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Utility Regulation—A Critical Path for Revising Price Controls

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Many countries are privatizing their infrastructure sectors, setting up independent regulatory agencies, and putting in place transparent control instruments and processes for the regulator to ensure that newly private firms do not abuse their monopoly powers. The United Kingdom was one of the first to privatize utilities, selling off British Telecom in 1984, British Gas in 1986, the water industry in 1989, and the electricity industry in 1990. The United Kingdom also pioneered the use of price control regulation. At the core of this regulatory mechanism is the periodic review of price controls, which the U.K. experience shows is complex, time-consuming, and often controversial. Based on the U.K. experience, this Note proposes a sequence of tasks that regulators in other countries could use when revising their price controls.

BOX 1 A MANUAL FOR REGULATORS

The Economic Development Institute of the World Bank will soon publish a manual for economic regulators, *Resetting Price Controls for Privatized Utilities*, that describes the tasks they should undertake when revising the price control for a regulated company. Besides setting out a critical path for price control review, the manual presents options for price control; sets out a formula for calculating the amount of revenue that would be appropriate under a price control, including an option using cost pass-through; explains how to carry out present-value calculations to determine how much revenue would be required to cover a company's predicted costs and a specified cost of capital; shows how to apply yardstick competition to test the validity of a firm's cost projections; and details the issues surrounding the choice of asset value and depreciation rates. The manual, written by Richard Green and Martin Rodriguez-Pardina, will be available from Antonio Estache (aestache@worldbank.org).

In the mid-1980s, some commentators thought that price controls were fundamentally different from rate-of-return regulation, the more traditional approach used in the United States. Most would now agree that the two belong to the same family of instruments, with both requiring a similar process and similar calculations. But under rate-of-return regulation, the regulator would be expected to raise prices whenever the company's revenue requirements rose, while a price control is intended to last for a preset period, regardless of what happens to the company's costs.

Under rate-of-return regulation, the regulator allows the company to charge the prices expected to produce profits equal to a fair rate of return on the fair value of capital invested in the company. If profits fall below this level, the company can request approval for a new set of prices. The problem with this approach is that it gives the firm little incentive to improve efficiency and may even encourage behavior that will raise costs. Under price controls, prices are set so as to allow the firm to generate sufficient

revenue to cover its costs, less an amount reflecting the efficiency gains the regulator considers achievable. The firm has an incentive to make those gains, because otherwise it will make a loss. But it also has an incentive to exceed the gains, because it is free to keep any additional profits it can earn during the control period. At the end of the period, though, the regulator adjusts the prices, passing on the benefits of the efficiency gains to consumers through lower prices. The regulator then sets a new control.

Thus, price control regulation gives the company a greater incentive for efficiency, but also exposes it to more risk. If the company's ability to bear risk is limited, it may be best to have a short period between price reviews, effectively adopting rate-of-return regulation. If the company can bear more risk and is believed to have much scope for reducing its costs as long as it is given an incentive to do so, it is better to have longer periods between reviews —a "purer" form of price control regulation.

Timetable

The regulator should start to reset the control at least two years before a new control is due to come into effect. Much information will be required, and it will all have to be checked and processed before the regulator can propose a new control. In addition, most regulatory systems include an appeal mechanism to protect the company against an overzealous regulator, so the regulator will have to allow time for a possible appeal. These considerations imply that the regulator should make his proposal at least nine months before the control is due to take effect, to allow six months for an appeal and time to implement the eventual decision (figure 1).

Gathering and analyzing information

The regulator should start by asking the company for information on its present and projected operating costs, its assets, its investment plans, and its demand forecasts. Some of this may have to be specially produced, so the company must be given adequate time to respond. Once the regulator has the information, it must be assessed. Every regulated firm knows that its allowed revenues will depend on its predicted costs and investment and thus has an incentive to inflate these predictions. And it has an incentive to underestimate demand: the lower the predicted demand, the higher the prices needed to raise a given amount of revenue.

