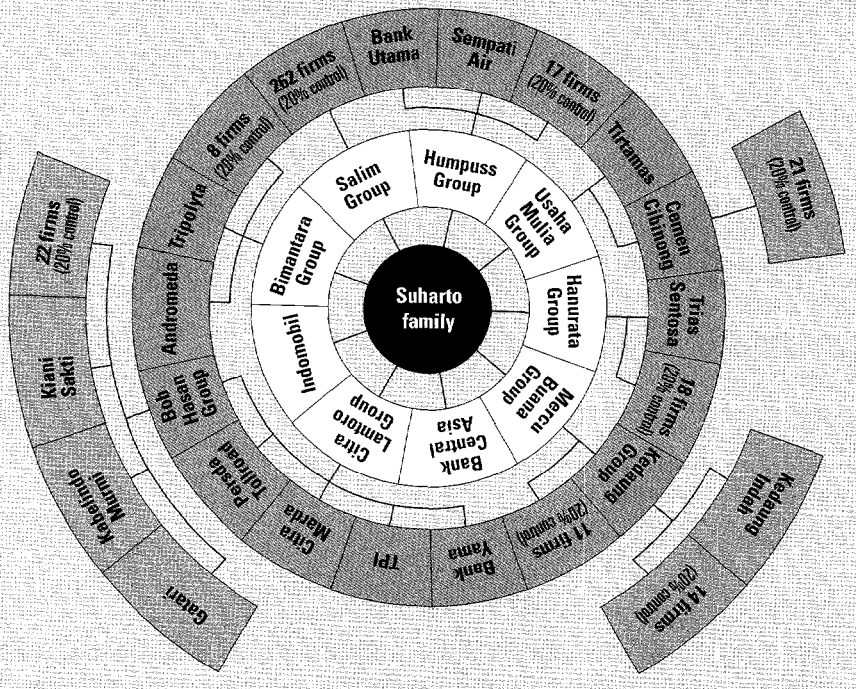
These numbers already suggest that in most East Asian economies ultimate control of the corporate sector rests with a small number of families. Further evidence is the number of firms and the market value of assets controlled by the largest family group in each country. The largest family group in a country does not necessarily coincide with the largest business group. In Japan the largest *keiretsu*—the Mitsubishi Group—controls more than 400 affiliated firms, but does not have a single controlling family. In Indonesia the largest conglomerate is the Salim Group, which is controlled mainly by Soedono Salim but also in part by the Suharto family. The Suharto family has many other holdings—members collectively control assets worth US$24 billion in the sample firms—and is considered the largest stockholder in Indonesia (figure 3). The largest family holder in terms of assets across all nine economies is the Chung Ju-Yung family—which owns Hyundai and its related companies—with holdings worth US$48 billion.

Another measure of wealth concentration is the share of market capitalization held by the top family or by the top ten. In Indonesia 16.6 percent of market capitalization can be traced to the ultimate control of the Salims—and in the Philippines, 17.1 percent to the Ayalas (figure 4). The top ten families in Indonesia and the Philippines control more than half the corporate sector (57.7 percent and 52.5 percent). Control is also concentrated in Thailand (46.2 percent) and Hong Kong (32.1 percent). In Korea, Malaysia, and Singapore the top ten families control a quarter of the corporate sector. In Japan family control is insignificant—the top ten own only 2.4 percent of market capitalization.

Concentration, rule of law, and corruption

There are many direct and indirect channels through which business may influence government, and government may play a role in busi-

FIGURE 3 THE SUHARTO GROUP



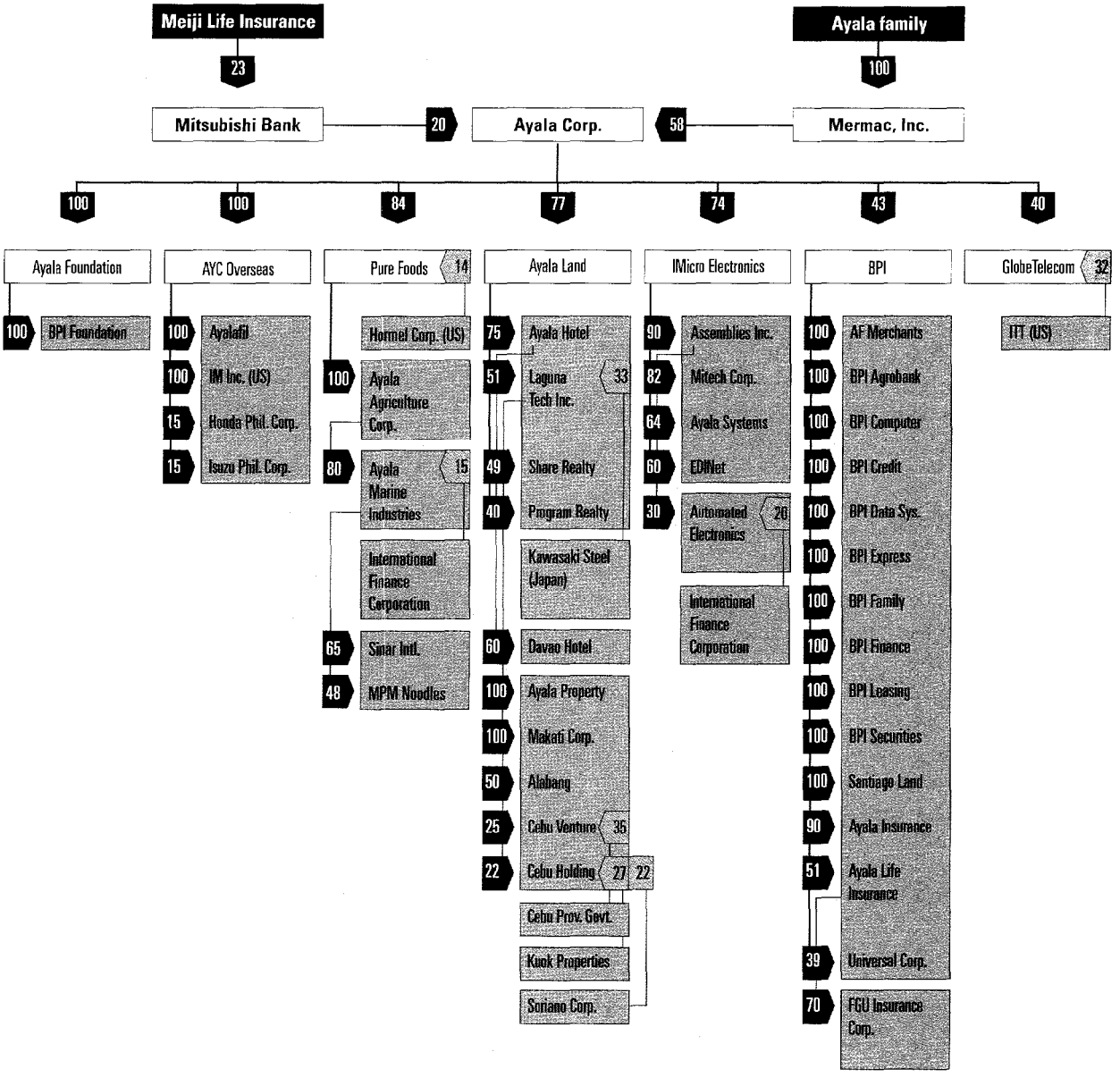
Source: W.I. Carr 1997.

ness. For example, senior government officials may give preferential treatment to family members. A case in point is the business empire of the Suharto family in Indonesia. Business groups led by Suharto's children, relatives, and business partners, many of whom also serve in the government, control 417 listed and unlisted companies. The most direct link, of course, is through the large state-controlled companies prevalent in Malaysia and Singapore.

Government and business may also be linked through indirect control of companies by ruling political parties. In Taiwan (China) the main political party, Kuomintang, has a controlling stake in 155 companies, some of them overseas. Kuomintang's corporate holdings range from scores of small textile and pharmaceutical businesses to highly protected financial oligopolies with exclusive rights over a wide array of investment transactions. Many companies operate in defense-related industries and are thus exempt from financial and ownership disclosure requirements, making it difficult to estimate the true size of the party's corporate portfolio (Baum 1994). The main political parties in Malaysia—Umno and the Malaysian Indian Congress—also have substantial business holdings.

Have the concentration of wealth and the important links between government and business helped shape the legal system in some East Asian economies? In the wake of the East Asian financial crisis, many analysts have argued that if a few

FIGURE 4 THE AYALA GROUP



Note: The numbers refer to percentage ownership shares. BPI is the Bank of the Philippine Islands.
Source: Koike 1993.

TABLE 4 DOES CONCENTRATED FAMILY CONTROL SHAPE LEGAL SYSTEMS?

Economy	Concentration of family control[a] (percent)	Judicial efficiency index[b]	Rule of law index	Corruption index
Hong Kong	34.4	10.00	8.22	8.52
Indonesia	61.7	2.50	3.98	2.15
Japan	2.8	10.00	8.98	8.52
Korea, Rep. of	38.4	6.00	5.35	5.30
Malaysia	28.3	9.00	6.78	7.38
Philippines	55.1	4.75	2.73	2.92
Singapore	29.9	10.00	8.57	8.22
Taiwan (China)	20.1	6.75	8.52	6.85
Thailand	53.5	3.25	6.25	5.18

Note: Data refer to 1996.

a. Share of total market capitalization controlled by the top fifteen families.

b. Assesses the efficiency and integrity of the legal environment as it affects business, particularly foreign firms.

Source: Claessens, Djankov, and Lang 1999.

families play a large role in the corporate sector and the government is heavily involved in and influenced by business, the legal system is less likely to evolve in a way that protects minority shareholders and promotes transparent, market-based activities. But little evidence has been collected to support this argument.

To test the argument, the analysis compared the concentration of corporate control by families with three indexes of judicial and legal development: efficiency of the judicial system, rule of law, and degree of corruption (La Porta and Lopez-de-Silanes 1998). The indexes run from 1 to 10, with 10 indicating the most efficient judicial system, strongest rule of law, and least corruption. The correlations between the market capitalization share of the fifteen largest families and the three indexes are very strong (table 4). This result suggests that the concentration of corporate control plays a major part in the evolution of the legal system—that there are relationships between the ownership structure of the corporate sector and the level of institutional development. Moreover, La Porta and others (1998) show a relationship between the ownership structures of individual corporations and judicial and legal development.

Conclusion

In most East Asian economies wealth is concentrated in the hands of a few families and links between government and business are extensive. These features may have directly or indirectly impeded legal and regulatory development. Thus relationships between patterns of ownership and the characteristics of legal systems are not necessary casual, as has been suggested for some countries. These findings imply that in some East Asian economies successful legal and regulatory reform may require changes in ownership structures and concentration of wealth. Findings also suggest that insider control may have contributed to the weak performance and risky investments of

many East Asian corporations before the financial crisis.

References

Aoki, Masahiko. 1990. "Toward an Economic Model of the Japanese Firm." *Journal of Economic Literature* 28:1–27.

Baum, Julian. 1994. "The Money Machine: Taiwan's Kuomintang." *Far Eastern Economic Review,* August 11, pp. 62–66.

Claessens, Stijn, Simeon Djankov, and Larry H.P. Lang. 1999. "Who Controls East Asian Corporations?" Policy Research Working Paper 2054. World Bank, Financial Sector Practice Department, Washington, D.C.

Koike, Kenji. 1993. "The Ayala Group during the Aquino Period: Diversification along with a Changing Ownership and Management Structure." *Developing Economies* 31:442–63.

La Porta, Rafael, and Florencio Lopez-de-Silanes. 1998. "Capital Markets and Legal Institutions." Paper presented at the Fourth Annual Conference on Development in Latin America and the Caribbean, June 28–30.

La Porta, Rafael, Florencio Lopez-de-Silanes, and Andrei Shleifer. 1999. "Corporate Ownership around the World." *Journal of Finance* 54:471–518.

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert W. Vishny. 1998. "Law and Finance." *Journal of Political Economy* 106:1113–55.

W.I. Carr. Banque Indosuez Group. 1997. *Indonesian Group Connections.* Jakarta.

Stijn Claessens (cclaessens@worldbank.org), Lead Economist, Financial Sector Strategy and Policy, Simeon Djankov (sdjankov@worldbank.org), Financial Economist, Financial Sector Strategy and Policy, and Larry H. P. Lang (llang@baf.msmail.cuhk.edu.hk), Professor, Chinese University of Hong Kong

Reforming Insolvency Systems in Latin America

Malcolm Rowat

Argentina, Colombia, Costa Rica, and Peru have recently revised their insolvency laws. The Argentine reforms are of special note because they have been complemented by labor law reforms. But reforms remain on the drawing board in many other countries in Latin America—including the big economies of Brazil and Mexico—where the laws tend to be very old, formalistic, unenforced, out of touch with today's business practices, and heavily skewed toward preserving the enterprise to protect employment, but at the expense of creditors. Moreover, judicial decisionmaking is unpredictable, and corruption is rampant. In some countries anticreditor political pressures appear to have stalled the reform process. This Note assesses the weaknesses of insolvency law in Latin America and proposes some common solutions.

Conflicting interests

Most insolvency systems share two prime objectives: allocating risk among participants in the economy in a way that is predictable, equitable, and transparent, and maximizing the value of the insolvent firm for the benefit of all interested parties and the broader economy. Disputes usually center on how to maximize value—whether through liquidation or reorganization, whether with the existing management or under new management, and at whose expense. Once this is settled, the dispute then becomes a matter of hierarchy—who gets paid, how much, and when.

Where to strike the balance between the rights of debtors and creditors is a political decision. In Latin America the balance has historically favored preserving the enterprise to protect employment. While the consequences of a policy favoring preservation of the enterprise have not been studied closely in Latin America, one possible effect is a tendency to provide overly short-term credit. This is shown by an analysis of the French insolvency system, which emphasizes keeping firms in operation and preserving employment. To minimize the risk of being trapped in bankruptcy cases, French banks provide mostly short-term credit, renewing the loans only if the risk of bankruptcy over the next period is low. Yet this short-term financing increases the risk of bankruptcies caused by transitory decreases in firms' cash flows.

In the absence of an effective avenue for collection and a viable insolvency system, creditor banks have turned to the state for bailouts—sometimes billions of dollars worth. After the 1994 financial crisis in Mexico, for example, the state responded to banks' request for a bailout by creating special vehicles to purchase troubled loans. Mexican bankers resorted to the government in part out of a feeling that the insolvency system is ineffective in controlling credit losses.

