

REGULATION OF FIRM SIZE IN INDUSTRIAL DEVELOPMENT: The Experience of Two Manufacturing Sectors in India

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Abstract

This paper examines two manufacturing sectors in India and shows that regulation aimed at protection does not provide the necessary impetus for growth and survival of small industries. Rather, such regulation provides a fertile territory for larger businesses to avail themselves of undue rents through protected markets and regulatory loopholes. The article also proposes a new role for the state to better serve the twin objectives of social equity and industrial growth. Such a role would rely on the existing coalitions of small enterprises and pool resources to consolidate their economic and political power. The article concludes that state institutions can provide a forum for small-business coalitions that would create conditions for all scales of operation to survive and grow without protective regulations.

I. INTRODUCTION

The importance of small-scale manufacturing in a country's economy has been the subject of numerous studies.¹ Several studies have concluded that small enterprises are indispensable to the process of industrialization. Based on these reports, most countries, rich and poor, have instituted regulations to promote small businesses.² Perhaps the most far-reaching and controversial state policy in favor of small-scale industries has been the protection of these industries from larger competitors. India has been among the first countries to institute such a policy and continues to maintain a list of over 800 product items for the exclusive manufacture by small-scale industries.³ How successful is this policy? Does it support the objectives of growth with equity that the Indian constitution upholds? This article attempts to provide an answer to these questions through an analysis of the performance of two industrial sectors in the Indian economy.

The most significant feature of India's industrial development strategy has been its reliance on sectorial planning and regulatory policies. Such a strategy seemed to be a necessary part of the effort to mobilize resources for rapid development of the country's industrial base. Planning has also been a dominant part of the socialist model of development espoused by India, a model that emphasizes equity and distributive justice through a combination of large investments in the public sector and substantial inducements for small-scale entrepreneurship. The rest of the private sector has been subject to numerous regulatory controls over every aspect of industrial activity. In several respects the rigid regulatory structure has failed to address the dynamic nature of industrial development, especially with regard to the transition from publicly supported small-scale units to healthy, self-supporting enterprises.⁴

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The two sectors selected for this study, metal furniture manufacturing and the electronics industry related to the manufacture of television sets, represent two ends of a technological continuum. While metal furniture manufacturing relies on processes known for several centuries, electronic gadgetry in television, and its manufacturing processes, have been characterized by a rapid rate of technological change. However, policies aimed at both industries have emphasized small-scale production during the 1970s. Since 1981, the electronic industries have benefited from increased liberalization and the relaxation of licensing restrictions. In contrast, the metal furniture industries are still reserved for exclusive manufacture in the small-scale sector.

The different treatment of the two industrial sectors in the last decade underscores certain assumptions about their ability to contribute to India's industrial growth and their relation to the wider social structure of the country. There is widespread belief that consumer electronic items such as television receivers require a level of sophistication in manufacturing processes that precludes participation by most of the uneducated and unskilled labor force. It is also alleged that larger scale operations inevitably substitute capital for labor, thus aggravating the unemployment situation.⁵ Furthermore, relaxation of capacity restrictions and import liberalization are deemed justifiable in the case of electronic items as a means of keeping abreast of 'new' technologies, while 'older' industries are obligated to maintain their outmoded processes to accommodate the large, unskilled labor force.

This investigation of two technologically disparate sectors of the Indian economy dispels a number of myths that permeate industrial policy decisions. The evidence suggests that although the two sectors are dissimilar in several respects, the operational differences between them are not significant. Simple econometric tests are performed with data from the Annual Survey of Industry to show that the differences in average value added per factory are primarily a function of invested capital for the manufacturing unit, irrespective of the type of manufacturing activity. These tests substantiate the thesis that contribution of technological sophistication in explaining changes in value added for both industries is negligible. Also, contrary to expectations, television manufacturing and the manufacture of metal furniture do not attract vastly different types of entrepreneurs with respect to their social and educational background. More importantly, a small survey of entrepreneurs in the two sectors shows surprising similarity in strategies for market penetration. Such strategies are known to rely on rent-seeking opportunities resulting from the rigidities in industrial policies and the bureaucratic system.

