Private sector
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Mitigating Commercial Risks in Project Finance  9
In developing countries, project finance is commonly used as a vehicle for private participation in such infrastructure projects as power plants and toll roads. The investor's recourse is limited to claims on the project's cash flow and related assets. And risks are distributed across project participants—sponsors, lenders, third-party contractors, state-owned enterprises, and the government as end user—on the basis of who is best positioned to manage them efficiently, though commitments are usually limited in scope, amount, and time. From a lender's perspective, Jeff Ruster lists common instruments for mitigating commercial risks.

A Pre-export Guarantee Facility in Moldova—Mitigating Political Risk in Transition  13
About 70 percent of Moldovan industrial firms have been privatized. But any of these firms wanting to export face severe financing constraints. Local banks are unable to provide working capital, and any export credit agencies willing to provide cover require a full government guarantee for all risks—commercial and political. Foreign input suppliers and trading companies, however, have indicated a willingness to bear the commercial (but not political) risks of supplying inputs on credit to exporters. So the Moldovan government and the World Bank have set up a pre-export guarantee facility in which the government guarantees the financier against political risk and the World Bank provides a backstop guarantee of the government's claim payment obligations. Onno Riihl and Alfred Watkins explain how the facility works.

Are Bank Interest Rate Spreads Too High?  17
During the first half of 1995, average bank spreads in Ukraine ranged from 46 percentage points to 84 percentage points. At first sight, these wide spreads might suggest that banks were enjoying a tidy profit margin. But in a transition economy with high inflation and large stocks of nonperforming loans, that may not be the case. Fernando Montes-Negret and Luca Papi construct a simplified model to help estimate breakeven spreads with a positive real return on banks' equity. It shows that spreads in Ukraine are in fact below the breakeven point. The model can easily be applied in other countries.

Emerging Markets and Financial Volatility—Beyond Mexico  21
Gary Perlin explains that understanding the financial crisis in Mexico and its effect in other countries' financial markets requires understanding what has changed in global capital markets. One important new feature is the behavior of investors in emerging markets, who seek out high-risk, high-return investments.

Pension Funds and Capital Markets  25
The Mexican crisis highlighted once again the importance of local sources of savings to develop domestic capital markets. The main source of long-term savings is pension funds, which interact with capital markets in important ways. Dimitri Vittas reviews this dynamic interaction, giving special attention to lessons from Chile.

Designing Mandatory Pension Schemes  29
Dimitri Vittas explains that governments should make retirement saving compulsory to protect society against those who make inadequate provision for their old age. Compulsion should be accompanied by tax inducements to encourage compliance. And it obliges governments to make sure that the compulsory schemes work well, are simple and easy to understand, and deliver the targeted benefits. Dimitri Vittas explains how to do this.
The Privatization Dividend—A Worldwide Analysis of the Financial and Operating Performance of Newly Privatized Firms

In a sample of sixty-one privatized companies in eighteen countries—including Chile, France, Germany, Italy, Malaysia, Singapore, and the United Kingdom—William Megginson, Robert Nash, and Matthias van Randenborgh identify significant improvements in postprivatization performance. On average, profitability, efficiency, investment, and employment all rise in the years following privatization. And financial policies start to resemble those of private entrepreneurial companies—lower debt-equity ratios and higher dividend payout.

The Macedonian Gambit—Enterprise cum Bank Restructuring

The usual practice in transition economies is for the government to sell state-owned enterprises without first restructuring them. That is left to the new owners, who, it is argued, are better able to manage the risks and opportunities. In the period before sale, the government imposes a hard budget constraint by “isolating” enterprises from banks. But this isolation rarely succeeds. Seeking more credit, enterprise managers lean on politicians, who lean on banks. Joseph Pernia and S. Ramachandran describe Macedonia’s strategy to circumvent these lobbying tactics—isolating politically powerful enterprises from banks but giving them transparent subsidies in return for reforms that will ultimately lead to privatization or liquidation.

Finding Real Owners—Lessons from Estonia’s Privatization Program

The Estonian government has privatized more than 90 percent of its industrial and manufacturing enterprises. John Nellis explains that, unlike most countries in Eastern Europe and the former Soviet Union, Estonia has avoided selling its state-owned enterprises into the control of insiders—workers and managers in the firm or financial institutions tied to the state. Instead, the Estonians have used a modified version of the German Treuhandanstalt’s group tender method, which helps to ensure that privatized firms have real owners serious about creating a productive and enduring business and willing to pay a meaningful price.

End of the Line for the Local Loop Monopoly?

Peter Smith argues that local network competition is increasingly feasible both technically and in terms of cost, is increasingly accepted by investors, and offers important public policy benefits—especially its potential to stimulate investment. He describes how local network competition is delivering in such countries as Ghana, the Philippines, and Sri Lanka.

Regulating Telecommunications—Lessons from U.S. Price Cap Experience

The United States has recently switched from rate-of-return regulation to price cap regulation of monopoly services. Reviewing the U.S. experience, Jeffrey Rohlfs argues that since price caps promote productivity, reduce incentives to cross-subsidize, and are simpler to administer and therefore more transparent and less subject to abuse, developing countries should bypass rate-of-return regulation and opt for price caps.

Franchising Telecom Service Shops—Meeting Demand from Nonsubscribers in Indonesia

Indonesia has come up with an innovative way to meet nonsubscriber demand for telephone service. Rajesh Pradhan and Peter Smith describe the franchise system that the mostly state-owned telephone operator PT. Telkom has developed to allow small private investors to operate commercially viable telecom service shops.
Letters and emails
Suzanne Smith, Editor, The World Bank, 1818 H Street, NW, Room G8105, Washington, D.C. 20433, USA, fax: 202 676 9245, email: ssmith7@worldbank.org

Subscribing to Monopoly

In the September issue, Peter Smith attacked the lexicon of catchphrases often used by telecom executives, civil servants, and investment bankers to justify monopoly provision of telecommunications services. He claimed that those phrases—wasteful duplication of facilities, uneconomic entry, universal service and cream skimming—have a simplistic and fallacious rationale and that the monopoly approach they defend has resulted in chronically poor telecommunications services in many developing countries. These views provoked many comments. Several are published below:

To the Editor—Peter Smith’s piece is stimulating to read, and I wish to congratulate him. I enjoyed following his arguments directly attacking the assumptions that have been widely accepted as justification for monopoly regimes in the telecommunications sector. Representatives from countries (both developing and industrial) with restrictive telecommunications regimes often say that, although they support liberalization in general, it must be achieved gradually and with some limitations. The phrases duplication of facilities, universal service, and so on, are indeed often used to justify such arguments. While I appreciate the economic, social, and historical realities unique to each country, I question how much value they hold in arguments for protecting monopoly regimes. The terms examined are often used to protect interests other than the provision of telecommunications to the broad public.

Airline Telecommunications
Yoshiko Kurisaki and Information Services.
Geneva

To the Editor—This is an excellent and most helpful contribution to the debate.
TelCom, London Trevor Kelsall

To the Editor—I do not find fault with the pure economic theory that monopoly is inefficient. However, the real world is different. My feelings are the following:

- Industrial countries had dozens of years of monopoly that allowed uneconomic service to be subsidized and hence resulted in universal service. A quick rush to competition in developing countries may result in telephone service’s becoming a luxury.
- I don’t think the example of Australia is a good one for arguing that the cost of universal service is lower than assumed. Most people in Australia live in clustered urban areas, and only a few live in remote areas. In the dozens of conversations I have had with public telecommunications operators and equipment vendors, the universal view is that rural and remote communications are expensive and the revenues will not cover the costs. As wireless technology drops in price, this service may become more affordable.
- In my experience, most developing (if not all) countries lack the regulatory expertise to handle competition. If advanced economies such as Australia, Hong Kong, New Zealand, and the United Kingdom have not solved interconnection problems, I don’t think developing ones will. Industrial countries’ complicated, legalistic solutions to interconnection and universal service will only lead to fraud and corruption in developing countries. Far better are simple approaches such as that in the Philippines: if a public telecommunications operator wants lucrative services, such as international or cellular, it must deal with the subsidy issue by also requiring lines in remote and rural areas.
- There is anecdotal evidence that countries that have sold off their international services (for example, to France Telecom in West Africa or Cable & Wireless in former British colonies) have done far worse in the provision of local service because the revenues from lucrative international services are not reinvested in the network.
- Capital is scarce and there will not be takers for all regions of a country. Look at India, where there were no bids for a number of unattractive regions. Moreover, when countries are desperate for funds for adequate health and education services, it is
JUDICIOUS TO PROMOTE DUPLICATE INVESTMENT IN TELECOMS.

International Michael Minges
Telecommunications Union, Geneva

PETER SMITH RESPONDS TO MR. MINGES:

Back in the real world, the overwhelming evidence from most developing countries is that the performance of the monopoly operator has been very unsatisfactory—most clearly seen by waiting times for service that have frequently exceeded five or ten years, high costs, low staff productivity, and a dearth of service outside of major cities. Thus, what we have observed in most developing countries over the past twenty or so years is chronic underinvestment in the telecommunications sector and low efficiency. These are supply problems—that is, the crucial problem is not inadequate demand (that needs to be cross-subsidized) but inadequate or inefficient supply or both—a situation that is most likely to be sustained where new entry is prohibited.

In my view, competition is likely to stimulate investment in the sector because it opens new channels for investment and changes incentives—companies that do not invest to meet demand risk losing market share (see “End of the Line for the Local Loop Monopoly?” on page 45). On this point, the example of the Philippines is instructive. Only after the main operator in the country came to believe in 1993 that the government was serious about authorizing new entrants did it announce a “zero backlog” program to try to clear the waiting list for telephone service.

The assumption that monopoly is necessary for cross-subsidies to occur is wrong. Competition and cross-subsidy can and do coexist. But it would be wrong to put too much faith in cross-subsidies. Many monopoly operators have very high costs, suggesting that inefficiency is being cross-subsidized rather than customers. Mr. Minges notes that rural telephone service is usually seen to be uneconomic. But this is no justifcation for giving the typically high-cost incumbent operator a monopoly on a service that it does not provide or does not provide to an adequate standard. Mr. Minges says that developing countries do not have the regulatory expertise to handle competition. But these are the same countries that have not had the regulatory expertise to make monopoly work.

I do not want to suggest that there is only a single route to high performance in the telecommunications sector. Many different approaches can be made to work. But it is clear that in very many developing countries, the state-owned monopoly model of sector development has failed to deliver—in the worst cases, the population is growing faster than the telephone network, resulting in declining telephone penetration rates.
Fill out and mail or fax this form

To Suzanne Smith, Editor, The World Bank, G8105, 1818 H Street, NW, Washington, D.C. 20433, USA, fax: 202 676 9245

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Mitigating Commercial Risks in Project Finance

Jeff Ruster

In project finance, risks are allocated to the parties best able to manage them. However, the risk mitigation instruments incorporated in the project’s contractual and financial arrangements need not be all-encompassing to provide the security investors require. Commitments may be limited in scope (restricted to geological risk, labor and equipment productivity, operation and maintenance, market demand, or force majeure), amount (limited to a percentage of project debt or capital costs, contract price, or operating budget), and duration (applicable only during construction, performance testing, start-up, operation, or on failure to achieve certain milestone dates or operational or financial indicators). This Note provides a checklist of commercial risk mitigation instruments commonly used in project finance by private lenders and sometimes by equity investors. The checklist is structured around a project’s development cycle, which, for simplicity’s sake, is divided into the construction (including start-up and testing) and operating phases. (See tables 1 and 2 for summaries of possible risks and coverage.)

Construction period

Three main groups of instruments are used to mitigate risk during the construction period: contractual arrangements and associated guarantees, contingency funds and lines of credit, and private insurance.

Contractual arrangements

Contractual arrangements offer a broad range of possibilities for allocating risks among project participants. The construction contract, for example, assigns responsibilities to the project sponsor and the construction companies for engineering, procurement, performance testing, obtaining permits and insurance, provision of required services (water, electricity, fuel), and relief under force majeure events. The contractor may be responsible only for bringing a project to mechanical completion according to the owner’s design and specifications, transferring to the sponsors responsibility for start-up and testing. Under an engineering, procurement, and construction contract, however, the contractor accepts full responsibility for delivering a fully operational facility on a date-certain, fixed-price basis.

If the contractor fails to meet its obligations, it may be required to pay compensation to the project sponsors, often in the form of liquidated damages (LDs, typically assigned to lenders as part of their security package). Delay LDs, payable when the contractor fails to meet certain milestone dates, normally cover additional interest costs arising from the delay and may compensate equity investors for lost income and fixed costs incurred. Buydown LDs compensate a project’s owners for the contractor’s failure to meet project operating criteria (output, input efficiency, and emissions). Buydown LDs, used to pay down project debt to offset the expected decline in net operating cash flow, are set at a value that will allow the debt service coverage ratios (DSCR) to remain unchanged. But contractor liability under the LDs is almost always capped at some percentage of the construction contract price. LDs are often 10 to 15 percent of the contract price for many gas pipelines, for example, while for longer-gestation and more technically complicated coal-fired power generation projects they may be as high as 35 to 40 percent.

Material, workmanship, and equipment warranties cover defects discovered following a
Mitigating Commercial Risks in Project Finance

TABLE 1 POSSIBLE RISKS AND COVERAGE DURING THE CONSTRUCTION PERIOD

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Cost overruns</th>
<th>Delays</th>
<th>Start-up and testing problems</th>
<th>Contractor payment defaults</th>
<th>Hidden defects</th>
<th>Force majeure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquidated damages</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performance bonds</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retainage accounts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Warranties</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contingency funds</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insurance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

Note: Table shows principal applications of instruments.

project’s final completion. Warranties may be issued on an evergreen basis, guaranteeing the reliability of a stipulated item for a period following final completion, typically one to two years. If any repair is required, the clock starts again and the item must perform without problems for the full warranty period.

Lenders often require a performance bond or other type of surety instrument from third-party financial institutions to backstop the contractor’s payment obligations. In addition, because of frequent delays in collecting under LDs and performance bonds, 5 to 10 percent of monthly payments owed by project sponsors to the contractor may be escrowed in a retainage account. This cash reserve further backstops the contractor’s payment obligations.

Contingency funds and lines of credit

Construction budgets often include a 5 to 15 percent line item to cover unexpected cost increases. This financing may be provided pro rata between debt and equity or under some other sharing arrangement (for example, 100 percent equity for the first 5 percent of cost overruns and pro rata thereafter). Contingency funds can be used to cover all types of cost overruns or earmarked for specific contingencies such as environmental cleanup.

In addition to, or in the absence of, such instruments, contingent lines of subordinate debt may be provided by third-party contractors, standby letters of credit, or sponsor guarantees. These instruments may be limited in amount (available only for the first 10 percent of overruns), scope (not callable upon a force majeure event), and time (applicable only after a project achieves mechanical completion).

Inspection

A project is generally covered by several types of insurance. Construction All Risk insurance protects against property damage and is effective from the commencement of procurement to transportation to the project site through completion of construction and performance testing. Risks covered include acts of God and standard perils (fire, lightning). Adjunct liability coverage insures against bodily injury or property damage to third parties resulting from project work. Advance Loss of Profits insurance covers income losses due to delays resulting from the same risks covered under Construction All Risk insurance. Miscellaneous coverage may include employer’s liability, architect errors and omissions, and force majeure insurance, which can cover losses due to strikes, contractor insolvency, and delays in obtaining permits.

Operating period

The instruments most commonly used to mitigate risk during the operating period are
TABLE 2 POSSIBLE RISKS AND COVERAGE DURING THE OPERATING PERIOD

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Operating efficiency problems</th>
<th>Increase in routine O&amp;M</th>
<th>Increase in major O&amp;M</th>
<th>Market demand and pricing</th>
<th>Input availability</th>
<th>Force majeure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Take-or-pay</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Put-or-pay</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Pass-through</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Debt service reserve funds</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Maintenance reserves</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash traps</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insurance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Tracking accounts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equity kickers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

Note: Table shows principal applications of instruments.

contractual arrangements, contingency reserves, cash traps, insurance, and risk compensation devices.