Weak creditor protection may also deter banks from lending. One legal practitioner observes that Brazilian *concordata* (reorganization) and bankruptcy laws enable solvent debtors, without showing compelling need, to obtain a moratorium on their debt, allowing them to repay it in

depreciated currency, or to have part of their debt extinguished. In both cases unsecured creditors run the risk of substantial losses, and even secured creditors can suffer losses. With sophisticated lenders clearly understanding these risks, conventional, unsecured lending may not take place.

Current problems

There are five main categories of problems. First, many of the current insolvency laws are rigid, formalistic, and old. In Mexico few *suspensión de pagos* proceedings (suspension of payments proceedings, the closest thing in Mexico to a reorganization) succeed. And in Brazil as well as Mexico many of the insolvency provisions are simply theoretical or are not followed in practice. Both countries have insolvency schemes that date from the 1940s, with provisions still on the books that were designed to accommodate the difficulty of communicating before telecommunications. While age alone is no reason to reform a law, most of the region's economies have changed radically in recent years, while the laws have not.

Second, the high degree of judicial discretion increases uncertainty and financial risks and encourages corruption (though in Argentina recent reforms have diminished this discretion). Judges have the power to make such critical decisions as selecting the trustee and deciding contested issues of fact and law. In some cases they can decide what is in the best interests of all concerned. Some observers have accused the courts of having a paternalistic and interventionist perspective that values the general interest over the collective judgment and interest of the stakeholders.

Third, corruption is rampant. References to the "mafia" that works the bankruptcy field are common. The sense is not that organized crime is somehow endemic in the system, but that a core group of players control the field and exact kickbacks and bribes in exchange for favorable treatment. While opinions about the severity of the problem vary, they vary within a narrow range, with some observers believing that the problem in their jurisdiction is less virulent than it once was.

Fourth, a "rescue culture"—where creditors' interests are protected—is unlikely to thrive in the region without better enforcement. Skepticism—if not cynicism—about the functioning of the current systems is pervasive. Regardless of the text of the law, faith in the system is unlikely where creditors find, for example, as they have in Mexico, that the executive branch at the state level has refused to give the police the power to execute judgments out of political concerns over the public's reaction to enforcement. Such skepticism is widespread among general counsels of Mexican banks, which face a large backup of collection cases. Their view is that creditors have little chance of collecting on their debt in the current political environment and that judges do whatever they can to prevent collection. One bank alone is reputed to have 35,000 collection cases pending. This situation has led some to observe that in Mexico the issue is less the lack of a rescue culture than the existence of a culture of nonpayment.

That the absence of a rescue culture creates needless losses is borne out by current practice. In Mexico secured creditors regularly accept settlements worth far less than the value of their collateral, recognizing that a court process is likely to bring only delay and even lower value. Across Latin America creditors tend to lose all expectation of a meaningful recovery once a debtor enters the insolvency process, deterring them from getting involved with the system. Instead, creditors tend to write off a debt once a borrower is in bankruptcy. In Brazil a "white concordata" process has developed in which creditors agree to accept payouts below the statutory minimums once a debtor threatens to file for *falençia* (liquidation).

Fifth, as noted, there is a powerful, explicit bias in favor of labor. In Brazil, Mexico, and Venezuela labor claimants receive a high degree of preference and protection. For example, labor claimants in Mexico are not affected by insolvency moratoriums, are free to pursue their

claims outside the bankruptcy court, and effectively have priority over secured creditors.

New priorities

A common set of essential reforms can be prescribed for all countries in Latin America, although the priority and sequencing of reforms in a country will depend on its circumstances.

Crack down on corruption. The widespread corruption in the insolvency system—not only among some judges but also among the core players (trustees, debtors, creditors)—calls for a multipronged strategy:

- Requiring disclosure of behind-the-scene dealings (such as collusive bidding or wrongful transfers of value from debtors to creditors).
- Creating incentives for ferreting out corruption.
- Setting rules of conduct—emphasizing transparency, accountability, and conflict of interest—for trustees in insolvency cases.
- Fostering associations of insolvency professionals to help improve knowledge, standards, and practice through education, peer pressure, and political influence (as in Canada).

Delink criminal and bankruptcy issues. Many Latin American countries have laws that classify bankruptcies by different degrees of fault (with no differentiation between the business and the businessman), some of which can result in criminal sanctions and bar insolvency relief (as in Mexico). By mixing the business and criminal aspects of insolvency, these laws deter owners and managers of failing businesses from seeking outside help early. Criminal conduct should not preclude insolvency relief to a business in crisis.

Foster transparency. To ensure that all participants in the insolvency process have accurate and timely information, priority should be given to maximizing transparency.

- Current statutes should be revised to require meaningful disclosure of information, particularly financial information.
- Trustees and other stakeholders should be given greater power to investigate debtors' past dealings, particularly with regard to transfers, collateral arrangements, and the like.
- Trustees should also be given greater power to recover assets wrongfully transferred, particularly overseas, through better procedural provisions, both domestic and international.

Help preserve going-concern value before and during insolvency. To aid the preservation of going-concern value, insolvency laws in most Latin American countries need to be revised to provide for more timely and predictable relief, by:

- Defining more precisely the standard to be met before insolvency relief can be granted (such as failure to pay a fixed number of creditors within a certain period).
- Permitting and encouraging insolvency relief so that it is more broadly available (as in the Costa Rican reform), not just for extreme financial disaster.
- Fixing a definite period, prior to a bankruptcy filing, within which a judge or trustee can void transactions that may be fraudulent or harmful to other creditors (probably three to twelve months).
- Revising avoidance statutes to encourage resolutions before petitions are filed. (Under the new Argentine law a mortgage or lien is not avoidable if the unsecured debt had matured, encouraging commercial banks to grant concessions during a workout.)
- Providing protection for postpetition creditors to encourage the granting of credit during insolvency proceedings.
- Eliminating provisions that needlessly drive toward liquidation (such as those prohibiting the sale of assets before they are appraised, or making creditors that, as a group, have voted for a debtor to stay in business liable to third parties if the debtor cannot perform).
- Providing for exits other than liquidation if a debtor fails to obtain the required consents from creditors to a proposal. (In Argentina shareholders' interests can be sold to third parties.)

Protect collateral. To give workouts a real chance of success, secured creditors could be barred from pursuing mortgage claims for a reasonable

period during a nonliquidation proceeding. But the debtor should compensate the creditors appropriately for the value of the collateral that it consumes.

Reduce delay in bankruptcy proceedings. While promptness is a virtue in nearly all judicial proceedings (as long as quality is maintained), bankruptcy proceedings in particular demand rapid resolution because of the costs of delay to a firm's going-concern value and its underlying assets. Judges should be educated about these costs, and needless legal impediments that slow insolvency proceedings should be eliminated. These include the procedures for proof of claims, the ability to routinely appeal decisions, and the need for personal validation of claims in court hearings.

Enhance flexibility in reorganization. Current insolvency statutes have excessively formalistic and rigid requirements for reorganizations. Flexibility should be built into the relevant laws to:

- Allow for more than just a predetermined payout schedule (as in Brazil and Mexico).
- Allow for capital restructuring, including debt-to-equity conversions.
- Make adequate provisions for executory contracts (for example, contracts that are only partially completed).
- Address the setoff of debts in financial contracts.
- Provide for insolvencies of groups of affiliates (not permitted in Brazil and Mexico).
- Provide for the special needs of small and medium-size businesses, for example, by simplifying insolvency procedures for them (as is now done in Argentina).

Promote cooperation in cross-border insolvencies. Latin America has long adhered to the "territoriality" principle in cross-border insolvency cases, with each state asserting sovereignty. With the globalization of investment bringing about more joint ventures and other transactions that cross national boundaries, there is a growing need to harmonize bankruptcy and reorganization proceedings across borders. Those involved in cross-border bankruptcy proceedings want the same results that they would seek in a domestic case: reasonable notice, access and participation, predictability, enforcement, and fair and transparent distribution of assets.

Conventions ensuring cross-border cooperation have been difficult to achieve. But recent initiatives on several fronts may be promising. In the private sector Committee J of the International Bar Association has prepared a concordat providing procedures and administrative arrangements for cross-border court cooperation, which has been successfully implemented in a case involving U.S. and Canadian courts. Probably more important for Latin American countries is the model law on cross-border insolvencies developed in 1997 by the United Nations Commission on International Trade Law (UNCITRAL) to foster procedural and administrative coordination among courts. This law should be adopted by Latin American countries as a useful starting point for effective collaboration across borders.

Provide specialized courts and training. The complexities of insolvency exacerbate the problems of inadequate judicial training in Latin America. Special training on bankruptcy and insolvency law is essential for judges, along with training on business concepts such as accounting, derivatives, netting, and interest and exchange rates.

The specialized nature of bankruptcy law also requires specialized bankruptcy courts. Such courts have been successfully piloted in several countries in the region. Where specialized courts are not feasible in the near term because of a lack of resources or qualified judges, insolvency cases could be routed to designated commercial law judges. Another possibility is to use nonjudicial mechanisms to resolve cases, as in Colombia, or formal alternative dispute resolution programs, which could be annexed to courts or free-standing.

This Note is based on Malcolm Rowat and José Astigarraga, *Latin American Insolvency Systems: A Comparative Assessment* (World Bank Technical Paper 433, Washington, D.C., 1999).

Malcolm Rowat (mrowat@worldbank.org), Private Sector Development Department

Reaching the Urban Poor with Private Infrastructure

Penelope Brook Cowen and Nicola Tynan

The current approach to private participation in infrastructure can inadvertently erect barriers to improving service for low-income households in developing countries. The approach frequently involves exclusive control of a local monopoly over a long period and an obligation to provide service to all or to all who request it within the area of exclusivity. It also generally includes regulations setting uniform service and quality standards (often with high technical standards for inputs and outputs), and tariffs based on rising blocks and with an element of cross-subsidy.

Underlying the approach are assumptions that the infrastructure sectors involve a high degree of natural monopoly (so that conferring exclusivity would have little impact on potential competition); that governments not only can define appropriate service standards but can enforce them; and that below-cost tariffs for low-consuming households—social tariffs—are an effective and practical way to ease poverty.

But there are serious doubts about these assumptions. Experience in gas, power, and telecommunications suggests much potential for competition in the provision of these services. Technological innovations in service delivery—from cellular phones to condominial water and sewerage systems—are broadening the range of service delivery options, away from monolithic network standards. Analysis of how low-income households (especially those in slums and peripheries of cities) purchase infrastructure services, and of their willingness to pay for different kinds of service delivery and quality, raises questions about traditional service standards—for example, mandates that all households should have in-house water connections. Such analysis also challenges strict definitions of affordability—for example, that a household should spend no more than 5 percent of its income on water. Increasing experience with social tariffs is bearing out theory-based concerns that the prime beneficiaries of these tariffs may not be the poorest households, and that the tariffs may create disincentives to expand services to low-income areas.

An alternative approach

Competition between large, international companies to serve existing network customers has received much attention from theorists and policymakers. Policy advisers initially focused on the potential for new entry at the "generation" end of infrastructure businesses and for competition across networks—for example, competition between power plants selling into or across a national transmission grid, or competition in long-distance calling across conventional telephone lines. Such entry can be expected to benefit all households connected to the grid, by increasing service options and reducing costs. In some industrial countries competition has spread to the retail level, with households able to choose their provider of gas, electricity, or cellular services. Again, these innovations primarily benefit consumers connected to conventional service delivery networks (cellular phones are an exception). But they may also speed new connections by reducing the costs of connections and services.

But large-scale competition between formal utilities is not the only means for improving consumers' service options. More recently, there has been growing interest in the potential of another kind of entry to benefit low-income households: entry by nonconventional suppliers

of infrastructure services, which may not always involve connection to a formal network. Examples include small-scale electricity generation (diesel generators, household solar panels), water delivery by tankers or through low-cost piping, and access to telecommunications through prepaid wireless phones or privately owned local phone booths. The nature of service innovations varies. Sometimes a network is constructed, but more cheaply than by conventional utilities (for example, condominial water or sewerage systems might use cheaper pipes of shorter lengths that are buried less deeply than conventional networks and installed and maintained with community labor). Sometimes solutions are found that require no network of pipes or wires (local electricity generation, cellular phones) or less extensive networks (as in sewerage, where the efficient scale of treatment has fallen). And sometimes technological innovations allow payment arrangements that ease purchases by low-income households (smart cards that allow prepayment for water or power, load limiters that keep electricity consumption to affordable levels).

Technological change has also eased entry by new providers. Easier entry raises the possibility that private cooperatives, small-scale entrepreneurs, or existing utilities from other sectors and countries will start delivering infrastructure services. Many low-income consumers in the slums and peripheries of developing country cities already receive service from suppliers other than the monopoly utility. Informal provision is typically seen as necessarily inferior to service delivery through formal networks. At best, it is seen as a stopgap—a way to deliver services until the formal network reaches a neighborhood, with privately developed systems often subsequently transferred to the monopoly utility. At worst, it is seen as actively harmful (as in the delivery of dirty or stolen water—sometimes both dirty and stolen—by tanker mafias, or black market installation of unsafe electrical wiring). Government officials and policy advisers often underestimate the potential of informal provision to offer a good medium- to long-term means for low-income households to secure services of a quality acceptable to them and at a price they are willing and able to pay.

The possibility for entry, the forms this entry might take, and the remaining public policy concerns differ across sectors and countries. But common policy questions arise. These include the possibility for small-scale providers to establish and abuse monopoly power (such as in small-scale local networks) and the implications of more varied forms of service provision for public health and safety. For example, are tanker prices for water high because costs are genuinely high, or because illegality strengthens the tanker mafia? Are costs of informal (illegal) provision raised because the high risk of expropriation causes providers to invest in relatively expensive non-network technologies and increases their cost of capital? If costs are high in part because of illegality and risk of expropriation, legalizing tankers and allowing competition will improve services for the poor.

Such policy issues raise questions about the efficacy of conventional policy solutions. For example, are regulatory systems designed for one or a small number of traditional utilities likely to be effective for dealing with abuse of local monopoly power in illegal slum settlements? Is it possible to develop effective means of tracking people's exposure to health and safety risks (unsafe drinking water, exposed wires, poorly maintained vehicles) in disaggregated and diverse delivery systems? However daunting these questions, it is important to recognize that they are not created by the decision to take nonconventional service delivery seriously. They already exist for all the communities that do not receive services from formal utilities—but with formal provision the ultimate policy goal, they are almost always swept under the rug.

