

FROM PLANNING TO REGULATION:  
Towards a New Dirigisme ?

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#### ABSTRACT

This paper argues that regulation in particular of natural monopolies will provide the next arena for the dirigiste impulse in developing countries, particularly as they are faced with having to adopt private financing of infrastructure. It provides a critique of these arguments in favour of a 'new dirigisme', and also shows how market based methods can avoid the dirigiste alternative in the provision of infrastructure.

JEL Classification: B00, D4, L5, O1

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## INTRODUCTION

In this article in honour of Prof. Shenoy, the pre-eminent classical liberal Indian economist during the lost years of Indian planning, I will discuss the "new dirigisme" which is emerging even as there is a worldwide move from the plan to the market. The dirigiste impulse has not been stifled but merely transformed from planning that sought to supplant the price mechanism to regulation that seeks to supplement it. The intellectual basis for both sorts of dirigisme as is argued in part I is the same. Planning being discredited by the events of 1989, dirigistes -spanning the political spectrum- have rallied around the banner of bureaucratic regulation to correct various forms of perceived market failure. These relate to externalities- in particular those relating to the environment- and from various forms of monopoly. Having dealt with the former elsewhere (see Lal (1994), (1995)) I shall be mainly concerned with the latter.

This new metamorphosis of the dirigiste beast is one which has plagued the US since the second world war - bureaucratic regulation of the market. In particular, given the growing importance- and shortage- of infrastructure, and the inability to finance it through taxation, faut mieux, governments in both the Third and Second worlds are being forced to examine private sector alternatives. As many aspects of infrastructure have the characteristics of natural monopolies, which current wisdom and past practice in the US deems require regulation in "the public

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<sup>1</sup> This is an abridged version of the Prof. B.R.Shenoy Memorial Lecture 1996, that I delivered in Ahmedabad, Gujarat in March 1996. I am grateful to Profs. Bhatt and Bharadwaj for inviting me.

interest", its future development and regulation will provide the major operational arena for the "new dirigisme". Part II therefore deals in some detail with these arguments. Whilst Part III reiterates the relevance of a market-based method of dealing with natural monopolies, and shows how the dirigiste alternative in the provision of infrastructure can be avoided.

## I. THE MUTATIONS OF THE PLANNING SYNDROME

### 1. Shifting Notions of Competition

The common intellectual basis for the justifications provided for planning and regulation, is linked to a subtle but important shift that has occurred in economists notion of competition from the classics -spanning Adam Smith to J.S.Mill- to modern mainstream economics. The latter's intellectual moorings are provided by the so called Arrow-Debreu theory of general equilibrium, which it is asserted gives precision to the claims of the classics on the virtues of the market (see Arrow and Hahn (1971) ps.vi-vii). But as Blaug (1987) points out one needs to note:

" the subtle but nevertheless unmistakable difference in the conception of 'competition' before and after the 'marginal revolution'. The modern concept of perfect competition, conceived as a market structure in which all producers are price-takers and face perfectly elastic sales curves for their outputs, was born with Cournot in 1838 and is foreign to the classical conception of competition as a process of rivalry in the search for unrealized profit opportunities, whose outcome is uniformity in both the rate of return on capital invested and the prices of identical goods and services but not because producers are incapable of making prices. In other words, despite a steady tendency throughout the history of economic thought to place the accent on the end-state of competitive equilibrium rather than the process of disequilibrium adjustments leading up to it, this emphasis became remorseless after 1870 or thereabouts, whereas the much looser conception of 'free competition' with free but not instantaneous entry to industries is in evidence in the work of Smith, Ricardo, Mill, Marx and of course Marshall and modern Austrians. For that reason, if for no other, it can be misleading to label classical economics as a species of general equilibrium theory except in the innocuous sense of an awareness that 'everything depends on everything else'" (p.443).

It is equally surprising that the "Chicago school" as Kirzner (1994) has noted "maintains that the competitive market economy displays systematic regularities only to the extent that it can be reasonably fitted into the perfectly competitive mold. Subsequent [to Frank Knight] generations of Chicago theorists would maintain that as a matter of fact the real world competitive market can so be fitted" (p.103). Thus self-proclaimed mainstream theorists on both sides of the market-dirigiste divide, now use the Arrow-Debreu model as their paradigm.