II. INDIAN INDUSTRIAL POLICIES:

UNDERLYING ASSUMPTIONS AND STATED OBJECTIVES

Before the 1980s, Indian industrial policies affecting both metal furniture and television sectors included a strong preference for small-scale manufacturing. In the case of metal furniture, this predilection led to its inclusion in the list of items exclusively reserved for the small-scale sector during the Fourth Five Year Plan (1969-74). The Fourth Plan period was also significant as it ushered in the age of television in the country and established the foundations of the television industry. The policy framework for television favored the small-scale and public sector in licensing new units, which was in conformity with the country's general commitments to self-reliance and distributive equity. As a result, the two

sectors operated under very similar policies that reflected a belief in the small-scale sector's ability to promote a number of broad social objectives aside from contributing to economic growth.

One major difference existed between the two sectors that policymakers could not ignore. The metal furniture industry already included at least half a dozen firms that were large and well-established. The survival of small enterprises was contingent upon control of the indiscriminate growth of these large firms. As a result, the production capacity of the large firms was frozen at the existing levels and further expansion was disallowed. Nonetheless, small-scale reservation policies instituted investment ceilings for all firms in the industry. This severely restricted the ability of small enterprises to compete with the large firms that had already created a brand image backed by investments in quality.

The television industry, on the other hand, faced no such growth ceilings. Since it was a new industry, licensing was an adequate tool in limiting the participation of large private firms. Also, most manufacturing units started with very similar initial levels of investment and faced similar circumstances. All entrepreneurs in this industry started small and were confident that their products had a ready market. As a result of producer homogeneity, further restrictions on investment limits were unnecessary. Another important aspect of the television industry was its rapid growth fueled by pent-up demand and the proliferation of television broadcasts. Under these circumstances, all sectors of the television industry enjoyed significant returns on investments. The rapidly expanding demand also induced indiscriminate licensing of new, small-scale manufacturing units and meant almost automatic approvals for capacity expansion. Unlike the metal furniture industry, differences in product quality and price among various brands of television sets are minimal.

The policy to regulate industrial size and structure in these two sectors was a deliberate attempt to meet a number of stated objectives. These objectives, as reiterated by all Industrial Policy Resolutions and Five Year Plans, underlie socialist ideals of growth with distributive equity. There is little debate about the relevance of these espoused objectives. However, the policy instruments used to achieve them have often been severely criticized. Table 1 presents an evaluation of the small-scale sector policies in terms of their stated objectives and consequences. It is important to note the unintended effects of these policies. They suggest the need for a complete re-evaluation of the policy instruments and of the underlying theoretical foundations.

Notwithstanding the theoretical validity of the fundamental assumptions in policymaking, the policy instruments designed to direct industrial strategy have often been ineffective. In certain instances, over-ambitious policies with multifarious objectives have resulted in unanticipated effects that undermine the original objectives and create unacceptable socioeconomic imbalances. The reservation of selected items for manufacture in the small-scale sector is a good example of a policy that has been used to the advantage of the forces it was meant to control. There are, of course, some trade-offs that are made consciously, as most forms of market intervention have associated costs. How such costs and benefits are distributed is also an important part of policymaking. However, careful evaluations of costs and benefits cannot be accomplished in a theoretical vacuum. Even in cases where policies have solid theoretical foundations, contextual peculiarities can confound realization of the

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Table 1

*Theoretical Foundations and Underlying Assumptions
in Small-Scale Sector Policies*

