

Taxation by Regulation

Searching for a Post-Privatization Framework

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This essay attempts to provide a post-privatization framework that would reconcile market-based supply and competition with fair and equitable outcomes traditionally associated with public provision of water, electricity, roads, telecommunications, etc. Specifically, it explores the use of regulation as an effective instrument of taxation for the purpose of securing publicly mandated, fair and equitable access to such facilities across the relevant population. It argues that pricing and supply decisions for various utilities—whether under private or public ownership—are *de facto* fiscal in nature. Regulation of these utilities ought, therefore, to be guided by conventional standards of fiscal fairness as is normally done for taxes and subsidies. Existing and evolving regulatory practice in both developed and developing countries are shown in fact to be motivated by such public good—as opposed to market efficiency—considerations.

THE NEW ORDER OF PRIVATIZATION, TECHNOLOGICAL CHANGE, and competitive pressures has created the need to reconcile market-based supply with equitable and fair outcomes traditionally associated with the public provision of basic infrastructure in water, roads, power, and telecommunications. The desire for equitable outcomes as determined by the distribution, the cost of, and, therefore, access to these facilities across regions, communities, and individuals has historically motivated their outright nationalization and public provision by the state. However, as noted in the *World Development Report: Infrastructure for Development* (WB 1994), endemic failures of the welfare state, especially in the developing world, imposed a high cost on the economy and undermined the ability to effect and sustain equity objectives in the various infrastructure sectors. Where combined

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with wider growth-retarding macro and micro policies, infrastructure sectors in these countries have suffered an acute shortage of capital and investments. While this account of public provision is true for most developing countries, notable exceptions are to be found among East Asian countries—Japan, Singapore, South Korea, Taiwan, Hong Kong—that combined public provision of infrastructure, including equity objectives, with broader growth-inducing policies (Mody 1997).

Nevertheless, rapid technological change and competitive pressures are motivating a shift toward increased private provision of basic infrastructure services in these countries, too. The shift to market-based supply in these countries, however, is expected to generate less significant equity trade-offs, given their higher per capita income and more equitable access to basic infrastructure across the population. This is clearly not the case for the less developed countries—China, India, Indonesia, Philippines, Thailand. Here, the governments are expected to be less willing to bear the equity implications of an unconstrained private-sector led growth of infrastructure facilities. The challenge before developing countries is, therefore, to effect a post-privatization framework for regulation that addresses these concerns while preserving the efficiency enhancing incentives of private supply.

In this essay I explore the use of regulation as an instrument of taxation for the purpose of securing legitimate public goods or outcomes, defined to include fair and equitable access to basic infrastructure facilities across the relevant population. Weak tax administration and an ineffective public expenditure system—common to developing countries—have been argued in the literature to be legitimate reasons for the common use of regulation as an instrument of taxation.¹ (The section below briefly reviews the standard explanation.) Notwithstanding these concerns, existing theory has not satisfactorily addressed the public mandate for equitable and fair outcomes commonly extended to regulatory agencies in both developed and developing economies. An alternative, public goods, ap-

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proach to regulation is, therefore, suggested here, based upon the shared or common nature of fixed costs for most infrastructure facilities. Significant equity dilemmas inherent in pricing, and supply of, shared facilities are argued to justify a potential public good role for the regulator.² The final section of the essay extends the public goods approach to evaluate both existing and evolving regulatory practices, such as cross-subsidies, competition policy, access prices, price and profit caps, etc. The main conclusion supported here is that pricing decisions for common facilities—whether under private or public ownership—are *de facto* fiscal in nature. Regulation of common facilities, if mandated by the state, ought, therefore, to be guided by conventional standards of fiscal fairness as is normally done for taxes and subsidies—such as the ability to pay, the benefit principle, and merit good considerations. In fact, regulatory intervention in both developed and developing countries has been, and continues to be, motivated in no small degree, by the desire to achieve a preferred structure of relative access prices, across users, for the common facility—that is, one preferred over the relative cost burden expected across consumers under unregulated market provision.