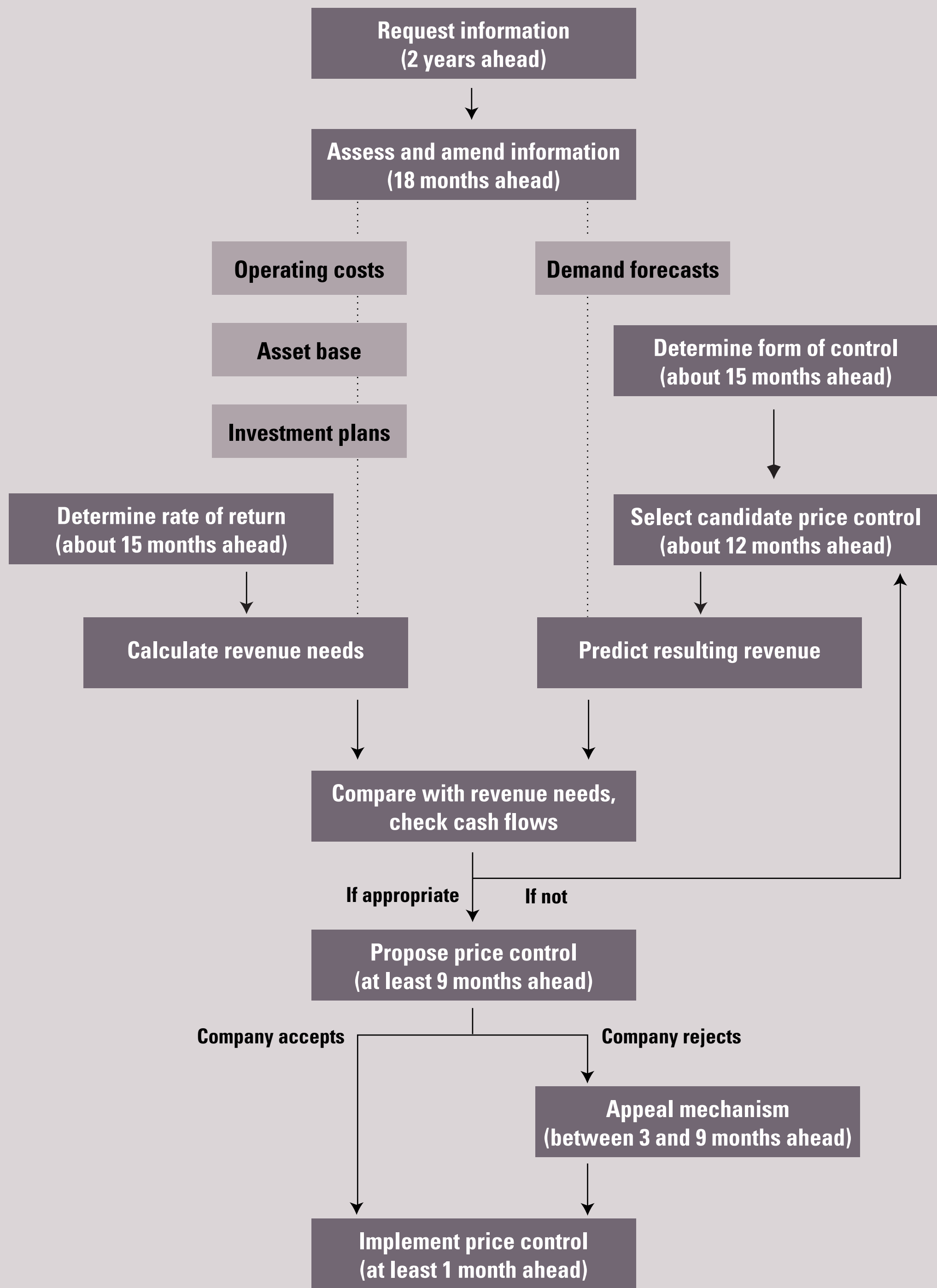
At the very least, the data should be consistent—if the company plans to invest a lot to meet new demand, the demand forecast should reflect this—and the regulator should check that the company is not predicting excessive operating costs or investment. Specialists (in-house or consultants) will probably have to be employed to assess at least some of the company's investment plans. But the company's operating costs can be compared with those of similar companies—a process known as yardstick competition.