Small-Scale Policy Objectives	Theoretical Foundations	Assumption	Intended Effects	Unintended Effects
Generate massive employment at low cost	Capital intensity increases with size; capital productivity decreases with size	Limited technological and management variation; absence of economies of scale	Proliferation of small-scale units	High cost and poor quality of products; loss of scale economies
Increase production of consumer items; achieve self-sufficiency	Theories of monopoly & oligopoly; market concentration leads to production below efficient levels	Domestic markets are protected; substantial barriers to entry	Diverse industrial base; increasing variety of manufacturing operations	Products not competitive internationally; high cost of protection
Facilitate the utilization of traditional skills	Social theories of cultural identity; continuity through the preservation of traditional modes	Modernization breaks down traditional customs and values	Continued existence of traditional arts and crafts in some form	Aversion to high technology; inability to change attitudes
Raise incomes and living standards	Theories of development through industrialization	Existence of surplus labor; industrial employment offers substantial income-generating opportunities	Created jobs for the unskilled and mostly uneducated labor force	Job insecurity; depressed wages; unemployment and underemployment among the educated and skilled
Make industries export-oriented	Theories of comparative advantage; availability of cheap labor	Low technological input; product type and quality adequate to stimulate demand	Export of handicrafts and semi-finished goods; some manufactured products exported to less-industrialized countries	Low image of the country's manufacturing capabilities abroad
Remove regional disparities	Regional development theories; create 'basic' employment	Locational advantages or disadvantages are minimal; job dispersion controls migration to cities	Industrial facilities built in designated backward areas; employment for local people	Lack of infrastructure increases costs; fragmentation of capital leading to loss of economies of scale

original objectives. Thus, ambiguities embedded in social theories provide a fertile territory for adopting a populist agenda, devoid of substantive foundations that often serve the interest of the dominant classes.⁶

In the face of inadequate theory and tenuous assumptions, policymakers are forced to rely on strong conjecture and the prevailing political agenda. Under such circumstances close monitoring and evaluation of the effects of policies are necessary. This research provides an evaluation of small-scale sector policies by examining the performance and emerging trends in two different sectors of the Indian economy. The two sectors selected for this study capture the variation in a number of qualitative variables, especially those related to technology, that can inform the operation of other sectors of the economy.

III. HOW DIFFERENT ARE THE TWO SECTORS?

Metal furniture and television-receiver manufacturing activities are obviously different in several respects. The actual and, in many cases, superficial differences have become the justification for the use of divergent policy instruments for the two sectors. While reservation for the small-scale sector, which entails barriers to investment and entry, continues to persist in the case of the metal furniture industry, television manufacturers can expand operations and create new markets. The functioning of the Department of Electronics as a separate body to expedite procedures and promote the interest of all electronics industries confirms their favored status. Furthermore, a more liberalized industrial environment with less regulation has provided the required impetus for their rapid growth and improved performance.⁷ Can the lessons of liberalization in the case of television manufacturing apply to other 'low-profile' industries as well? The following investigation will attempt to provide an answer to this question by looking at significant similarities and differences between the two sectors.

The perceived differences between the two sectors are based on three major attributes of the industries:

- a. *Sociological aspects*; these include entrepreneurial and employee characteristics, and styles of management, among others;
- b. *Economic aspects*; these arise from technological characteristics of the products which, in turn, determine factor proportions, intensities, and productivities; and
- c. *Industrial organizational aspects*; which include industry size, structure, concentration, and linkages.

It should be noted here that the industrial attributes listed above are not independent of each other and are also affected by the regulatory environment.

Sociological Aspects: In spite of the common impression of metal furniture as part of the traditional 'low-tech' sector, evidence suggests that, in several respects, it is similar to 'high-tech' industries like television manufacturing. The similarity is especially strong with regard to the entrepreneurs who are managing the industries and the employees who participate in their operation. The data on entrepreneurial characteristics in the two industry sectors, presented in Table 2, was obtained from a survey conducted by this author between January and May 1990. The overall percentages for all size categories show that, for both industries, almost one-third of the businesses are owned and operated

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Table 2

Entrepreneurial Characteristics by Firm Size

<u>Industrial Sector</u>	<u>Entrepreneurial Attributes</u>	<u>Large</u>	<u>Medium</u>	<u>Small</u>	<u>All Firms</u>
Metal Furniture	<i>Sample Size:</i>	5	4	7	
	<i>Annual Sales:</i> (Rs. million)	> 10	1-10	< 1	
	College (%)	100	75	57	75
	Family (%)	40	50	14	31
	Experience (%)	60	50	43	50