Contractual arrangements

Of the many contractual structures that can allocate risks during the operating period, take-or-pay, put-or-pay, and pass-through structures are perhaps the most commonly applied. Take-or-pay arrangements require the offtaker to pay for the good or service regardless of whether it is needed. This obligation is normally conditioned on, among other things, the project’s compliance with the terms of the offtake or concession agreement (for example, minimum availability factor, environmental permitting). Payments under take-or-pay contracts may be set to cover all fixed costs of the project (fixed operation and maintenance costs, debt service, after-tax equity return) or may cover only part of the project’s available capacity. In the latter case, project sponsors must sell the uncommitted portion to the spot market or seek long-term offtake arrangements with third parties to achieve their required equity return.

Put-or-pay contracts provide for a secure supply of project feedstocks or raw materials. If the supplier is unable to provide the inputs, it agrees to indemnify the project company for excess costs incurred in securing the inputs from third parties or, if third-party supply is unavailable, for revenue losses due to the project’s resulting inability to comply with its offtake arrangements.

Pass-through structures often link the offtake and input agreements to shield investors from adverse changes in the prices of project inputs or outputs. For a power project, fuel price escalation formulas might be tied to a basket of international reference prices. The offtake agreement, referred to as the power purchase agreement (PPA), would include an energy payment to cover the project’s variable operating expenses, including fuel costs. The price escalation formula for the energy payment typically matches that of the fuel supply agreement. However, although PPA escalation formulas may include pass-throughs for fuel price changes, they typically do not include cost pass-throughs related to lower than expected fuel consumption efficiency. Thus, if the project requires more fuel than expected to produce a given amount of electricity, its net operating income would decline. This risk can be mitigated through penalty provisions in the project’s operation and maintenance agreements, through sponsor guarantees, or through other mechanisms described below.
Contingency reserves

To cover cash flow shortages, a debt service reserve fund can be established through sponsor equity contributions, excess cash flow (available cash flow after debt service payments but before dividend distributions), standby letters of credit, or sponsor guarantees. A separate fund to cover extraordinary maintenance can also be created to ensure proper operation and maintenance in the future.

Cash traps

Sometimes a project can meet its debt service obligations, but not with the cash flow margins that lenders had expected. Cash traps can be used to ensure that lenders continue to receive timely payments. For example, if a project is unable to maintain a required DSCR (typically defined on a pretax basis as gross revenues minus operating expenses divided by interest and principal payments), no dividend distributions would be permitted. Until the project achieves the required DSCR, “trapped” cash flow could be escrowed or applied in inverse order of maturity to prepay debt (often referred to as a “clawback”). If noncompliance persists beyond a certain date, the project may be considered in default, and all excess cash flow would be permanently applied to prepay project debt. One possible application is as follows: If the expected DSCR is 2.1, but the actual is between 1.75 and 1.90, excess cash flow would be escrowed until the project achieves the required DSCR for two consecutive quarters, at which time dividends would once again be permitted; 50 percent of excess cash flow would be “clawed back” if the actual DSCR falls between 1.35 and 1.74, and 100 percent if it falls to between 1.20 and 1.34. An event of default may be called if the DSCR falls below 1.20 for more than two consecutive quarters.

Insurance

Coverage for the operating period typically includes property insurance with extensions available for loss of revenue from machinery breakdown and for business interruption from property damage. Third-party general liability insurance might include coverage for workers’ compensation, automobiles, and pollution cleanup.

Risk compensation devices

Sometimes investors and contractual participants assume certain risks in return for an opportunity to share in the project’s upside potential. Tracking accounts are often used to compensate input suppliers or off-takers for offering fixed price agreements, which shield project sponsors from market risk. Under an off-take agreement that provides for tracking, if the contract price exceeds spot market prices, the difference between the two would be tracked. Amounts tracked may be 100 percent of the price difference or a lower proportion, with payments owed only if the difference exceeds a certain threshold. Equity kickers, such as convertible debentures, stock warrants, and contingent interest payments, allow investors to share in the upside potential of the project while still providing them priority over common equity investors with regard to claims on project assets and cash flow if the project is unable to generate sufficient cash flow to meet its financial obligations.

1 Other types of pass-through structures relate to nonprice contractual terms such as force majeure and cure period provisions. For example, if a third-party contractor is relieved from its obligations upon the occurrence of a specified force majeure event, the project will seek similar relief in its input or off-take agreements for failure to meet its contractual obligations as a result of the same force majeure event.

2 Debt service reserve funds and cash traps are designed to cover very different scenarios. Debt service reserve protects against catastrophic events (for example, a turbine blade breaking) that would prevent the project from generating revenue for an extended period. Cash traps cover a scenario in which the project may be limping along, still meeting its debt service obligations but not with the cash flow margins that lenders had anticipated. This situation could arise, for example, if spot prices are below fixed case projections, operation and maintenance costs are higher than projected, or expected output levels are lower than expected levels of production.

Jeff Ruster, Financial Specialist, Private Sector Development Department (email: jrnister@worldbank.org)
A Pre-export Guarantee Facility in Moldova

Mitigating political risk in transition

Onno Räb and Alfred Watkins

About 70 percent of industrial and agro-industrial firms in Moldova are now in private hands. But any of these firms wanting to export face severe financing constraints. The local banking system has neither the capital base nor the technical capacity to finance their working capital requirements. And export credit agencies either are not willing to provide cover or, if they are, require a full government counter guarantee covering both commercial and political risks. Thus, to enable viable local firms to attract private working capital, the government of Moldova asked the World Bank to help design a pre-export guarantee facility, but with the proviso that the facility should not require the government to assume commercial risks. Under this facility, which became operational on October 30, 1995, the Moldovan government guarantees financiers against political risk, and the World Bank provides a backstop guarantee of the government's claim payment obligations. A similar approach could be used in other transition economies, where firms face much the same constraints.

This Note briefly describes the development of the facility and offers suggestions for designing a "line of guarantee" modeled on it as a way to help attract private finance for a relatively large number of small projects.

Catering to risks and opportunities

Although local and international banks are unwilling to provide pre-export finance to Moldovan enterprises, foreign trading companies and input suppliers have indicated that they would be willing to bear the commercial risk of supplying inputs on credit. But these nonbank financiers need assurance that the Moldovan government would not impose retroactive changes in rules and regulations that would prevent their being paid. Discussions with a wide range of input suppliers, trading companies, and commercial lenders suggested that an effective program to mitigate political risk could do much to boost private finance for commercially viable pre-export transactions. Political risk coverage would also encourage many trading companies and input suppliers not now active in Moldova to look into the possibility of doing business there.

These risks and opportunities defined the basic design. First, the noncommercial risks in-

THE POLITICAL RISKS OF PRE-EXPORT FINANCE

A Western European trading company that has been selling canned fruits and vegetables to buyers in Russia and Kazakhstan would like to start selling them Moldovan canned fruits and vegetables to increase its profits. There is no apparent quality difference between Western European and Moldovan produce, and the Moldovan canning factory has sufficient excess capacity to meet the anticipated demand. But it needs to improve its labeling and canning equipment to match Western European quality standards.

The trading company is willing to provide the equipment the factory needs to upgrade. And since the company has already established commercial relationships with Russian and Kazak buyers, it is willing to accept the political and commercial risk associated with selling in the former Soviet states. But the perceived government performance risk of producing and exporting in Moldova has deterred the company from providing the upgrade equipment, foreclosing a potential new export opportunity for the country.
hibiting the private sector from financing viable pre-export transactions in Moldova had to be identified and mitigated. Second, the risk coverage, risk definitions, and claim adjudication procedures had to have sufficient credibility in the private financial community. Finally, the design had to be flexible enough to accommodate the diverse pre-export financing structures expected to emerge in Moldova in the short to medium term.

The facility is designed to be an instrument of transition. Its potential catalytic effect would be especially strong during the early stages of the economic transition, when political and economic uncertainty is greatest and the government's commitment to trade liberalization and private initiative relatively untested. It is during this period that a favorable enabling environment—in the form of a liberalized trade and foreign exchange regime—may not suffice to assuage the concerns of private lenders. The reason is not that the proposed policy environment is “wrong,” but that potential lenders are not confident that the new, more liberal rules and regulations will survive the underlying input supply transaction. Once these rules and regulations have gained some traction, investor perceptions of political risk will diminish, and the guarantee facility can give way to more mainstream financing techniques.

The architecture

The pre-export guarantee facility was designed to work in the following way:

- A foreign trading company, input supply company, or commercial bank would agree to finance working capital inputs for a Moldovan enterprise. The local firm would repay the working capital advance with a portion of the revenues from exporting the resulting outputs. To ensure repayment, the input supplier would act as a marketing agent for the Moldovan enterprise, arranging for the sale of the output to a creditworthy buyer outside Moldova. In this way, input suppliers would also help Moldovan enterprises develop new markets and restore old markets ruptured by the breakup of the Soviet Union.

- A government-owned guarantee administration unit would sell political risk coverage on a first-come, first-served basis to any foreign creditor willing to bear the commercial risk of financing a pre-export transaction in Moldova.

- A framework guarantee contract outlining the terms and conditions of the political risk guarantees would protect the holders against losses arising from retroactive government interference with a guaranteed pre-export

---

**FIGURE 1** STRUCTURE OF THE MOLDOVAN PRE-EXPORT GUARANTEE FACILITY

- **WORLD BANK**
  - Counter-guarantee
  - Access to loan facility, umbrella guarantee

- **GOVERNMENT**
  - Right to sell guarantees
  - Confirmation of approval

- **AGENT BANK**
  - Confirmation of availability of funds
  - Letter of credit

- **GUARANTEE ADMINISTRATION UNIT**
  - Guarantee

- **FINANCIER OF TRANSACTION**
- **TRANSACTION**
transaction. The contract would cover such risks as currency inconvertibility or inability to transfer foreign exchange out of Moldova, government seizure of inputs or outputs, government expropriation of the local enterprise, the retroactive revocation of import or export permits, the retroactive imposition of other import or export restrictions, and political force majeure related to war and civil disturbance on the territory of Moldova. All but the last risk are entirely within the control of the government, which simply has to refrain from retroactive interference with a transaction to avoid liability. Thus, the government accepts responsibility only for risks at least partly within its control. It bears no financial responsibility for any of the commercial risks typically associated with pre-export transactions, such as an unexpected decline in world market price, the failure of the local enterprise to deliver goods of acceptable quantity or quality, or the failure of the foreign buyer to fulfill the purchase contract.

- Under the terms of the framework guarantee contract, the government would pay only for damages caused by government actions or inactions specified in the contract. The guarantee holder would be required to notify the guarantee administration unit thirty days before filing a claim. During this thirty-day “cure” period, the government would have an opportunity to correct the actions that triggered the notification. If the problem is corrected, no claim would be filed and no payment made to the guarantee holder.

The World Bank’s role

Because political risk guarantees issued by the government of Moldova do not yet have sufficient credibility in international markets, a World Bank contingent loan facility was designed to backstop the government’s claim payment obligations on up to US$30 million of outstanding guarantees. The facility works as follows: An agent bank employed by the guarantee administration unit issues standby letters of credit to accompany each guarantee contract sold by the unit. If a claim must be paid and the government does not remit funds to the agent bank by the payment deadline, the agent bank can draw funds from the World Bank loan facility, to which it has irrevocable access. Under the terms of the World Bank facility, funds used to pay claims on guarantees would be permanently deducted from the facility, reducing the amount of future government guarantees that could be issued with World Bank support.

The World Bank facility is available for backstopping new guarantees for five years. Thus, the guarantee administration unit could potentially support US$150 million of pre-export transactions, assuming that the average length of the transactions is one year and that the unit’s guarantee issuance capacity is fully utilized. Guarantees issued during the five-year period would remain valid for the remaining life of the private transaction, which could be up to three years.

Using the design in similar Bank operations

Other transition economies also face problems in financing private firms’ pre-export transactions. For these countries, it would be relatively straightforward to develop a pre-export guarantee facility similar to Moldova’s, adapting it as needed. Preparation would be relatively quick, since a generic framework guarantee contract and an operating manual for a guarantee administration unit already exist and would require only minor modification. Efforts to develop such facilities are under way in Ukraine, Russia, and possibly Armenia.

To be feasible, such a facility requires a relatively open trade and foreign exchange regime, to give the private sector confidence that there is scope for viable pre-export transactions. World Bank support would help assure the private participants in pre-export transactions that the relatively open regime will remain in place for at least the life of a transaction.
WORLD BANK SUPPORT

No existing World Bank Group guarantee instruments were appropriate for supporting the Moldovan project. The Multilateral Investment Guarantee Agency is not permitted to guarantee loans with a maturity of less than three years. And the International Finance Corporation is prohibited from obtaining a government guarantee—a prohibition that applies in this case even though the guarantee facility’s credibility derives from the government’s commitment to pay for losses directly resulting from retroactive changes in government rules and regulations.

Furthermore, the World Bank’s then-new policy of mainstreaming guarantees did not envisage the use of guarantees for this type of project. The Bank therefore provided support to the Moldovan project in the form of a contingent loan with a ten-year bullet maturity, meaning that any repayment is due ten years after the loan becomes effective, no matter when disbursement took place. Yet discussions during preparation of the project and the discussion of the project by the Bank’s Executive Board acknowledged that it was very much in the spirit of the mainstreaming policy: the government and the Bank bear only those risks the government can control, and the project enables the country to attract private foreign capital for productive purposes.

Thus, future projects of this type are likely to be supported by a World Bank guarantee. But the contingent loan design could still be used in countries that borrow from the International Development Association and for which the guarantee option is not available.

Using the “delivery mechanism” for capital investment or infrastructure projects

While Moldova’s guarantee facility is designed to support pre-export transactions, the general approach could also be used to deliver a government “line of guarantee” with World Bank backstop for a large number of relatively small projects. For example, a framework guarantee contract could be developed to promote fixed capital investments in small or medium-scale enterprises, or to support a large number of relatively small private municipal infrastructure investments or small hydro-power investments. In either case, a government unit would sell a World Bank-backed guarantee contract covering the discrete government compliance risks—but none of the commercial risks—associated with private investment in the sector.

Onno Rübl, Country Department IV, Europe and Central Asia Region (email: orubl@worldbank.org), and Alfred Watkins, Technical Department, Europe and Central Asia and Middle East and North Africa Regions (email: awatkins@worldbank.org)
Are Bank Interest Rate Spreads Too High?

A simple model for decomposing spreads

Fernando Montes-Negret and Luca Papi

In the first seven months of 1995, average bank spreads in Ukraine ranged from 46 percentage points to 84 percentage points (table 1). The size of these spreads might suggest that banks enjoyed a wide profit margin. But inflation was high in Ukraine, and its banking system had large stocks of nonperforming loans. Using a simplified model to make a “quick and dirty” estimate of the spreads banks need to achieve a positive real return on equity, this Note shows that nominal spreads in Ukraine were in fact well below breakeven. The model can be adapted for use for any country or for any bank or group of banks.

Specifying the model

An important task for bank analysts is to assess the efficiency of bank intermediation. A good place to start is the size of interest rate spreads—the difference between lending and deposit rates (ex ante spreads). In theory, this difference should comprise a liquidity risk premium “rewarding” banks for transforming more liquid assets (deposits) into less liquid assets (loans), an information premium for banks’ comparative advantage in selecting and monitoring projects and borrowers, and a premium for controlling and managing risk. In reality, it is a complicated business to assess whether these premiums—and therefore the spreads—are too high or too low for efficient intermediation. This Note approaches the question from a methodological perspective, using a highly simplified model and applying international parameters for bank performance as a benchmark. The model is a static one based on quite restrictive assumptions, and it manipulates simple accounting identities without any consideration of the strategic behavior of market participants. The model contains three groups of critical variables (see box for the derivation of the formula):

- The prevailing policy parameters (reserve requirements and their remuneration, if any; taxes and the capital-asset ratio)
- The operating condition of the banks (operating costs, targeted real return on equity, and share of nonperforming loans)
- The rate of inflation (and the related deposit interest rates).