EXPLAINING TAXATION BY REGULATION

I hope to show that any theory that conceives the function of regulation to be to approximate the results of competition, or to enrich the regulated firms, or to do sometimes the one and sometimes the other, is incomplete. But it does not follow that a *broadened public-interest approach* (one that accommodated certain subsidy elements) or a broadened effective-political-group approach (one that viewed certain customer classes as effective political groups) might not be tenable. (Posner 1971, emphasis added)

THE economic approach to regulation of public (or privately supplied) utilities has traditionally concerned itself with issues of efficient pricing and supply, as defined by the theory of natural monopoly. Actual regulatory practice, however, rarely attempts to effect the standard economic, or market-efficient, solution to so-called naturally occurring monopolies in this sector. Instead, the use of regulation has been more often than not motivated by the desire of governments to effect equi-

table outcomes, including redistribution of income, across users. This has been true for both developed and developing countries. Cable television regulation in the United States provides a good example. Though thought to display characteristics resembling a natural monopoly, early regulation of this industry (as well as later deregulation in the mid-1980s) did not concern itself with cable rates or monopoly pricing (Posner 1971 & Viscusi 1995). Instead, regulation instituted local private cable monopolies through franchise agreements with the municipal authorities that, in turn, collect significant fees and impose various social obligations—such as provision of free channels to schools—on the local monopoly. The result was subscriber rates higher than what would have prevailed in a state of unregulated provision. The regulatory intention has been an explicit redistribution of income-in-kind from household cable subscribers toward socially valued recipients such as municipal schools. More recently, the US Telecommunications Act of 1996 provides schools and libraries with subsidized access to the Internet funded through higher charges on interstate telephone users (Hausman 1998).

The theory of taxation and government expenditure would be a natural framework for an analysis of the government's attempts to achieve equitable outcomes in basic infrastructure or redistribute income through regulation. Richard Posner made such an extension in his 1971 article, 'Taxation by Regulation'. In this seminal contribution, Posner pointed to the common use of *cross-subsidization*, enforced by the authorities on both regulated private firms and public enterprises, for the provision of otherwise un-remunerative services. The presence of cross-subsidies is troublesome since it is contrary to both the efficiency norms of economic-welfare theory and the maximization of monopoly profits. That is, cross-subsidies are both difficult to justify by the normative theory of optimal regulation and unsatisfactorily explained by the more positive theories of economic regulation, such as the interest group theory or the capture theory of regula-

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tion.³ Posner explained the practice by suggesting that regulation is a legitimate instrument of taxation through which the government attempts to effect a redistribution of income between different consumer groups. The use of regulatory instruments as part of the wider system of taxes and expenditures could be justified, according to Posner, under conditions that made regulation a more cost-efficient way to achieve the desired redistributive outcomes. Thus, weak tax administration and the lack of an effective social expenditures system—both common to developing countries—would justify employing regulation as an instrument of taxation.

However, it would be an open question whether these cost-efficiency conditions were actually being fulfilled in every case of cross-subsidization. That is, conventional theory could still claim, on empirical grounds, that regulation, in many cases, remains a relatively inefficient instrument to effect social obligations or redistribute income. Thus, in a study quantifying comparative efficiency losses to the economy of cross-subsidies and alternative taxes, Hausman (1998) makes such a claim for recent telecommunications regulation in the United States. And in some developing countries, policy reform has indeed shifted the burden of social obligations from regulatory instruments to the broader tax base. This has been the case in Chile (see Irwin 1997) where traditional cross-subsidies in water supply have been replaced by targeted subsidies funded through economy-wide taxes. Or, as in the Philippines, the proposed restructuring of the power sector hopes to achieve a subsidy-free, cost-based structure of electricity prices and supply, with direct subsidies (and state provision) providing for small and low-income consumers, including rural households (ADB 1998).

While the issue of most cost-efficient instruments available for the government's tax and expenditure/subsidy program is clearly a general one, the persistent use of regulatory instruments for redistributive purposes in infrastructure remains to be explained. The Samuelsonian public good argument provides a partial answer, and is a well-recognized basis for public involvement in the provision of infrastructure. However, the traditional public good argument in itself does not explain the preference for regulation over general taxes and subsidies. Here, the common, or shared, nature of consumption in infrastructure

facilities, and the accompanying equity dilemmas, may provide a more coherent framework for the phenomenon of taxation by regulation.