Television

<i>Sample Size:</i>	4	7	5	
<i>Annual Sales:</i> (Rs. million)	> 100	10-100	< 10	
College (%)	100	100	94	94
Family (%)	75	43	0	37
Experience (%)	75	57	20	50

Notes:

1. College (%) = Percent of entrepreneurs in specific size categories holding college degrees.
2. Family (%) = Percent of entrepreneurs in specific size categories belonging to traditional business families.
3. Experience (%) = Percent of entrepreneurs in specific size categories having previous business experience.
4. Number of firms surveyed = 16 in each industry sector.
5. Turnover can also be interpreted as total annual sales.
6. Exchange rate for mid-1990 was approximately Rs. 17.30 to US\$ 1.00.

Source: Interviews conducted by the author between January and May 1990.

by well-known, business-oriented communities like the Marwaris, the Sindhis, and in a smaller number of cases, the Parsis. These communities together control the lion's share of India's large business houses. Furthermore, exactly one-half of all businesses surveyed in both sectors were operated by entrepreneurs with previous business experience. Educational qualifications also rank high in the attributes of the entrepreneurs, with over one-quarter holding college degrees. In fact, an overwhelming majority of the entrepreneurs are educated urbanites irrespective of the type of industry. Thus, the stated objective to help the small artisans through small-scale policies is probably not met. Over

one-half of all small-scale entrepreneurs surveyed in both the sectors hold concurrent jobs in other services or industries. This strongly suggests that subsidies for small-scale businesses have had an urban middle-class bias despite attempts at industrial dispersion out of metropolitan regions.

There are, of course, some notable differences in the attributes of entrepreneurs in the two industry sectors. The small industrial sector in television, as defined in Table 2, seems to have unleashed significant entrepreneurial talents outside the traditional business communities. These entrepreneurs are also, on average, more educated than their counterparts in metal furniture industries. This can be partly explained by the fact that the industry-wide figures (the 'Total' column) show a higher incidence of educationally qualified entrepreneurs in television than in the metal furniture industry. However, in business experience, the small-scale entrepreneurs in television are well behind their counterparts in the metal furniture industry.

The labor force engaged in metal furniture and television manufacturing does not show any marked difference in educational and social characteristics. The average firm size for the television sector is over twice that of metal furniture industries, which explains the larger number of trained engineers and professionals employed in television industries. According to the *Annual Survey of Industries* data for the fiscal years 1972-73 to 1986-87, the difference between the number of 'employees' (all persons on the payroll) and the number of 'workers' (employees involved in actual production process) for the electronic equipment sector, which includes television, averaged 40 persons, with a standard deviation of about 7. The same figures for metal furniture were 12 and 2, respectively. This is not surprising since the metal furniture firms are, on average, smaller in size and, therefore, require fewer management-level personnel. However, the workers involved in production in both industries did not possess any special practical skills or training.

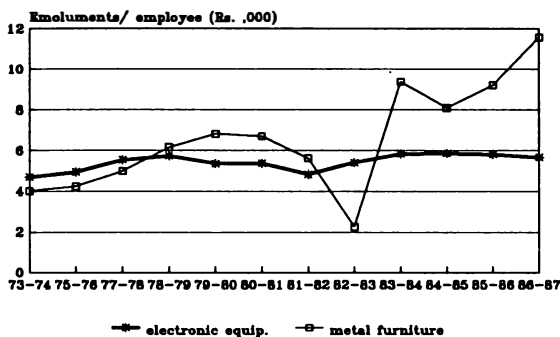
The use of female labor is especially common in television manufacturing firms. Those television industries surveyed had between 20 and 50 percent women in their labor force. The women were used almost exclusively in assembly operations which do not require any knowledge beyond the use of simple tools. Even the technical personnel used for supervision were, for the most part, trained in the polytechnics and industrial training institutes, rather than engineering degree-awarding institutions. Contrary to expectations, the few engineers who were maintained on the payrolls were involved in sales and management instead of design or production-related jobs.