TABLE 1 COMMERCIAL BANK INTEREST RATES AND SPREADS IN UKRAINE, 1995 (percent)

<table>
<thead>
<tr>
<th>Month</th>
<th>Average lending rate</th>
<th>Average deposit rate</th>
<th>Spread (simple difference)</th>
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<td>144.9</td>
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<td>July</td>
<td>81.6</td>
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A STYLIZED MODEL

The balance sheet of the representative bank has three assets, loans (L), nonperforming loans (NPL), and reserves (R), and two sources of funding, deposits (D) and capital (K):

1. \( L + NPL + R = D + K \)

Bank profits (P) are defined as:

2. \( P = [L + rR - dD - c(L + NPL)](1 - t) \)

where \( i, r, \) and \( d \) are the interest rate on loans, on reserves, and on deposits, \( c \) is the operating cost per loan, and \( t \) is the tax rate on profits. The interest rate on loans is obtained by adding a spread (\( s \)) to the deposit rate (markup pricing):

3. \( i = d + s \)

The real return on equity (RROE) can be defined as:

4. \( \frac{P}{1 + \pi} = \frac{K}{1 + \pi} - 1 \)

where \( \pi \) is the inflation rate. Substituting equations 2 and 3 into equation 4 and solving for \( s \) gives the following expression:

5. \( s = \frac{\text{RROE}(1 + \pi) + \pi - d}{1 - t} \cdot \frac{K}{L} + \frac{NPL}{L} \cdot (d + c) + \frac{D}{L} \cdot (d - r) + c \)

where \( R \) is the coefficient of mandatory reserves (\( R = R/D \)). Alternatively, and in a more manageable way, equation 5 can be expressed as:

6. \( s = \frac{\text{RROE}(1 + \pi) + \pi - d}{1 - t} \cdot \frac{K}{A} + \frac{NPL}{A} \cdot (d - r) + d \cdot \frac{NPL}{A} + c \)

where \( A \) stands for total assets (\( L + NPL + R \)) and, to simplify, \( t \) is assumed to be zero.

Equation 5 shows that the spread will be higher the higher the rate of inflation, the profit tax rate, the share of nonperforming loans, the bank’s operating costs, the targeted return on equity, and the required minimum legal reserve ratio and the greater the difference between the deposit rate and the return (if any) on reserves. Under some assumptions, equation 5 can provide an indication of the sensitivity of the spread to changes in key variables. For example, given the interest rate on deposits, the rate of inflation, and operating costs, it is possible to calculate the effect on the spread of changes in reserve requirements or in the share of nonperforming loans for a desired return on equity.

The model assumes a simplified balance sheet in which loans and reserves are the only assets and there are no liquidity reserves or other investments by banks. It assumes that banks target a desired real return on equity, that banks are free of controls and competitive pressures, and that the market is not competitive (that is, that banks are price setters in the loan market). It assumes no dynamic interaction between the lending rate and market participants. Thus, banks do not ration credit, and the likelihood of adverse selection and moral hazard and the elasticity of credit demand are not taken into account. Similarly, the model assumes that there is no interaction between banks’ financial situation and authorities’ actions. Thus, for example, banks do not receive automatic central bank or government support, so nonperforming loans widen spreads.

Calculating breakeven

For the illustrative calculations in this Note, a number of assumptions are made about the critical variables. The capital-asset ratio is set at 8 percent (in line with Basle Accord requirements), and the central bank pays no interest on required reserves (as is the case in many developing and transition economies). Banks’ operating costs are 2 percent of assets, banks aim to pay their shareholders a real return on equity of 5 percent a year (a conservative assumption considering the risk banks in developing countries face), and spreads are not taxed directly. Finally, the deposit rate is equal to the inflation rate, and depositors therefore do not receive a positive return in real terms, nor do they pay an inflation tax. (Most of these assumptions can be relaxed to fit the model to any bank, group of banks, or banking system. For example, the equations in the box can be solved for positive real interest rates on deposits, interest paid on required reserves, different operating costs, different rates of return on equity, capital-asset ratios, and taxes.)

With a spreadsheet format, this model can be run using a range of values for the rate of inflation, reserve requirements, and share of nonperforming loans. In the simulation table (table 3), the share of nonperforming loans is allowed to
fluctuate between 1 percent and 30 percent, and minimum reserve requirements fall in the range of 10 percent to 30 percent. This table can be a handy guide to assess bank spreads for a given bank or banking system—for example, the banking system of Ukraine from January to July 1995. During that period, reserve requirements were 15 percent of deposits, and annualized rates of inflation ranged from about 170 percent to more than 1,000 percent in January (table 2). It is assumed that loan portfolios were in bad shape—that, say, 20 percent of bank assets were nonperforming (perhaps a conservative assumption given the experience in other transition economies).

The simulation table shows that in the hyper-inflationary conditions of January, the system's break-even spread for a return on equity of 5 percent should have been about 520 percentage points, or almost seven times the actual average spread in Ukraine's banking system for that month (table 1). In July, after a dramatic fall in the annualized rate of inflation, the break-even spread should have been 98.5 percentage points, yet the actual average spread was about 46 percentage points. Only if the share of nonperforming loans did not exceed 5 percent—a very unlikely possibility—would banks have been able to achieve a 5 percent real return on assets in July.

These results must be interpreted with caution. With the dramatic and unpredictable changes in inflation during the first half of 1995, it would be hard for any bank to get its prices exactly right. Furthermore, the model has many caveats, including the fact that it ignores other sources of bank revenue, such as fee income. Moreover, the model looks at Ukraine's banking system as a whole. Some large, formerly state-owned banks with disastrous portfolios could be skewing the outcome, obscuring the profitability of banks with healthier portfolios. Nevertheless, the simulation shows that, although apparently very wide, the nominal spreads observed in Ukraine were not high enough for the banking system to break even at a 5 percent real return on equity. This suggests that the representative Ukrainian bank does not recognize the extent of its portfolio problems and is grossly underprovisioning for the assets in its portfolio that are at risk.

The results for Ukraine should not be interpreted to mean that bank spreads should simply rise to yield a reasonable rate of return. In all likelihood, more fundamental portfolio problems, undercapitalization, and oppressive regulatory constraints (for example, heavy taxation, excessively tight restrictions on loan loss provisioning) need to be addressed. But what the model can do is alert policymakers to possibly unsustainable situations and provide estimates of the effects of changes in the policy parameters or the size of the spreads.

**TABLE 2 MONTHLY AND ANNUALIZED RATES OF INFLATION IN UKRAINE, 1995 (percent)**

<table>
<thead>
<tr>
<th>Month</th>
<th>Monthly rate*</th>
<th>Annualized rate</th>
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<tr>
<td>January</td>
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<td>March</td>
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</tr>
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<td>May</td>
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<td>June</td>
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<td>175.5</td>
</tr>
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<td>July</td>
<td>5.2</td>
<td>183.7</td>
</tr>
</tbody>
</table>

* Based on consumer price index.

*Source: Ministry of Statistics of Ukraine and World Bank staff estimates.*

**References**


**Fernando Montes-Negret, Principal Financial Economist (email: fmontesnegret@worldbank.org), and Luca Pepi, Financial Economist, Financial Sector Development Department (email: lpepi@worldbank.org)**
### TABLE 3 BREAKEVEN SPREADS FOR A 5 PERCENT TARGETED RETURN ON EQUITY

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<th>Reserve ratio</th>
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<td>0.452</td>
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<td>0.444</td>
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<tr>
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<td>0.342</td>
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<td>0.544</td>
<td>0.668</td>
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<td>0.40</td>
<td>0.669</td>
<td>0.811</td>
<td>1.222</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Assumes that tax rate = 0, interest rate on reserves = 0, deposit rate = inflation rate, real return on equity = 0.05, capital-asset ratio = 0.08, and ratio of operating costs to assets = 0.02.
Emerging Markets and Financial Volatility—Beyond Mexico

Gary Perlin

In the wake of the Mexican financial crisis, too much attention has been given to what was happening in emerging economies and too little to what was changing in financial markets. Easily forgotten now is that within weeks of the Mexican devaluation in December 1994, the unprecedented power of financial markets was twice demonstrated, and with equal drama, in the downfall of Orange County, California, and of the venerable Barings Bank. Such events suggest that emerging market investors and borrowers must derive lessons not only from their own experience but also from the broader changes in market structure and behavior.

What are these changes? First, much of the capital flowing to emerging markets is now in the form of bonds and portfolio equity investment. Second, investors managing these flows are attracted to high-risk, high-return opportunities and are less patient than the foreign direct investors or banks that emerging market governments may have been more used to dealing with. Third, these investors have no way of communicating their patience level to policymakers other than by exit. And fourth, high information costs tend to concentrate these flows in “hot” countries and lead investors to rely on a few knowledgeable observers to signal when their returns are at risk, adding to the potential volatility. These changes require a new perspective and new financial management capacity in both the public and the private sector.

Origins of volatility

“Putting the financial genie back in the bottle” by simply restricting the flow of capital, as some suggest, is not an option. Why? Because volatility predated the flows. It was, ironically, market volatility that in large part caused the globalization of financial markets in the first place. Until the 1970s, most international capital flows were fairly steady, passing through banks as a means of settling underlying trade in goods and services. Then oil price inflation, budget and trade deficits, and a variety of speculative bubbles appeared. The U.S. Federal Reserve abandoned its policy of targeting stable interest rates and announced that the best remedy for these ills was to steady growth in the supply of money. This policy shift set off unprecedented worldwide interest rate swings to accompany already volatile exchange rates. As interest rate targets dropped, economic volatility was transformed into financial asset volatility, and the markets responded.

Rather than following trade, growing pools of savings, increasingly managed by sophisticated, competitive institutions, began to flow across borders in search of much higher returns or, for the fainter of heart, portfolio diversification. These flows increased as nominal interest rates in the United States fell through the mid-1980s. Financial deregulation was embraced as a way to free institutions to deal with the volatility that threatened their access to funds or their ability to diversify into new businesses and markets. And new technologies allowed investors and intermediaries to complete transactions quickly and securely. Communications and information engineers made it possible to talk, trade, and settle across borders and time zones. Meanwhile, a new class of financial engineers developed security structures and derivatives that enabled investors to build international exposure—and to affect international market levels—without ever leaving their home market. Then it was only a matter of time before global capital discovered—and in some senses
created—the “emerging markets.” And in the early 1990s, investors who had mastered the art of seeking out returns and diversification wherever they could were quick to recognize the opportunities in the newly liberalized economies in Latin America, East and Southeast Asia, the Middle East, and even Central Europe.

An unstoppable virtuous cycle had begun, or so the thinking went. Growing pools of savings in aging industrial countries would continue to find superior investment returns by building exposure to faster-growing developing countries. In turn, the integration of these countries with world financial markets would assure a level of connectivity and discipline that would prevent the kind of economic backsliding that had earlier soured such investments. It was presumed that newly powerful capital market forces would demand great discipline on the part of borrowers, with investors able to sell their holdings and refuse to invest again. After the loan failures of the 1970s and 1980s, when many commercial banks, trying to bail themselves out, threw good money after bad in lending to long-time customers, capital markets were expected to reduce volatility and its underlying conditions. But as things have turned out, the information content of the capital flows and the discipline they could instill in borrowers were both overestimated. And, as the Mexican experience shows, volatility was too often—and at great risk—simply assumed away.

What has changed?

Capital need not always be crossing borders in record flows for it to be “global,” nor can we expect investment flows to expand in an uninterrupted fashion. Still, capital flows now result from deliberate locational decisions by investors and borrowers who have considered global alternatives. Flows will slow from time to time. Indeed, after tripling from an average US$50 billion a year in 1989–91 to US$159 billion in 1993, investment flows to developing countries rose by only 5 percent to US$167 billion in 1994 and by some estimates fell by up to 20 percent in 1995.

The question now is, how does volatility affect emerging market investors, borrowers, and the market itself? To answer this, it is important to note the dramatic shifts in the composition of investment in developing countries since it exploded during the early 1990s. These flows are not “stodgy” old bank loans. Commercial bank loans have fallen sharply—from more than 20 percent of total capital flows to developing countries in the late 1980s to less than 4 percent in the past four years. Limited by balance sheet capacity and banks’ new focus on fee-generating business, bank loans and syndications have given way to securities issues. Bonds reach a much broader range of investors, many of whose potentially longer-term and less-leveraged liabilities are well suited to bond assets. These investors are also willing to bear risks because of their ability to diversify portfolios and their perceived ability to trade assets actively when conditions appear to shift.

Capital flows to developing countries in the form of debt securities reached 25 percent (or US$42 billion) in 1993. But bonds are not the only financial market instrument being traded. Dynamic equity portfolio investments have grown from low levels to nearly another quarter of capital flows. These portfolios interact with increasingly well-developed stock markets. Or investors can trade them without ever leaving the comfort of their home market by using American or global depository receipts, which represent interests in emerging market companies.
Not all equity investments are held in trading portfolios, of course. In fact, nearly half the capital flows to developing countries represent direct foreign investment (like that in plant and equipment) by strategically minded global corporations. Still, some US$65 billion of capital—about 30 percent more than the total annual investment flows just five years ago—has flowed in each of the past few years to developing countries in the form of bonds and portfolio equity investments.

The profile of these investments is decidedly less patient than that of the direct foreign investment whose presence in part attracts them. The new investors appreciate volatility. Their often highly quantitative managers intentionally create exposure—typically representing a small share of assets—to high-risk, high-return classes of investments. Taken together, such investments can make up a large share of lightly capitalized markets, reinforcing the markets' volatility. And emerging markets are well suited to the new investors. Newly opened economies present opportunities for windfall gains at the same time that they are steering through the uncharted waters of adjustment (which occasionally turn windfalls into waterfalls). Moreover, the performance of many firms in the emerging economies is tied to the fate of their market. This phenomenon, along with the high information and transaction costs of dealing in a wide variety of equity and debt instruments, can lead to holdings concentrated in a few countries or companies, again adding to volatility. For example, during the 1990s, 84 percent of private capital flows to developing countries have gone to just twelve countries, with nearly 30 percent going to China and about 13 percent to Mexico. Trouble in one of these countries cannot but have a major impact on the market as a whole.

Financial market investors compensate for their lack of intimate knowledge of—and long-term relationships with—the countries and companies in which they invest with hair triggers on their investments. They count on other, more knowledgeable observers to signal when returns are in jeopardy. They expect such signals to be reflected quickly in market prices, which are in turn affected by the relatively large number of investors whose decisions are linked to price performance. Prices are therefore more likely to rise or fall precipitously. The trouble is that the markets have no easy way to transmit their time-bound expectations and their ongoing judgments to borrowers. As long as prices are high, both investors and borrowers tend to presume that all is on track. Neither pays enough attention to fundamentals. Investors believe that others will want to buy their stakes when it is time to take profits. And borrowers draw from the price charts and their success stories a sense

... the message from investors was not that all was well. It was simply that they would give Mexico another chance—as long as it absorbed more of the market risk.

that their job is done. By the time it becomes clear that not enough has been done to support long-term investments, there is little or no margin left for completing the task.

Economic management implications

In view of the benefits of financial integration—increased trade, more uniform market rates (adjusted for risk and inflation), and a higher potential for growth—investors and developing country capital importers both must understand how the other responds to financial volatility.

So how should investors adapt? Recent experience suggests that investors might be well served to ignore traditional counsel against “fighting the tape” and begin to rely less on market trends as a guide to investment strategy. Developed markets in which trend analysis is used enjoy relatively complete information flows and are populated by a wide variety of investors with different objectives and time horizons. In thinner and more crisis-prone emerging markets, inves-
tors should consider the underlying fundamentals for the countries and companies—not only policies and the commitment and ability to implement them, but also the ability to manage in the wake of financial volatility.

There is already broad agreement on the importance of better-quality information on the fundamental condition of economies into which global funds are flowing. But this is not a panacea, nor will it improve the situation immediately. It might even slow capital flows down for a while. Some investors will be deterred by the information they receive or by the difficulty of determining how others in the market will respond to such data. And it might take time for existing or prospective investors to reclassify their emerging market assets away from the most high-risk, high-return categories, while in the short run they could choose to reduce their portfolio exposure to all developing country securities.