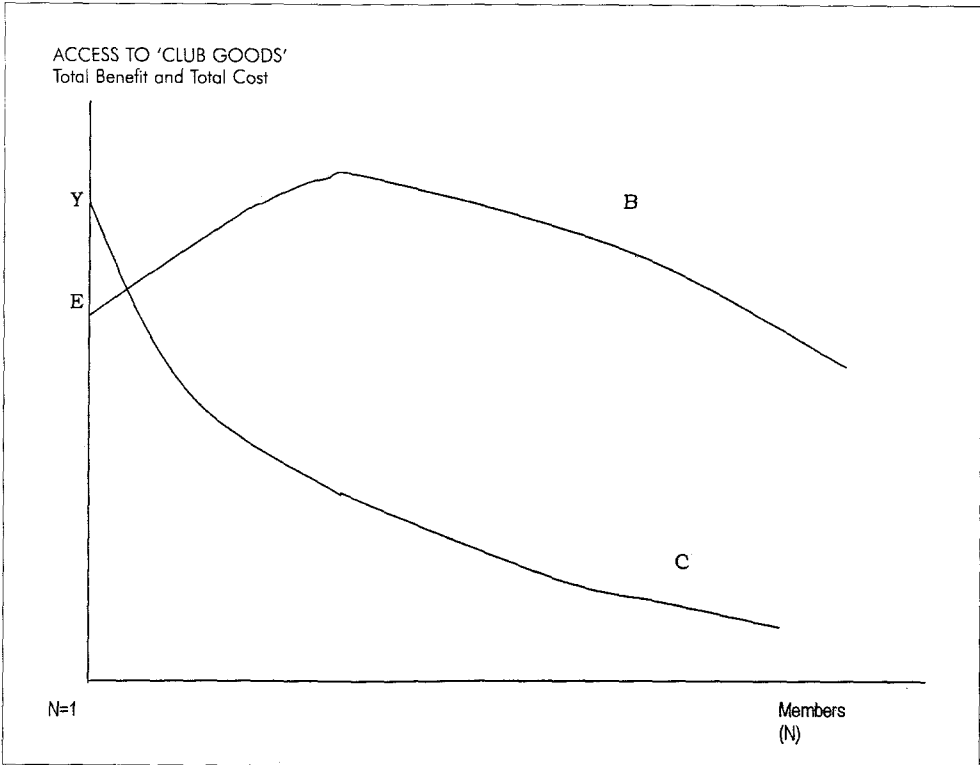
DETERMINING RELATIVE ACCESS TO COMMON FACILITIES

THE presence of common facilities or networks in infrastructure is often inaccurately associated in the literature with the category of fixed costs in production. Common costs, instead, are to be associated with shared consumption of an indivisible facility or network—for example, a piped water facility or a telecom network. Fixed costs, on the other hand, pertain to investment decisions, taken over time, for production of goods that are privately consumed—for example, investment in a plant producing bottled water. That is, common costs relate to a range of goods—the so-called ‘club goods’—that lie between the purely private and the purely public, Samuelsonian good. These are goods or facilities that are used in common or shared by consumers both in time and over time. The range of such goods is, of course, large. It includes the sharing of a hotel room or a taxi to the sharing of common facilities in telecommunications and power. Moreover, in all of these cases, the determination of relative access and individual-member cost-shares is potentially characterized by significant distributive or equity dilemmas. The determination of relative access to a common facility across consumers, of course, is neither an issue for private goods, nor is it for Samuelsonian public goods. The inherently distributive character of such a determination for club goods, instead, is suggested by the following summary discussion.

In an early contribution, Buchanan (1965) investigated the determinants of club size—that is, optimal membership size, and the optimal quantity of club facilities. Buchanan’s focus was on more traditional optima, rather than on issues of equity, which he set aside by assuming throughout an identical set of individuals in all relevant respects, including preferences and income. However, his basic analysis of club optima easily allows itself to be subject to issues of equity under a more realistic set of assumptions.