Low-income households already select their preferred service on the basis of available price and quality combinations. They often choose low-quality services because they have few alternatives and face high marginal costs in switching to something better. Allowing entrants to expand the

range of price and quality options in low-income areas could improve the quality of service received without necessarily requiring consumers to spend more or to adjust their preferences. Demand-side policies, such as microcredit or community involvement, may complement and reinforce these supply-side improvements.

Designing private infrastructure projects to facilitate entry

Making private participation in infrastructure pro-poor requires rethinking the design of both transactions and supporting regulation. For example, by paying greater attention to market structure and the potential for entry before contracting with the private sector, policymakers can help open new service options for low-income households. They will need to refocus regulation on facilitating entry and monitoring quality and prices to end users. And they may need to refocus regulatory and transaction processes.

Avoid service cuts. At the least, arrangements for private participation should not cut off existing service options or reduce choices for the poor. But sometimes this can happen by accident. Contract drafters, taking earlier contracts as models, often transplant clauses that are irrelevant or poorly suited to the city or country in which they are working. Some water concessions include exclusivity arrangements that give the private operator rights to close down wells in areas not yet connected to the formal network. Far-reaching exclusivity provisions remain common in local systems for solid waste collection and gas and electricity distribution. Simply reassessing the relevance of these clauses can help make contracts for private participation more pro-poor.

Focus on outcomes. Market restructuring to allow entry—for example, in retailing—can remove a major legal barrier to service expansion, but may not be enough to encourage entry when entrants face rigid input or output standards. Technical standards for system construction (the depth of pipes beneath roads, housing construction standards that must be met before electrical wiring is permitted) are often set at industrial country levels, leading to high start-up costs and creating a disincentive to expand network services. Easing or setting aside such standards may raise the quality of services delivered in poor areas even if these services fall short of industrial country ideals.

Best practice policy advice and many contracts for private participation have moved away from the more restrictive input standards based on international companies' existing technology toward output standards that allow greater flexibility in how services are provided. But while output standards can encourage innovation in inputs, they discourage more significant innovation by continuing to use existing forms of service—usually connection to a large network—as the standard. Policymakers should think about ways to redesign regulation to encourage improvements in the quality of service received. The focus should be on such outcomes as the basic potability of water at point of use or electric lighting for homes every day—and therefore on ultimate goals of public health and safety, and poverty alleviation through improved access to infrastructure.

Rethink interconnection. Restructuring infrastructure markets to facilitate entry and innovation may raise new issues in the areas of interconnection and bulk supply, in both pricing and logistics. Regulation focusing on interconnection issues has become routine in such sectors as telecommunications, but seldom addresses serving the poor. Allowing entry by microentrepreneurs to supply low-income neighborhoods raises additional issues for regulators. For example, water retailing by entrepreneurs who purchase water from an incumbent utility's trunk network raises questions about the availability, quality, and price of bulk water. How will the regulator monitor the quality of water distributed by multiple retailers? What role should the regulator play in encouraging rather than just enforcing agreements? Where a power supplier uses small-scale generation to serve a low-income settlement, but seeks backup from an existing utility, a range of interconnection issues may arise. What is the maximum load a

small-scale supplier can obtain from the utility? Does the availability of backup supply depend on the time of day or year? In some sectors solutions to these problems could involve explicit contractual provisions for interconnection between suppliers or for bulk supply. In others regulators may need to facilitate discussions between incumbent utilities, community groups, and alternative providers.

Untie support. Easing entry by avoiding exclusivity and supporting low-income households through, for example, land tenure initiatives and better access to microcredit should reduce the gap between service affordability and consumers' willingness to pay. But these improvements may still leave a gap. Subsidy targeting then becomes critical. Governments should avoid tying subsidies to one provider because this will deter entry by raising the relative price of alternative services. Subsidies should be targeted to low-income consumers and designed to allow consumer choice of service.

Redesign processes. Making private participation in infrastructure more pro-poor is also likely to require a refocusing of transaction and regulatory processes. For example, early in the reform policymakers might pay more attention to identifying how low-income consumers obtain infrastructure services, the scope and nature of nontraditional supply, the willingness of low-income consumers to pay for improved access to and quality of services, and institutional barriers to improved service (for example, in land tenure or access to microcredit). Strengthening property rights in illegal settlements can increase the return from investments in durable assets. The reduction in risk will give low-income households a greater incentive to switch from day-to-day purchases to longer-term sources of supply. Under monopoly provision, the slow transmission of information may leave poor consumers unaware of many lower-cost options. Informing the urban poor about supply options will increase the viability of long-term investment in new technologies once the risk of expropriation disappears. Improved access to credit will help low-income households afford the longer-term options.

In designing regulation for a market structure that allows free entry, policymakers need to consider a more complex set of customer-to-provider relationships than with a single provider. Policymakers also need to recognize supplier and consumer variety. Regulators need to pay more attention to designing mechanisms that ensure access to the regulatory process for residents in low-income settlements (for example, through local hearings or local complaint bureaus). And they may need to institute advisory groups to solicit the views and concerns of local service suppliers and community organizations engaged in low-income communities.

Manage transition. Ideally, pro-poor approaches to private participation in infrastructure would address all the key issues affecting entry and the expansion of service options to low-income areas. In the long run this could mean never awarding blanket concessions to one supplier, thoroughly reassessing technological standards, and avoiding social tariffs. But governments may not be able to implement every desirable reform at one time. Policy sequencing then becomes critical. Some policies (allowing entry and competition, shutting down existing sources of supply, stipulating high technical standards) are difficult to change once a private sector contract is in place. Others (for example, reform of tariff structures to eliminate the service disincentives implicit in social tariffs) are more easily changed post-transaction. Incremental moves to make policies more pro-poor must ensure that the hard-to-change policies are not left until late in the process. Policymakers also need to ensure that each step not only does no harm to the poor, but also supports timely, sustainable improvements in service.

Penelope Brook Cowen (pbrook@worldbank.org), Private Participation in Infrastructure Group, and Nicola Tynan (ntynan@gmu.edu), George Mason University

Mitigating Regulatory Risk in Telecommunications

Peter L. Smith and Björn Wellenius

In the transition from state-owned monopolies to privately led and increasingly competitive market structures in telecommunications, poor performance of regulatory agencies limits the benefits of reform, especially in countries with a tradition of weak governance. Bearing in mind that the main objective is not a successful agency but a well-performing sector, this Note proposes measures for establishing a regulatory framework that enables better sector performance even when an effective, full-fledged regulatory agency is lacking. These measures reduce the need for agency decisions, enhance the credibility of regulation, and generate maximum impact from scarce professional and financial resources by using them effectively. Although each of the measures has a primary purpose, several contribute to more than one (table 1).

TABLE 1 REGULATORY STRATEGY CHECKLIST: PRIMARY (●) AND SECONDARY (●) BENEFITS

Measure	Reduce need for agency decisions	Enhance regulatory credibility	Use resources effectively
Accelerate competition	●	●	●
Prepackage regulatory rules	●	●	●
Establish rules for interconnection	●	●	●
Keep operators' obligations reasonable	●		●
Focus licensing on the main operators	●		●
Rebalance prices early	●		●
Reduce regulation as competition develops	●		
Adopt transparent processes		●	
Harness public support		●	
Lock in principles through international commitments		●	
Outsource regulatory functions			●
Adopt alternative dispute resolution	●	●	●
Put the operators to work		●	●
Consider multisectoral agencies			●
Create regional capacity			●

BOX 1 ROLE OF REGULATION IN THE TRANSITION TO A COMPETITIVE MARKET

In the transition from state monopoly to private and competitive market structures, regulation is needed to promote the public interest for several reasons.

Containing abuse of market power. **The former state monopoly is likely to remain the largest operator for some time. Customers should be protected from abuse of this market power, typically reflected in high prices, insufficient supply, poor service quality and reliability, slow repairs, slow introduction of new services, inaccurate and incontestable bills, and corrupt practices in allocating scarce service. New service providers must also be protected.**

Fostering competition. **This means action on four fronts:**

- **Unless all regulatory barriers to entry and competition are dismantled at the outset, someone must decide from time to time how many operators can enter the market, who can enter the market, and under what conditions.**
- **New entrants need access to scarce resources initially controlled by the incumbent—most critical, the radio spectrum, telephone number blocks, and rights of way.**
- **Developing effective competition hinges on new entrants' ability to access the incumbent's customers and to use parts of the incumbent's network at prices that reflect costs. Thus interconnection between new and established operators is at the heart of the competition agenda.**
- **Constant vigilance is needed against anticompetitive behavior, particularly by the incumbent (cross-ownership among operating companies, limitations on resale, conditioning of sales) but also by fast-growing new entrants.**

Creating a favorable investment climate. **Investors need to be convinced that the rules of the game under which they are investing can be relied on. In particular, they need to be confident that their investments will be safe from de facto expropriation through arbitrary changes in prices, taxes, and service obligations.**

Narrowing development gaps. **A fully commercial approach to telecommunications will go a long way toward meeting development objectives, including extending access to rural and low-income urban areas. But gaps in meeting universal service goals are likely to remain, calling for public sector initiatives or financing to complement or catalyze those of the private sector.**

Regulatory strategy

Most new regulatory arrangements hinge on a regulatory agency loosely modeled on North American public utility commissions that have developed procedures and credibility over decades. To work well, this model of regulation requires certain conditions: a strong administrative tradition, the ability to undertake commitments that endure from one government to the next, and a judiciary that is impartial, immune to government and political pressures, and able to make enforceable decisions (Levy and Spiller 1996). It also requires substantial professional cadres, capable of handling complex regulatory concepts and processes. Telecommunications regulatory agencies generally need thirty or more professional engineering, accounting, pricing, legal, and administrative staff (more if, as is often the case in emerging economies, the regulatory agency also manages the radio spectrum) and sometimes plan on more than 100 (Nulty and Schneidewinde 1989).

When these institutional and country features are not in place, regulatory effectiveness, and therefore sector development, can be seriously undermined (box 1). In the Philippines, for example, friendly ties with the government in 1978–83 allowed the Philippines Long Distance Telephone Company (PLDT), the country's dominant telephone company, to raise prices, borrow heavily, limit investment in local facilities, take over other companies, and channel high profits to the accounts of controlling shareholders. By 1992, in the wake of changes in the government, an economic slowdown, and efforts by PLDT to thwart new entries in the market, outstanding applications for service exceeded telephones. Regulatory failures played a big part, including large price distortions, the absence of effective rate-of-return regulation that might have created incentives for extending local service, and continued protection of PLDT's de facto monopoly. These failures resulted in the worst possible outcome: exclusive rights for a service provided not at all in some areas and inadequately in most others. Yet the sector was privately owned and equipped with a reg-

ulatory agency modeled on public utility commissions in the United States.

The general steps in setting up effective regulation include establishing an agency with a firm foundation in law, limiting opportunity for government intervention, starting up the agency well before privatization, ensuring financial and administrative autonomy, hiring competent staff, establishing a process for appeal, giving the agency the means to enforce its decisions, and setting clear boundaries and links with other institutions (see for example Wellenius forthcoming). But in countries with weak governance and limited administrative and professional skills, the regulatory strategy should also focus on:

- Reducing the need for agency decisions.
- Enhancing regulatory credibility.
- Using resources effectively by outsourcing some regulatory tasks and pooling sector knowledge.

Reduce the need for agency decisions

Reform plans typically expect the regulatory agency to do too many things too soon. A more practical approach is to reduce the need for regulatory action, especially in the early years after privatization. This can be done in seven main ways.

Accelerate competition

Opening the market quickly to new entry and competition not only accelerates the full benefits from reform but also makes the job of the regulator more manageable. The question is no longer whether to have competition—the traditional arguments for exclusivity, even temporary exclusivity, no longer hold (Smith 1995; Noll 1998). Instead, it is how fast competition should be ushered in. Allowing competition in the core telephony business creates powerful incentives for the incumbent to perform better. PLDT accelerated investment to catch up with demand only after the Philippine government issued licenses in 1993 for mobile service and for several new international gateways to consortia committed to significantly expanding local telephone facilities in regions throughout the country. By 1996 the number of lines in service had almost tripled, to 1.8 million.

The regulator's job is eased when it can adjudicate among several influential players or constituencies. Multiple players provide the regulator with alternative sources of information on sector issues, reduce the risk of regulatory capture by any one operator, and offset some of the dominant operator's economic and political power.

Opening the market to new entry is easiest early in reform—before or at the same time as privatization—when large unmet demand allows both the incumbent and new entrants to grow. Large initial productivity gains by the incumbent following privatization will allow it to reposition itself for competition, but opening the market

BOX 2 UGANDA'S PREPACKAGED RULES

Network rollout. **The bid evaluation criteria for the second national operator license included both license bid price and network rollout. The winning bidder proposed to build 89,000 lines over five years (more than the 50,000 required), a goal now included in its obligations. Regulatory intervention will be limited to monitoring compliance and establishing approaches to providing service in unserved areas.**

Price control. **The licenses specify a price cap–type price regulation, which will continue for the five years the duopoly in basic services is in effect. No further regulatory decisions on prices will be needed during this period.**

Interconnection. **Both licensees are required to negotiate interconnection agreements. Pending agreement, either licensee can request from the other the immediate application of the prices and terms of a default interconnection agreement appended to the licenses.**

Monopolistic practices. **The licensees cannot unduly condition the provision of telephone service on purchase of terminal equipment, and cross-ownership between the companies is prohibited.**

Resale. **The licensees are obligated to provide basic exchange service for resale for public pay telephone service.**

early enough can prevent it from using these gains to entrench its dominant position.

Prepackage regulatory rules

If rights and obligations of an operator or class of operators need to be specified, it is best to write these into licenses, contracts (such as for the sale of state enterprises), or laws. Then technical assistance (from multilateral or bilateral agencies, for example) can be concentrated up front to establish a detailed base-case regulatory environment.

Uganda provides a good example of this strategy (box 2). There, a moderately pro-competitive policy and specification of initial regulatory rules in the licenses of the main operating companies (along with other elements, discussed later) add up to a fairly robust regulatory framework. A key part of the strategy was to immediately introduce some competition in all services by authorizing a second national operator to provide local, cellular, domestic long-distance, and international telephone services alongside Uganda Telecommunications Ltd. (UTL), the state monopoly being privatized. Before bids were invited for the second license, licenses were prepared for both companies specifying in advance important elements of the regulatory regime. This reduced regulatory uncertainty for the investors, eased the regulatory commission's burden of establishing a new regulatory regime from scratch, and served the public interest by addressing regulatory issues that often become problems elsewhere.