The countries on the receiving end of global capital flows, meanwhile, face substantial risk along with high opportunity. The cost of avoiding financial integration is unacceptably high. But integration is not costless; in the early stages of economic and financial reform, it can introduce a potential for higher financial volatility. That is why some countries have deliberately curbed investment inflows during long periods of adjustment. But not all have found this tradeoff attractive. Some attempt to integrate quickly into global financial markets even if their local markets are not yet developed to global standards. This leads to a pattern of events that by now has been repeated in several countries, notably in Latin America but also in such countries as Turkey. In the typical scenario, economic adjustment is led by tight-money policies aimed at reducing chronic inflation. This generates substantial inflows of foreign funds and heavy repatriation of overseas holdings. Success in this phase, however, does not necessarily signal a capacity in the economy to absorb investment flows. Countries that have “suffered” such a surplus of capital inflows relative to their ability to deploy them in a fully productive way find that international markets continue investing even when trade deficits balloon, growth remains anemic, banking weakness reflects poor investment performance, and the political will to complete the reform is lacking.

Investors’ reaction to conditions in Mexico throughout 1994 and 1995 was, of course, the extreme case. As the markets there began to plateau, competitive investment yields rose and investors became wary. Outflows were stemmed by offering higher returns and through financial engineering that lowered investors’ risks. But the message from investors was not that all was well. It was simply that they would give Mexico another chance—as long as it absorbed more of the market risk. Even if this was recognized in Mexico as well as outside, it was not clear that the Mexicans were granted enough time or room to fix the economy to meet market expectations, nor could they easily change those expectations. Clearly, officials must learn to manage the economic fundamentals that it is in their power to affect, to inform investors of their progress, and to listen carefully to the feedback that the market offers. Market jitters do not necessarily require fundamental rethinking, nor does market euphoria suggest that necessary reforms can be postponed. But the stakes are rising, and the window of opportunity for action is shrinking.

Like other international financial institutions, the World Bank too must reconsider its role in the wake of volatile global capital flows. Strategic advice and financial support can no longer be offered in a market vacuum. The message of market flows must feed into Bank operations, and the Bank must try to improve the information content of its advice to client countries. Finally, while the Bank’s need to address long-run fundamentals is increasingly important, so too is the need to help client countries improve their capacity to anticipate, avoid, and manage the crises of volatility that can accompany economic liberalization and financial integration.

Gary Perlin, Director, Financial Sector Development Department (appointed Vice President and Treasurer of the World Bank, effective March 1996)
The volatility in emerging markets during 1995 has reinforced the importance of local capital market development. Chile's resilient financial markets provide some useful lessons on the role pension funds can play in generating long-term financial resources and facilitating the growth of capital markets. The experience of Chile and indeed of several OECD, East Asian, and other Latin American countries shows that both pension funds and capital markets can thrive under the right macroeconomic policies—low inflation, small budget deficits, and positive long-term real rates of interest.

This Note briefly examines the dynamic interaction that can develop between pension funds and capital markets. Pension funds are not only a source of long-term savings to support the development of bond and equity markets. They can also be a positive force for innovation, for corporate governance, and for privatization. In turn, capital markets offer pension funds the opportunity for better portfolio returns and risk management. This interaction is a long, self-reinforcing process that builds on sound macroeconomic policies, effective regulatory reforms, and robust accounting, legal, and information infrastructure.

The key message for policymakers is that pension reform should be part of a broad reform program. It need not be delayed until capital markets are well established. But, equally important, large quantities of state assets should not be transferred to newly formed private pension funds—or, even worse, to state pension funds—without first taking steps to develop robust and well-regulated capital markets. Chile's gradual approach to investment deregulation is a good model for developing countries introducing mandatory but decentralized pension systems (see box).

**Pool of long-term financial savings**

Although the quantitative effect of pension saving on total savings is unclear and hotly debated, there can be little doubt that funded pension schemes lead to a big increase in long-term financial savings that can underpin capital market development.

The size of accumulated long-term funds depends on the maturity of the schemes, their coverage, the contribution rate, and the investment rate of return. The experience of Malaysia, Singapore, and, more recently, Chile shows that, once in place, a credible and well-run pension system can accumulate long-term resources rapidly. In Singapore, the resources of the Central Provident Fund rose from 28 percent of GDP in 1976 to 73 percent in 1986 and 76 percent in 1990, and in Malaysia, provident fund assets grew from 18 percent of GDP in 1980 to 41 percent in 1990 (table 1). Chile's pension system expanded from a mere 1 percent of GDP in 1981 to 9 percent in 1985, 26 percent in 1990, and 43 percent in 1994. Adding the assets of insurance companies brings contractual savings in Chile to nearly 55 percent of GDP. Large increases were also experienced in OECD countries with funded pension schemes.

Although the large accumulations of financial resources in these countries are sometimes smaller than the total assets of banks, their economic significance is often greater, because contractual savings are not inflated by interbank borrowing and lending. Pension and insurance reserves are the largest component of household financial wealth in all these countries.
INVESTMENT LIMITS: CHILE'S GRADUAL APPROACH

Chile applied very tight investment limits when it created its new, government-mandated but privately managed pension system. Initially, the investment limits were 100 percent for state securities, 80 percent for mortgage bonds, 70 percent for bank liabilities, 60 percent for corporate bonds, and 20 percent for quotas of pension funds. The limit on bank liabilities was reduced to 40 percent in 1982. In 1985, the limit on state securities was lowered to 50 percent and that on corporate bonds to 40 percent. Pension funds were permitted to invest up to 30 percent of their value in equities of privatized state enterprises, but no more than 5 percent for any one enterprise. In 1986, pension funds were also allowed to invest in corporations with dispersed ownership. Investments in real estate companies were permitted in 1989, subject to a global limit and a limit for individual companies. Pension funds were authorized to invest in foreign securities in 1990, subject to a very low and slowly increasing limit. At the same time, the limit on state securities was lowered further to 45 percent, while the limits on bank liabilities and corporate bonds were raised to 50 percent. Investments in venture capital and infrastructure funds were permitted in 1993, and in 1995 the limit on equity holdings was raised to 37 percent and that on foreign securities to 9 percent. Chile has also imposed limits on holdings of the securities of individual companies in order to prevent the concentration of risk. See the table below for the investment profile of Chilean pension funds.

INVESTMENT PROFILE OF CHILEAN PENSION FUNDS
(percentage of total assets)

<table>
<thead>
<tr>
<th>Type of asset</th>
<th>1981</th>
<th>1985</th>
<th>1990</th>
<th>1994</th>
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<tr>
<td>State securities</td>
<td>28</td>
<td>43</td>
<td>44</td>
<td>40</td>
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<tr>
<td>Bank deposits</td>
<td>62</td>
<td>21</td>
<td>17</td>
<td>5</td>
</tr>
<tr>
<td>Mortgage bonds</td>
<td>9</td>
<td>35</td>
<td>16</td>
<td>14</td>
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<tr>
<td>Corporate bonds</td>
<td>1</td>
<td>1</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>Corporate equities</td>
<td>0</td>
<td>0</td>
<td>11</td>
<td>32</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Administradoras de Fondos de Pensiones.

To bond or equity markets?

Historically, whether pension fund assets flow into bond or equity markets has usually been a matter of regulation (investment limits) and attitude toward risk. U.K. pension funds' emphasis on equities is attributed to their freedom from detailed regulations and to the adverse effect on bond returns of the high inflation of the 1960s and 1970s (table 2). U.S. pension funds invest 46 percent of their resources in real assets and 54 percent in debt instruments. Although both countries apply the "prudent man" rule to pension fund investments and do not specify limits on different types and classes of assets, U.S. pension fund investment policies are more conservative as a result of the minimum funding requirements imposed by pension law. Continental European countries show a stronger predilection for bonds. The low level of equity holdings by European pension funds is often attributed to tight investment limits. But in most cases the limits are not binding, and the investment policies are due to a more conservative approach.

In Singapore and Malaysia, most pension funds are placed in government bonds and other debt instruments, with only a very small proportion going into equities. But Singapore and to a lesser extent Malaysia allow workers to invest their provident fund balances in housing and other approved securities. Singapore has recently permitted investments in foreign securities, and Malaysia is likely to follow suit. Chile did not initially allow pension funds to invest in equities and still subjects them to strict rules with maximum limits on investments in different instruments and issuers. These limits, designed to ensure adequate risk diversification, have been relaxed over time. Chile allowed equity investments in the mid-1980s, first in privatized utilities and then in other companies, and recently raised the equity limit to 37 percent of a pension fund's assets.

To local or foreign markets?

Pension fund investment in foreign assets is a controversial but important issue for all countries. International diversification may increase portfolio returns, especially if pension funds are too big for the size of the local capital markets. Most important, it helps reduce investment risk because of the less than perfect covariance in
investment returns across countries. But unrestricted foreign investment may institutionalize capital flight and prevent domestic markets from reaping the benefits of creating pension funds with long-term financial resources. For these reasons, most developing countries limit foreign investments. Chile, for example, did not allow overseas investments until 1990. It recently raised the limit for investments in overseas securities to 9 percent of assets (4.5 percent for foreign equities), even though actual holdings of foreign securities were less than 1 percent of assets, well below the previous limit of 6 percent. Chile also recently allowed pension funds to engage in currency hedging operations.

In industrial countries, pension funds have built up substantial holdings of foreign equities and bonds since the removal of exchange controls from the early 1980s onward and the relaxation of investment rules. These holdings range from well over 50 percent for the typical pension fund in Hong Kong to over 20 percent in Australia, New Zealand, and the United Kingdom. In the United States, foreign investments account for only about 10 percent of total assets, reflecting the country’s large size and perhaps the ability to diversify risks by investing in U.S. multinationals.

Lessons on limits

Investment limits are unnecessary for industrial countries, with their well-established financial markets and sophisticated supervisory agencies. The “prudent man” rule and fiduciary diligence should suffice to ensure adequate diversification and custodial protection of pension fund assets. But in developing countries, initially tight and detailed investment rules are justified by the absence of strong and transparent capital markets, the compulsory nature of the pension system, and the pension fund members’ lack of familiarity with capital market investments. These rules should be systematically relaxed as domestic capital markets grow and mature.

As a general rule, prudent policy would initially favor investments in indexed government bonds on market-determined terms. Relaxation of investment rules, such as lowering the ceiling on government bonds and permitting investment in equities, could come when pension fund assets reach, say, 5 percent of GDP, and permission to invest in overseas assets when they reach, say, 20 percent of GDP. Small countries could give permission to invest overseas earlier and allow a higher limit for foreign assets than larger countries with more diversified capital markets.

Force for innovation

Pension funds can play a big part in encouraging financial innovation and stimulating the

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**TABLE 1 PENSION FUND AND LIFE INSURANCE ASSETS**

(percentage of GDP)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Switzerland</td>
<td>51</td>
<td>70</td>
<td>110</td>
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<tr>
<td>Netherlands</td>
<td>45</td>
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<td>107</td>
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<td>United Kingdom</td>
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<td>United States</td>
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</tr>
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<td>Singapore</td>
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<td>76</td>
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<tr>
<td>Malaysia</td>
<td>18</td>
<td>18</td>
<td>41</td>
</tr>
<tr>
<td>Chile</td>
<td>1†</td>
<td>1†</td>
<td>26</td>
</tr>
<tr>
<td>South Africa</td>
<td>0</td>
<td>0</td>
<td>84</td>
</tr>
</tbody>
</table>

.. Not available.
a. Refers to pension fund assets only.
b. 1976.
c. 1981.
Source: National central banks.

**TABLE 2 ALLOCATION OF PENSION FUND ASSETS, 1990**

(percent)

<table>
<thead>
<tr>
<th>Country</th>
<th>Real assets</th>
<th>Debt instruments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switzerland</td>
<td>33 67</td>
<td></td>
</tr>
<tr>
<td>Netherlands</td>
<td>31 69</td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>72 28</td>
<td></td>
</tr>
<tr>
<td>United States</td>
<td>46 54</td>
<td></td>
</tr>
<tr>
<td>Singapore†</td>
<td>2 98</td>
<td></td>
</tr>
<tr>
<td>Malaysia†</td>
<td>2 98</td>
<td></td>
</tr>
<tr>
<td>Chile</td>
<td>20 80</td>
<td></td>
</tr>
<tr>
<td>South Africa</td>
<td>60 40</td>
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</tr>
</tbody>
</table>

a. Does not include workers’ direct investments in housing and approved securities.
Source: National central banks.
modernization of capital markets. As pension funds grow in size and relative importance, new instruments are developed to meet their needs and to fill perceived gaps in the markets. In the United States, for example, the development of securitization and financial derivatives has been attributed at least in part to the investment and risk management needs of pension funds and other institutional investors. The emergence of block trading and the reform of stock exchanges around the world, including the abolition of fixed commissions, can also be attributed to the growth of pension funds and other institutional investors.

Pension funds can act as catalysts for the development of efficient trading and settlement systems, the adoption of modern accounting and auditing standards, and the promotion of meaningful information disclosure. But their impact on trading efficiency and on market liquidity also depends on their investment policies. In countries where pension funds acquire strategic holdings and follow a policy of “buy and hold,” their effect on market liquidity is small. But heavy trading is often criticized as excessive and motivated by concerns about short-term results rather than long-term performance.

**Player in corporate governance**

The question of market trading and strategic holdings is also linked to the role of pension funds in corporate governance. As pension funds grow, they become the dominant class of institutional investors and can acquire an important collective voice in corporate affairs. In South Africa, pension funds and the insurance companies that manage most of them acquire controlling stakes in a large number of companies, including other financial institutions, and play a dominant part in corporate affairs. In the United Kingdom and the United States, pension funds have tended to acquire small, fragmented holdings and have historically played a rather passive role. But in recent years, large, public pension funds have started to exercise greater voice in corporate matters. The growing presence of collective bodies (such as pension fund associations and ad hoc groups of institutional investors) has enabled them to take actions that have had a salutary effect on the performance of several large but stagnating corporations. They have strengthened the role of independent, non-executive directors and have replaced the top managers of persistently poorly performing companies. Collective bodies can exert influence without running into conflicts of interest and can economize on monitoring and other costs associated with a more active role in corporate governance—another example of the dynamic interactive process between pension funds and capital markets.

The role of pension funds in corporate governance is also likely to become an important issue in countries with mandatory but decentralized pension systems, such as Chile and other Latin American countries. Chile now requires pension fund managers to vote for independent directors. The collective voice approach being developed in the United Kingdom and the United States, as well as in Canada and other countries, also seems to be appropriate for developing countries.

**Role in privatization**

Pension funds can facilitate privatization and will do so more successfully as they accumulate substantial resources and look for profitable investments. But simply transferring state assets en bloc to pension funds in recognition of acquired pension rights might not work, and should certainly not occur without fundamental improvements in the way these transferred assets are managed.

In Chile, investments in privatized utilities are the core of the equity holdings of pension funds. Although their share has been declining, these investments still account for about 75 percent of the funds’ equity holdings.

_Dimitri Vittas, Adviser, Pensions and Insurance, Financial Sector Development Department (email: dvittas@worldbank.org)_
Designing Mandatory Pension Schemes
Some lessons from Argentina, Chile, Malaysia, and Singapore

Dimitri Vittas

In most countries, participation in a public pension system involving some kind of redistribution is compulsory, while participation in private pension schemes is voluntary. Public and company pensions have enjoyed high popularity as long as their promises seemed credible and generous. But there are growing fears in many countries that the value of public pensions will not be sustained. There are similar fears about company pensions. The credibility of company pensions depends on the integrity and solvency of large employers, which can no longer be taken for granted.

These problems point to a need to refine, but not do away with, compulsory saving. There is clearly more justification for a compulsory scheme providing a minimum pension than for a scheme that sets a high replacement rate for preretirement earnings. But as the real value of public pensions declines, the case for compulsory private pension schemes becomes stronger. And if retirement saving is made compulsory, tax incentives should be used to encourage compliance.