As a result of the reservation policies for the small-scale sector, the metal furniture firms are usually much smaller than television firms. Due to the metal furniture industry's small scale, the requirement for management personnel is also small. However, workers engaged in metal furniture manufacturing, on average, command a higher salary than television manufacturing employees. The difference in emoluments per employee (salary + benefits) between the two sectors has been increasing since 1980, as shown in Figure 1. This growing disparity in labor compensation can be explained by several factors, including worker organization and management styles. The larger metal furniture manufacturing firms are also older establishments with a history of organized labor activities. Furthermore, and perhaps more importantly, the few large firms in metal furniture have managed to eliminate the competitive pressures that

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Figure 1

Growth in Total Emoluments in Metal Furniture and Electronic Equipment Industries: 1973-1987



Source: Central Statistical Orgn.
Govt. of India. *Annual Survey of Industries*. Various Years.

accompany an increasing number of firms in the same category. Thus, these firms have carved out comfortable market shares and can afford to increase labor compensation, in spite of the growing numbers of very small units.⁸

In contrast, the rapidly increasing electronic industries have forced individual units to economize and develop more efficient organizations. The ensuing competitive pressures resulted in a tight lid on wages to keep costs under control. Also, several management-level personnel indicated that the use of unskilled female labor and engineers from technical training institutes is a strategy to keep wages, as well as expectations, low. Worker organizations in this industry are typically weak or non-existent.

The similarities in entrepreneurial profiles and types of employed labor in the two sectors, especially in the large and medium-scale units, dispute the argument that technologically disparate sectors have different *sociological* roles in India's development. The reservation of certain 'traditional' industries for small-scale manufacturing does not necessarily affect the size or composition of either the entrepreneurial class or the labor force. Instead, such regulation creates rigidities in the bureaucratic system that provide further opportunities for exploitative 'rent-seeking' by the dominant classes.

Economic Aspects: Econometric enumeration of the characteristics of production functions can shed some light on the use of factors in the two selected industries. Is it true that the metal furniture industry is less capital-intensive than the electronic equipment sector? Are there significant differences in tech-

nological inputs between the two industries? A number of simple econometric tests will attempt to provide some answers to these questions. The data from *Annual Survey of Industry* for the years 1972-73 to 1986-87, for both sectors, is used to estimate a modified Cobb-Douglas form of production function. The average industry-wide statistics for each year for the input and output variables constitute the cases for analysis. Due to the small number of data points available in this case, more sophisticated tests are not possible. However, some cautious but logical conclusions may be attempted from this analysis. The hypotheses tested can be simply stated as follows:

- a. Despite expectations, technical change plays a minor role in the growth of output in both the industries; and
- b. The partial contribution of labor in the growth of output of both industries is very small, while most of the change in output can be attributed to change in invested capital in the two industries.

A neoclassical production function having two productive inputs and exhibiting disembodied technological change may be written in the most general form

$$Q = F(K, L, t) \quad (1)$$

where t denotes time and Q , K , and L represent output (value-added), capital, and labor, respectively. A modified Cobb-Douglas form of equation (1) may be written as

$$Q = A e^{st} K^a L^b e^u \quad (2)$$

$E[u] = 0$

The term A denotes the constant of proportionality and u is a random variable assumed to be normally distributed in the sample with a mean value of 0. The logarithmic form of (2) provides a first-order equation:

$$\ln Q = C + st + a \ln K + b \ln L \quad (3)$$

The coefficients s , a , and b represent the contribution of technical change, and the change in capital and labor inputs, respectively, in explaining output changes. Ordinary least square estimates of the coefficients for the two industries, metal furniture and electronic equipment, are presented below:

Metal Furniture:

$$\ln Q = 5.98 + 0.006 t + 0.82 \ln K + (-1.7) \ln L \quad (4)$$

t -statistic: (2.2) (0.021) (1.86) (-2.5)
 $(R^2 = 0.57; F = 4.5; \text{Durbin Watson} = 1.7)$