There are many other cases of prepackaged rules. The 1982 telecommunications law of Chile, for example, requires dominant operators' prices to be revised every five years using marginal cost pricing and to be indexed between revisions.

Establish rules for interconnection

Ideally, interconnection agreements could be treated simply as a commercial matter to be agreed between the parties. But interconnection disputes have become so common, and the impact on new entry is so important, that it is useful to have interconnection rules or guidelines that provide a framework for negotiation and eventual regulatory adjudication—as Mexico found when it prepared for competition in long-distance and international services in 1996. Moreover, the parties often have unequal resources, negotiating power, and ability to cope with delays.

The authorities can address these issues by establishing up-front default terms of interconnection (both price and technical) by which all parties must abide while they negotiate or if they fail to agree. Alternatively, the dominant company could be required to publish a standard interconnection offering. Guatemala's 1996 telecommunications law sets caps on interconnection charges for two years following privatization and specifies how the regulator should resolve interconnection pricing disputes between operators. And in Uganda the license for the second national operator includes a detailed default interconnection agreement.

Keep operators' obligations reasonable

Imposing tough obligations on operators may seem good for the country, but it can force regulators into untenable situations. In particular, setting stiff rollout obligations, with investments that go far beyond what is commercially viable at the time of privatization, risks forcing companies to undertake bad investments, leads operators to demand special privileges (such as longer exclusivity), and creates a need for renegotiation later.

Focus licensing on the main operators

Many services can be provided without license, perhaps subject only to declaration for the public record and for statistical purposes. Class licenses can be automatically granted to any applicant meeting set criteria. Bidding should be used to allocate any licenses that will be restricted in number, such as for the use of radio frequencies when demand exceeds supply.

That was the strategy used by El Salvador in restructuring its telecommunications sector in 1997. Licenses are required for using the radio spectrum but not for operating networks or services. Network operators are free to establish prices and conditions for the services they provide to end users as well as to each other, but must grant access to essential services on a nondiscriminatory basis. Defined by law, essential services are interconnection, signaling, caller identification, billing data, number portability, and directory databases.

The regulator in El Salvador is informed of the terms of access, monitors fairness and compliance with the law, and resolves disputes if parties fail to agree. The law prescribes in detail the process for the regulatory agency to follow in all decision-making. While the terms of interconnection are to be agreed among the parties, disputes are to be settled by the regulator, with the aid of qualified external experts and based on long-run average incremental costs. The regulator also administers the radio spectrum and the numbering system (including codes for customer selection of carriers) on demand or—for spectrum—using auctions when demand exceeds available capacity.

Surprisingly, even countries that adopt fairly pro-competitive policies from the start often write into law a requirement to license all entrants. This places an excessive burden on the regulator—and the operators—and creates opportunity for discretion, pressure, and corruption.

Rebalance prices early

Leaving it to privatized companies to rebalance prices invites difficulties for the regulator as well as for the companies. In Argentina, for example, failure to rebalance before privatization, coupled with broad institutional weaknesses, led to years of conflict involving the regulatory agency, regulated companies, the government, opposition parties, consumer associations, and various judicial courts. In 1991, after adoption of a currency board system made local currency price indexing for inflation illegal, the government agreed to rebalance telephone prices to make local service profitable—as compensation for reneging on license provisions allowing newly privatized telecommunications companies to index their prices to inflation. But it took more than six years to reach a final decision on the rebalancing. Meanwhile, business users faced long-distance prices that were up to fifty times cost, and international prices some four times those in neighboring countries. These distortions created artificial incentives to use foreign callback and calling card services, which may have siphoned off about a fourth of Argentina's international telephone revenues (Artana, Navajas, and Urbizondo 1998). (The lesson was learned: privatizations in gas and electricity were preceded by rate rebalancing.)

The experience in Mexico was only somewhat better. Before privatization in 1990 large taxes on telecommunications bills were converted to tariff elements, improving alignment with costs. The task was left to the privatized operator to complete under a timetable linked to its exclusivity period, but progress on rebalancing and investment was slower than expected. Near the end of the period the operator argued, unsuccessfully, for more time to rebalance prices before it faced competition in 1996. By contrast, in Uganda in 1998, prices for most telecommunications services were substantially rebalanced and liberalized before the award of the second national operator's license, contributing to the high level of investment today. The number of telephone lines, including cellular, increased by more than 48 percent in the year after the license was awarded in April 1998.

Since new entrants will often have little market power, an alternative is to leave prices unregulated and allow price competition to lead to rate rebalancing by the incumbent.

Reduce regulation as competition develops

Because a fundamental rationale for regulation is to respond to operators that have significant market power or control scarce resources, regulators should be able to reduce or end regulation

as competition develops, and instead permit general commercial rules to apply. Thus in Canada the telecommunications regulator is required to forbear exercising its regulatory powers where it finds markets to be sufficiently competitive for regulation to be unnecessary (for example, most wireless and long-distance services of all carriers, including the main telephone companies). In Chile the antimonopoly commission determines what telecommunications services are to be subject to price regulation. This trend of treating telecommunications as a tradable service, subject to general commercial and trading rules, is also seen at the regional level—notably in the European Union—and under the World Trade Organization (WTO).

Enhance regulatory credibility

Enhancing credibility can also do much to strengthen regulation in an environment of weak governance. Critical steps include ensuring adequate legislative provisions on agency jurisdiction, autonomy, access to information, timeliness of the appeal process, enforceability of decisions, staggered terms of office for commissioners, and inability to remove commissioners except for cause. But other measures are also in order.

Adopt open regulatory processes

Transparency in decisionmaking enhances the credibility of agencies and the legitimacy of decisions. This in turn helps ensure that decisions will not be overturned arbitrarily, increasing investor confidence. Public consultation on major regulatory issues adds to transparency by educating the regulatory authority and interested parties about the facts of an issue and the merits of alternative solutions. Using consultative papers has several advantages: administrative simplicity, broad reach, and quick decisions. The Telecommunications Regulatory Authority of India adopted this approach, issuing consultative papers in 1997 and 1998 (for example, on prices, service quality, the numbering plan, and the process for determining the license fees) and soliciting comments from interested parties. When a minister attempted to block the regulator's tariff rebalancing order in 1999, public outcry followed and the government supported the regulator.

Harness public support

The sustainability of a regulatory agency will eventually depend on public trust and support. Thus the agency needs to be seen as addressing issues important for customers, not just arbitrating on highly technical matters. Although the issues valued by customers will vary from country to country, they could include billing accuracy and practices, operators' terms and conditions of service (including customer redress), quality of service, geographic coverage, and access by nonsubscribers to communal facilities, such as pay phones and telecenters.

Often, telecommunications reform involves losses for concentrated and influential vested interests—such as monopoly owners, managers, or employees—and gains for highly dispersed customers. This outcome is typical where there is large unmet demand for services, and occurs not only at the time of sector restructuring but also later, in a myriad of regulatory decisions. Since regulatory agencies in almost all countries operate in a political environment, strengthening customer associations to advocate customer interests can help facilitate agency decisions that promote a broad public interest. The Canadian Radiotelevision and Telecommunications Commission for many years has arranged funding for customer groups that contribute to its proceedings.

Undertake international commitments

Governments can take steps that formally commit them beyond the boundaries of their own legal environment to apply the rules of the game. Countries that subscribed to the 1997 WTO agreement on basic telecommunications entered a binding international commitment to implement specific reforms, apply a common set of regulatory principles and practices, and recognize the WTO as an avenue for intergovernmental appeal. Sovereign loans and credits from

multilateral development organizations such as the World Bank involve formal government obligations that can be tailored to reduce regulatory risk, such as the risk that the government will fail to abide by the pricing rule established in the license.

Use resources effectively

The skills required by a regulatory agency vary widely as the focus of regulatory action shifts from relationships between operators and government (licensing) to relationships between operators (interconnection) to relationships between operators and consumers (prices, complaints). Relying mainly on internal skills is unlikely to be the best way to obtain (and dispose of) the wide range of skills needed in a timely way. There are a number of other options.

Outsource regulatory functions

Many regulatory functions can be contracted out. Audit firms can monitor compliance with performance commitments in operating licenses, interconnection rules, and tariff rules. In Argentina a private contractor monitors use of the radio spectrum on behalf of the regulatory agency, keeping part of the annual license fees as payment for its services. And external experts can resolve disputes among operators and with the regulator, leaving final decisions (such as applying penalties) in the hands of the regulator.

Adopt alternative dispute resolution

Disputes and conflicts increasingly arise between incumbent operators and new entrants, between new entrants, and between operators and regulators. Regulatory, administrative, and judicial resources may be quickly overwhelmed by the number and complexity of cases. A broad range of alternative dispute avoidance and resolution methods can be used in the telecommunications sector, including negotiation, mediation, and arbitration. These methods can be presented in the telecommunications law, the licenses, or contracts of sale.

There is a risk, however, that alternative dispute resolution procedures will be used to delay or sideline difficult decisions that the regulators do not want to face. The incumbent operator may have incentives to let the process drag on. To avoid this, the dispute resolution process should include:

- Firm deadlines for completing the process.
- Authority to empower the arbitrator or mediator to obtain information, schedule meetings, and recommend a decision if the process fails.
- Regulatory or other sanctions for noncompliance.

Put the operators to work

In most countries the greatest concentration of telecommunications sector knowledge is in the operating companies. This information asymmetry places the regulator at a disadvantage, but it is possible to turn the tables by putting the regulated companies to work for the regulator. The Chilean telecommunications law requires the regulated companies—not the regulator—to prepare detailed proposals every five years for revising prices along the lines prescribed in the law. The regulator reviews the proposals with the help of consultants and solicits comments from other interested parties. Once satisfied that a proposal is consistent with the law and current best practice, the regulator approves it, and the proposal remains in force for five years.

Consider multisectoral agencies

Many emerging economies cannot afford the financial and human resource costs of a separate regulatory agency for each sector. Since network industries—gas, water, electricity, transportation—have much in common (but also important differences), a multisectoral agency can be considered. Such an agency could afford a better core staff versed in generic regulatory processes, finance, law, and administration than each sector agency could separately (though sector-specific teams would still be required). And a multisectoral agency is less likely to be captured by any one operating company or controlled by any one sector ministry. U.S. public utility commissions

typically regulate gas, electricity, local telecommunications, and sometimes water at the state level, but not mail, broadcasting, interstate telecommunications, or radio spectrum.

A multisectoral agency does not necessarily imply a single agency for all infrastructure or public utility sectors. Care must be taken to avoid an overcrowded portfolio of responsibilities and undue concentration of power, and to take account of differences in the reform and market development stage of sectors. Furthermore, if regulatory agencies are to be merged or restructured, it is vitally important to maintain credibility and effectiveness during the transition period. Examples of multisectoral communications regulatory agencies with limited scope are the Canadian Radio-television and Telecommunications Commission and the Uganda Communications Commission, which is responsible for mail and radio spectrum management as well as telecommunications.

Create regional capacity

Countries that have some federalization of government functions among them could share a regulatory agency or technical secretariat. The five countries of the Organization of Eastern Caribbean States are working toward a common telecommunications law and a single telecommunications regulatory agency much like their common Central Bank and Civil Aviation Authority. Where a shared agency is politically infeasible, the regulatory agency of one country could provide regulatory services to other countries under contract or as part of a regional economic cooperation agreement such as the Southern African Development Community. Another possibility is to establish core teams of regulatory experts in regional centers to support countries on demand, as proposed in the Africa Connection program and endorsed in 1999 by the Organization of African Unity. Besides sharing the regulatory load, all these arrangements aid learning across countries and could result in a degree of regulatory uniformity allowing commercial aggregation of small markets into larger, more viable ones.

Conclusion

There is no universal prescription that can guarantee success in launching new telecommunications regulatory frameworks, especially in economies with weak governance. But the elements outlined in this Note can do much to increase the chances of success even in these environments. These elements are being tried, usually a few at a time, in several countries. It will be some time before we can draw firm conclusions on their effectiveness. Nonetheless, given the limited chances of success for more narrowly defined solutions in countries with weak governance, all these elements should be systematically considered when designing regulatory arrangements in countries now embarking on sector reforms.

References

Artana, Daniel, Fernando Navajas, and Santiago Urbizondo. 1998. "Contractual Adaptation in Regulated Utilities: A Few Observations from Argentina." Fundación de Investigaciones Económicas Latinoamericanas, Buenos Aires.

Levy, Brian, and Pablo T. Spiller, eds. 1996. *Regulations, Institutions, and Commitment: Comparative Studies in Telecommunications.* Cambridge: Cambridge University Press.

Noll, Roger G. 1998. "Telecommunications Reform in Developing Countries." World Bank, Washington, D.C.

Nulty, Timothy E., and Eric Schneidewinde. 1989. "Regulatory Policy for Telecommunications." In Björn Wellenius, Peter Stern, Timothy E. Nulty, and Richard D. Stern, eds., *Restructuring and Managing the Telecommunications Sector.* Washington, D.C.: World Bank.

Smith, Peter. 1995. "Subscribing to Monopoly: The Telecom Monopolist's Lexicon—Revisited." *Public Policy for the Private Sector* (September).

———. 1997. "What the Transformation of Telecom Markets Means for Regulation." *Public Policy for the Private Sector* (September).

Wellenius, Björn. Forthcoming. "Regulating the Telecommunications Sector." In Luigi Manzetti, ed., *Regulation in Post-Privatization Environments: The Latin American Experience.*

Peter L. Smith (psmith2@worldbank.org) and Björn Wellenius (bwellenius@worldbank.org), Telecommunications and Informatics Division

Competition in Mobile Telecoms

Carlo Maria Rossotto, Michel Kerf, and Jeffrey Rohlfs

Many governments, particularly in developing and emerging market economies, still doubt the benefits of competition in wireless services. But international experience shows that competition in any of the digital technologies brings substantial benefits to users and creates powerful incentives for incumbent fixed-line operators to lower prices, introduce new services, and increase productivity. This Note explores the impact of competition on mobile service using data on Global System for Mobile Communications (GSM) technology. Launched in Europe in 1992, GSM networks have grown by up to 80 percent a year and now reach an estimated 135 million subscribers in nearly 130 countries (table 1).

