

Economies of Scale, Distribution of Industry and Programming

Jagdish Bhagwati

If one studies the industrial planning and licencing policy of the Government, it is difficult to escape the conclusion that the planners believe that the mere ritual of licencing is tantamount to a rational planning decision.

There are several agencies which are concerned with these decisions, including the Industries Division of the Planning Commission' and the Development Wing of the Ministry of Commerce and Industry. It appears that efficiency of planning is in inverse proportion to the number of people involved in the planning process,

Perhaps the most startling of inefficiencies is connected with the technical work done by these agencies prior to the licencing process.

One would think that the government would attempt to choose optimum locations and sizes of plants by solving simultaneous programmes, thereby improving upon the uncoordinated laissez faire system.

However, the actual licencing procedure involves the standard mixture of politics and incompetence which almost certainly results in unnecessary waste.

IN choosing the scale and distribution of plants in any activity, several factors must be taken into account and the optimum solution can be quite intricate. It is not enough, for instance, to lay down a simple rule like the following: no plant smaller than the minimum average-cost (MAC) plant should be allowed to be set up. This may be wrong due to spatial reasons. If in an activity, there are two geographically distant consumption points, each with a level of demand lower than the MAC output, it may be more profitable to set up two uneconomic — scale plants, one at each consumption point, than to set up one MAC plant and ship out the output to the two consumption points. The decision to enforce MAC plants could be wrong because of the inter-temporal distribution of demand as well. Thus, if the current demand is for 10,000 units and future demand is for 20,000 units, it may be sensible to install only an uneconomic scale plant of 10,000 units now and to bring it up to 20,000 level (admittedly at higher-than-MAC-cost level) later. Indeed, numerous choices may open up: for instance, one could experiment with excess capacity now (i.e. have a plant of 20,000 now, produce 10,000 and have excess capacity but be optimal in the next period) or with building up stocks (i.e. have a plant of 15,000 now, produce and carry over 5,000 which, combined with 15,000 in the next period, gives the desired 20,000 units); An operational solution to this inter-temporal problem can be exceptionally difficult — one must

choose from numerous possibilities, the terminal conditions have to be sensibly stated, stochastic demand projections may be relevant and so on. The central point, however, remains that it may be profitable, as with the spatial case, to have an uneconomic-scale (< MAC) plant set up, given certain inter-temporal distributions of demand. Operationally, these problems can be set up in programming terms, suitable assumptions made and the optimum sizes, locations and expansions-over-time of plants be determined by the planning authorities.¹

The processes employed by our planners, however, have no resemblance to the programming procedures which can be employed to deal with such problems. The planners have, owing to a variety of non-economic reasons, adopted a policy of promoting uneconomic-scale plants. As argued here, these may very well be economic if spatial and inter-temporal factors are taken into account; but, if this is so, it is by sheer chance and despite the planners.

These uneconomic-scale plants have come up in many activities. In cars, there are already 3 firms with a current total annual output of under 40,000 and estimated 1965-66 output of 50,000! In refrigerators, there are 4 firms with a total annual output of around 12,000 units. In domestic portable air conditions, the current output is around 12,000 and there are already 10 firms! In aluminium, the recent additions to the industry have been characterised by what are admitted-

ly less than MAC-scale plants. The list could be lengthened to include paper and pulp, cement (though some might debate this) and other industries.

Targets Not Broken Down

The reason why these uneconomic-scale plants have proliferated, under the current licencing procedure, is overwhelmingly political. But it is a result of the technical-cum-intellectual vacuum in the planners' methods, to which I have already drawn attention. So far, there has been no attempt at all at developing systematic, spatially distributed industrial targets on the basis of explicit optimising procedures. This is partly a reflection of the failure to break down all national targets into spatial, regional targets of output, investment and income in terms of some efficiency criteria and satisfying certain objectives concerning the regional distribution of income." In view of the failure to allocate economic activity between regions, politicians have quite naturally ended up trying to get a share in every activity that is "currently going" at the Ministry of Commerce and Industry. And precisely because the Ministry does not yet

Such studies are frequently done by industrial planners. I and M Datta Chaudhury are doing, one on the aluminium industry in India.

² Not merely is spatial planning absent but even the description of the national targets as "efficient" is ridiculous in view of the primitive methods that have been employed so far to derive them

have the competence to work out the programmes and optimum solutions, a has so far capitulated to these political pressures and divided up most industrial targets among many plants.