The following diagram provides a good start for understanding the relevant set of issues. The two curves B and C, respectively, trace the total benefit and total cost, measured along the ordinate, for an

individual club member with reference to a single club facility, such as a swimming pool, and derived in relation to the total number of members in the club, indicated along the abscissa. The points Y and E on the ordinate indicate the total cost and benefit of the facility for a single-member club. Instead of considering the optimum club size, consider the following features that are unique to the choice calculus for shared facilities.



(a) The individual, in this particular case, will not consider self-provision worthwhile (or affordable), given $Y > E$ for the entire facility.

(b) The individual cost share is a function of membership, total facility cost (of given size and quality), and the cost-sharing plan agreed upon by club members. Membership here could mean both the number of individuals *and* the frequency of use of facilities by any individual. That is, the use of a shared facility is a mere unit of account toward recovery of total costs. Thus, the number of laps swum or tournaments played represent potential units of account or membership in the club.

More importantly, the individual share in the total cost of the facility, however calculated (per visit or as a lump sum charge) would be based upon an agreed cost-sharing plan between club members. Furthermore, every member, for any given size of club membership and use, is potentially confronted with an all-or-nothing choice with regard to the facility. The potential cost share, acceptable to any individual member, again, irrespective of club size or use, would range from the full cost Y to a share that is a function of the number of members and the particular cost-share plan chosen. Thus, unlike the consumption of private goods, the use of common facilities by individual members does not impute a unique cost-share in total facility costs. The resulting share in common costs through any agreed upon pricing (or access) rule inescapably generates redistributive outcomes, including cross-subsidization of access to the common facility. The determination of relative cost-shares for individual consumers of a shared facility is, thus, predominantly a matter of fairness, rather than simply of efficiency.

(c) The Benefit curve captures, for the individual member, both the utility and disutility of sharing facilities as opposed to the private enjoyment of the facility. Obviously, both income and preferences affect the height and shape of the benefit curve. The disutility of sharing would, most commonly, reflect the relative congestion and inflexibility of common as opposed to private consumption.

(d) The determination of optimum club size is automatic if the assumption of identical individuals is maintained. However, once the more realistic assumption of differing individuals is introduced, the cost-sharing agreement and the process by which this is reached assumes greater significance, in terms of equity.

(e) Lastly, the matter of optimum size of club facilities, for identical individuals, is mechanistically related to membership size. However, with differing preferences and income, the quantity (and quality) of club facilities becomes a matter of social choice as they would differently affect individual cost shares and benefit functions.

WHAT SHOULD THE REGULATOR DO?

THE preceding section has sought to shift analytical focus away from the conventional efficiency supply (and pricing) concerns and toward

the distributive relevance of relative access to common facilities provided under different institutional arrangements, and under varying market structures. Some key and related regulatory issues need to be, therefore, rephrased in terms of the perspective adopted in this essay.

The Redistributive Imperative. Market or private provision is clearly not separable, even in theory, from the equity issue. Instead, privatization may be seen as merely a more efficient arrangement, among other possible institutional arrangements, such as cooperatives or government provision, for the delivery of shared facilities. The considerations that determine the 'optimum' cost-shares, size, and quantity (quality) of common facilities remain valid under various ownership-management forms. The actual institutional arrangements under which infrastructure facilities are provided are, of course, quite different from the model of voluntary and cooperative clubs described earlier. For most facilities, the form of provision has been a dominant or monopolist provider without the possibility of consumers having a say, through either voice or exit options, in the supply and pricing of the facilities. In the absence of suitable alternatives to the dominant network, and the fact that individual consumers may be unable/unwilling to bear the full, or 'stand-alone', cost of the facility, the allocation of common costs inevitably generates equity concerns for the regulator. These concerns have, and continue to inform much of actual regulatory practice: including universal access in telecommunications, cross-subsidies, creation of competition, interconnection, access fees, etc.