Compulsion also imposes an obligation on the state to ensure that the system works well, is simple and easy to understand, and will deliver the targeted benefits. This obligation has implications for the management and regulation of the pension system. Other important design issues include the extent of compulsory coverage, the form and rate of compulsory saving, and the extent of individual choice.

Drawing on the experiences of countries in Asia, Latin America, and elsewhere, this Note provides some guidance on how to impose compulsion and which tax incentives to offer.

Whom to compel?
The issue of who should be compelled to participate is complex. A strong case can be made for exempting some groups of workers—especially those under age twenty-five, those with very low incomes, and those above the normal retirement age. The treatment of unemployment spells, maternity leave, military service, and university education creates complications that may have a serious effect on defined benefit schemes based on final salary, though their impact on defined contribution systems is less important.

In practice, most countries with mandatory private schemes require all workers other than the self-employed to participate. Self-employed people usually are not covered because it is difficult to ascertain their incomes and monitor compliance. Among countries with mandatory fully funded second pillars, Chile and Switzerland follow this approach. Argentina has made participation compulsory for all workers, including the self-employed, though it remains to be seen whether self-employed workers will comply.

Defined contribution or benefit?
Increasingly, compulsory schemes are of the defined contribution variety with individual capitalization accounts. These defined contribution schemes tend to be fully funded, fully vested, and fully portable. Vesting and portability rights are increasingly important as employment patterns become less stable, though the performance risk of pension funds is transferred to workers. But this risk can be reduced through properly diversified portfolios and sophisticated annuity products.
Size of contribution?

How large compulsory contributions should be depends on what is considered an appropriate targeted pension level and on whether there is a separate, redistributive public pillar. Experience in Latin America suggests that a contribution rate for long-term capital accumulation of less than 5 percent is inadequate. (An additional 2 to 3 percent is required to cover operating costs and premiums for term life and disability insurance.) In Chile, the total contribution rate has been about 13 percent (10 percent plus 3 percent), and in Argentina, it is 11 percent (7.5 percent plus 3.5 percent). Ten percent for capital accumulation is adequate for a reasonable replacement rate if investment returns exceed wage growth rates by 2 to 3 percentage points (or more) and if a person's active working life is at least twice as long as retirement (calculated to include the life expectancy and benefits of dependent survivors). A higher contribution rate for long-term capital accumulation is required if the gap between investment returns and wage growth is smaller, if allowance is made for interrupted careers and therefore for a lower ratio of active years to retirement years, or if a higher replacement rate is desired.

Who should manage the funds?

Experience in both industrial and developing countries shows that private decentralized (competitive) management has achieved higher real returns than public centralized management. Under centralized schemes, even in countries with high growth and low inflation, such as Malaysia and Singapore, the investment returns to individual accounts have been poor. In many countries, especially in Africa and Latin America, the investment performance of central agencies has been disastrous. In OECD countries, private pension funds have generally achieved higher investment returns than public pension funds.

The weakness of decentralized, non-employer-based funds such as those in Argentina, Chile, and other Latin American countries is their high operating costs. What matters, however, is the net investment return after deducting operating costs, and on this score the Chilean and other Latin American pension funds generally have done very well. The high costs stem mainly from high selling commissions and other marketing costs related to workers' freedom to switch their accounts among competing pension fund management companies. Employer-based pension funds have much lower operating costs. A compromise solution is to allow employer-based schemes as long as they offer fully vested, fully funded, and fully portable benefits. Allowing group contracts with independent fund managers could achieve the same result, especially if employers negotiated the contracts and offered them to their employees on an optional basis.

What types of regulation?

The main focus of regulation should be prudential norms and fiduciary standards. Rules legally separating the assets of the pension fund from those of the management company are essential so that the pension fund does not suffer if the management company becomes insolvent. Proper custodial arrangements are necessary to prevent fraud, as are rules to discourage insider trading and self-dealing.

Detailed investment rules setting upper limits on different assets by type and by issuer may be necessary to ensure diversification in countries with less developed capital markets (see page 25). Investment rules should emphasize safety and profitability and should not direct funds into projects merely because they are politically or socially desirable. Other structural rules that have been used in Latin American countries—such as one account per worker, one fund per company, and one price (non-discrimination between workers)—have aimed to protect workers by ensuring simplicity and transparency. But they may go too far in restricting choice. In industrial countries, detailed investment and structural rules are not necessary. Reliance on the “prudent man” rule and benchmark portfolios (see below) should provide adequate protection.
What state guarantees?

State guarantees can take three forms: a minimum pension, a minimum return, and protection from insolvency. A minimum pension guarantee is essential if there is no separate public pillar and any social assistance is low. Chile offers a minimum pension guarantee of about 25 percent of the average wage to workers who have contributed for at least twenty years. Argentina, which has a separate public pillar paying a basic universal pension of about 30 percent of the average covered wage, does not offer a minimum pension guarantee for the private pillar.

If not properly formulated, minimum pension guarantees may encourage strategic manipulation by workers—that is, workers may try to contribute for the minimum period and for the minimum amounts that would entitle them to draw the minimum pension. A better alternative is to guarantee an accrual factor of, say, 0.75 percent of the average wage for each year of contribution, with a minimum no lower than social assistance.

A minimum return guarantee should not be expressed in absolute terms. This could distort incentives and encourage management companies to adopt risky investment policies at the expense of the state. Guaranteeing the minimum return relative to the average for the industry makes more sense because it would protect workers from large deviations in returns. But it would also imply more uniform, and perhaps more conservative, investment policies. Guaranteeing relative minimum returns leads to a need for minimum solvency requirements and investment reserves. These rules tend to increase the cost of entry for management companies, but they may be essential when a new system is introduced in a developing country with rudimentary capital markets.

For more advanced countries, other solutions may be needed to protect workers from excessive fluctuations and deviations in returns. One alternative is to require management companies to spell out clearly the investment policies of the funds they promote and to assume liability for any shortfalls that result from deviating from those policies. Using benchmark portfolios and detailed investment guidelines may be a better approach in industrial countries, where the only constraint on fund management companies is potential loss of reputation and business. But these penalties offer no consolation to retiring workers who suffer large losses because fund managers fail to comply with their own investment guidelines.

Protecting workers from the insolvency of fund management and insurance companies (which provide term life and disability coverage as well as annuities) is essential and unavoidable in a mandatory retirement saving scheme. To prevent moral hazard problems and excessive risk taking, regulators need to ensure that such companies have adequate capital and reserves for the risks they assume.

Individual choice and competition

In an apparent oxymoron, individual choice is essential in a compulsory saving scheme. In Malaysia and Singapore, workers can decide how to invest their own balances, provided that they choose among approved instruments and maintain a minimum balance in their account. Approved instruments used to be limited to owner-occupied housing, but in recent years they have been extended to investments in both domestic and foreign securities. In Argentina, Chile, and other Latin American countries, workers can choose their fund management company and can switch their account from company to company. In fact, account switching has become a big problem in these countries: it happens on a large scale (about a third of active accounts are switched each year in Chile) and seems to be motivated more by the interests of selling agents than by those of the workers.

Improvements could be made in these countries by increasing individual choice and thus...
enhancing efficiency while retaining compulsory saving for retirement. Some of these improvements could also make compulsory retirement saving schemes more palatable in more advanced countries.

First, group contracts could be allowed that offer discounts to group members and are arranged by employers (or other groups with a common bond). Workers could be allowed to opt out of company-based group schemes, though they might be discouraged by the higher operating costs they might have to incur by doing so. Still, the right to opt out would ensure that group schemes earn net investment returns as high as those of nongroup schemes.

Second, workers could be given the right to invest in pension funds subject to less regulation (especially fewer and less draconian investment rules), though they would not be covered by government protections and guarantees. Thus, workers who value the minimum pension and minimum relative return guarantees could stay with the (heavily) regulated funds, while those who do not desire such protection could opt for less regulated funds. A system based on benchmark portfolios could offer similar choices.

How to offer tax incentives?

A distinction is usually drawn between regimes that exempt contributions and investment income from taxes but tax pensions (the EET regime) and those that tax contributions but exempt investment income and pensions (the TEE regime). These two regimes have different cash flow effects because of differences in the timing of tax payments, but their long-term effects are the same.

Many countries use the TEE concept for compulsory public pension pillars and the EET approach for voluntary company or personal pension schemes. Although not perfect, the EET approach is the better option for both types of schemes. One problem is that if the tax exemption is offered at the marginal tax rate, it favors high-income workers. So most countries that operate an EET regime limit the exemptions to minimize the regressive impact and protect the tax base. Another problem is that the exemption provides no benefit for non-tax-paying workers.

A more equitable solution is to replace tax exemption with a tax credit system that produces a uniform tax incentive effect for all workers—for example, by providing a direct state contribution to workers’ retirement saving accounts. The Czech Republic has introduced a scheme that comes close to this ideal—although because the scheme fails to link the tax credit to a minimum contribution (or saving) rate, it has encouraged small amounts of saving rather than adequate saving for retirement. This general approach, which could be referred to as the CET regime, would be superior from the social point of view. It would eliminate the preferential treatment of tax-paying workers and could contain the tax cost of these exemptions or achieve greater redistribution in favor of low-income workers for a given tax cost. It would also encourage saving by low-income workers. Compliance by high-income workers might decline, but high-income workers are less likely than others to require either compulsion or inducement to save for their old age.

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The Privatization Dividend
A worldwide analysis of the financial and operating performance of newly privatized firms

William L. Megginson, Robert C. Nash, and Matthias van Randenborgh

Surprisingly little direct empirical investigation has been done to see whether privatization is delivering the expected results. The main constraint has been getting post-sale data for firms not publicly traded. Most of the early empirical work looked at only a small number of companies from a single country (usually Britain) and therefore lacked statistical significance, making it hard to draw strong conclusions. The consensus about privatization by the mid-1980s—to the extent that there was one—was summed up by Yarrow (1986), who argued that competition and managerial accountability are more important than privatization in promoting economic efficiency.

More recent theoretical and empirical studies have offered stronger support for the dual propositions that private firms outperform public firms and that privatization itself increases the operating efficiency of the divested firms. The theoretical work of Boycko, Shleifer, and Vishny (1993) showed that privatization will lead to effective restructuring of public enterprises only if rights to both cash flow and control pass from the government into private (particularly managers') hands. Boardman and Vining (1989), comparing the performance of the 500 largest non-U.S. mining and manufacturing companies in 1983, found, after controlling for the regulatory and competitive environment, that private firms are more profitable and more efficient.

The most thorough empirical analysis of privatization is the World Bank study by Galal, Jones, Tandon, and Vogelsang (1994). They analyzed the postprivatization performance of twelve companies (mostly airlines and regulated utilities) in Britain, Chile, Malaysia, and Mexico to determine whether the transfer to private ownership increased efficiency—and, if so, how the costs and benefits of adjustment were allocated. Taking great care to isolate the effect of privatization, they compared the performance of the divested firm with what it would have been had the firm remained in state hands. Results showed net welfare gains in eleven of the twelve cases—averaging, in present value terms, 26 percent of the firm’s predivestiture sales revenue.

As rigorous as the World Bank study was, however, it examined only a small number of (mostly regulated) firms from four countries. Thus, it only partially overcame the basic problem that has bedeviled all empirical privatization studies—obtaining truly comparable pre- and post-privatization data for a large, multinational, multi-industry sample of companies. The study described in this Note did overcome this problem. It limited its analysis to companies that were sold to the public through a share issue and thus for which comparable pre- and post-issue

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Average change</th>
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<tr>
<td>Profitability</td>
<td>+45%</td>
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<tr>
<td>Efficiency</td>
<td>+11%</td>
</tr>
<tr>
<td>Investment</td>
<td>+44%</td>
</tr>
<tr>
<td>Output</td>
<td>+27%</td>
</tr>
<tr>
<td>Employment</td>
<td>+2,346 (+6%)</td>
</tr>
<tr>
<td>Dividend payout</td>
<td>+57%</td>
</tr>
<tr>
<td>Board turnover</td>
<td>46%</td>
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financial and accounting data could be obtained (from the firms’ offering prospectuses and annual reports).

Although limiting a study to a relatively small subset of firms would normally yield a serious sample selection bias, that was not the case in this study, for two reasons. First, the largest and most economically significant public enterprises usually can be privatized only through public share issues, and companies so privatized account for most of the assets and employees transferred to the private sector during the study period. Second, companies sold publicly are the most visible and politically sensitive privatizations, and it is the public’s perception of their postinvestment performance that will determine whether the entire privatization program is judged a success or a failure.

Tests, methods, and results

The study compared the pre- and postprivatization performance of sixty-one companies in eighteen countries (six developing and twelve industrial) and thirty-two industries. It constructed a timeline of the operating results from the first years after privatization. And it tested for the results most governments expect: increased profitability, increased operating efficiency, increased capital investment spending, and increased output. It also tested for a result that governments hope for but generally do not expect to achieve: privatization without lowering employment levels. The study tested for these results both for the full sample and for several subsamples: privatizations of firms in competitive and noncompetitive industries, full and partial privatizations, privatizations involving firms headquartered in OECD countries and in developing countries, and “control” and “revenue” privatizations. Control privatizations are those in which the government sells a controlling share or voting control, and revenue privatizations are those whose purpose typically is to raise revenue without surrendering control. The overwhelming majority of issues are pure secondary sales of government shareholdings. Thus, any significant results will not be the consequence of cash flowing to the firm from the share offering (see table 1 for a summary of results).

Higher profits and greater efficiency

Privatization is designed to substitute the single objective of maximizing profits for the typically mixed objectives of public enterprises, and exposure to the benefits and penalties of monitoring by capital markets is expected to focus employees on the task of raising revenues and lowering costs. The study’s results showed that profitability does increase significantly after privatization, as measured by the return on sales (up 45 percent). Profit margins expanded after privatization for 69 percent of all firms. The subsamples showed similar results, except for firms in noncompetitive industries (regulated industries such as utilities and banking), for which the increase in the return on sales was insignificant.

Both of the efficiency measures used, inflation-adjusted sales per employee (up 11 percent) and net income per employee (up 32 percent), showed significant increases following privatization for the full sample. Sales per employee increased for 86 percent of firms and income per employee for 70 percent. Efficiency improvements were also the norm for most of the subsamples. The median increase in sales per employee was significant for firms in competitive industries, for full and partial privatizations, for control (but not for revenue) privatizations, and for companies headquartered in OECD countries. And in all but the subsample of non-OECD companies, more than half of firms (70 to 93 percent) increased output per employee.

More investment

There are several reasons to expect that privatized firms will increase capital spending after divestiture. First, after their initial public offering, these firms gain far greater access to private debt and equity markets than most public en-
terprises ever have. Second, if privatization is accompanied by deregulation and market opening (as often occurs), the newly private firms generally must make large investments to compete with other private firms. Third, public enterprises tend to emphasize labor over capital inputs in their production processes, and the combined influences of politicians, labor unions, and other interest groups tend to leave them employee-rich and capital-poor. And years of financial stress often lead firms to defer routine maintenance, which must also be made good after privatization. Fourth, the removal of government control frees enterprises from pressure to overproduce politically attractive but economically wasteful goods—and frees resources to be reallocated to higher-value uses. Finally, to the extent that privatization promotes entrepreneurship, newly private firms have the incentive and the means to invest in growth options (such as launching new products and services or pursuing acquisitions) both at home and abroad.

The study’s results showed significant increases in the ratio of capital expenditures to sales (up 44 percent), its proxy for investment intensity, with the ratio going up for 67 percent of all firms after privatization. For the first time, the results for subsamples reflected substantial differences. Capital expenditure ratios rose significantly for firms in competitive industries, for full divestitures, for control privatizations, and for companies headquartered in OECD countries. The increase was smaller, and insignificant, for firms in non-competitive industries, for partial divestitures, and for revenue privatizations. With only seven observations for companies in developing countries, no strong conclusions could be drawn about this subsample, except that investment spending did not decline.