From this theoretical perspective the two so-called Fundamental Theorems of Welfare Economics are derived, which theorists assert provides the justification for the superiority of a market economy (see eg. Dasgupta (1980), Hahn (1984), Sen (1983)). Whilst if one or the other conditions for the existence of the Utopian state of perfect competition are not met, there is 'market failure' and thence a prima facie case for government intervention. This justification for dirigisme is bizarre (Lal (1983, 1987)). To compare 'competition' in in any actual market economy with an unatttainable ideal, is to use Demsetz's (1969) useful phrase a form of "nirvana economics". For it is child's play to show that because of incomplete markets, external effects and the existence of public goods, "market failure" defined as deviations from the perfectly competitive norm is ubiquitous, but the corollary that this then requires massive corrective public action is highly dubious.

But 'market failure' was the intellectual basis of the planning syndrome. As emerged in the famous debate between Lange, Lerner, von Mises and Hayek in the 1930's, the planners (Lange and Lerner) argued that (a) because of the ubiquitous imperfections in most markets, no market economy could ever in practice attain the Utopian norm of perfect competition, and (b) through computations simulating the outcome of a perfectly-competitive economy, the planners could compel the production of the resulting quantities of inputs and outputs (or legislate their optimal relative prices). A planned economy could, thus, achieve Nirvana. Hayek and Mises

pointed out that, though such a form of planning might be theoretically feasible in a world where information about resources, technology and the myriad actual and possible production processes and tastes of consumers could be costlessly acquired by the central planning authority, in the real world it would be impossible. The market based price mechanism is essential because it makes use of the division of knowledge which is unavoidable in any real world economy. (see Hayek (ed) (1935)).

The failures of centralised planning - not least in India- are now well known, with the events of 1989 having hopefully buried the planning syndrome. For even mainstream theorists accept that imperfect information leads to incomplete markets, (see Greenwald and Stiglitz (1986), Dasgupta (1980), Stiglitz (1995)), which cause problems of what is called "incentive compatability"- exactly the point made by Hayek and von Mises in the 30's. Thus a command economy on Lange-Lerner 'market socialist' lines is ruled out.

## 2. Neoclassical Public Economics

But it is being argued that a full welfare optimum or Pareto improvements can be achieved by the government implementing a system of optimal taxes and subsidies. This "optimal tax" basis for the 'new' dirigisme is set out in Stiglitz (1995), and its theoretical base is claimed to be the working out of this optimal tax structure in Greenwald and Stiglitz (1986). Its relevance is however strictly limited. First, because its implementation raises questions both about the character of the mandarins required to implement these 'optimal taxes', and second, because in a dynamic economy the optimal structure will have to be continually changing and the requisite information will not be readily available to the authorities- as Hayek (1945) noted a long time ago.<sup>2</sup>

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<sup>2</sup> Newberry and Stern have advocated the application of this optimal tax theory to developing countries. But as they note it assumes that "the government has coherent, unified and largely benevolent objectives, captured in the social welfare function, and we search for ways in which the tools available to it can be used to improve the measure of welfare" (p.653). That the theory is irrelevant for most developing countries is patently obvious as

On the first question concerning political economy, Greenwald and Stiglitz note in a footnote :

" It might be noted that we ignore any discussion of the political processes by which the tax-subsidy schemes described below might be effected. Critics may claim that as a result we have not really shown that a Pareto improvement is actually possible" (note 7, p.234).

Quite!

Whilst on their claim:

"that there exist Pareto-improving government interventions ..[and] that the kind of intervention required can be simply related to certain parameters that, in principle, are observable" (p.231),

they are in their concluding comments forced to concede:

" we have considered relatively simple models, in which there is usually a single distortion (one kind of information imperfection, one kind of market failure). Though the basic qualitative proposition, that markets are constrained Pareto efficient, would obviously remain in a more general formulation, the simplicity of the policy prescriptions would disappear. Does this make our analysis of little policy relevance? The same objection, can of course, be raised against standard optimal tax theory. (Some critics might say, so much the worse for both.) Though simple expositions of optimal tax theory often focus on the case of independent demand curves, in the general case, one needs to know all the cross elasticities of demand, and these are seldom available. What is worse, if one abandons the unrealistic assumption of the standard optimal commodity tax formulation (eg. Diamond-Mirrlees (1971), with their assumption of 100 per cent pure profits taxes, no restrictions on commodity taxation, and no (progressive) income tax), then the informational requirements on the government are even greater" (p.258)

Quite!