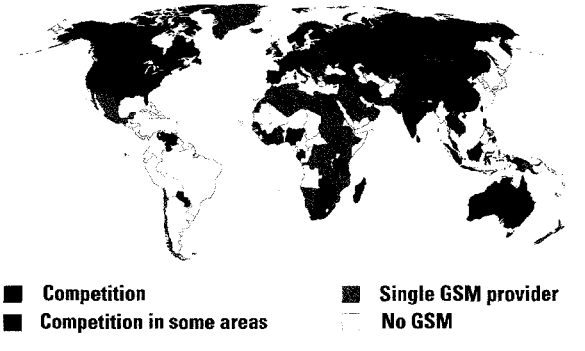
Competition in the GSM market is now a global trend. More than seventy countries have at least two GSM providers (figure 1).[1] Most Eastern European countries, preparing for accession to the European Union, have licensed two GSM providers, and second operators are emerging in many countries of the Commonwealth of Independent States (Russia, Ukraine, the Baltics), where GSM contributes most of the growth in installed lines. Second operators are also present in East and South Asia. Competition has been introduced in many countries in the Middle East and North Africa (Egypt, Lebanon, Morocco). Several Sub-Saharan African countries (Côte d'Ivoire, Madagascar, Tanzania) have also introduced a second GSM operator. Where it exists,

TABLE 1 GLOBAL SUBSCRIBERS BY TECHNOLOGY, MARCH 1999

Technology	Countries	Subscribers (millions)
GSM	129	135
AMPS	95	76
PDC	1	39
CDMA	17	20
TDMA	36	18
TACS	24	14
NMT	35	3

Source: Ericsson; Global Mobile.

FIGURE 1 COMPETITION IN GSM SERVICES, AUGUST 1999



Note: Competition means that a country has two or more licensed GSM operators, and *competition in some areas* that the competing operators' service areas largely do not overlap.
Source: Based on GSM Association data.

TABLE 2 GROWTH IN THE CELLULAR MARKET BEFORE AND AFTER GSM COMPETITION
Percentage growth in number of subscribers

Market	YC – 1	YC[a]	YC + 1
Belgium	85	116	125
Estonia	..	121	127
Italy	26	57	81
Philippines	161	153	111
Romania	37	1,300	44
Singapore	42	90	57[b]
Taiwan (China)	19	58	37

.. Not available.
a. Year in which competition starts.
b. Estimate.
Source: Financial Times Mobile Communications; Strategic Policy Research.

competition has given rise to strong growth in the mobile telecommunications market. (In Japan and Latin America and the Caribbean, where GSM is not widely adopted, competition among other technologies is widespread.)

Even countries with very low per capita incomes are able to sustain at least two cellular operators. Second operators are emerging in countries with a GDP per capita of less than US$1,000, such as Azerbaijan, Bangladesh, Côte d'Ivoire, Georgia, and Uganda. The Philippines, Romania, and many other countries with a GDP per capita between US$1,000 and US$2,000 are experiencing strong growth in the mobile market as a result of the introduction of GSM competition. In Estonia the presence of three GSM operators has increased cellular penetration—the number of cellular phone subscribers per 100 people—to 13 percent.

Even in countries with very low population density there is room for at least two GSM operators, as in Botswana, Côte d'Ivoire, Egypt, Madagascar, and Tanzania. In these countries, however, network development remains concentrated around major cities and more densely populated areas.

Effects on the telecoms market

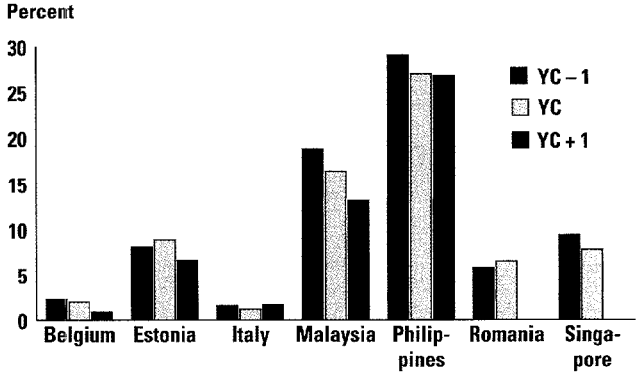
Cellular competition often brings with it growth in the cellular market. In relatively underdeveloped markets, such as Azerbaijan, Georgia, the Philippines, and Romania, GSM competition has marked the transition from a niche to a mass market. In Romania, where GSM competition was introduced in early 1997, the number of subscribers increased thirteenfold—from 16,000 to 225,000—by the end of that year. In more mature markets, where a single provider of GSM services had achieved average growth rates of 30 to 50 percent, such as Singapore, Taiwan (China), and most of Western Europe, GSM competition has increased those rates to 60 to 90 percent (table 2). The market growth effect holds regardless of GDP per capita and cellular penetration before competition.

GSM competition also reduces the price of cellular services. In several competitive markets the average price of a call from a GSM handset is 40 to 50 percent lower than in markets with a single provider. In the Middle East and North Africa it is Lebanon, where competition is most intense, that has the lowest prices (7 cents a minute, against a regional average of 40 to 50 cents a minute). Prices have fallen sharply in several markets in Western Europe. Four years after the introduction of competition tariffs had dropped by as much as 60 percent in Norway, and as much as 70 percent in Germany.

Another positive development of competitive digital cellular markets is the emergence of a wider range of services. In response to the entry of new competitors, incumbent operators introduce new features, such as caller ID, call forwarding, and call waiting. In several industrial and emerging economies GSM competition has also stimulated the introduction of prepaid cards, accelerating market growth. Thus to retain or increase market shares, competitors in the digital cellular market both reduce prices and develop new products and bundle services. GSM competition generally has not prevented continued expansion of wireline services, whether in mature markets or emerging economies (figure 2). In some countries (Estonia, Romania) the rate of growth in fixed lines increased after the introduction of a second GSM operator.

Finally, the introduction of new cellular players in the market, capable of offering new services and attracting new subscribers, tends to increase overall investment as well as revenues in telecommunications (table 3). Revenues grow both because the overall number of subscribers, for fixed and mobile networks, increases, and because the new cellular services generate particularly high revenues, given mobile customers' willingness to pay higher prices.

FIGURE 2 GROWTH IN FIXED LINES BEFORE AND AFTER GSM COMPETITION



Note: YC is the year in which competition starts.
Source: International Telecommunication Union; Strategic Policy Research.

Effects on the incumbent

Evidence from both industrial and emerging economies shows that introducing GSM competition does not hurt the operational and financial performance of the incumbent operator. The threat of competition alone is usually enough to cause the incumbent operator to adopt a series of changes to sustain its competitive edge. In Morocco, for example, where the authorities gave notice that GSM competition would be introduced in 1999, the incumbent began to rapidly expand its GSM network and reduce its tariffs to consolidate its market position well before competition was actually introduced.

As new GSM operators start to enter the market, the incumbent maintains its efforts to increase its competitiveness, enabling it to enlarge its subscriber base and retain a large share of the growing GSM market. This scenario is typical in both industrial and emerging economies. In Belgium the incumbent operator, Belgacom Mobile, has expanded from about 200,000 subscribers at the beginning of 1996, the year in which competition was introduced, to more than 900,000 today. Italy's incumbent operator, Telecom Italia Mobile, has increased its subscriber base from about 2 million at the end of 1995, when competition from Omnitel was introduced, to about 12 million today, retaining about 72 percent of the mobile telecommunications market and 65 percent of the GSM segment. Estonia's incumbent operator, Eesti Mobiltelefon, more than doubled its number of subscribers after the entry of two operators in the GSM market. Having achieved annual growth rates as high as 98 percent in 1997–98, Eesti Mobiltelefon holds about 60 percent of the GSM market (table 4).

Nor does the advent of competition in the GSM market seem to harm the incumbent's profitability. The large investments in GSM infrastructure that incumbents typically make as competitive pressures increase reflect strong confidence in the continued profitability of their GSM operations. And when the incumbent is a provider of both fixed and mobile services, its overall profitability does not seem to suffer either. In some countries for which data are available, the incumbent's overall profitability has tended to increase. A typical example is Spain, where the incumbent operator increased its revenues by 72 percent in the year in which competition was introduced, and by 31 percent in the year before. In the same period the growth rate of profits increased from 8 percent to 16 percent.

Current policy trends

As the benefits of cellular competition become more apparent, a growing number of governments are taking steps to ensure that new cellular operators can compete effectively with the incumbent operator. One of the most important—and arduous—tasks is to promote and enforce appropriate interconnection agreements between the incumbent operator and its competitors. Adequate regulatory mechanisms are also important to implement national and

TABLE 3 TELECOMMUNICATIONS REVENUES BEFORE AND AFTER GSM COMPETITION
Percent

Market	YC – 1		YC[a]		YC + 1	
	Telecom revenue as a share of GDP	Mobile telecom revenue as a share of total[b]	Telecom revenue as a share of GDP	Mobile telecom revenue as a share of total[b]	Telecom revenue as a share of GDP	Mobile telecom revenue as a share of total[b]
Belgium	1.6	5	1.7	11	1.8[c]	21
Estonia	2.7	7	2.9	9	..	..
Italy	1.8	14	1.9	21	1.9[c]	34
Philippines	1.4	10	1.3	18	1.3	32
Romania	1.2	1	1.6	9	..	..
Singapore	3.0	22	3.3	25	3.6[c]	38

.. Not available. a. Year in which competition starts. b. Conservative estimates. c. Estimate.
Source: International Telecommunication Union; Strategic Policy Research.

international roaming agreements between mobile operators.

Even with the best regulatory rules, however, it is difficult to ensure that cellular competitors are always granted access to the incumbent's network under fair conditions. As a result European Union members and other countries have granted new GSM operators the right to build their own long-distance and international gateway facilities. This right allows the new competitors to offer the full range of local, long-distance, and international services without having to rely on the network of the incumbent operator. And it brings competitive pressures to bear on the price of intercity leased line circuits and on the price of long-distance and international communications.

Other steps can also be taken to ensure that cellular operators are able to provide the full range of services possible with modern digital technology. GSM operators are increasingly allowed to provide fixed as well as mobile wireless services, to transmit data as well as voice, and to develop private as well as public networks.

In this Note GSM refers to a range of interoperable technologies, including GSM 800, GSM 900, DCS 1800, and PCS 1900.

Carlos Braga, Emmanuel Forestier, Peter Smith, Svetoslav Tintchev, Eloy Vidal, and Björn Wellenius contributed to to this Note.

[1] In North America, mainly through the PCS 1900 technology.

TABLE 4 SUBSCRIBERS TO THE INCUMBENT'S MOBILE NETWORK BEFORE AND AFTER GSM COMPETITION
Thousands

Market	YC – 1	YC[a]	YC + 1
Belgium	185	378	675
Chile	57	115	182
Estonia	13	26	53
France	44	370	700
Italy	467	1,910	5,600
Latvia	10	27	65
Mexico	1,048	1,900	..
Netherlands	68	241	484
Romania	..	20	200

.. Not available.
a. Year in which competition starts.
Source: International Telecommunication Union; Strategic Policy Research.

Carlo Maria Rossotto (crossotto@worldbank.org), Telecommunications Division, Michel Kerf, Middle East and North Africa Region, and Jeffrey Rohlfs, Strategic Policy Research, Maryland

Private Participation in Port Facilities—Recent Trends

Dirk Sommer

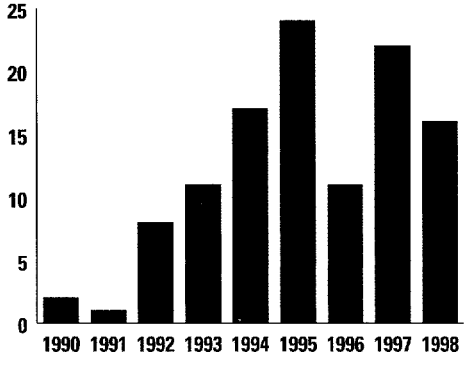
The private sector has become increasingly involved in the operation of common-user port facilities during the 1990s, following public sector dominance of the sector since the 1940s. During the past decade the reform of port administration has gained momentum in industrial and developing countries alike. Between 1990 and 1998, 112 port projects with private participation reached financial closure in twenty-eight developing countries, with investment commitments totaling more than US$9 billion (figures 1 and 2; boxes 1 and 2). This trend is set to continue.

Public port agencies have been moving away from the service port model, under which the port authority provides all commercial services as well as regulatory functions, and increasingly adopting the landlord model. Under this approach public port authorities retain their regulatory functions and continue to own the land and basic infrastructure assets such as berths and breakwater facilities. But they divest themselves of the managerial and financial responsibility for commercial facilities such as terminals and equipment in the port area.

Before the 1990s private involvement in managing and financing ports was largely limited to captive facilities. These facilities, typically for bulk cargo, are often vertically integrated into production processes and not actively promoted for use by third parties (figure 3). During this period private involvement in common-user ports was limited to a few projects: Kingston

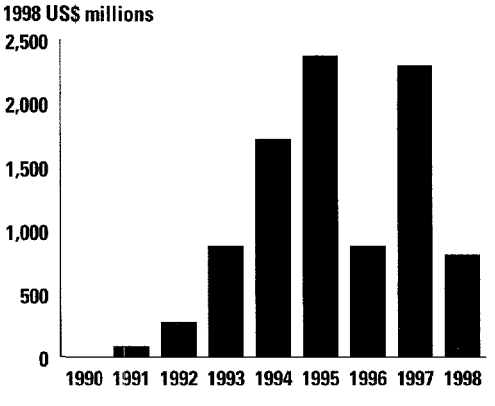
The World Bank's Private Participation in Infrastructure (PPI) Project Database covers private participation in infrastructure in developing countries. The database records details of all projects owned or managed by private companies from 1984 to 1998 in water, electricity, telecommunications, natural gas transmission and distribution, and transport—the road, seaport, airport, and railroad sectors. This Note examines projects in port infrastructure that reached financial closure between 1990 and 1998. It describes regional trends in and types of private sector involvement.

FIGURE 1 PORT PROJECTS WITH PRIVATE PARTICIPATION IN DEVELOPING COUNTRIES, 1990–98



Source: PPI Project Database.

FIGURE 2 TOTAL INVESTMENT IN PORT PROJECTS WITH PRIVATE PARTICIPATION IN DEVELOPING COUNTRIES, 1990–98



Source: PPI Project Database.

BOX 1 PPI PROJECT DATABASE: PROJECT CRITERIA AND DATABASE TERMINOLOGY

Database coverage

- To be included in the database, a project must have reached financial closure and directly or indirectly serve the general public.
- The sectors covered are electricity, natural gas, telecommunications, transport, and water.
- The transport sector includes the following subsectors: airports, seaports, rail, and road. The seaport subsector includes general cargo and container terminals, bulk cargo facilities, and port access channels.
- The database excludes movable assets, incinerators, stand-alone solid waste projects, and small projects such as windmills.
- The period covered is 1984–98.
- The database covers developing countries, as defined and classified by the World Bank, in East Asia and the Pacific, Europe and Central Asia, Latin America and the Caribbean, the Middle East and North Africa, South Asia, and Sub-Saharan Africa.