It should be pointed out here, however, that a state of monopoly provision (or imperfect competition), per se, is not sufficient reason for regulation of shared facilities. The regulator may, thus, be less concerned in regulating access to the local golf club versus ensuring access to local sewerage facilities. The decision as to a facility's public relevance ultimately belongs to the broader constitutional-political decision process.

Cross-Subsidizing Relative Access. The standard theory of public utility pricing and natural monopoly concerns itself with 'efficient price rules' meant to achieve marginal optimality conditions in an industry characterized by declining average production costs. In such an indus-

try, the fixed cost dilemma is, for instance, thought to be ideally resolved through infra-marginal pricing above marginal costs that allows for full recovery of fixed costs while still achieving the marginal conditions for optimal consumption. The possibility of obtaining 'first' or 'second-best' optimality in private consumption through some form of above-marginal cost pricing, thus, underlies the various pricing schemes⁴ (two-part pricing, multi-part pricing, declining block rates, Ramsey prices) proposed by the literature for public utilities. However, while these pricing rules are intended to secure an optimum consumption of private goods, they do not, by themselves, offer a welfare maximizing structure of relative access prices, i.e. cost shares, to a shared or common facility. The dominance of shared facilities in infrastructure that cannot be unambiguously tied to the consumption of a single individual or group would imply that the resulting share in common costs through any of these pricing rules would be arbitrary, and generate redistributive outcomes, even where voluntarily agreed upon by consumers. Of course, the confrontation of an all-or-nothing choice by consumers of facilities provided by a monopolist certainly does not meet the requirements of a welfare maximizing voluntary choice. The burden is therefore upon the regulator, guided by his government's overall objectives, to provide an explicit, or implicit, justification of the particular pricing structure adopted. It is this role that the regulator seems to effect through the practice of cross-subsidies. The latter is, therefore, discussed in some detail below.

The framework of shared consumption emphasized here lends itself to a more coherent analysis of the almost universal presence of cross-subsidies imposed by the regulator in basic infrastructure. As argued above, the regulatory imposition of cross-subsidies can be justified within an overall attempt to ensure a socially desired distribution of access costs, across the relevant population, for the shared facility.

Furthermore, and unlike in the competitive equilibrium for private goods of standard welfare analysis, cross-subsidization of relative con-

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sumption may well result from voluntary cost-sharing agreements. In contrast, the unregulated private provider is typically indifferent to the particular distributive character of individual or group share in common costs that result from its profit-maximizing set of prices. In the absence of reasonable alternatives, an evaluation of the distributive consequences of private supply may, thus, be legitimately required by the regulator.

For example, the ability of a monopolist to extract rents through price discrimination could be limited by the imposition of a progressive, cost-sharing, price structure that subsidizes access to the facility by certain groups or individuals. Or, uniform rates may be imposed, based on a facility-wide averaging of costs that ignores location-specific differences in access-costs. A typical example is the requirement for uniform basic telephone rates between urban and rural communities that, in effect, subsidize the latter by ignoring the possibly higher 'stand-alone' costs of rural provision. Thus, in order to close the urban-rural access gap for private telephones,⁵ the Malaysian government directed Telecom Malaysia Berhad, the dominant private provider, to lower rental rates for rural phones irrespective of their distance from the central exchange stations. A similar subsidy to increase rural access to electricity has been provided in connecting the outer areas to the national grid network. Regulation may therefore afford access to facilities to an extent and at rates that would not be forthcoming under unregulated market provision.

A significant regulatory function that has usually accompanied the imposition of cross-subsidies is the control over market entry and exit. The private provider is often assured a dominant market by the regulator that protects the net earnings required to cover the internal subsidies. At the same time, regulatory control—through, for example, universal service obligations—over the withdrawal of, or a refusal to supply, subsidized assets is imposed on the dominant provider.⁶ Such attempts to sustain the preferred relative cost-shares for individual, or group, access to the common facility may be seen as legitimate in a situation where technological and institutional innovations create selective competition within a yet dominant shared infrastructure. This is especially true for facilities—such as water and sewage systems, electricity