To those of us who spent our misspent youth on advocating the

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most of their polities do not even come close to these assumptions about their character. Whilst if a predatory state or rent-seeking society is accepted as likely, the optimal tax rules are no longer valid even within this framework. (see Lal (1994) Chp. 13). For a trenchant critique of optimal tax theory see Harberger (1987), who moreover notes that it is based on a philosophy of government- the social engineering view- which differs from that of classical liberalism.

second-best shadow pricing Little-Mirrlees rules which were the precursors of this "new" dirigisme, its policy irrelevance is hardly surprising.<sup>3</sup>

### 3. Market Governance or Business Governance?<sup>4</sup>

Many , however, have found the case studies of supposedly successful dirigisme in the Far East conducted by the 'market governance' school more persuasive. Even the World Bank (1993) has leaned towards them. As I have discussed the former in detail in Lal (1993), and Little (1994) provides a devastating critique of the latter, I need only emphasise a number of points.

First, it is undeniable that the trade and industrial policies of many of these countries were dirigiste. But was their undoubted success due to or despite this dirigisme? Little (1994), basing himself on estimates of social rates of return to investment for Korea <sup>5</sup>, shows convincingly that they were inversely correlated with the degree of dirigisme. Whilst the World Bank Miracle study's empirics based on total factor productivity calculations, despite its circumlocutions, found that public

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<sup>3</sup> See Lal (1980) for one of these exercises in irrelevance, and Lal (1993) Chp.1, on how I came to eschew this public economics approach to public policy.

<sup>4</sup> The so called 'new' growth (Romer (1986), Lucas (1988) and trade theories (Brander and Spencer (1984), Helpman and Krugman (1985)) have also been used to support dirigisme, but their theoretical and empirical bases have not been found to be persuasive by either theorists or applied economists. (see Solow (1994), Stern (1991), Pack (1994), Baldwin (1992), Lal-Myint (1996)).

<sup>5</sup> for which alone amongst these newly industrialising countries he had data.

interventions in both Korea and Taiwan had little effect in altering the structure of production at the sectoral level, and that the least selective intervention in these and other Asian miracle economies - the commitment to manufactured exports- was the most successful. Thus despite the claims of the 'market governance' school these economies vindicate policies of "getting prices right" rather than of getting them wrong!

Second, another more persuasive explanation can be provided for their industrial and trade policies (see Lal (1993)). Following some insights of Demsetz (1995) concerning the problem of control of business enterprises I have suggested that the explanation for the undoubted dirigisme to be found in Korea and Taiwan for instance is to be explained by the problem of "agency" which a country faces when it moves up the ladder of comparative advantage -ordered by ascending ratios of capital to labour- into more capital intensive lines of production, where there are likely to be indivisibilities in investment. In the absence of private concentrations of wealth, ownership and control are likely to be separated in these industries, leading to an agency problem, as the interests of the managers who control the day to day operation of a firm and the owners who are concerned with maximising the return to their 'shares' diverge. The problem is one of maintaining beneficial control over resources when there are economies of scale and scope in a firm. This control is in turn related to the amount of private wealth that is required to reduce the degree to which ownership is separated from control of the relevant resources.

Inequalities in private wealth may therefore be productive in allowing fewer people to own firms and exercise greater control over the managers than if wealth and 'shares' in the firm were more dispersed. This agency problem becomes important as soon as a country moves to the more capital intensive rungs of its ladder of comparative advantage. For at the lower rungs given the small concentrations of capital required to set up enterprises they can be owner-managed.

There are three ways of overcoming this agency problem. The first is through sufficient concentration of private wealth, and some institutional means for its spread over a number of enterprises while maintaining control by some concentrated owners. The second is through public enterprises. The third is through foreign equity controlling local firms.