**Higher output and more jobs**

The tests showed that real sales increase after privatization. The mean increase in real sales from the average level during the three years before divestiture to the average level afterward was 27 percent, with 75 percent of firms experiencing increases. All the subsamples also showed significant growth in output after privatization.

Perhaps the most surprising and important finding of the study is that employment actually increases after privatization—by an average of 2,346 employees (6 percent)—rising in almost two-thirds of all firms. So why do union leaders almost always vehemently oppose privatization programs? There are three possible reasons. First, there have been many high-profile examples of large-scale job losses before and after privatization. British Telecom, British Gas, St. Gobain, and Nippon Telegraph & Telephone all lost at least 5,000 workers after privatization, and British Steel’s employment declined from 166,000 workers in 1979 to only 55,000 employees in the year it was privatized. Second, labor unions invariably face the prospect of converting from public to private sector unions, with all that that implies about their power to influence public enterprise policy and to extract wage concessions from companies backed by the taxing power of a national government. Third, where privatization coincides with industry deregulation, management often comes under severe competitive cost pressures—to which it responds by pressuring its workforce for wage concessions, work rule changes, or both.

**Lower leverage and higher dividends**

Most governments expect leverage (debt to equity) ratios to drop after divestiture. Public enterprises traditionally have extremely high debt levels, at least in part because they cannot sell equity to private investors and must rely for financing on capital injections from the government and retained earnings. As predicted, the study documented a significant decline in leverage across both the full sample and the subsamples. Also as predicted, it found that the average ratio of dividend payout to profits increases—from 23 percent to 46 percent after divestiture. The ratio of dividends to sales shows an even greater increase.
Changes in ownership and control structure

The study found considerable turnover on the boards of directors of newly privatized firms. Barely half (54 percent) of existing directors remain with a firm after its divestiture. To find out what the implications of this turnover are for firm performance, the study divided the firms with data on boards of directors into two groups—firms with 50 percent or greater turnover among directors after privatization (high director change) and firms with less than 50 percent change (low director change). It performed the same analyses for these two groups as for the other subsamples. In general, the results for the firms with high director change mirrored those for the full sample of companies and most of the other subsamples—increases in profitability, output per employee, capital investment spending, employment, and dividend payout and a significant decrease in leverage. By contrast, firms with low director change experienced significant (positive) changes only in output per employee and dividend payout. Thus, changes in firms’ ownership and control structures, rather than government divestiture alone or cash infusions from share issues, seem to be the driving force in explaining most of the study’s results.

Conclusions

The study showed significant increases among newly private firms in profitability, output per employee, capital spending, and employment. It also found that the financial policies of these firms start to resemble those typically associated with private entrepreneurial companies—with lower leverage and higher dividend payout ratios. Although the data did not allow precise documentation of the causes of these performance improvements after divestiture, the study was able to rule out price increases as a frequent source of profitability increases.1 The pervasiveness of these improvements and the fact that most share sales did not raise cash for the firm suggest that privatization itself—the involvement of private investors in a firm’s ownership structure—has a strong effect on a firm’s operating and financial performance. The most likely explanation for these changes is that (even partial) private ownership allows the internalization of the benefits of performance improvements, and public listing of shares allows these benefits to be capitalized into the price of the firm’s stock. Changes in executive and employee compensation policies may give the firm’s workers incentives to be more productive, but the study was unable to document such changes with its data. It could only show that, for whatever reason, newly privatized firms improve their operating and financial performance while maintaining employment.2

1 Furthermore, the study found little evidence that governments subsidize public enterprises while they are being prepared for privatization, except for the French companies nationalized by the Minister of Finance in 1984 and privatized by the Chirac government in 1986–87. It found no significant examples of subsidies being paid after divestment. Well before privatization, however, governments often paid very large cash subsidies to public enterprises, usually to cover operating losses. For example, the British government paid more than £6 billion to British Steel during 1975–84 to cover the firm’s immense operating losses, and gave at least as much to other public enterprises during the same period.

2 The authors of this Note explore these issues in two later papers. “Share Issue Privatisations as Financial Means to Political and Economic Ends” examines how governments adjust the pricing and other terms of share offerings to achieve political and economic objectives, and “Determinants of the International Spread of Privatization” analyzes how and why privatizations have spread so rapidly in recent years. Both papers are available from William Megginson, tel. 706 542 3648, email: wmegginson@cbacc.uga.edu.

References


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The Macedonian Gambit—Enterprise cum Bank Restructuring

Joseph Pernia and S. Ramachandran

The former Yugoslav Republic of Macedonia suffers from more than the well-known problems of an economy in transition from central planning. Until recently, this small, landlocked country (2 million people and a per capita GDP of US$790 in 1994) traded mostly with other Yugoslav republics. Then Serbia became subject to a United Nations boycott and Greece cut access to the convenient port of Thessaloniki. Macedonia shares mountainous borders with Albania and Bulgaria, but there is no east-west railroad and the roads are not designed for heavy truck traffic. In such isolation, the country’s economic situation has been precarious since its independence in 1992. Despite—or perhaps because of—its desperate straits, the country’s leaders have grasped the nettle and begun reforming with little procrastination.

Usually in transition economies, there has been a tendency to leave enterprise restructuring to those with the incentive to restructure efficiently—the new private owners. Until privatization, the government simply subjects each enterprise to a cash (“hard budget”) constraint. Sometimes the government tries to enforce the hard budget constraint by isolating the enterprises from bank, often using mixed and muddled criteria—for example, a status as largest debtor or as lossmaker—to select enterprises for isolation. In practice, this approach has rarely been successful, because powerful enterprises tend to lean on politicians to relax the cash constraint—usually through banks but with government connivance. Relaxing the cash constraint for some enterprises, especially when done on the sly, undercuts the rules—and the leak soon turns into a flood as other borrowers demand similar lax treatment.

Transparency

Supported by a World Bank policy-based loan, Macedonia is trying an approach with subtle but important differences. Enterprises will still be privatized as soon as possible, but the government frankly acknowledges that a few enterprises have considerable clout and must be subsidized for political, not economic, reasons. These politically powerful enterprises are isolated from vulnerable banks, but given a direct subsidy in exchange for undertaking monitorable reforms.

When subsidies to the “political” enterprises are made transparent in this way, the cabinet can equalize the marginal political benefits of such expenditures. In exchange for the subsidies, the politically powerful enterprises have to end value-subtracting activities, break off their relations with banks to prevent any slackening of the constraints, and immediately take steps to liquidate or privatize constituent units at a pace determined by the cabinet, where political tradeoffs are best made.

Banking reform proceeds in tandem. Freezing the debts of the political enterprises frees banks from the pressure to make more bad loans. But the incentive to make good loans only comes when banks are effectively privatized. Because the government cannot deny implicit deposit insurance to a dominant bank, effectively privatizing the large but poorly run Stopanska Banka meant that it had to be broken up and sold in pieces so none would be "too large to fail."

This isolation technique is still risky: although transparent subsidies allow the cabinet to
make informed choices, they do not dissipate political pressures and indeed could increase them. But so far the technique is working well. Although it is too early to declare victory, the Macedonian gambit shows signs of success—and it could usefully be adapted by other transforming economies.

**Fleshing out enterprise reform**

By the time the World Bank became involved, Macedonia's privatization law had already been passed and the salient features could not be altered without reopening a parliamentary Pandora's box. Social ownership of enterprises—a unique Yugoslav arrangement under which workers had nontransferable usufructuary rights over assets—would end under the 1989 Yugoslav law that gave workers first dibs on buying their enterprise. Macedonia's privatization law only added some new wrinkles. The main awkward feature was a reservation price based on "company valuation"—a slow and pointless exercise, but necessary to make amends for an earlier scandal in which workers bought firms "too cheaply" using untaxed funds. Although privatization is slower than what might have been technically possible, the process is credible because the political battles have already been won.

"...I have a little list"

Identifying enterprises with political clout required no elaborate analysis. As the then Minister of Finance put it, "I know who they are, for they always bother me over the phone." These enterprises may also have the largest losses, arrears, and indebtedness—though these were not the criteria for selection. They have operating cash deficits and need additional funds, not merely rollovers of existing debts. Even state-owned banks already saddled with bad loans are loath to throw good money after bad by lending to these enterprises. So enterprise managers pressure politicians, who in turn lean on the central bank or directly on the banks to lend more money.

As it turned out, the list of politically powerful enterprises was drawn up through a fortuitous and inadvertent "bait and switch." Under an earlier Economic Recovery Credit, the World Bank had backed the use of government guarantees for loans to the twenty-five enterprises identified as the largest loss-makers in a vain effort to improve bank balance sheets and lending behavior. Debtor enterprises and creditor banks quickly realized that obtaining a guarantee was far easier than pressuring the central bank to misclassify the loans as sound. So enterprises seeking the government-guaranteed loans lobbied hard to skew the "objective" criteria—size of losses, indebtedness, and the attached weights—in their favor.

Although the guarantees were abandoned, they had helped flush out enterprises with political clout, the criterion for isolation. But the volte-face understandably provoked resentment, and it made it impossible to increase the arbitrarily chosen number of twenty-five. To the government's credit, those on the list remained on it, but some enterprises that perhaps should have been in the group were left out. And two that were included were state-owned utilities (the electric utility and the railways) that the government had decided to neither sell nor close down—creating a special subgroup.

**The political safety valve**

Restructuring the enterprises involved no new investment. It was really a liquidation (of all but two) overseen by the cabinet rather than by creditors or the bankruptcy court. Some argued that the government should agree to a declining schedule of future subsidies to these enterprises, to aid reformers dealing with avaricious firms. The risk in specifying the subsidy amounts was that enterprise managers could push for subsidies not easily detected (for example, through loan write-offs or purchases of goods at inflated prices). Worse, such subterfuges make it harder for the cabinet to see the implications of any political tradeoff—the main reason for transparency in the first place. Besides, if the government wants to increase enterprise subsi-
dies at the expense of, say, teachers' salaries, why hamstring it by disconnecting a political safety valve?

Quid pro quo for the subsidies

At the same time, the government needed objective advice on what to ask of the twenty-five enterprises as a quid pro quo for the subsidies. Bilateral grants financed outside consultants to provide that advice, and the government agreed to adopt the consultants' recommendations on the necessary measures for breakup or liquidation before the World Bank released the first tranche of the loan. The government quickly passed a law eliminating the social ownership of the chosen enterprises and, with its new legal authority, appointed a trustee to oversee the managers of the firms.

Fixing the banks

With incomes and thus savings having fallen so drastically, efficient intermediation is a concern for the medium term. Privatizing banks is normally tricky. But two circumstances have made it especially so in Macedonia. First, most household deposits were denominated in foreign currency and were explicitly the government's liability, although they were frozen. Rampant inflation in the former Yugoslavia and incipient capital outflows forced the government to allow banks to accept household deposits denominated in foreign currency (mostly in deutsche mark). Banks had to match assets and liabilities by currency, and the central bank in Belgrade obtained and held the corresponding foreign exchange assets through surrender requirements. Serbia kept the foreign exchange reserves when Yugoslavia broke up in 1992, but although the newly independent republics (Croatia, Macedonia, and Slovenia) had no foreign exchange reserves initially, they froze—but did not explicitly repudiate—their liabilities to depositors. Second, Stopanska Banka, which held the bulk of frozen deposits, was the bank in worst shape. So it had to be broken up, the stock of deposits dealt with, and the pieces privatized.

Thawing frozen foreign exchange deposits

The Macedonian government assumed the former Yugoslav central bank's obligations to its commercial banks, but as long as funds in the old foreign exchange accounts could not be withdrawn, interest continued to accrue. Some 60 percent of the frozen foreign exchange deposits were in Stopanska Banka, which traditionally lent to big state and socially owned enterprises. As Macedonia earned foreign exchange through exports, individual banks with available funds permitted ad hoc withdrawals, technically in defiance of the official freeze, which began to be formally relaxed only for hardship cases. The government also sought, with some success, to extinguish these foreign exchange liabilities by allowing them to be used as payment in the privatization of apartments and enterprises.

As banks competed for additional deposits, new deposits naturally gravitated to those that, formal restrictions notwithstanding, thawed their deposits. Stopanska, despite its insolvency, therefore thawed its deposits too. But because it had the most nonperforming loans, it had to tap the central bank with growing frequency and for increasing amounts. By March 1994, Stopanska's cash flow demands were becoming unmanageable and jeopardized the government's attempts to reduce inflation.

Stopping Stopanska

Stopanska had to be broken up before privatization to avoid (implicitly) insuring deposits in a large bank. Breaking up Stopanska immediately and deferring recapitalization until its parts were privatized were both difficult and controversial moves. The International Monetary Fund was anxious that a breakup not derail its impending standby arrangement. The European Bank for Reconstruction and Development (EBRD), although unwilling to bid immediately, seemed interested in buying Stopanska whole, and Stopanska's senior officers were understandably resisting its dismemberment. Fortunately, the government was
persuaded that breaking up Stopanska was important, and because Stopanska was an agglomeration of regional banks that retained their identity, the breakup was technically simple. The managers of the five regional clusters were eager to buy their parts, leaving the problem core (the Skopje cluster) for the government to tackle. In this way, more than 40 percent of Stopanska’s assets will be privatized before the World Bank loan’s second tranche is released.

An interim report

Macedonia is not out of the woods yet, but the signs are encouraging. After being reelected in November 1994, the government immediately began whittling down the twenty-five political enterprises. Some 15,000 of the 20,000 surplus workers have been laid off. The conglomerates among the political enterprises are being broken into independent units, many of which look quite promising and are privatizable. The next test of the government’s resolve comes at the end of 1995, when the unsold units must be liquidated. Privatization of the other enterprises is creeping along.

There are also some worrying signs. Ten of the twenty-five enterprises have together accumulated USS200,000 in arrears to the electric utility, which, along with three other companies, demanded and obtained government-guaranteed loans of USS3 million. The electricity and rail utilities have not shed ex

1 With transparent subsidies, the enterprises could collude and collectively demand more, rather than compete among themselves for the amount the government sets. So the superiority of transparency is not automatic. The subsidies were expected to be lower than the present value costs to the budget of unemployment benefits to laid-off workers, but were not specified in this manner because discussions were under way to reduce unemployment and other benefits and the sums were not added up until the consultant studies on each enterprise were available.

2 Ramachandran outlines why bank privatization is necessary but difficult in “Betting Banking: Privatize Flows and Let Sleeping Stocks Lie” (Private Sector, March 1995).

3 Increases in total central bank credits are tightly controlled to reduce inflation. The IMF was more concerned about the rate of nominal increase in central bank credits than about how they were allocated among banks, but in real terms increases, while small to administer, implied that the banks’ market shares were changing. If banks are to have an incentive to improve their operations, each bank should be allowed to increase its share at the expense of others.

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Finding Real Owners—Lessons from Estonia’s Privatization Program

John Nellis

The Estonian government has quickly privatized more than 90 percent of its industrial and manufacturing enterprises. The Estonian privatization agency, following the approach devised by the German Treuhandanstalt (former staff of which advise the agency), hatches thirty to forty firms and advertises them for sale. The prime goal is to find “real owners” capable of running a durable, productive firm. Purchase offers are thus judged not only on price, but also on the quality of business plans submitted, particularly with regard to expected investment and employment creation. Winning bidders negotiate contracts formalizing their commitment. No special concessions are made to workers and managers in the affected firms, but they can and often do submit a bid and a business plan—and they have won the competition in some thirty cases. In seventeen sales (with more in progress), the Estonians have combined strategic investment with voucher exchanges, a mix beyond the reach of most other transition economies. And now Estonia is addressing, earlier and more comprehensively than most other formerly communist countries, the complicated issue of involving the private sector in the provision of infrastructure services.

So far, allegations of corruption and insider dealing—though not absent—have been fewer than in most other transition economies. And although a fair number of sales have been to foreign buyers, there has been little political protest. Many observers thought that a transition economy could not handle a privatization strategy as politically risky and as administratively intense. But the Estonians have proved them wrong.