Electronic Equipment:

$$\ln Q = -3.6 + 0.015 t + 0.71 \ln K + 0.61 \ln L \quad (5)$$

t -statistic: (-.9) (0.35) (1.05) (0.69)
 $(R^2 = 0.83; F = 16.5; \text{Durbin Watson} = 1.7)$

The results show insignificant contribution of technical change (coefficient of t) in affecting value added for both the industries. More surprisingly, the unconstrained model shows a negative contribution of labor in metal furniture industries. The negative value was accompanied by a high t -statistic (-2.5), suggesting that this value is significantly different from 0. This points to an inefficient production process that can only be sustained through regulation

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and protection. As may be expected, both the models become more robust when the 'time trend' variable is removed. The equations for a model without technological change (or 'time trend') are presented below:

Metal Furniture Industry

$$\begin{aligned} \ln Q &= 6.0 + 0.82 \ln K + (-1.69) \ln L & (6) \\ t\text{-statistic:} & (2.6) \quad (3.6) \quad (-2.9) \\ (R^2 &= .57; F = 7.4; Durbin Watson = 1.7) \end{aligned}$$

Electronic Equipment Industry

$$\begin{aligned} \ln Q &= -2.23 + 0.93 \ln K + 0.3 \ln L & (7) \\ t\text{-statistic:} & (-3.4) \quad (4.4) \quad (1.96) \\ (R^2 &= .83; F = 26.9; Durbin Watson = 1.7) \end{aligned}$$

The significant negative contribution of labor in the metal furniture industries suggests uneconomic use of labor in this sector. This result also indicates underinvestment that, perhaps, follows from the investment ceiling imposed on the metal furniture industry. However, both industries seem to be capital-intensive, using a significantly higher proportion of capital than labor for each unit of value added.

In a more constrained model with constant returns to scale, the differences between the two industries almost totally disappear. The model now assumes that the contribution of disembodied technical change is minimal, and therefore the time trend variable is discarded. It may be stated as:

$$Q = A K^a L^{(1-a)} \quad (8)$$

A first-order equation is derived through logarithmic transformation:

$$\ln(Q/L) = C + a \ln(K/L) \quad (9)$$

In this constrained model, the factor productivities are assumed to be a homogeneous function of the factor proportions. The ordinary least-square estimates of the coefficient a for the two industries is provided below:

Metal Furniture:

$$\begin{aligned} \ln(Q/L) &= -1.62 + 0.76 \ln(K/L) & (10) \\ t\text{-statistic:} & (-1.24) \quad (2.38) \\ (R^2 &= .32; F = 5.6; Durbin Watson = 2.3) \end{aligned}$$

Electronic Equipment:

$$\begin{aligned} \ln(Q/L) &= -1.85 + 0.73 \ln(K/L) & (11) \\ t\text{-statistic:} & (-3.0) \quad (4.6) \\ (R^2 &= .64; F = 21.2; Durbin Watson = 1.1) \end{aligned}$$

The constrained model highlights a number of similar attributes in the two industries. It may be observed that the relationship between labor productivity and capital-to-labor ratio is almost identical (value of a is .76 in metal furniture and .73 in electronic equipment). Also, the intercepts of the regression lines for the two industries are close (at 0 labor productivity, both industries register a capital-to-labor ratio between 2 and 2.5). However, there seems to be a significant positive autocorrelation error in the equation for electronic equipment. When a correction for such an error was attempted, the coefficients seemed

to move even closer to those in the model for the metal furniture industry ($Ln Q/L = -1.77 + .75 Ln K/L$; using the Cochrane-Orcutt method). Figures 2 and 3 illustrate the regression lines for the two sectors.