Korea following Japan, sought to create concentrations of private wealth through the promotion of the "chaebol". The major instrument was long term subsidised credit to a select number of industrial groups, who were "chosen" by a relatively efficient dynamic monitoring process based on export success -under a relatively neutral overall trade regime. But the resulting concentration of economic power has subsequently become a political albatross.

In Taiwan, by contrast, as the government was concerned with the political consequences of promoting native Taiwanese economic power, it eschewed the Korean route and instead chose the public sector route for capital -intensive industries like ship-building

and petrochemicals; but with the usual damage to profitability as compared with the private sector alternatives (see Wade (1990), p.81).

Singapore chose the third route, but its 'neutral' trade regime ensured that the direct foreign investment was not of the "tariff jumping" kind, and hence likely to be both socially as well as privately profitable. (Lal (1975)).

Finally, there is the "laissez faire" example of Hong Kong. Whilst Singapore did try to force the pace at which its industries were to move up the ladder of comparative advantage (with some dire results as in its 1980's recession) Hong Kong let its industrial structure evolve more naturally. If performance is judged by the productivity of capital then Hong Kong has been the more successful (see Findlay -Wellisz (1994); Lal-Myint (1996); Young (1992)).

#### 5.A Counter -Counter-Revolution in Development Theory ?

This suggests that there is little merit in the "new" dirigiste case. So why has Krugman (1992) proclaimed a "counter counter-revolution in development theory". Because he claims the ideas of the old development economics based on the importance of increasing returns, and pecuniary external economies arising from the effects of market size, which underwrote concepts like the "big push" in investment and "backward and forward linkages" in planning industrialisation, have now been formalised and shown to be logically consistent. He claims the reason why it failed to persuade in its earlier incarnation was because of the failure to

formalise the ideas in mathematics. But this is ridiculous. As his discussant Stiglitz rightly noted: "That we can write down a model of a phenomenon proves almost nothing. It does not make the idea right or wrong, important or unimportant." (p.41). The reasons why the 'big push' and 'linkages' do not persuade were clearly set out in the detailed discussion by Little (1982). Murphy et al's (1989) formalisation of a model does not in itself validate a big push in investment whose validity depends upon the income effects associated with increasing returns- which are irrelevant in an open economy.

Moreover, we now have empirical evidence of the outcomes in countries which did try a 'big push'. Four were included in the Lal-Myint (1996) study - Ghana, Madagascar, Brazil and Mexico.<sup>6</sup> The results were invariably disappointing if not disastrous (as in Ghana and Madagascar). To promote such bad policies just because some theorists have been able to write down some algebra is not only puerile but wicked - given the high costs that the poor people thus being experimented on suffer.

## II. REGULATING MONOPOLIES - TOWARDS A NEW DIRIGISME

### 1. Monopoly and Competition

Whilst the above debates are unlikely- I hope- to have any practical influence in the current worldwide move from the plan to the market, another more ancient one concerning monopoly and how

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<sup>6</sup> Also see Lal and Maxfield for a detailed analysis of the Brazilian case.

best to deal with it is likely to promote a new dirigisme. This, was the basis of the vast dirigiste regulatory framework built up over the years in that supposed beacon of the free market -the US, and was also constructed in Thatcherite Britain.

## 2. Two Views About Monopoly

There is a popular view propounded by socialist thinkers like R.H.Tawney and embraced by many Third World politician's like Jawaharlal Nehru that a market economy will inevitably be dominated by monopolies. It continues to resonate, not least in many supposedly market economies. But is it right? An important paper by my UCLA colleague Harold Demsetz is useful in setting the record straight. As he notes there have been two systems of belief about monopoly. One due to Adam Smith saw monopoly as being necessarily underwritten by government action which kept potential rivals from competing. The other, views monopoly arising without government intervention because of the theoretical model of monopoly, which provides an analysis of a case where there is only one firm in an industry as compared with the atomistic case of perfect competition. This view in turn has led to the belief that monopoly is significantly correlated with market concentration. But as he notes : " the monopoly model assumes that monopoly power exists, it does not explain how monopoly power is exercised and maintained" (Demsetz (1989),p94). In particular there is "no good explanation ..provided for how present and potential rivals are kept from competing without some governmentally provided

restrictions on competitive activities" (ibid). The usual culprits, economies of scale, indivisibilities of capital, and advertising as sources of barriers to entry are acquitted whilst the empirical evidence in support of the view based on Bain's supposed demonstration of a positive correlation between profit rates and measures of market concentration is shown to be at best shaky if not non-existent on the basis of more recent research.