Progress

By November 1995, the Estonian privatization agency had concluded more than 400 sales contracts for medium-size and large industrial firms or parts of firms. These sales generated about US$200 million in direct receipts—though much of this is being paid in installments. Purchasers contracted to invest an additional US$160 million in the divested firms and assumed at least US$130 million in liabilities. The privatization agency estimates that the sales created or maintained some 49,400 jobs—a significant number in a country of 1.5 million people. Besides infrastructure firms and a couple of particularly difficult industrial cases (oil shale and alcohol firms), there is not much left to privatize.

Small-scale privatizations and “leftovers”

More than 90 percent (over 1,100) of the small business units and assets in Estonia have been divested through auctions, raising some US$23 million. This process is regarded as substantially complete, since the remaining items appear to be of little interest to investors. “Leftovers”—unsold assets or parts of businesses resulting from the tender method of sale—are constantly being created. Many have been divested, but several with severe financial or environmental problems are not moving and may never be sold. Experience has not yet yielded a hard and fast rule on how long to try to sell businesses before giving up and liquidating them. Some have been sold even after a long stay in the leftover category. A good solution would be for the privatization agency to set a “normal” period of sale—say, one year from tendering—after which liquidation would start.
Contract control

With 400 concluded contracts, the privatization agency’s postsale supervision process is being formalized. The agency reports no problems with investment and employment promises but does have problems with installment payments of the purchase price. In December 1995, the agency said that seventy buyers were having difficulty in meeting their payment schedule. Only once has the agency repossessed a firm when the buyer failed to make payments. In effect, the government is unwilling to renationalize on a large scale or declare the new private firms bankrupt. While still insisting on the need for payment of the obligation, controllers often give the new owners more time. Given these generous enforcement and supervision practices, would it have been preferable to maximize the purchase price and omit nonprice criteria? Agency officials say no; they view investment and employment commitments as legitimate, given the short time horizon of so many investors.

Public offerings and use of vouchers

Two large and fifteen small “combination” sales have been concluded. These sales combine partial purchase by a strategic core investor with divestiture of a minority of equity through a public offering limited to Estonians, who exchange vouchers for shares. In the two large sales, investment funds reportedly contracted with individuals to use their personal vouchers to buy shares and then to sell their shares to the funds. Share prices were fixed, and both offerings were oversubscribed. Concerns have been expressed that the investment funds, acting in concert, gained a significant ownership stake cheaply, and concentrated ownership excessively, defeating the goal of promoting diffused shareholding. But nobody was forced to sell his or her shares. And from the viewpoint of corporate governance, concentrated ownership by investment funds is superior to widely diffused ownership by small shareholders.

In the fifteen small combination sales now concluded, the privatization agency sold a majority stake to a strategic investor and offered varying minority stakes for vouchers—using a “Russian auction” pricing mechanism that roughly matches supply to demand. Fifteen similar exchanges are under way. This combined method has several benefits. First and foremost, the scheme mixes the economic and financial gains of obtaining a core investor with the political advantages of giving the public a chance to acquire shares and use its voucher accounts. A scheme that allows people to trade vouchers for shares (even if they quickly sell them) generates political support for the privatization program by counteracting the claim that divestiture benefits only the foreigner, the local elite, or the politically well connected. This is important in Estonia, where claims that the privatization process was nontransparent won votes in the 1995 electoral campaign. Second, the trading of vouchers and shares and the activities of the investment funds promote the development of capital markets.

But the method also has costs. Some critics say that since August 1994, when it was first decided to hold back a minority of shares in divested firms for later exchange for vouchers, the pace of contract conclusion has slowed. This could have occurred naturally, as sales reduced the supply of better opportunities. But critics claim that investors were anxious about who the future minority owners would be, what their rights would be, how the public offerings would be conducted, and how the government would vote its residual shares in the interim. They say that prices paid by core investors have fallen by a greater percentage than prices for shares reserved for the public offerings, that the uncertainty has caused promised investment to decline, and that the core investors are striking deals with investment funds to buy up shares for transfer, at a discounted price, to the core investors. The solution, say the critics, would be to limit voucher use to buying housing and land—the use originally intended for the vouchers—and allow the privatization agency to focus on its proven strategy of selling whole companies to investors. But these views underestimate the political importance of the voucher program. Privatization is everywhere and
always intensely political. Estonia is but one of many transition economies whose electorate has replaced radical reformers with governments advocating more caution and prudence in reform, particularly in privatization. For all their complexity, schemes in which vouchers are exchanged for shares can provide the level of public support needed to carry out privatization.

**Voucher value**

An unresolved problem in the Estonian privatization program is that the face value of the vouchers outstanding far exceeds the likely value of assets being sold. And even more vouchers are being created as restitution proceeds slowly. According to estimates by the Ministry of Finance, about 10.5 billion crowns worth of vouchers have been issued: 8 billion crowns in “national capital” vouchers, allotted to all citizens, and 2.5 billion crowns in “compensation” vouchers, given out for injustices suffered in the Soviet period. The ministry calculates that the public has exchanged about 1.2 billion crowns of vouchers for housing (70 percent of which has been privatized) and another 1.8 billion crowns of vouchers in privatization transactions—of which only about 100 million crowns of vouchers were used in the two large combination public offerings. A rough calculation yields a face value for the remaining vouchers of about 7.1 billion crowns, or US$630 million. The minority percentages held back from all the firms remaining to be sold are unlikely to be large enough to absorb this outstanding stock of vouchers (though the problem is eased if the trading of vouchers allows their price to fall to clear the market).

Citizens may use their vouchers in a variety of ways (including simply selling them to any bidder). They may exchange them for shares in companies or in investment funds, or they may use them to buy the housing in which they live, to purchase land, or to buy bonds from a Compensation Fund. And in November 1995, it was announced that vouchers may be used at face value for up to 50 percent of installment payments for privatized companies. (This should raise the vouchers’ depressed trading value, but cost the government considerably in forgone revenue: as much as US$10 million to US$20 million in voucher value could be absorbed.)

**Infrastructure and land**

Large infrastructure firms remain to be privatized, including the port, the airline, the electricity company, and a majority share of the telecommunications company. If the combination method were used in these sales, a large amount of voucher value could be absorbed through even minority offerings. From a more technical perspective, some Estonians feel that the need for investment capital in infrastructure firms is so great that few or no shares should be reserved for free distribution against vouchers, but the politically constituted policymaking board of the privatization agency has not yet pronounced on this matter. In addition, exchanging vouchers for land might use up a good share of voucher value, but the mechanics of land sale and exchange are only now being elaborated, and the intention is to limit voucher use to 50 percent of the price of a parcel of land. Much time will probably pass before land sales start to absorb many vouchers.

**Compensation bonds**

Yet another possible use of vouchers is purchasing compensation bonds from the Compensation Fund. This fund also receives half the after-expenses proceeds from privatization sales. Ministry of Finance officials said that by June 1995, 270 million crowns (about US$24 million) of vouchers had been invested in these bonds, which are paying an attractive rate of interest. One worry is that the fund has to invest in long-term, high-risk restructuring of enterprises, raising questions about the income stream that will be generated to pay interest on the bonds. And, obviously, the more assets sold for vouchers and the more vouchers accepted for payment of installments, the less income will be generated for the Compensation Fund to service the bonds. Estonian governments have so far resisted the notion that vouchers might be redeemed at face value.
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value, so the inflationary potential of vouchers is slight. But unless the government can speed up the exchange of vouchers for land and shares, exchanging vouchers for compensation bonds may be the only recourse for many citizens. It would be politically embarrassing if the bonds’ market value fell sharply.

What to do?

To avoid a discounting of the vouchers from face value, the simple solution is to put more good assets up for sale—and inform voucher holders that they have until a certain date to arrange an exchange. But this solution is hard to implement while questions persist about which assets are up for exchange and under what conditions. Moreover, the government is unlikely to set a deadline while vouchers are still being created by a slow-moving court process. But while the voucher issue is complex and has the potential to cause some political problems, it should be economically containable, given the range of possibilities for voucher exchange and the “safety valve” of the compensation bonds.

Infrastructural complexity

Before the 1995 elections, the Estonian government had endorsed a privatization program to divest most remaining infrastructure or problem industrial enterprises by selling the majority of shares to the purchaser able to guarantee investments and effective management. The government argued, however, that these large companies first required reorganization to turn them into joint stock companies, division into marketable parts, and the introduction of competitive forces or regulation. In almost all areas of infrastructure, the program recommended founding “holding-type stock companies” to oversee reorganization and privatization. Some of what was proposed was accomplished. At least one action along those lines had predated the program: a 49 percent share of the telephone company was turned over to a private consortium in 1992. Many business activities in the port of Tallinn are already in private hands. And it is broadly accepted that any new electricity generation needed will be privately supplied. But two changes of government have taken place since this program was announced. Although privatization will clearly continue—a majority stake of Estonian Airlines was recently put up for bid (with a closing date in January 1996)—there has been neither a formal acceptance nor a modification of the previous policy statement. It would be reassuring if the government reconfirmed its principles of infrastructure privatization: creating a market structure to promote competition where possible, imposing credible and efficient regulation where necessary, and locating core investors to provide governance.

Conclusion

In scope and pace, Estonian privatization has been a success. No privatized firm has yet failed, and the privatization agency reports that most divested firms are expanding their employment. The partially privatized telephone company has improved the quantity and quality of service markedly since the involvement of private partners. But these promising results are tempered by the fact that the seventy privatized firms experiencing problems with installment purchase payments are only being admonished. Although four of five privatized firms are current on their obligations, how long they will stay current if there is no penalty for nonpayment or partial payment is another question. But this problem—though significant—is not overwhelming.

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1 The electorate’s dissatisfaction with some aspects of privatization contributed to the 1995 defeat of the incumbent coalition. But it could be argued that it was the few instances of insider trading, rather than the scope and pace of the program or the involvement of foreigners, that caused the dissatisfaction.

2 This section updates an earlier Note by the author (“Privatization in Estonia: Major Accomplishments and Remaining Problems,” Private Sector, December 1994).

3 Estonian purchasers can pay 20 percent down and the balance over a period of three to ten years. Foreign buyers supposedly must pay all at once, but most create a local company to take advantage of the installment plan.

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End of the Line for the Local Loop Monopoly?

Technology, competition, and investment in telecom networks

Peter Smith

Local telephone service is the last bastion of a still frequently asserted public policy preference for monopoly provision of telecommunications. This Note challenges the rationale for that preference, addressing four issues: First, is local network competition feasible from a technical and cost point of view? Second, is telecommunications competition accepted by major investors? Third, how important is competition from a public policy point of view? And fourth, briefly, how can it be made to work?

A traditional and now outdated view in the telecommunications sector is that competition is suitable for terminal equipment, for value-added services, and possibly for long-distance telephone service after universal service is achieved—but not for local telephone service. This position is usually accompanied by the view that cellular mobile telephony is not local telephone service (which it clearly is) but a separate “mobile” market segment.

A modified traditional view is that local service competition is appropriate only for large markets (such as the United Kingdom) and in rich countries that have already achieved universal service (for example, Finland, New Zealand, and the United Kingdom). This is wrong. Even in a relatively small market such as Sri Lanka, local network competition is beneficial. Sri Lanka has four cellular operators and some of the lowest cellular telephone service prices in the world. In 1994, the number of telephone lines in the country increased by about 47,000. Of these, about 30,000 were conventional lines provided by state-owned Sri Lanka Telecom—a record increase. The remaining 17,000 lines came from the provision of cellular service. Thus, the cellular operators contributed significantly to the expansion of telephone service in Sri Lanka—and demonstrated the transition of cellular service from a small, specialized, premium part of the market to a substitute for conventional service.

Feasibility and viability

To assess the feasibility and viability of local network competition, we need to review two groups of factors: first, technology and the cost characteristics of different technologies; and second, the views of investors, since it is no good being right about the technology if investors don’t believe in it.

The choice of technologies for the provision of local telephone service is now broader than ever. There are several wireless options: analog and digital cellular radio, digital cordless telephony (for example, Digital European Cordless Telecommunications, or DECT), proprietary (non-cellular) wireless local loop systems such as Lonica (being installed in Finland), and mobile satellite. There are also fiber-optic cable TV options and hybrid solutions combining, for example, cable TV and DECT.

Figure 1 compares lifetime costs for two generic technologies: traditional underground
copper cable and wireless. The figure is, of course, simplified and generalized, showing just one cost line for each technology. (The wireless cost curve is for Global System Mobile, or GSM, cellular.) Actual cost structures vary according to the technology, market, topography, network configuration, and grade of service. Nevertheless, the figure shows that in areas of low subscriber density (fewer than 250 to 300 subscribers per square kilometer), wireless systems have lower costs. Furthermore, because wireless costs are falling relative to the costs of cable systems, the crossover point is moving to the right. Thus, wireless systems are becoming more competitive, in larger parts of the market, every year.

**What do investors think?**

The issue of exclusivity often arises in the context of telecommunications privatizations. In many of these transactions, a policy decision has been made to continue monopoly rights, sometimes on the basis of an investment bank’s recommendations. In Mexico, Argentina, and Venezuela, for example, exclusivity periods of six, seven, and nine years were granted. In these and other cases, privatization advisers have made recommendations that do not necessarily lead to the best public policy for the development of the telecommunications sector as a whole.

But do investors think that network competition poses unacceptable risks? Apparently not. In New Zealand, Telecom NZ was successfully privatized in a policy environment of open entry in all market segments. In the Philippines, such foreign investors as NYNEX, Cable & Wireless, and Telstra have entered—or are preparing to enter—the market as competitors or partners of competitors. In Mexico, a large domestic cellular operator with support from Bell Atlantic has proposed installing a fixed wireless network to serve 1.5 million customers. In southern India, US West has proposed a telecom buildout-operate scheme and has not asked for an exclusive franchise. Investors have also accepted competition in Australia, Malaysia, Sweden, the United Kingdom, and the United States and in the cellular market of almost every country.

**Why competition is so important**

Many of the benefits of telecommunications competition are well known—lower costs, lower prices, greater innovation. Less recognized and more important benefits, however, particularly for developing countries with significant underinvestment in the sector, are increased investment and better service.

By way of comparison, the alleged benefits of exclusive franchises are short-term stability in a difficult privatization environment (as in Argentina in 1990), higher profits, and more investment (“no one will invest unless you grant them a monopoly”). In some cases, it is true that a very short period of exclusivity (say, one year) can contribute to stability in a difficult environment. But the second alleged benefit, higher profits, is not, of course, a customer benefit. Thus, the question of whether competition or monopoly is the better public policy in an environment of underinvestment hinges on which leads to more investment. This is really an empirical question. But it seems likely
that competition will stimulate more investment, because it opens more channels for investment and it creates incentives to invest to meet demand—companies that do not invest will risk losing market share. This stimulus is exactly what is needed in countries with chronic under-investment in telecommunications—such as Bangladesh, India, the Philippines, and Sri Lanka. Two examples from Ghana and the Philippines confirm that competition will stimulate investment in the sector.

Ghana, a small West African country with less than 20 million people and low per capita income, is regarded as a relatively high-risk location by some foreign investors. In 1992, a small, mainly foreign-owned cellular operator, Mobitel, began operations in the capital, Accra. Mobitel’s business plan called for it to extend service to Kumasi, the second main city, only when the required investment could be financed out of retained earnings. This decision changed in 1994. Mobitel rushed to provide service in Kumasi after a new operator, Celltel, announced plans to provide service in both Accra and Kumasi within a few months. Furthermore, Mobitel has halved its connection charges since Celltel began operations earlier this year.

In the Philippines, the threat of competition similarly prompted a quick response from the main telephone service provider, PLDT. Only in 1993—after PLDT came to believe that the government was serious about authorizing new entrants to provide local telephone service on a large scale—did it announce its “zero backlog program.” PLDT’s investment program turned sharply upward after 1993 (figure 2).

These are not isolated examples. The issue of local network competition is becoming important in many countries. Finland has authorized duopolistic competition in the provision of both local and long-distance service, and Indonesia’s government has authorized Ratelindo to provide fixed wireless local loop service in the Jakarta and Bandung areas of West Java. Local network competition is also pending in India, Mexico, and Sri Lanka and could become very important in China.