Definition of private participation. The private company must assume operating risk during the operating period or assume development and operating risk during the contract period. In addition, the operator must consist of one or more corporate entities with significant private equity participation that are separate from any government agency. A foreign state-owned company is considered a private entity.

Definition of a project unit. A corporate entity created to operate infrastructure facilities is considered a project. When two or more physical facilities are operated by the same corporate entity, all are considered as one project.

Project types

- *Operations and management contract.* A private entity takes over the management of a state-owned enterprise for a given period. This category includes management contracts and leases.
- *Operations and management contract with major capital expenditure.* A private consortium takes over the management of a state-owned enterprise for a given period during which the private entity also assumes significant investment risk. This category includes build-transfer-operate, build-lease-transfer, and build-rehabilitate-operate-transfer contracts as applied to existing facilities.
- *Greenfield project.* A private entity or a public-private joint venture builds and operates a new facility. This category includes build-own-transfer and build-own-operate contracts as well as merchant power plants.
- *Divestiture.* A private consortium buys an equity stake in a state-owned enterprise. The private stake may or may not imply private management of the company.

Definition of financial closure. For greenfield projects, and for operations and management contracts with major capital expenditure, financial closure is defined as the existence of a legally binding commitment of equity holders or debt financiers to provide or mobilize funding for the project. The funding must account for a significant part of the project cost, securing the construction of the facility. For operations and management contracts, a lease agreement or a contract authorizing the commencement of management or lease service must exist. For divestitures, the equity holders must have a legally binding commitment to acquire the assets of the facility.

Sources

- World Wide Web.
- Commercial databases.
- Specialized publications.
- Developers and sponsors.
- Regulatory agencies.

Contact. The database is maintained by the Private Participation in Infrastructure Group of the World Bank. For more information contact Mina Salehi at 202 473 7157 or msalehi@worldbank.org.

Port, in Jamaica (1967), Port Klang, in Malaysia (1986), and Manila Harbor, in the Philippines (1988).

The shift toward private involvement has been driven by two main factors:

- The strong growth in world trade[1] has led captive port users—unable to switch to other transport modes, such as railways or airports, or to other ports—to put enormous political pressure on authorities to improve handling efficiency, reduce port user fees, and expand facilities to accommodate larger cargo flows. Yet many public port authorities have had only limited success in improving labor and other practices to increase the productivity and efficiency of existing installations.
- Economies of scale in cargo shipment have led to the emergence of a few global players in shipping, able to control the allocation of transshipment business to strategically located, well-equipped, and efficiently managed hub ports.[2] To stay competitive, port authorities have to modernize and upgrade port facilities to meet the needs of the large shipping lines. But with larger ships, the advance of containerization, and the introduction of sophisticated cargo information systems, the investment required has often gone beyond the financial and managerial capacities of public port authorities.

BOX 2 PPI PROJECT DATABASE: RECORDING OF INVESTMENT

The database records investment differently for different types of projects, because project characteristics and data availability vary. For operations and management contracts with major capital expenditure, investment is recorded as commitments of the private consortium for the entire contract period at closure. For the Aguas Argentinas water concession, for example, investment was recorded as US$4 billion, the commitment at financial closure in 1994. Most transport and water projects are operations and management contracts with major capital expenditure.

For greenfield projects, investment is recorded as commitments for the entire contract period where those commitments are clearly defined. For example, the US$1.6 billion investment in the Hub Power Company was recorded in 1994, when the power plant reached financial closure. For other greenfield projects, investments and license fees are recorded periodically. For the Czech mobile phone operator Polkomtel, investments in network expansions are reported every year there is a major expansion, and license fees are registered in the first year of operations. Greenfield projects are predominantly in electricity and telecommunications.

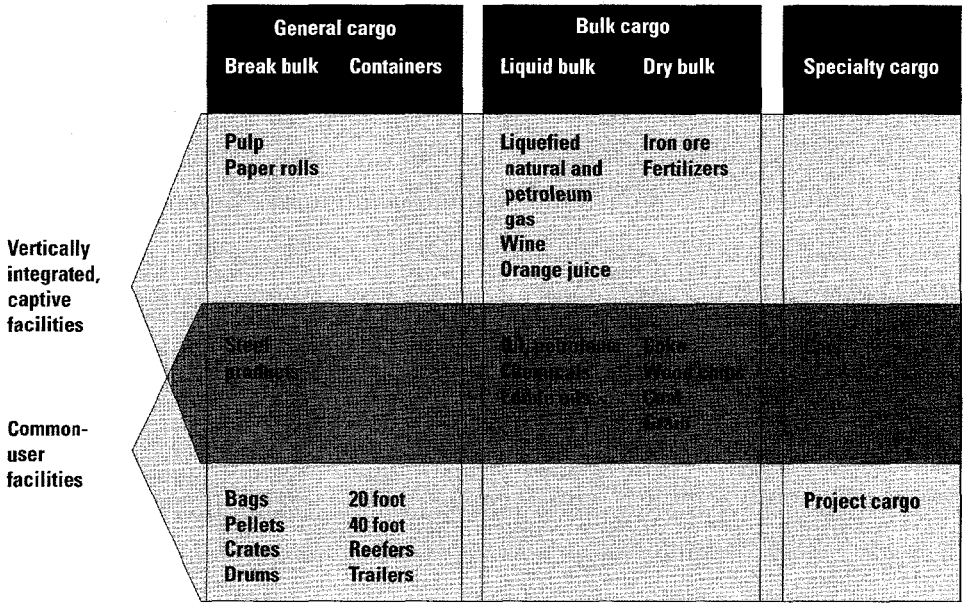
For divestitures, privatization revenues are reported annually, and postprivatization investments in privatized companies managed by private consortia are tracked. For Telmex, for example, divestiture revenues are registered annually. And since the sale of a controlling stake in Telmex to a private consortium, the company's annual investments have been reported as additional investments. For Korea Telecom, only divestiture revenues are tracked, since the government still owns the controlling stake. Divestitures are predominantly in electricity and telecommunications.

This Note, which draws on the World Bank's PPI Project Database, provides an overview of the emerging patterns and trends in private involvement in ports in developing countries. The database does not track very small projects[3] and covers only seaports that operate on a common-user basis. The database covers only twenty-one bulk facilities, since most are operated as captive facilities. (Thirteen are dry bulk handling facilities, for grain or coal, transferred to private management, and eight are liquid bulk facilities developed by the private sector.) Among the public port facilities attracting private involvement that have been included in the database, most have been container terminals (sixty-two transactions). The rest have been smaller ports handling general and bulk cargo. There has been only a single case of a concession for channel dredging and maintenance, awarded in the Rio Paraná. Part of the project revenues will come from direct charges to the future channel users by the concessionaire.

The database depicts two distinct patterns:

- Long-term concession contracts involving private operation and management and significant private investment in existing public assets have been the most common arrangements; the ownership of land has in most cases remained with the public port authority. Private investment has fostered the rehabilitation of terminals and the renewal of superstructure, such as cranes and yard equipment.

FIGURE 3 MARITIME CARGO AND THE HANDLING FACILITIES REQUIRED



- Reflecting a pattern observed in other infrastructure sectors, most transactions have taken place in Latin America and East Asia. Within regions, the distribution of projects has been uneven, with five countries accounting for roughly half the projects in all developing countries.

Concessions involving major private investments dominate

In most projects the new private port operators have taken on significant investment obligations for expansion and modernization of existing facilities (commonly buildings and equipment), assuming full commercial risks for the facilities. The public port authorities, with few exceptions, have retained obligations for investment in berths and breakwater facilities and maintenance of access channels.

Three-quarters of the 112 projects are operations and management contracts with significant capital expenditure for existing facilities (forty-nine projects) or greenfield development (thirty-five). Most of these projects are in Latin America (eight greenfield projects and twenty-nine concessions) or East Asia (eighteen greenfield projects and thirteen concessions). Rapid growth in trade and insufficient infrastructure in East Asia have meant a larger role for new port facilities (greenfield projects) in that region and also explain the high volume of investment there, as in Malaysia. In Latin America the private sector has more often taken over existing infrastructure assets and invested in refurbishing and modernizing superstructure, focusing on increasing the efficiency and productivity of existing assets.

Twenty of the 112 projects are structured as operations and management contracts without investment commitments. In these projects private operators have leased existing port infrastructure. Lease contracts have reached closure for facilities in Latin America (eight projects) and Sub-Saharan Africa (two). In East Asia, Thailand (Laem Chabang) and the Republic of Korea (Pusan, Kwangyang) have awarded leases to operate new container facilities financed by the public sector.

Divestiture has played a limited role in the port sector. In the Russian Federation ports have been transformed into joint stock companies through voucher privatization. The stevedoring companies, usually former divisions of the port, have been assigned ownership rights to parts of the port infrastructure, such as real estate in the port

area (St. Petersburg), or to shares in the port company (Vladivostock), with the state retaining a 49 percent ownership. In Brazil captive port facilities have been divested in the context of privatization in oil, steel, and mining and have since been opened to third-party access (Tubarão, San Nicolas).

Private involvement remains regionally concentrated

Latin America and East Asia have clearly led the trend in private involvement in port operations, both in the number of projects reaching financial closure and in investment commitments (table 1). This regional pattern is largely consistent with trends in other infrastructure sectors, such as electricity and water and sewerage.[4] Within these regions, projects and investments are unevenly distributed. Five countries accounted for half the projects reaching financial closure in 1990–98, and more than 65 percent of committed investment (figures 4 and 5).

TABLE 1 PORT PROJECTS WITH PRIVATE PARTICIPATION IN DEVELOPING COUNTRIES BY REGION, 1990–98

Region	Number of projects	Total investment (1998 US$ millions)
East Asia and the Pacific	38	5,410.5
Europe and Central Asia	8	23.4
Latin America and the Caribbean	48	2,497.7
Middle East and North Africa	5	376.5
South Asia	9	942.6
Sub-Saharan Africa	4	32.0
Total	112	9,282.7

Source: PPI Project Database.

Latin America and the Caribbean

Latin America and the Caribbean, with poor performance by public ports and strong growth in trade, turned to private participation in ports in the early 1990s. By 1998 seven countries—Argentina, the Bahamas, Brazil, Colombia, Jamaica, Mexico, and Panama—had transferred control of port facilities to the private sector.

Colombia led the way in 1993, awarding concessions for the management of its four major general cargo ports to public-private consortia with a majority of votes held by local private companies. These consortia then subconcessioned private terminal operators.[5]

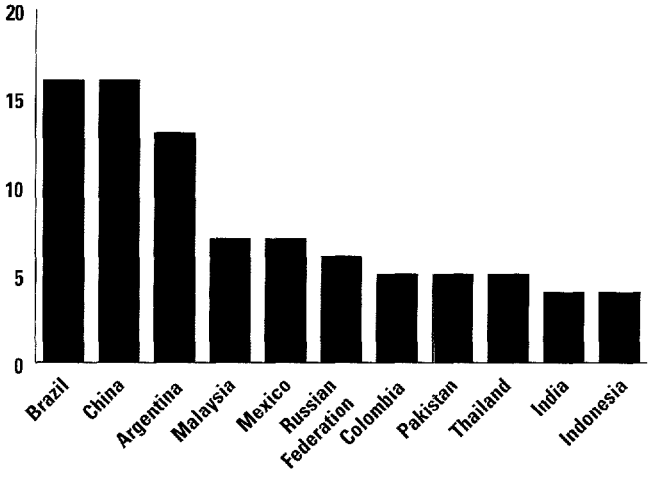
Argentina, as part of a broad program of private involvement in public infrastructure services, awarded concessions for the terminals of its main port, Buenos Aires, to four competing private port operators in 1994. The stiff competition within the port and from a greenfield facility in the province of Buenos Aires has brought down handling charges significantly, mostly through improved labor productivity, but has also led to consolidations among the terminals.[6]

Panama and Mexico transferred their major port facilities to the private sector between 1995 and 1998. Panama attracted more than US$380 million in investments for four facilities under private management—Manzanillo International Terminal, Colón Container Terminal, and the ports in Cristóbal and Balboa; all are strong competitors in the container transshipment market. Mexico awarded concessions for its major port facilities in Manzanillo, Ensenada, Altamira, and Veracruz.

Brazil started its port privatization program in 1997 with concessions for the container terminals in Santos and Rio Grande. Following the Argentine model, it awarded concessions for single terminals.

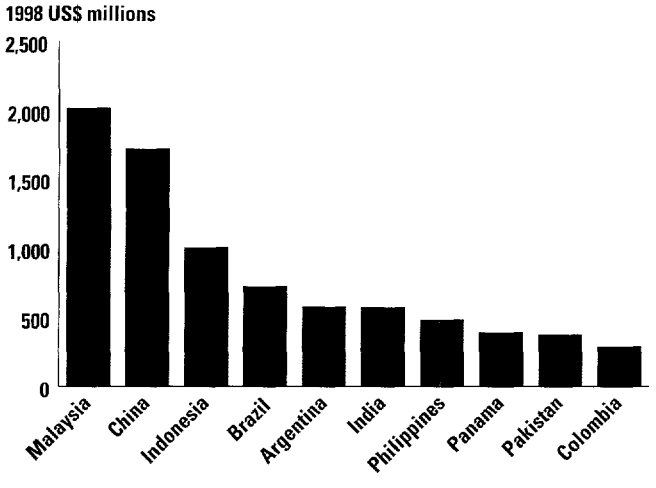
In most of the Latin American projects the private operators have been able to attract significant private capital investment to refurbish infrastructure assets and modernize cargo handling equipment. The private terminals have improved the quality of service and reduced costs (although handling charges remain high by international standards), especially where competition from other terminals in the port or among neighboring ports has been strong.

FIGURE 4 TOP TEN DEVELOPING COUNTRIES BY NUMBER OF PORT PROJECTS WITH PRIVATE PARTICIPATION, 1990–98



Note: India and Indonesia both have four projects.
Source: PPI Project Database.

FIGURE 5 TOP TEN DEVELOPING COUNTRIES BY INVESTMENT IN PORT PROJECTS WITH PRIVATE PARTICIPATION, 1990–98



Source: PPI Project Database.

Sustaining that competition will depend on a regulatory framework that promotes competition not only among terminals and ports but also among different modes of transport.