A similar view that, the degree of market concentration does not imply that market prices and outputs will necessarily diverge from the competitive outcome is also stressed by the recent theory of contestable markets (see Baumol, Panzar, Willig (1982)). Even with scale economies which limit the number of firms that can service a particular market, as long as potential rivals can contest the 'monopoly', the single eventual incumbent's pricing and output policies need not diverge from those under competition. The only rent such a 'monopolist' can acquire are in terms of the sunk costs of firm-specific assets essential for production.

All this suggests that appearances to the contrary, the old Smithian view that monopolies ultimately depend on government support is valid. In the absence of such public protection, even in industries where- depending upon eg. 'scale economies'- only one firm survives, there is no necessary presumption that its behaviour will be monopolistic.

This of course means that regulations designed to increase competition- like antitrust legislation in America- are unnecessary. Worse, because of the evidence of the capture of the

regulatory agencies by the companies being regulated (see the essays in Stigler (ed) (1988)), for well known reasons of political economy, there is the clear danger that such regulations instead of promoting competition create the very government mediated barriers to entry which nurture monopolies.

The basic reason for this is that, efficient economic performance does not only depend upon one type of competition- the imitative output competition emphasised by perfect competition. Equally important is innovative competition, particularly of the creatively destructive kind emphasised by Schumpeter. Whereas, for the imitative output competition of perfect competition, efficiency does require a large number of firms, innovative competition most likely does not. Much innovation has the hallmarks of a race in which the winner takes all. As Demsetz notes "the competitive intensity of [such] a contest is not always increased by adding more contestants." (Demsetz(1995) p.139). What matters is the quality of the contestants and the size of the prize. The existence of patents and other devices to prevent imitative competition - at least for a time- to allow the winners in innovative competition to secure a big payoff for their innovative effort shows that, in a dynamic market economy, there may be many dimensions of competition, with some of the characteristics associated with the different dimensions being inversely correlated- eg. imitative competition requires a large, whilst innovative competition requires a small number of firms. Given this and the resulting incommensurability of different dimensions of competition relevant for the efficient

functioning of a dynamic economy, there can be no single measure- such as market concentration- of competitiveness which can be used to judge the dynamic efficiency of an actual market economy.

### 3. "Rate of Return" and "Price Cap" Regulations

Nor will "rate of return" or "price cap" regulatory formulae necessarily ensure competition in the large. For once there are scale economies, prices can no longer equal marginal costs and there cannot be perfect competition. Competition will not be merely imitative but have some of the elements of a contest, in which some agents will lose and others win. It would be inappropriate to judge the intensity of competition of such a contest by the ex post rate of return of the winner. For as Demsetz notes " if one were to gauge competitive intensity by the rate of return on investment made by winners in a lottery game, the rate of return would be quite high, but a negative return is obtained if the calculation includes the wagers made by losers". So if one were to use the rate of return criterion to judge the competitiveness of a particular industry, the calculation should ideally also include the costs incurred by those who competed to become incumbents but lost. If, moreover, the decision on incumbency depends on government favours then the cost would also have to include the "rent seeking" costs of all the contestants associated with competing for political favour. This inclusive rate of return need not be above some competitive norm. But, in practice, it will be impossible to calculate.

### III. NATURAL MONOPOLIES- REGULATION OR AUCTIONS?

But what of natural monopolies? Surely, once a firm acquires one, it will faut mieux exploit its monopoly power, and hence such natural monopolies will require some form of regulation. Most infrastructural services have elements of natural monopoly. This was the justification used in the past for their nationalisation. But, with growing fiscal constraints and the well-known inefficiencies associated with public enterprises there is a welcome move globally for their privatisation. Will this not inevitably lead to these natural monopolies being used by private producers to exploit consumers? Hence, should these utilities not be regulated?