In some cases, the applications for bigger plants have been pruned down to make room for other plants. In others, the applicants, anticipating such an axe, have deliberately approached the Ministry with smaller scales than they would like. Where the net result has been inefficiency, one would have expected that competition would have eliminated such successful applicants. However, competition has been virtually ruled out by the detailed target system of planning that is now practised in our country. Foreign competition is ruled out, thanks to the Ministry's heavy reliance upon QRS (quantitative restrictions)³. The adoption of the quantitative, target system of planning has led to the elimination of domestic competition as well. Since industrial capacity is closely watched (with quite absurd res&its sometimes, such as people being harassed about why they upvalued capacity) an efficient producer cannot increase output and drive out an inefficient producer, thus ruling out "actual" competition. (In fact, the rivals themselves are often saddled with equally uneconomic plants under the present system). Nor can a new firm enter, so that one cannot have even "potential" competition. (This has relevance to the one other factor that may be adduced to explain the Ministry's policy of licencing less than MAC-scale units. It may be that the Ministry, faced with limited targets wishes to have more than one producer, even though at less than MAC-scale and at the cost of efficiency, just to prevent monopoly. But this desire, even if admitted to be sensible in this context, becomes impossible to satisfy meaningfully, as argued here, as soon as the target system of planning is adopted.)

How to Make Government Intervention Rational

Thus a constellation of factors, ranging from technical incompetence on the part of the bureaucrats to political pressures to obtain a raised share in the regional allocation of activity and income,

has led to a system of industrial planning which is far removed from the ideal. Such a procedure of licencing, in fact, negates the very objective of planning.

Useful planning does not consist in merely multiplying the strength of the Development Wing and the Planning Commission with engineers who have no conception of economic planning. The vast staff of bureaucrats who plan industry usually end up being unnecessary nuisances in various ways merely because they have no clue to the type of planning that can improve upon the *laissez faire* system. We thus get numerous reports, statistics on output and capacity (which mean nothing), meetings and delays. The marginal benefit is almost certainly negative.

It is absolutely necessary that the Development Wing and the Planning Commission's Industries Division be instructed to carry out analytical work to determine optimal locations and scales of activity, at least of important items. These exercises would be necessarily expensive, as they would need estimates of costs which, in turn, demand consultation fees. However, once the problem has been viewed, for any industry, and solved in the programming framework, the locations, scales and expansions of plants emerge. The plants could be "handed over" to the successful applicants who could then be made

to bear the expenses of the Ministry's investigations. We would then be able to secure the advantage of a rational governmental intervention.⁴

³ I have already written elsewhere (*Oxford Economic Papers*, February, 1962) about the need for a devaluation and the inflationary plus iniquitous character of the current poacy. Exchange is clearly scarce; in adopting a heavy export subsidy programme, the government have already admitted that devaluation (with offsetting duties on some traditional exports) would be effective; letting importers make excess profits and paying export subsidies is inflationary. Devaluation would instead pick up money from the importers and pay it out to the exporters. But, of course, the Government would naturally prefer to plan by maximising the bureaucracy. The recent activities of the Minister for International Trade are characteristic of the current attitude that if you have enough Committees on a problem, it has been solved. All that happens, of course, is an enormous waste of public funds on travel and hotels and also wastage of the private sector's energies and resources. One just has to read about the Board of Trade's activities, as reported in the press, to see the force of this point.

⁴ I have not touched here upon important questions such as the need to raise the price of capital if proper choices are to be made; nor have I exhausted all the deficiencies of the current licencing procedure. I have merely sought to focus on the fact of the technical incompetence which characterises the bureaucracy in both the Planning Commission and the Ministry of Commerce and Industry.

The Indian Economic Journal

Volume X

July 1962

No. 1

I. Articles

Interrelationships Between Industry and Agriculture in a Dual Economy

Anne O Krueger

A National Accounts Model of India, 1950-51 through 1957-58

D V Ramana

Demand for and Supply of Money in India

V K Sasry

The Consumption Function in the Light of Recent Controversies

A Ghosh

Population, Output, and Expenditure in a Sudan Flood Irrigated Region: The Gash-Tokar Delias

Peter F M, McLaughlin

II. Reviews

III. Notes

All Communications should be addressed to:

The Editor, **The Indian Economic Journal**,
Department of Economics,
University of Bombay,
Bombay 1.

Per Copy: Rs 5/- or 7/6 d
or Dollars 1.25 post free

Per annum: Rs 15/- or
£ 1-5-0 or Dollars 4.00
Post free.