transmission and distribution, local telecom networks—where the stand-alone costs may remain prohibitively expensive, relative to demand, for the development of sufficient substitutes. Long-distance telecommunications and independent electricity generation are two examples where selective competition has affected the sustainability of preferred cost-shares, and potentially reversed the subsidy from the less to the now more competitive market segments served by the common facility. The regulator would thus be justified in weighing such a trade-off while considering the allowance and terms of increased competition. Here, the price of entry, such as interconnection or access charges for long-distance telecommunications providers, would be part of the regulator's overall attempt to effect a just distribution of cost shares for the dominant facility. The preferred entry price level, and allowable competition, to be considered would be one that sustained existing and legitimate cross-subsidies while allowing for sufficient competition to restrain monopolistic profit-maximization.

Long distance telecommunications and independent electricity generation are two examples where selective competition has affected the sustainability of preferred cost shares.

The need to sustain internal subsidies through earnings in a protected market raises the additional question of regulating monopoly profits. Here regulators, in applying rate-of-return or price-cap controls, seem to have been less concerned with profits earned in the dominant facility's protected—by natural or artifactual means—markets, and more with prices charged in the subsidized market. If the intention was to replicate competitive outcomes, one would expect the opposite. Such regulatory practice does, however, make sense in the context of the regulator's overall intentions to redistribute income. Profit regulation of Hong Kong Telecoms is a typical example of this practice. Hong Kong Telecoms, a private firm with exclusive franchises to service both the local market and provide international services has traditionally been subject to rate-of-return regulation on its subsidized local services, while no profit or price control is imposed on its relatively high-profit international subsidiary.⁷ In 1993, the rate-of-return regulation over its lo-

cal franchise was replaced with a price-cap which, in effect, institutionalized existing cross-subsidies to local users. And, since the expiry of Hong Kong Telephone's exclusive franchise for the local market in 1995, the government has allowed greater competition in the local market. In contrast, no competition is expected to be allowed for its international services until 2006 when Hong Kong Telecom's international franchise expires.⁸ Of course, control over entry may not always be necessary to sustain cross-subsidization if improved productivity can substitute for protected earnings. In fact, removing restrictions on entry may be perceived as an important inducement to increase efficiency, especially if large X-inefficiencies are thought to afflict the incumbent firm. The existence of such a trade-off thus seems to have informed the regulator's actions in the mid-1980s that subjected the then recently privatized Nippon Telegraph and Telephone (NTT) company to increased competition in long-distance services without allowing it to rebalance its rates in the subsidized local market. However, in 1994 the Japanese Ministry of Ports and Telecoms allowed NTT to start collecting access charges from its competitors.

A different, but related, issue of sustainability arises in the case of declining industries (passenger railroads, telegraph services, postal services) which may cease to function as significant public utilities while, at the same time, facing a shrinking market-revenue base. In such circumstances the decision to sustain the declining industry in its present size through both direct and indirect subsidies may be justified only with regard to the government's constitutionally determined broader program of taxes and expenditures. Here, subjecting the subsidy to a wider trade-off seems more feasible than in the case of regulation concerned with the distributive aspects of a dominant infrastructure facility.

Competition as a Substitute for Regulation? A recent concern of regulators in both developed and developing countries has been the attempt to force competition into traditional preserves of natural monopoly through a legislated process of 'unbundling' and restructuring vertically integrated common facilities. It is even suggested that such competition be developed as a substitute to regulation. The nature of such competition differs, however, in important respects from both compe-

tition between select facilities and the so-called 'competition for the market'. In the former, substitute facilities or firms compete to supply a select market, as in the cellular/wireless phone market. In the latter type of competition, firms compete to obtain an exclusive right to service the market with own-facilities, as in a water franchise obtained through competitive bidding. In contrast, competition with common facilities seeks to allow or force firms to employ common facilities while competing to service the dominant or main market. Central to such competition, however, is the matter of relative access or rights to the common facility and accompanying cost or payment shares. However, a notorious feature of recent attempts to create competition using a common facility has been the widespread inability on the part of

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regulators to secure voluntary and stable access agreements between the incumbent firm and potential entrants. Thus, in the Philippines, competition within the domestic telecoms sector has been characterized by recurrent breakdown of interconnection agreements both between new entrants, as well as between these and the incumbent firm.