#### 1. "Competition for the Field" vis a vis "Contestable Markets"

The UCLA industrial organisation school<sup>7</sup> has provided a distinctive and important answer to this question, which unfortunately is not as well known as the various dirigiste regulatory regimes currently being touted by mainstream theorists. The basic idea has been labelled "competition for the field" by Harold Demsetz, following a distinction due to Edwin Chadwick in

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<sup>7</sup>As Demsetz (1995) notes: "as a small act of institutional immodesty, I note that the profession has allowed the University of Chicago to appropriate to itself the efficiency doctrine of anti-trust. The offering of this doctrine in a substantive, analytical way originated at least as much from work done at UCLA as from that done at Chicago" (p. 144, n.70). He along with Armen Alchian and Ben Klein have been the leaders of this UCLA- IO school.

the 19th century between it and "competition within the field".

It differs from the later development of the notion of "contestability", in so far as the latter is concerned with competition between an existing incumbent and potential entrants to the natural monopoly. By contrast, competition for the field as its name suggests is concerned with the competition for becoming an incumbent in the first place. This has important consequences for the price-output configuration and hence the competitive efficiency of the economy. In the theory of contestable markets it has been shown that, in equilibrium, the only rents the incumbent of a natural monopoly can acquire are the incumbent's sunk costs, associated with the monopoly which a new entrant would have to incur in moving in and out of the monopoly. If an outsider can enter and exit a market without incurring any transition costs, then the natural monopoly would be perfectly contestable, and despite economies of scale and scope, the incumbent insider would not be able to garner any rents. But as there are unlikely to be many natural monopolies in which these transition costs are insubstantial, from the view of contestability theory usually insiders would be able to extract rents equal to these transition costs from consumers.<sup>8</sup>

The situation is very different from the viewpoint of competition for the field. Here the competition takes place before

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<sup>8</sup> I have found this theory particularly useful in thinking of the natural monopoly which is the State. In Lal (1989) I develop a model of the predatory state in which contestability plays a central role. The model is used to explain the rise and fall of empires in India over the millenia (see *ibid*, Ch.13.2).

production begins, with would-be natural monopolists competing for the right to serve the market in which each rival could serve the market at the lowest cost, adopting the best technology. In this competition for the field as Demsetz showed in his famous essay "Why regulate utilities?", the potential rents of the natural monopoly would be competed away with the best bid amongst the rivals being accepted by the community for becoming the incumbent of the natural monopoly. Thereafter, there would be a distinction between insiders and outsiders, and substantial transition costs for the latter- in sharp contrast with the conclusions of contestability theory. For without these entry barriers, the potential cost reductions associated with scale economies may not be realised by the successful incumbent. The frequency of competition for the field, or equivalently the length of a franchise to the natural monopoly, will depend upon the particular supply and demand conditions for the output of the natural monopoly. Also, there is no reason why there should not be contractual conditions attached to the possibility of renegotiation of the terms of the franchise before its expiry. In fact given uncertainty on this account, the rivals bidding for the franchise will take account of these renegotiation costs in their bids. Similarly, if there are likely to be future cost reductions because of technical progress, which would lead to future rents for the incumbent, these too would be taken into account in the rivals bids for incumbency if they can be forecast, and the best bid again will involve the whittling away of these potential future rents.

Positive or negative windfalls, which are the result of unavoidable uncertainty need not be inefficient. For instance even in the near perfect markets for commodities, economic agents suffer positive and negative windfalls all the time, but this does not provide a case for regulation. However, in the case of natural monopolies, as these windfalls could continue for some considerable period of time, there could be political pressure for their curtailment if they are positive, and the danger of bankruptcy for the incumbent and hence of a disruption of supply if they are negative. This would provide a case for some renegotiation clause in the contract granting a franchise to a natural monopoly.

But what cannot be laid down is some ideal form of contract. For given the ubiquitousness of imperfect information and the associated uncertainty, agents can only search for the best available mutually advantageous contract. In Hayek's felicitous phrase the market is par excellence "a discovery process".

## 2. Game Theory

In contrast with this UCLA view on regulation we have the emerging technocratic view on the regulation of natural monopolies. This is based on the frail framework of non-cooperative game theory.<sup>9</sup> As the leading lights of game theory recognise, it is of very limited practical relevance because of the plethora of Nash equilibria which can be generated (Binmore(1990), Kreps(1990)).

