AN ABSTRACT

Industrial location depends on a number of essential advantages, so that industrial development is inevitably unbalanced over space. But, if this results in very large regional disparities, it becomes imperative for the State to intervene and attempt to mitigate the inequalities. Most industrial location policies rely on a system of incentives, both positive and negative, and on direct controls, to guide industry away from areas of industrial over-concentration and towards the lagging regions. While the provision of subsidies may be a necessary condition for inducing firms to choose relatively backward locations, it is unlikely to be a sufficient one. There may be many other factors which influence location decisions, such as the availability of transport and communications, water and power, services and social amenities. Therefore, the formulation of an effective industrial location policy, which would induce future industrial activity in desired locations, necessitates the identification of factors which influence industrial location decisions.

The objective of the present study was to identify the important causal factors bearing a significant influence on industrial location. It was felt that an analysis of industrial location would be meaningful only if the study was focussed on data at a disaggregated regional level. Therefore, the regional analysis of industrial location in Maharashtra and Gujarat was undertaken as a particular case in order to derive a general causal model of industrial location.
Both these States are considered industrially advanced, but they are both characterized by large intra-state imbalances. It was necessary to undertake a combined analysis of industrial location in these States for a number of reasons. The city of Bombay is the focus of industrial development in both the States, because large parts of both constituted the Bombay Presidency till 1950 and the Bombay State till 1960; even otherwise, industrial location in the two States is interdependent. The strategies and incentives used for guiding industrial location are similar (competitive, in fact), and there has been a noticeable shift of industry from Maharashtra to Gujarat in recent years.

The district-level analysis of industrial location in Maharashtra and Gujarat was undertaken for two decades: 1960-71 to 1970-71 and 1970-71 to 1980-81 (i.e., prior to the introduction of the Central Government incentive schemes for backward areas, and after). In terms of industrial employment, little change had taken place in the regional distribution between 1960-61, 1970-71 and 1980-81, in either of the States. In Maharashtra, the district of Greater Bombay accounted for nearly 60 per cent of total industrial employment in 1960-61 and nearly 40 per cent even in 1979-80. The thirteen backward districts (eligible for Central Government incentives), on the other hand, had a combined share of less than 10 per cent in 1960-61 and, even in 1979-80, their share was below 15 per cent. Similarly, in Gujarat, though Ahmedabad's share fell from 55 per cent in 1960-61 to 40 per cent in 1980-81, the share of the ten backward districts was only about 18 per cent.

The distribution of incremental industrial employment over the two
periods of time was somewhat more in favour of the backward districts. From 1960-61 to 1970-71, only 10 per cent of incremental industrial employment generated in Maharashtra was in the backward districts whereas, during the next decade, these districts received about 30 per cent of incremental or new industry. Such a trend is not noticeable in Gujarat. Here, although the share of the backward districts in the first period was 19 per cent and was greater than that in Maharashtra, there was actually a marginal decline in their share in the later decade to 17 per cent.

On the whole, it appeared that relatively industrialized districts attracted comparatively more industrial activity as well. In order to determine whether industrial location in a region was influenced by factors other than the prior existence of industry, and to assess the role of government intervention, correlation and regression analyses were undertaken. The variables selected for the causal analysis, though limited by the non-availability of adequate district-level data, were those considered most relevant for explaining industrial location. The independent variables included were the initial level of industrial employment, cost-output ratios and factor productivities, availability of infrastructural facilities (transport, power and social amenities) and industrial credit, and government assistance in the form of subsidies. The causal analysis attempted to relate location of new industrial employment in a region to the locational advantages (as measured by the independent variables) in the district at the beginning of the period.

The correlation analysis showed that the most important variable explaining the location of new industrial employment was the initial
level of industrial employment. Other variables which had significant relationships with the dependent variable in both the States were the availability of power, and labour productivity, in both the decades, and the availability of industrial credit and government assistance in the 1970s. It was found that nearly all the independent variables were strongly correlated to the level of industry at the same point of time. This implies that the attraction exerted by relatively industrialized districts for industrial location is due to the prior existence of industry, as well as to the existence of complementary factors, such as the availability of infrastructure, lower costs of production and higher factor productivities, which provide external economies and strengthen the locational advantages of the already industrially developed areas. These advantages have, often, been compounded by government assistance; this variable was highly correlated to the level of industrial employment at all the points of time.

From the step-wise regression analysis, it was found that, other than the initial level of industrial employment, important explanatory variables influencing incremental industrial activity in a region in the 1960s were labour productivity in Maharashtra, and the availability of power, transport and social amenities in Gujarat. In the later decade, the availability of power and industrial credit were important causal factors in both the States. Though government assistance did not enter the best-fit regression equation in most cases, this variable was strongly related to the significant explanatory variables which entered in each case. This suggests that the effect of subsidies, and some other variables, on industrial location, was subsumed in the variation explained by the significant variables. On the whole, it
was found that a combination of factors is required to attract industry to a region. But, the weak relationships observed between some of the independent variables and new industrial employment suggested that location decisions may be more strongly influenced by conditions at individual locations than those in the district as a whole. A field study was carried out in the two States to compare the factors influencing the location decisions of firms at industrially developed and backward centres.

The results of the district-level analysis were supported by the field data. Industrially developed areas usually form the first location preference but government intervention, in the form of restrictions on industrial expansion in these areas, together with the provision of subsidies, cheap land and developed industrial estates in the less developed areas, has induced industry away from established industrial centres. It was clear, however, that incentives have proved successful in inducing industrial development in less developed areas only when they have been available in conjunction with other facilities required by industry, especially transport and communications, and access to inputs and markets. Since developed areas best provide these facilities, the backward locations emerging as industrial centres are those which provide easy access to the developed areas. Such locations provide a dual advantage to industrial units: access to developed facilities and subsidies and concessional assistance. Thus, in Maharashtra, most new industrial centres emerging in the less developed areas are places which have good access to Bombay or Pune. Many of the emerging centres in Gujarat owe their success, at least partly, to Maharashtra's regional policy. Instead of locating their units in remote areas in
Maharashtra, many Bombay-based entrepreneurs have preferred locations in Gujarat which are nearer Bombay.

On the whole, in both the States, industry is developing in corridors provided by the major transport networks, and radiating outwards from Bombay. Industry is also developing in a radial or concentric pattern around smaller nodes provided by other industrial centres. It appears that, as new industrial centres emerge along the growth corridors, they act as foci for the development of industry in their hinterlands, in turn. On the other hand, attempts to promote industry in very remote and backward areas have proved unsuccessful, and have resulted in wasted resources by way of a large number of 'sick' units.

It was found that there is little likelihood of industrial development in remote areas till more favourable locational possibilities are exhausted. Such clearly discernible locational preferences should not be ignored when formulating location policies. This implies concentrating resources and incentives on a few well-chosen growth centres, with more development potential because of their being intermediate, both geographically and otherwise, between the industrially most developed and most backward areas. Such efforts are likely to yield quicker results and, as a result of speedier returns to investment on incentives and infrastructure, enable more financial assistance to the development of the very backward areas, in turn. At present, in the latter, efforts may be directed towards the development of basic amenities, rather than towards the development of industrial agglomerations.