East Asia and the Pacific

In East Asia and the Pacific the model for private management of port facilities has been the port of Hong Kong, which has been privately managed for many years. The Philippines, too, involved the private sector early, handing over management of its major container facilities at the Port of Manila to International Container Terminal Services in 1988. China, Indonesia, Korea, Malaysia, Myanmar, Thailand, and Vietnam have turned to the private sector since the mid-1980s to manage and invest in port terminals.

Malaysia awarded Kelang Container Terminal (KCT) a twenty-one-year lease contract to manage and develop container facilities at Port Klang in 1986 and awarded a concession for the port's bulk operations to a private consortium, Klang Port Management (KPM), in 1993. Between 1992 and 1998 Malaysia attracted significant investment commitments for seven other major port projects. The most important is Klang West Port, which reached closure in 1994. This project will compete with the other operators in Port Klang as well as with the region's dominant transshipment hub, the port of Singapore. In December 1998 KCT and KPM announced a merger of their operations to achieve economies of scale and cost-effectiveness. Whether the resulting loss of competitive pressure will be balanced by the emergence of Klang West Port remains to be seen.

China opened the management of its ports to the private sector beginning in 1991. The Hong Kong Port operator, Hutchison Whampoa, took over the development and management of container facilities in Shanghai in 1993 and in Yantian in 1994. By 1998 thirteen facilities in China were managed by the private sector. Private operations are generally structured as joint ventures with the public port authorities; the competition within ports seen in Latin America is rare in China.

Indonesia introduced private management in 1995, transferring the Koja container terminal at Tanjung Priok Port. The project ran into difficulties amid the political and economic turmoil of the financial crisis, and the state-owned port company, PT Pelabuhan Indonesia II, canceled the concession contract and took over the facility in 1998.[7]

Elsewhere in the region, Korea (Pusan, Kwangyang) and Thailand (Laem Chabang) granted leases for government-owned port facilities to the private sector. Myanmar, Thailand, and Vietnam have attracted minor private investments for port facilities.

Middle East and North Africa

Countries in the Middle East have only recently opened up their port infrastructure to private involvement. Oman, the United Arab Emirates, and Yemen awarded one facility each to the private sector in 1997. The new container facilities in Oman (Port Raysut) and Yemen (Port Aden) will compete with each other mainly for transshipment cargo. Saudi Arabia awarded a concession for a facility in Jeddah and one for a general cargo terminal in Dammam. And the United Arab Emirates awarded a concession for a liquid bulk terminal in the port of Fujaira. In North Africa in early 1999, Morocco awarded a contract to a private consortium for the development of a new container facility at the port of Tangiers (Tanger-Atlantique) on a build-operate-transfer (BOT) basis.

Sub-Saharan Africa

Mozambique and Kenya have been the only countries in Sub-Saharan Africa to award private contracts for port operations. Mozambique awarded lease contracts for Maputo coal terminals in 1993 and container terminals in 1996.[8] Kenya entered into a management contract for a container facility with an international operator in 1996 that was later canceled. But in 1998 a consortium invested in the development of a grain and fertilizer terminal at the port of Mombasa.

Europe and Central Asia

After launching a reorganization of the maritime sector in 1991, Russia used vouchers to privatize its major port facilities (Murmansk, Kaliningrad, St. Petersburg, Vostochny, Vladivostock, Arkhangel'sk). The joint stock port companies and stevedoring companies have had difficulties raising financing to expand and modernize the privatized port facilities. Foreign involvement in managing and financing port infrastructure through 1997 was limited to a lease contract in 1995 for one minor container facility in Vostochny Port. Elsewhere in the region, Romania granted a license to construct and operate a grain terminal in the port of Constanta to a private consortium in 1997. And in 1998 Latvia privatized a stevedoring company that leases quays and land from the Riga port authority.

South Asia

Port projects involving the private sector are a very recent phenomenon in South Asia, limited to India and Pakistan.[9] In India, despite much private sector interest, only three projects—in the ports of Mundra, Pipavav, and Jawaharlal Nehru—had reached financial closure by 1998. The Nhava Sheva container terminal at the Jawaharlal Nehru Port Trust is the only significant foreign investment. In Pakistan four container terminals and one liquid bulk facility in the ports of Karachi and Qasim reached financial closure between 1995 and 1998.

Conclusion

Private participation in port operation has grown strongly over the past decade, driven by broader trends in the transport sector and a new understanding of the public sector's role in the provision of infrastructure services. Labor unions, which play an important role in the sector, remain highly critical of private participation, however, mostly because of the changes in labor rules and the workforce reductions introduced by private operators.

The countries leading the way in private participation have been able to attract significant private capital investment to refurbish infrastructure assets and modernize cargo handling equipment. Under private management ports have usually significantly improved their performance, boosting labor productivity and service quality and reducing handling costs. Whether these efficiency achievements can be sustained

will depend in large part on the extent to which competitive pressures can be brought to bear on private operators, through competition among ports or within ports.

Sustaining competition among ports will require coordinating competition policies at a regional level to create a level playing field for ports and avoid dominance by single port operators. A broader approach—aimed at encouraging private participation and competition in the transport sector as a whole—would need to promote competition by ports with other transport sectors, such as railroad and road transport, and provide incentives for service providers to compete across transport networks by combining transport modes.

Dirk Sommer, Private Participation in Infrastructure Group

[1] Latin America recorded annual growth rates of 13 percent for merchandise imports and 9 percent for merchandise exports in 1990–97, while in Asia imports grew 9 percent and exports 7.5 percent, according to the World Trade Organization's *International Trade Statistics 1998* (Geneva, 1998).

[2] Hub ports seek to consolidate regional cargo by connecting regional ports through feeder vessels to a main port, the "hub," thus allowing shipping companies to exploit economies of scale by deploying larger vessels on long routes, such as in transoceanic transport. The unloading of feeder vessels, temporary storage of freight, and loading of large vessels make up the transshipment business.

[3] For example, the database does not fully reflect licenses for the small private stevedoring companies that often operate state-owned port equipment, which is a common arrangement in parts of West Africa (Cameroon, Côte d'Ivoire, Gabon, Guinea, Senegal) and Latin America.

[4] See Ada Karina Izaguirre, "Private Participation in the Electricity Sector—Recent Trends" (*Public Policy for the Private Sector*, December 1998), and Gisele Silva, Nicola Tynan, and Yesim Yilmaz, "Private Participation in the Water and Sewerage Sector—Recent Trends" (*Public Policy for the Private Sector*, September 1998).

[5] See also Juan Gaviria, "Port Privatization and Competition in Colombia" (*Public Policy for the Private Sector*, March 1999).

[6] See Antonio Estache and José Carbajo, "Competing Private Ports—Lessons from Argentina" (*Public Policy for the Private Sector*, December 1996).

[7] In early 1999 Hong Kong's Hutchison Whampoa, which operates Java International Terminals at Bojonegara Port jointly with PT Pelabuhan Indonesia II, announced the acquisition of a 51 percent stake in management of the container terminals in Jakarta jointly with Pelabuhan II, the state-owned port authority. It acquired the twenty-year stake against competition from other international port operators.

[8] Mozambique also awarded the N4 Maputo Corridor toll road concession and three concessions for railroad lines serving the Maputo port to consortia with private participation.

[9] In early 1999 South Asia Gateway Terminal (P&O Australia) took over the Queen Elizabeth Quay of Colombo Port in Sri Lanka under a thirty-year concession.

Transmission Investment in Competitive Power Systems

Decentralizing decisions in Argentina

Manuel Angel Abdala and Andres Chambouleyron

Recent power outages in Argentina are largely the result of transmission problems that could be solved by more investment. Private concessionaires now operate the main and regional networks, but they are under no obligation to expand capacity. In a decentralized electricity market such as Argentina's the key to a successful transmission investment policy is coordination among the parties involved. Without coordination, an investment project in one site might affect or even disrupt power flow in another. But user coalitions are difficult to set up because of high transaction costs (mainly informational) and, in the Argentine system, because investment mechanisms do not provide a clear allocation of property rights to private investors. Investment decisionmaking for capacity expansion is centralized, but prolonged congestion indicates that the process is not working efficiently. Argentina is searching for a decentralized solution. This Note outlines the options for its high-voltage network and proposes a solution for the regional grids.

The unbundling and privatization of Argentina's power sector in 1992 has been a success. Six years after the reform wholesale prices had been more than halved (from about US$50 per megawatt-hour) and output had increased by 52 percent. Retail prices have also fallen, and service quality has improved. Transmission has shown explosive growth: medium- and high-voltage lines increased 42 percent in length in 1991–97.

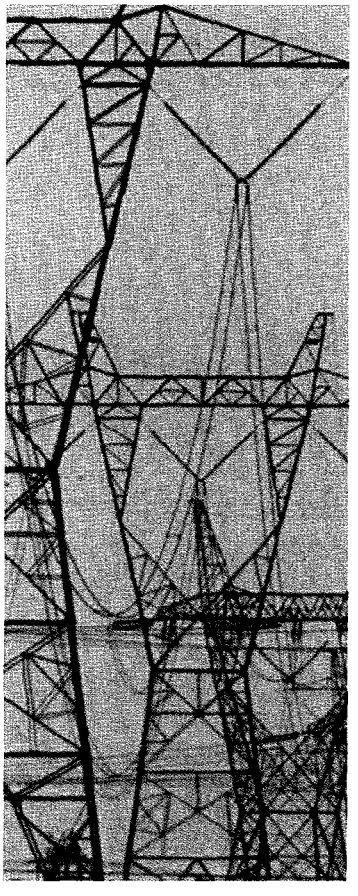
But there is growing concern about the efficiency and fairness of transmission investment rules: in some regions lack of transmission investments has led to outages and thus to reliability problems. More than 90 percent of power outages in the system have their origins in transmission problems that could be substantially avoided with increased investment.

The design of a regulatory framework for transmission is challenging. Transmission is an essential facility, and whoever controls it can exercise a lot of market power. Reliability is key to the operating efficiency of a transmission network.[1] Regulation of transmission must induce optimal management of existing assets and optimal investments in generation and transmission. In countries that have established competition in bulk and retail markets, transmission regulation policies are aimed at:

- Guaranteeing open access to the network.
- Ensuring fair and efficient pricing.
- Protecting ownership rights to transmission assets (for both incumbents and newcomers).
- Establishing network use protocols and coordination and compensation mechanisms.

There are tensions between these objectives. No one should use a network facility without contributing to its financing. Thus property rights are crucial to internalize network users' effects on

each other and to avoid free-riding problems. A first problem here is to reconcile existing ownership rights with the open access rule. Other challenges relate to the way transmission rights are administered: Should rights reflect differences in nodal prices (congestion pricing)? Should they be issued in the form of physical rights or as financial rights? And should they be dealt with through an exchange market? Setting up transmission rights may not even be cost-effective if competition is limited or if the rights are too hard to administer.



Who owns the grid and issues transmission rights also raises issues. Should investment be carried out by grid users or grid operators, and what are the implications of who pays what to whom? In the United Kingdom Gridco, the grid operator, has the monopoly on ownership and investment. In New Zealand network users or coalitions of users make investment decisions with minimal regulatory supervision. This is one of the alternatives under study for Argentina, where new entrants can construct, operate, and maintain new transmission facilities.

This Note looks at the issues in Argentina, where decisionmaking on transmission investments is centralized and projects must be approved by a federal agency. Underlying Argentina's search for better rules for investment is a belief that more decentralized mechanisms would lead to more efficient outcomes. The Note briefly describes current rules for transmission investment, discusses the experience so far, presents the alternative mechanisms under consideration, and proposes a solution to the remaining challenge: devising an efficient decisionmaking mechanism for the regional meshed grids.

How transmission is regulated in Argentina today

In Argentina a private, nonprofit company, Compañía Administradora del Mercado Mayorista Eléctrico SA (CAMMESA), is in charge of generation dispatch, power flows, and administration of wholesale transactions. The main high-voltage national network is operated under concession by a regulated private monopoly, Transener SA, in an unbundled electricity market where generation is very competitive. Six other private transmission companies hold concession rights to operate and maintain high-voltage lines in regional areas. The regulation of transmission is rooted in five principles:

- Monopoly rights to operate the existing network.
- A prohibition on selling or buying energy.
- Open access by buyers and sellers.
- Periodic competition for the concession rights.[2]
- Incentive-based regulation of prices and quality.

Pricing

Argentina has put in place a system of locational electricity pricing. The price of power in each network node consists of four main elements: marginal generation costs, resistive line losses, congestion costs (these are administered costs; they are not calculated in real time or even updated very often), and a reliability component.

Nodal prices vary with losses and, above all, when transmission constraints occur. When the capacity of a line is exceeded, the generation dispatch is altered, local prices change, and congestion charges thus appear as the differential in nodal price increases. These charges do not accrue to the grid companies, as they would create a perverse incentive to allow congestion. Instead, the charges are centrally administered and collected by CAMMESA for financing transmission investments. In aggregate, they bear no relationship to the costs of new investments and are frequently lower, so that other sources of revenue are required to meet investment costs.

No one should use a network facility without contributing to its financing. Thus property rights are essential to avoid free-riding problems.

Transmission companies face no obligation to expand capacity. Their pricing regime is a hybrid, with elements of price caps, revenue caps, and incentive clauses. Their main source of revenue is a fixed annual charge paid by network users and set on the basis of energy losses (as forecast by CAMMESA) and approved by the federal regulatory body, Ente Nacional Regulador de la Electricidad (ENRE). This charge acts as a revenue cap for a five-year period.[3] Other revenue comes from connection charges (which are capped) and bonuses for high reliability (administratively determined) less penalties for lack of availability, the main source of risk in transmission.

Investment regulation

Capacity expansion in transmission requires prior authorization by ENRE, which evaluates proposed projects on economic efficiency criteria. Current law allows two ways of financing the construction of new lines:

- Private contracts among interested parties.
- Build, operate, and maintain (BOM) contracts.

The private contract mechanism is the most practical for lines that connect single users (or small coalitions of users) to a point on the grid. The mechanism is straightforward: interested parties finance the construction of the facility and operate it under the same price and incentive regulations imposed on Transener.

For large investments—such as one shared by several users—BOM contracts are more appropriate. They provide for a split-savings device, may be financed partly by accumulated congestion charges, and go through a four-step hearing and bidding process.

First, a group of parties (generators, distributors, or industrial users) interested in constructing a new line files an application with ENRE outlining the details of a BOM contract, including a description of the project, the annual levy needed to finance the venture, and the amortization period.

Second, ENRE evaluates the proposal and verifies that the net present value of the system's total investment, operation, and maintenance costs is less with the project than without it.