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<sup>9</sup> See for instance Gilbert and Newberry (1994), which also has references to this literature.

Though of use in training the intellectual muscles of the young, it has not as yet yielded any robust policy relevant results in my view.<sup>10</sup>

### 3. On Privatising Infrastructure Services

So how in practice should the current and future provision of infrastructural services in electricity, natural gas, water, sewerage, roads, telecommunications, be dealt with? Though there are some important differences between these different "utilities", they have one common feature. The natural monopoly element in their provision consists essentially of the "networks" they use to "ship" their products. They provide common "transportation" facilities for all possible users rather than being dedicated to individual ones.<sup>11</sup> Thus an electricity grid, a gas pipeline, a system of telephone lines, water and sewage pipelines, railway track and of course roads are "networks". All other aspects of the provision of the services of these utilities can be made competitive by allowing multiple users of these networks to service consumers.

Thus consider the provision of electricity or gas. There are three stages, and ideally they should be separated by creating separate companies in each. First, there is the production stage, second, the transmission stage through the common "network" and

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<sup>10</sup>. But see Laffont and Tirole (1993) for an attempt to provide a textbook for the dirigiste technocratic regulator!

<sup>11</sup>See Kay (1994) for this illuminating characterisation of the natural monopoly element of utilities. But I do not subscribe to the technocratic regulatory conclusions of his argument.

finally, the distribution stage to consumers. There is no reason why the first and last of these stages should not be competitive. If rival firms are free to produce electricity as they see fit, and to service users on the common "network" there is no intrinsic reason why the production and distribution of electricity need require regulation. It can be produced and distributed like any other commodity by competing firms.<sup>12</sup>

This leaves the "common" network. Here there are two choices. The first, is for it to be communally owned and financed through taxation, but built and run through a franchise given to the bidder who offers to build and supply the network and its services at lowest cost to users. The services of the network would then be available to any user at a fixed fee, or if administrative costs are high could be free. This is the solution for instance adopted for most public roads in many countries.

The second is a purely privately financed alternative. Consider electricity. First, each regional grid is set up as an independent private time-bound franchise. This franchise is then auctioned to the bidder who offers to execute the quantity - quality terms of the franchise at the lowest cost to users during

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<sup>12</sup>Recently the notion of "network externalities" has been advanced by Katz and Shapiro(1985), which are claimed to lead to market failure. But most of these for instance in computer networks, telecommunications, are examples of pecuniary externalities as rightly emphasised by Liebowitz and Margolis (1994). But as Buchanan and Stubblebine (1962) pointed out a long time ago such pecuniary externalities are Pareto-irrelevant and do not constitute examples of market failure. (Also see Lal(1994), Chp.11)

the fixed period the franchise will operate. The bidder who bids most for the existing grid whilst meeting the other franchise conditions gets the franchise for the stipulated period.

At the end of the franchise there are two options. One, is for the grid to return to the "community" which then auctions a new franchise for the grid as before. This reversal of the assets in the expanded "network" to the community is very much the practice, for example, which China has adopted in its foreign direct investment projects.

The other alternative is for the incumbent of the grid to obtain the highest price anyone is willing to pay for the grid, subject to the new price-quality and expansion conditions. Of course the incumbent would also be able to participate in the bidding procedure.

There are a number of reasons to favor this latter alternative rather than have the "networks's" capitalised value revert to the community at the end of the franchise. As can readily be shown in the second form of contract where the incumbent recoups the capitalised value of the grid from the highest bidder for the new franchise, the price charged users of the network, and hence the price to final consumers will be lower than with the first option where the grid reverts back to the community.<sup>13</sup> Of course,

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<sup>13</sup> Thus suppose the sum bid by the successful incumbent for the existing grid is  $K$ , and the price he agrees for the bid is  $p$  per unit, and also the level of expenditures on expansion and maintenance he incurs to meet the 'quality' dimension of the franchise are  $E(t)$  and  $M(t)$  in any year  $t$ . The quantity of the service he hopes to sell in any year is  $Q(t)$ . If his discount rate is  $r$ , and the franchise's life is for  $T$  years, the incumbent's

what the consumer gains through lower prices, he loses through the loss of tax revenue which would accrue if the grid reverted back to the community. But if, for reasons of what may cryptically be called political economy the social value of a dollar of tax revenue is less than one dollar, in contrast to what I believed in my misguided youth,<sup>14</sup> consumers may be better off getting their dissipation of the potential rents from the natural monopoly through a reduction in prices than through the government budget.