Forecasting revenue requirements

Once the regulator has adequate data on the company's costs, they can be combined to forecast the company's revenue requirements. These will be equal to operating costs plus depreciation plus a return on assets (both existing assets and new investment). Revenue requirements can also be expressed as operating costs plus investment plus the change in the present value of the company's assets over the period. The two approaches may sound different, but they give the same answer.

Critical in determining the revenue needed is the rate of return used—the amount that must be paid to reward investors for the use of capital. One way to estimate the rate of return is to base it on stock market information. Equity should earn the normal rate of return for the country, plus a risk premium related to the company's riskiness relative to the market. Debt should earn a return related to the company's credit rating. If the local stock market is not well developed, it may be possible to use information from markets in other countries.

FIGURE 1 FLOW CHART FOR A PRICE CONTROL REVIEW PROCESS



Choosing the form of control

The regulator must also determine the form of price control to use, unless it is specified by law (U.K. regulators face no constraints on the form of control, other than the need to get it past the Mergers and Monopolies Commission if appealed). The two main types of control are price basket and revenue yield (see Viewpoint 132). A price basket control sets weights for a number of prices and controls their weighted average. With a revenue yield control, there is no need to set individual prices, and the weights are effectively the current quantities sold by the company. The price basket can lead to more efficient relative prices but is suitable only for a company with a small and relatively stable set of prices. The revenue yield approach is better for a company with more complicated prices, though it may give the firm an incentive to expand sales in low-priced services.

The regulator must then decide whether to exclude some sales from the control—because, say, they are subject to competition, as sales to large consumers can be. The regulator must also decide whether to allow the company to pass some costs straight through to consumers rather than including them (at their projected level) in the control. Such cost pass-through can reduce the risk borne by the company in the face of fluctuating prices for inputs.

Checking revenue and cash flows and making the announcement

Given the form of control (and the demand forecasts), the regulator can estimate the revenue that would be produced under different values for its parameters. Once the regulator has chosen a set of parameters that appear to yield appropriate revenue, he should also project the company's cash flows to ensure that these too are adequate. When the regulator is satisfied with the control, he can announce it as a formal proposal.

Because the new price control could affect the regulated company's profits, the announcement may cause ripples in the market. So, rather than make a single public announcement, the regulator might release information regularly during the review. That allows the regulator to discuss options with interested parties before finalizing the proposal, reducing the risk and impact of leaks. It can also have political advantages: giving people time to get used to proposals before they become formal may defuse controversy.

If the company accepts the proposed control, the regulator can implement it formally. If not, the appeal mechanism should be invoked so that an independent body can determine the appropriate level for the control. The regulator and the company should already have prepared most information needed for the appeal process, but it could still take up to six months. Once the appeal process is finished, the regulator will need time to formally implement the proposal and the company will need time to set prices consistent with the control—perhaps up to two months. Since the company must also be given time to decide whether to appeal, the regulator clearly must announce the proposed control at least nine months before it is due to take effect.

Conclusion

The aim of regulation is to protect consumers while ensuring that the company remains viable and has an incentive to operate efficiently. The term *price control* does not imply that the regulator dictates every price that the company charges. Instead, a price control is a constraint on the overall level of the company's prices. As long as the company complies with this constraint, it is free to choose its prices, and it has every incentive to act as efficiently as possible. The regulator must ensure that the constraint is not too harsh, for the company must remain viable. But if it is too loose, consumers will pay higher prices than necessary.

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