Third, using a standard methodology, CAMMESA identifies the beneficiaries of the project. The criterion is based on a physical concept: a network user is considered a beneficiary if it is located on a node where electricity flows will change as a result of the new project. Beneficiaries will be liable for paying the levy that finances the project, though they can contest this liability through

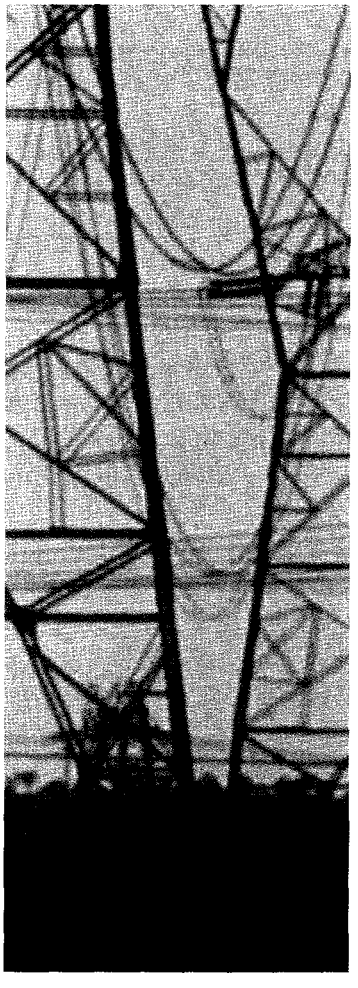
a public hearing. A veto of the project must have the support of beneficiaries representing at least 30 percent of the pool.

Fourth, if no veto stands, ENRE tenders the proposed BOM in a public bid, awarding the project to the bid with the lowest levy. If there are no competing bids, the project goes to the BOM contract proposed in the initial application.

The experience so far

While private contracts have been widely used for relatively small investments, BOM initiatives have been limited to two in five years.

The first initiative was proposed in February 1995 to upgrade conductor size on a line between the Comahue and Buenos Aires regions. It was expeditiously approved, but only because the project was entirely financed through the allocation of congestion charges.



The second initiative, also proposed in February 1995, was to construct a 1,000-megawatt line between Comahue and Buenos Aires (Comahue's fourth line) at a cost of about US$200 million. The main beneficiaries were seven generators from the Comahue region suffering from reduced generation load and low local prices as a result of transmission constraints. Accumulated congestion charges could finance only a small part of the investment. The initiative was presented by five generators from Comahue but vetoed by beneficiaries that disagreed with the allocation of costs. These represented more than 30 percent of the pool, thanks to the two Comahue generators that did not join the initiative, so the veto stood.

The rejection led to informal negotiations among the Comahue generators, which eventually reformulated the project and presented a new initiative in September 1996. In the second hearing complaints again arose about the way CAMMESA allocated investment costs, but this time the veto did not stand. The project was approved, and those that considered their share of the costs unfair were not compensated.

Lessons learned

Prolonged congestion in power transmission in Argentina indicates that the BOM and private contract procedures can lead to nonoptimal investment:

- The private contract procedure grants no property rights, and the resulting threat of free riding deters investment—as does the ineligibility for funding from congestion charges.
- The BOM procedure relies on an administrative rule for its most sensitive aspect, the allocation of costs among potential beneficiaries. That rule has conceptual flaws, and the veto safeguards are insufficient to prevent unfair and inefficient outcomes.
- The BOM procedure partially avoids free riding, since the allocation of costs may vary over time according to flows on the new line. But it fails to eliminate free riding for the same reason: physical flows are an imperfect measure of benefits because benefits have price and quality dimensions.
- Congestion charges are handled through administrative rules, not market decisions. The current rules are clear and simple, allowing little room for discretion. But congestion rents are collected by regions (or electric corridors),

and it is unclear how the centrally administered funds would be allocated if more than one project becomes eligible for accumulated congestion rents. The allocation could be inconsistent with private investment incentives.

Alternatives under study

Policymakers in Argentina are considering three alternative investment mechanisms, all of which involve granting some form of financial (not physical) ownership rights: transmission capacity rights (TCRs) based on incremental capacity, transmission rights (TRs) based on bilateral power flows (Bastos 1998), and transmission congestion contracts (TCCs) based on postinvestment congestion charges (Anderson and others 1998).

No matter how hard a centralized agency tries, it will not have the same information as individual users do about their expected investment returns.

Transmission capacity rights

Under the TCR mechanism the potential beneficiaries of a capacity expansion project would buy financial instruments (TCRs) in a public auction by submitting bids offering a price per kilowatt of the incremental capacity. These instruments would confer a form of ownership rights on their buyers that could be exercised directly or leased to another potential user of the incremental capacity.

The appeal of this mechanism is that the beneficiaries that finance the expansion would reveal their true preferences in the auction. In addition, the mechanism would eliminate free riding, since every user of the new facility would be required to hold TCRs equal to the power capacity it demanded. But this feature is effective only in a radial network, where flows typically go in one direction and the capacity utilization of any user is easy to measure. In a meshed network, where it is sometimes difficult to determine exactly the capacity used, users have little incentive to buy the socially optimal amount of TCRs in the auction.

Transmission rights

In the TR approach rights would be allocated on the basis of bilateral power flows in transmission lines; thus this approach is based on actual power flows, while the TCR approach relies on actual use of the incremental capacity of the transmission facility. Under both approaches the loop flows could prevent holders of rights from exercising them. That would affect the price of each right and thus the likelihood that the investment project would be carried out.

Transmission congestion contracts

A TCC from node A to node B would give a user the right to collect the congestion charges associated with the transmission of an energy flow from A to B. Those that congest the line without having paid for it would generate congestion rents that would accrue to TCC owners, thus sending the right economic signals to investors.

This mechanism shares a problem with the TCR approach—determining the nominal capacity of the newly built transmission line. This is a tricky business because in a meshed network nominal capacity depends on loop flows, the hour of the day, and other factors. If the authority is unsure

about the line's nominal capacity, how many TCCs should it issue?

The most important problem with TCCs is that for some types of transmission constraints, the allocation of congestion rents among flow paths can be cumbersome. Since the amount of congestion rents collected through TCCs would depend on the spot price of electricity, market shocks affecting this price would put at risk the ability of TCCs to recover capital costs. For example, a fall in the cost of generation would cause the spot price to fall and entitle TCC holders to smaller-than-expected congestion rents.

A local coalition approach for regional grids

Any of the three mechanisms could work well in the very high-voltage network of Argentina because the network is radial. But implementing transmission rights would be difficult in regional grids, which are voltage meshed. An alternative approach relies on a regional board to coordinate investment and allocate its costs on the basis of self-imposed rules. Coalitions of future users reveal their preferences through a cost-benefit ratio, which is used to rank and approve projects. The projects would be financed through an escrow fund created by regional network users. The legal status of such projects would be the same as that of current private contracts, except for the role of the board and its eligibility for the proceeds of congestion charges to help finance projects.

While this committee approach does not guarantee optimal investment decisions, it offers several advantages over existing Argentine regulation. It might lead to a better allocation of investment costs because it gives users incentives to reveal their preferences and no centralized agency would meddle in their decisions. Why could this approach better handle the cost allocation in meshed networks? One explanation relates to the asymmetries of information between users and CAMMESA. No matter how hard this centralized agency tries, it will not have the same information as individual users do about their expected investment returns (with all foreseeable events internalized). A second explanation is that the approach would alleviate the free-riding problem, for two reasons: First, users internalize externalities when they voluntarily agree to undertake a project or when they bid the price they would pay for a project. Second, the board would have the power to provide for compensation among users whenever a new project reduces the expected returns of an existing one approved by the board.

There are also institutional advantages in the regional boards. By delegating some regulatory power to network users, the committee approach would lessen the risks of administrative expropriation and opportunistic behavior by government. Conflict resolution arrangements would probably be determined by the users themselves (with the regulator intervening only as a last resort). These elements would reduce the transaction costs of new transmission investments.

Conclusion

Alternative procedures for transmission investments are under study not only in Argentina but also in other countries that have deregulated their power sectors, including Australia (Victoria), Bolivia, Chile, Colombia, Peru, New Zealand, and the United States. One way of establishing property rights is to issue financial transmission rights over new lines. Transmission rights as described here can be made compatible with open access and efficient dispatch, but there are still shortcomings in their capacity to prevent free riding in meshed networks or where competition in the product market is limited. Their complexity is also a liability, though not an insurmountable one.

The regional board mechanism offers a different direction for policymaking, creating a forum for agents to discuss potential projects. There is no hard evidence that this mechanism would lead to optimal investment decisions. But it offers a solution to the investment cost allocation problem

under existing regulation in Argentina—it would generate incentives for agents to join together in a group that promotes coordinated decisions, and thus alleviate free riding. The mechanism has two clear advantages: it is highly decentralized, minimizing the scope for regulatory discretion, and it is simple, requiring no ex post calculations of power flows or nominal capacity.

[1] Other needs in transmission include minimizing distances between generation and demand sites, controlling load patterns, supplying emergency and security responses, coordinating maintenance, and managing operating reserves. All these should be seen as services provided by the transmission company. The main difficulty, for both the firm and the regulator, lies in pricing these services, as costing them out is arduous.

[2] Concessions last ninety-five years, but after the first period, which lasts fifteen years, the government calls a public tender for the sale of the controlling share package at the end of each ten-year period. The incumbent has a slight advantage in this tender, since all competing bids are compared with the incumbent's statement of company value (submitted in a sealed envelope before the bidding). If no offer exceeds the incumbent's reference value, the concession rights do not change hands. But if offers do exceed that threshold, the group offering the highest bid acquires the rights by paying the incumbent the bid price. The periodic competition gives the incumbent the incentive to preserve the value of the assets under concession, dampening the traditional negative effect of franchising contracts with asset reversion clauses.

[3] Structural changes in nodal prices are reflected in the revenue cap every five years, in the tariff review.

References

Anderson, K., S. Hunt, H. Parmesano, G. Shuttleworth, and S. Powell. 1998. "Analysis of the Reform of the Argentine Power Sector: Final Report." Final report to the Argentine Secretary of Energy. National Economic Research Associates.

Bastos, C.M. 1998. "Clave de la Transmisión." Paper presented at the Expectativa seminar Transmisión y Mercado Eléctrico: Cómo Armonizar Regulación y Competencia, Córdoba, April.

Chao, H.P., and S.C. Peck. 1996. "A Market Mechanism for Electric Power Transmission." *Journal of Regulatory Economics* 10(1).

Oren, S. 1997. "Passive Transmission Rights Will Not Do the Job." *Electricity Journal* (June).

Manuel Angel Abdala (Manuel_Abdala@legc.com), Law and Economics Consulting Group, and Andres Chambouleyron, Instituto de Estudios sobre la Realidad Argentina y Latinoamericana

PUBLIC POLICY FOR THE

Privatesector

For a free subscription please fill out this card

Return to Suzanne Smith, Managing Editor, Public Policy for the Private Sector, Room F11K-208, The World Bank, 1818 H Street, NW, Washington, D.C. 20433 (fax: 202 522 2961; email: ssmith7@worldbank.org)

FIRST NAME, LAST NAME

JOB TITLE

COMPANY

STREET ADDRESS

CITY STATE

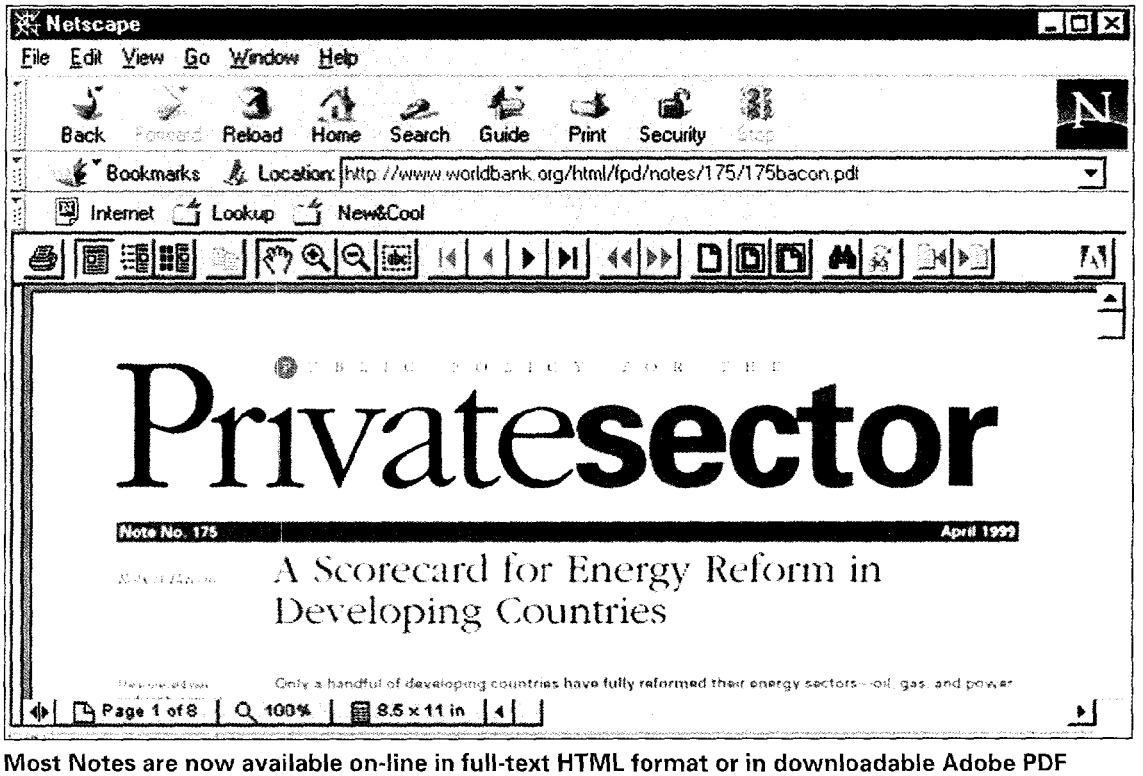
POSTAL CODE COUNTRY

EMAIL

WORK PHONE WORK FAX

Please select topics of interest:

- ❑ utility regulation
- ❑ utility privatization
- ❑ energy markets
- ❑ water markets
- ❑ transport privatization
- ❑ information infrastructure
- ❑ project finance
- ❑ municipal finance
- ❑ capital market development
- ❑ bank restructuring
- ❑ sovereign risk management
- ❑ business law
- ❑ other



Most Notes are now available on-line in full-text HTML format or in downloadable Adobe PDF format (http://www.worldbank.org/html/fpd/notes/).