The second reason for preferring the second option where the incumbent "sells off" the grid to the highest bidder after the end of his franchise is that this reduces the time inconsistency in his investment decisions which could arise with the other option of the

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present discounted value of his costs and benefits for the first option, under which the grid reverts back to the community at date T, will be given by:

T

$$\sum_{t=0}^T \{ [p \cdot Q(t) - E(t) - M(t)] / (1+r)^t \} - K = 0 \quad (1)$$

If he can sell the grid under the second option, at the end of the franchise for the sum  $K'(T)$ , he will with the same quality requirements concerning expansion and maintenance as before, bid a price  $p'$  to break even, so that :

$$\sum_{t=0}^T \{ [p' \cdot Q(t) - E(t) - M(t)] / (1+r)^t \} - K + K'(T) / (1+r)^T = 0 \quad (2)$$

As the potential incumbent should be indifferent between these two choices, (1)-(2) = 0, which yields:

$$\sum_{t=0}^T \{ [(p - p') \cdot Q(t)] / (1+r)^t \} = K + K'(T) / (1+r)^T \quad (3)$$

The price under the second option will be lower depending upon the expected capitalised value of the grid the current incumbent can garner at the end of his franchise.

<sup>14</sup>See Lal (1980), and Lal (1993) Chp.12, for why I now believe the shadow price of public funds is likely to be less than unity.

grid reverting to the community. For in this latter case, he would have an incentive to underinvest in both maintenance and expansion towards the end of his incumbency, and thus run down the assets of the natural monopoly. This would be avoided if he could obtain the capitalised value at the end of his incumbency of the assets he bought, maintained and created during his franchise.

Finally, as the incumbent will usually be a private firm, the trading of its shares on the stock market would permit takeovers by other private firms, which could prevent any monopoly developing on the networks even during the franchise period as has so often happened under regulation.

Now move to the next stage: the transmission of electricity at the intra-regional or local level. The same scheme would be applicable. Intra-regional or local franchises would be set up and auctioned on the same principle as the regional grid.

With any user of the "network" having access to it at the fixed fee determined in the auction for the "network", any company could set itself up without any government regulation to sell electricity to consumers. With the generation of power privatised, these distributing companies would be able to purchase electricity from the cheapest source given the varying demands for power. In fact as has happened in the UK a spot market for delivery of power by competing generators would develop. These generators could also end up specialising, with some finding it profitable to provide base load and others peak load power. There would be no need for government intervention of any sort in either the production or

distribution of power.

Similar schemes can be set up for all the other infrastructural services, which do not therefore need to be funded from tax revenues. This would also prevent the regulatory jungle and rent-seeking that the botched privatisation of utilities in the UK has promoted (see Robinson (1993), Beesley (ed) (1994)).

Finally it maybe noted that in many countries the contracting out of the provision of many local public services e.g. garbage collection, which was pioneered in the UK is now growing.

#### CONCLUSION

Prof. Shenoy's was a lonely but eloquent voice pointing out the folly of planning in India. He was opposed by a clerisy claiming access to the latest technocratic thinking. They prevailed. But their prescriptions made it impossible to fulfill the pledge Nehru made in his famous "tryst with destiny" speech at Independence: "to wipe every tear from every eye". Thirty years after Prof. Shenoy's effective vindication, as India, however belatedly moves from the plan to the market, another form of dirigisme promoted by the current technocratic "best and the brightest" could once again blight the prospects of fulfilling this pledge. In this article I have attempted to show that first, as before, with so much contemporary theory, in Peter Bauer's sage words: "the emperor's new clothes are of the finest hue but there

is no emperor within". Second, that as regards the problem of natural monopolies in the provision of infrastructural services there are simple ways to avoid the new dirigisme of regulation which, as in the past, the Siren voices of the clerisy are promoting. In this sense I hope I have provided a fitting memorial to a great classical liberal economist and a great Indian who showed uncommon wisdom and courage, and whose only fault was not to be in tune with his times.

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