Such a lack of stable access agreements for use of the incumbent's facilities is not simply, as is sometimes suggested, an attempt by the dominant facility to foreclose competition: monopoly surplus, if any, is conceivably equally extractable through lease of the facilities to both final consumers and/or intermediate resellers of the service.⁹ And, such surplus is limited by the stand-alone costs of reproducing existing facilities. Instead, the protracted and contentious nature of interconnection or access agreements most likely reflects conflicts over the identification¹⁰ and valuation of network assets for purposes of access pricing. The role of the regulator here is not one of reproducing the ideal, competitive outcome. Resolving such a conflict is, instead, inevitably a matter of defining property rights: that is, access rights to the use, over a specified time, of common facilities and the accompanying redistributive consequences, including distribution of existing cost burdens. Such

a determination is similarly expected of the regulator in the Philippine power sector. For the power sector, an unbundling and divestiture of potentially competitive generating facilities from transmission and distribution networks has been proposed in order to prevent anti-competitive foreclosure strategies that may otherwise be adopted by a vertically integrated utility with its own generating capacity. In spite of this, the regulator will necessarily be called upon to enforce, and price, access to the common transmission and distribution networks. Thus, the Omnibus Power Industry Act of 1998, pending before the Philippine Congress, specifically mandates such a role for the regulator. Competition, in this case, is clearly premised on the regulator's ability to determine relative access rights.

CONCLUSION

THIS essay has tried to provide a more coherent framework to address the legitimate equity concerns in the provision of basic infrastructure. The role of the regulator has been defined as being representative of a broader public concern with regard to ensuring a fair or equitable relative cost-share for individual, group, access to shared facilities in basic infrastructure. The regulator, through cross-subsidies, is simply effecting a preferred structure of relative subsidies, one that is preferred over the distributive outcomes expected of unregulated market provision. The concern with efficient supply assumes a secondary, though not unimportant, role in regulation of shared facilities. That is, once a public policy relevance is decided for a particular facility or sector, achieving the preferred distribution of access in the most efficient manner possible, including privatization of facilities, is a legitimate constraint that the use of regulation, as an instrument of taxation, ought to be subject to. The decision as to a facility's public relevance remains, however, to be judged by the broader constitutional-political decision process. The regulator would not, arguably, be concerned with the social trade-off identified at that level. Evaluating the effectiveness of particular regulatory instruments in achieving the intended 'public' goals would, however, be a legitimate exercise for the regulator.

NOTES

1. Posner (1971) provides the most systematic analysis, to date, on the use of regulation as a legitimate instrument of taxation.

2. The 'public good' significance attached to particular shared facilities is, ultimately, to be determined by the broader constitutional-political decision process. The constitutional perspective taken here has received extensive treatment in the works of Buchanan (1975).

3. See Stigler (1971), Peltzman (1976) and, especially, Becker (1983).

4. For a relatively non-technical discussion of standard welfare properties of the various price rules, see Train (1991).

5. In 1990, the number of telephone access in rural Malaysia was 2.2 phones per 100 persons, against the national average of 10.3 phones per 100. In 1995, rural access increased to 5.5 phones per 100.

6. Thus, in the US telecoms sector, rate-of-return regulation has traditionally been accompanied by grant of monopoly rights and universal service obligations (Harris & Kraft 1997).

7. The imposition of cross-subsidies does, of course, result in profits less than full monopoly profits. In addition, for rate-or-return regulation, the regulator ought to disallow inclusion of subsidized assets in valuation of the rate base.

8. In an agreement reached with Hong Kong Telecoms in January 1998, the government has sought to 'pre-pone' the introduction of competition in the international call market.

9. Indeed, there may be significant cost-savings for the monopolist in leasing its facility to a single or limited number of water resellers, than in selling to multiple final users. However, the former option may further restrict the ability of the incumbent owner of the dominant facility to price discriminate, and thus limit profits.

10. Identifying network assets for interconnection pricing is mainly done on non-economic engineering plans that simply break up the incumbent's network into technically separable pieces.

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