**How to make it work**

For competition to work, new entrants need reasonable interconnection, reasonable prices, telephone numbers, and, often, radio licenses—in a sense, all technical issues with technical solutions. But even more important is that the government must have the will to enforce reasonable rules of competition in the sector. This is particularly clear in the case of interconnection, where, in the absence of effective regulation, “strategic” conduct by the incumbent telephone company can hinder or prevent new entry. For a new entrant to interconnect its network with that of the incumbent, it needs information on the type of equipment that exists at different interconnection points. The incumbent can impede interconnection by providing no information, wrong information, or changed information. It can make only a limited number of interconnection points available, forcing the new entrant to send traffic along unnecessarily long
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routes. The incumbent may lease lines to new entrants that are incorrectly dimensioned and unreliable. And it may provide revenue settlement arrangements that are unsatisfactory, and make payments late. In short, without effective regulation, an incumbent can keep new entrants out of the business—and put them out of business.

Conclusion

This Note has made the case that local network competition is increasingly feasible from a technical and cost point of view, that it is increasingly accepted by investors, and that it offers important benefits from a public policy point of view—particularly its potential to stimulate investment. But in order to work, it must be supported by effective regulation. Much remains to be done in many countries to move toward a competitive telecommunications sector. Policymakers should be encouraged to address the critical issues of this transition—and discouraged from losing time on counterproductive efforts to maintain monopolies in this dynamic sector.

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Regulating Telecommunications
Lessons from U.S. price cap experience

Jeffrey H. Roblfs

Regulatory shift

Rate-of-return (ROR) regulation has been used for many years to regulate telecommunications carriers in the United States. This regulatory approach has important desirable features: it limits monopoly rents, and it provides a stable environment to attract investment. But it also has serious flaws. Like cost-plus procurement, ROR regulation provides limited incentives for firms to cut costs or otherwise to improve efficiency. As markets become more competitive, the incumbent may overprice monopoly services to subsidize competitive services. All firms may use the regulatory process strategically to undermine rivals' ability to offer better value to customers.

For these reasons, many U.S. telecommunications regulators have recently replaced ROR regulation with price cap regulation. Price cap regulation uses a formula, set in advance, to determine the price increases for a firm's services for a period of several years. During this period, the firm may keep all the benefits of its incremental productivity gains. Customers can also benefit, in several ways. The price cap formula may cause prices to rise less rapidly during the period than they did historically. The sharpened incentives created may encourage the firm to offer innovative new services. And after the period ends, regulators may order price reductions that reflect productivity gains during the period.

Another advantage of price caps is that they reduce firms' incentives to cross-subsidize. Cross-subsidy generally reduces a firm's profits, and during the price cap period the firm has no opportunity (as it would in an ROR rate case) to recoup those lost profits.1 In addition, price cap plans usually allow the firm substantial flexibility—within the price cap constraints—to restructure rates, with minimal regulatory delays.

The primary drawback of price caps is that they create incentives for firms to cut costs by degrading the quality of service. Many price cap plans deal with this problem by imposing penalties for quality degradation. Another drawback is that price levels may become inappropriate over time as a result of unexpected changes in demand or in real costs. Shortening the term of the plan helps ensure that rates do not drift too far out of line, but it also reduces efficiency incentives. (A firm faces the prospect of earlier unfavorable adjustments to prices if it improves efficiency.) U.S. regulators have generally opted for terms of three to five years. Longer terms will become appropriate as regulators gain more experience with price caps and uncertainty is reduced.

This Note reviews the U.S. experience with price caps, focusing primarily on federal regulation. It then briefly discusses the lessons of this experience for developing countries.

Competition and the regulation of AT&T

AT&T has been subject to competition in long-distance services since the 1970s, though the competition intensified substantially after equal access was implemented in the mid-1980s. In this more competitive environment, federal regulation of AT&T has been reformed and relaxed. The Federal Communications Commission (FCC) began granting AT&T pricing flexibility shortly after its breakup into the seven
regional operating companies in 1984. In the early 1990s, the FCC streamlined regulation of AT&T's large-business and 800-number services, and it has just streamlined regulation of AT&T's remaining services. Thus, although AT&T still has to file tariffs with the FCC, its prices are no longer subject to regulatory review. AT&T has generally responded to regulatory freedom by competing more aggressively for large customer accounts. Its competitors have stopped gaining market share at AT&T's expense, but remain prosperous.

For AT&T, the most dramatic gains were reductions in its real noncapital expenses (figure 1). The rising trend in AT&T's real noncapital expenses was reversed in 1989. In 1988, the company took a US$6.8 billion write-down of antiquated analog equipment and started to replace it with digital equipment, primarily fiber-optic systems, to thoroughly modernize its network.

FIGURE 1 REAL NONCAPITAL EXPENSES OF AT&T, 1985–91

![Graph showing real noncapital expenses of AT&T, 1985–91](image)


The FCC began to use price cap regulation for AT&T in 1990—though AT&T had started to act in anticipation of price cap regulation even before then. The FCC's 1993 review concluded that the price cap plan was working well. According to the FCC's calculations, price caps yielded US$1.8 billion of gains to consumers over the 1990–93 period. Estimates by Schmalensee and Rohlfs show that 90 percent of the gains from price cap regulation went to consumers and 10 percent to AT&T stockholders. Consumers enjoyed real price reductions as the price cap declined (in real terms) and from AT&T's voluntarily pricing below the cap, and they also made greater use of discounted pricing plans.

Transition to competition

Competition, rather than price caps, was undoubtedly the primary impetus for AT&T's modernization effort. When Sprint began to advertise its all-fiber network in the mid-1980s, AT&T perceived an urgent need to improve its network to maintain the company's reputation for quality. But price caps have eased the transition to streamlined regulation. Under ROR regulation, a detailed cost allocation manual would have had to be developed to ensure that prices in markets not subject to streamlined regulation covered the costs allocated to those markets. By contrast, under price caps, the FCC simply had to order streamlined regulation for some services, leaving the formulas for price cap regulation of other services unchanged.

Because of the altogether favorable experience with the price cap regulation of AT&T, the FCC renewed AT&T's price cap plan without change in 1994.

Regulation of local exchange carriers

After implementing price cap regulation for AT&T, however, the FCC backslid, adopting a hybrid of price cap and ROR regulation for local
exchange carriers. This hybrid plan allowed the local exchange carriers to keep all their marginal productivity gains until their rate of return reached a certain level. Above that level, the carriers had to share further efficiency gains equally with their customers, which reduced their efficiency incentives by 50 percent. At a still higher rate of return, the plan reverted to pure cost-plus regulation.

Despite this declining incentive structure, local exchange carriers have significantly increased their efficiency under federal price cap regulation. To ensure that consumers did better under price cap than under ROR regulation, the FCC included in the plan a "consumer dividend" of 0.5 percent a year. But local exchange carriers have still been highly profitable. Their rate of return on capital averaged about 10 percent a year in 1991–94, compared with the yield on short-term U.S. Treasury securities of less than 5 percent a year.

The improved efficiency of the local exchange carriers is only partially attributable to federal regulation: many states also adopted price cap regulation or one of many variants of incentive regulation during the period. Because local exchange carriers were so profitable under price caps, the FCC made adjustments when it renewed the plan. Rates have been reduced and will decline more rapidly than under the original plan.

**Hybrid drawbacks**

The FCC applied the same percentage adjustments to all price cap-regulated local exchange carriers—a form of "benchmark" regulation, often used in industries with many regulated firms. Thus, the adjustments to each firm’s rates were largely unrelated to its productivity gains, so each firm was able to retain most of the incremental benefits of its productivity gains, even after the end of the price cap period. As a result, the plan provides much greater efficiency incentives than one that makes adjustments for each firm based on that firm’s productivity gains.

The drawback of this approach—indeed, the problem with benchmark regulation generally—is that one size does not fit all. Price reductions that are not onerous for some firms may cause financial distress for others. The FCC dealt with this problem by offering a range of options. Firms could opt for smaller annual price reductions but would then have to share most of their productivity gains with customers. Or firms could opt for pure price caps (with no sharing of gains with customers) but would then have to agree to larger annual price reductions. Several large local exchange carriers chose the second option.

**Lessons for developing countries**

For developing countries, which generally lack strong regulatory institutions, creating and staffing a regulatory agency that can perform ROR regulatory functions competently would be costly and take considerable time. Furthermore, ROR regulation is subject to abuse—especially in the absence of judicial precedents. For these reasons alone, price cap regulation may be more feasible than ROR regulation for newly privatized telecommunications companies.

But the U.S. experience suggests that even where regulatory capacity is strong, price cap regulation may be better. Price cap regulation in the United States has been highly successful—the theoretical benefits of price caps for industry performance appear to have been realized in practice. Moreover, because price cap regulation is simpler and more transparent than ROR regulation, it may be less subject to abuse. And the U.S. experience in long-distance
telecommunications suggests that price cap regulation works well during an industry’s transition to a competitive structure.

Price cap plans have the additional advantage of being indexed to inflation. But even though they adjust automatically to unexpected changes in inflation, as occur often in developing countries, the adjustments do not fully compensate for the effect of inflation on capital costs. Thus, where inflation is unstable, an additional adjustment factor may be desirable.

This comparison of regulatory performance suggests that developing countries are well advised to avoid ROR regulation altogether and to leapfrog to price caps. By doing so, they can benefit from the greater efficiency incentives of price cap regulation while avoiding the administrative costs and difficulties of ROR regulation. Hybrid regulation incorporating formal mechanisms for sharing efficiency gains with consumers is a third alternative. But hybrid regulatory plans require having ROR regulatory institutions in place, offer weaker efficiency incentives than price caps, and provide less protection against cross-subsidy. Thus, pure price caps are the best alternative.

1 For the same reason, price caps increase the firm’s losses from providing subsidies mandated by regulators—for example, subsidies of residential services in rural areas. Consequently, regulated firms may carry out subsidized programs with less vigor under price caps.


3 Richard Schmalensee and Jeffrey H. Rohlfs, “Productivity Gains Resulting from Interstate Price Caps for AT&T,” filed with U.S. Federal Communications Commission, Docket 92-134, September 3, 1992. The Schmalensee-Rohlfs estimate, unlike the FCC’s, includes the customer benefits from greater use of discounted services.


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Franchising Telecom Service Shops

Meeting demand from nonsubscribers in Indonesia

Rajesh Pradhan and Peter Smith

Indonesia has only about 1.3 lines per hundred people, so universal telephone service—a telephone for every household—cannot be practically achieved in the near future. Nevertheless, public access to telephone and other telecommunications services can be dramatically improved through pay phones and telecom shops. The telecom shops are retail outlets that provide telecom services to "nonsubscribers," often under a franchise from the local telephone company. These shops have turned out to be effective at meeting the strong demand from the overwhelming majority of Indonesians lacking private residential or business telephone service, and their success provides a model that other countries can apply.

Harnessing small private investors

Franchised retail telecom service shops in Indonesia, known as Warung Telekomunikasi, typically are privately owned storefront operations—though some are owned by and sometimes co-located with such nongovernmental organizations as cooperatives and student or religious groups. The shops provide pay-as-you-go access to telecommunications services and are operated for profit. They usually have several phone booths and sometimes fax and telex terminals, and they employ service staff to assist customers. The first such shop was established in Bali just over ten years ago to provide telecommunications services for tourists. By 1988 these telecom shops had spread to Indonesia’s other large cities, and by 1990 they were in all cities. Last year they started to spread in rural areas.

While in many countries supervised pay phones, typically located in public post offices, have provided access to telephone service for many years, what distinguishes the Indonesian telecom shop initiative is its reliance on small private investors for the commercialization and rapid expansion of service. This rapid growth can be attributed to several factors. Compared with a private telephone connection, the telecom shop offers service at a very reasonable cost—because the customers pay only for the calls or messages transmitted and not for the installation or line rental charged for private residential or business service. In addition, the telecom shops can offer off-peak discounts, ranging from 25 percent to 50 percent for domestic and international long-distance services. By contrast, pay phones typically are not programmed to provide these discounted rates. Thus, customers using the telecom shop services pay the same use charges as residential or business customers and benefit from the same off-peak discounts. The telecom shops also meet demand for a range of telecommunications services—including facsimile—and they have proved to be more user-friendly and reliable than the frequently vandalized pay phones (table 1).
On the supply side, a key to the success of the telecom shops has been the active support of the national telephone operator, PT. Telekomunikasi Indonesia (PT. Telkom), which until recently was fully state-owned. The company made lines available, provided training, and set up revenue-sharing arrangements that allow most of the telecom shops to achieve robust profitability. As a result, the concept is popular among Indonesia's small businesspeople—who have come to see the telecom shops as a low-risk, high-return investment.

### A franchise agreement

A cooperation agreement between PT. Telkom and each telecom shop establishes a franchise arrangement that sets service and performance standards, operating procedures, and other obligations of each of the parties. The agreements last for two years but may be extended by mutual agreement. The telecom shops pay installation and rental charges for each of the connected lines. They derive their income through revenue-sharing arrangements with PT. Telkom, receiving 20 percent of the gross revenue from domestic calls and 7.5 percent for international calls. The telecom shops must meet all their own operating expenses and recover their start-up costs from their share of revenues. Start-up costs range from US$1,500 to US$3,500 per line, depending on equipment, furniture and fixtures, and other setup costs.

### Rapid growth

The growth in the number of telecom shops has been impressive (figure 1). Since 1990, the number has grown at an average annual rate of about 30 percent. The growth in gross revenue generated has been even more impressive, averaging about 40 percent a year since 1990. Gross annual revenue per line varies widely, but most lines generate more than US$9,000, about ten times PT. Telkom's average gross annual revenue per line.

The shops generating the highest revenue are normally located in high-traffic areas, such as on transportation routes and near tourist centers. By 1994, there were more than 1,500 shops, and aggregate gross revenue was US$60 million. Most shops have between two and fourteen employees. After revenue sharing, most had annual revenue of less than US$300,000. But a few made much more and now rank among PT. Telkom's top 100 customers. The Warung Telekomunikasi business association expects continuing strong growth.

### Table 1: Telecom Services Available from Different Sources in Indonesia

<table>
<thead>
<tr>
<th>Type of service</th>
<th>Pay phone</th>
<th>Residential or commercial service</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Telecom shop</td>
<td>Coin-operated</td>
</tr>
<tr>
<td>Local</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Long-distance</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Domestic</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>International</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Facsimile</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Telex</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Telegram</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>

*Available*  ✔  *Not available*  ❌

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a. Card-operated pay phones, unlike the telecom shop, cannot offer off-peak rates because the rates are physically set in the phone and not at the local exchange.

Lessons

The options for improving public access to telecommunications services—pay phones of different kinds and the telecom shop—are not mutually exclusive. Different options fit different situations and different categories of customers. The important message from the Indonesian experience is that the demand for service from nonsubscribers in developing countries is significant, commercially viable, and should be met. The rapid growth in the number of telecom shops in Indonesia attests to their increasingly effective role in providing public access to telecommunications services. The shops overcome some of the main barriers to access to these services in underserved or rural areas—where the communications network is thin, the range of services is sometimes limited, and the cost of terminal equipment and connections may still be too high to justify individual connections. The shops also help overcome knowledge or skill barriers to effective use of telecommunications services.

Micro telephone companies—the next commercial step

As technology advances and the cost of telecommunications equipment declines, the next commercial development could be the establishment of community “micro” telephone companies. Using a small PBX (an automatic switchboard), a telecom shop could cost-effectively service, for example, 100 telephone extensions on twenty main telephone lines (similar in size to a hotel telephone system). And using the new generation of digital cordless telephone sets, with a range of about half a kilometer or more, the telecom shop could extend its services. Indeed, to extend and enhance the service provided, the telecom shops not only need to adopt these technological innovations. They also need to evolve toward enhanced phone shop “telecenters” that provide one-stop access to all telecom and information-related services.

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Franchising Telecom Service Shops

1 Telecom shop associations exist in many urban centers. They provide a mechanism for coordinating discussions between telecom shop owners and the Ministry of Tourism, Posts and Telecommunications and PT. Telekom.

Reference


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