Industrial Organizational Aspects: Probably the most widely accepted justification for industrial regulation is related to the control of monopolies, oligopolies, cartels, and other forms of collusion among producers. Since economic theories suggest that such collusion results in socially inefficient outcomes, most countries have legislation similar to the anti-trust legislation in the U.S., and the Monopolies and Restrictive Trade Practices (MRTP) Act in India. Such legislation ensures competition among producers and compels them to use the most efficient production process. However, in the metal furniture industry in India, small-scale reservation policies seem to have eliminated competitive pressures on the large manufacturers. Thus, the concentration within this industry is high compared to the television manufacturing industry, which faces few restrictive policies. Table 3 compares some of the available concentration ratios for the two sectors.

The two industries exhibit very different characteristics with respect to industrial concentration. The concentration in the metal furniture industry is heightened by the brand image projected by the large firms, which is sustained through effective marketing strategies. The largest firms are also growing at a modest rate of between 10 and 20 percent annually in spite of limitations in capacity expansion. Although the level of concentration is far lower in the television industry, there is reason to believe that concentration in this industry is also increasing rapidly.⁹ However, industry stalwarts believe that this is a temporary phenomenon and several other firms have the capacity to challenge the market leaders.¹⁰ The largest firms in the metal furniture industry, on the other hand, face no such challenges since investment caps on growing small-scale units limit their ability to improve product quality and launch an effective marketing strategy that is essential for increasing market shares.

Prior to 1981, both industrial sectors in this study were characterized by strong state control of their backward linkages to raw material inputs. The television industry depended upon a number of imported components, the flow of which was regulated by the state. This dependence decreased substantially in the 1980s with the indigenous manufacture of many components and almost unrestricted import of other items that were not available in the country. Steel, the essential raw material for metal furniture, is regulated through the Minerals and Metals Trading Corporation (MMTC) and Steel Authority of India (SAIL), and strict purchase quotas on this commodity are enforced. Superior quality steel is even more scarce, and a considerable portion of this item is imported through state agencies to meet the demand. Inadequate distribution systems and an overall shortage of supply have resulted in unregulated trading in steel. Since the large firms maintain long-term contracts and high inventories, their dependence on the 'open market' for steel is minimal. In contrast, few small manufacturers are able to obtain steel from regulated channels and are forced to rely heavily on the open market. Consequently, they pay a premium of 15 to 20 percent over the stipulated prices. Furthermore, the limited amount of high-quality steel inevitably finds its way to the large firms exclusively. Thus, the small-scale manufacturers are forced to settle for high prices and low-quality inputs that restrict their ability to compete effectively in high-end product markets.

Figure 2

Electronic Equipment Sector: 1973-87

Regression Results

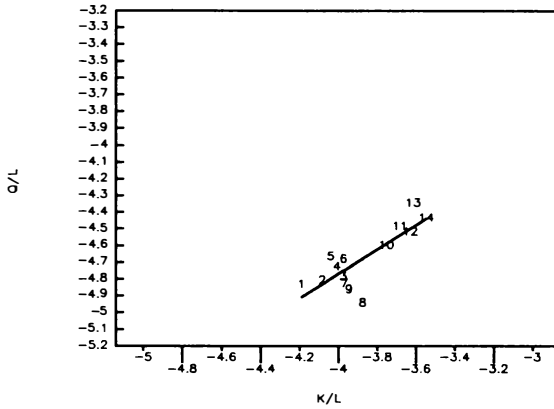


Figure 3

Metal Furniture Industries: 1973-87

Regression Results

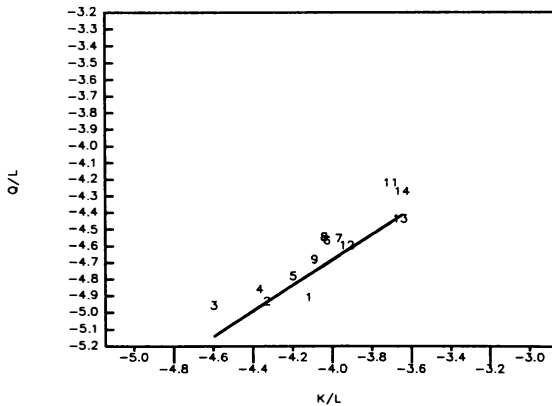


Table 3

*Concentration in Metal Furniture and Television
Manufacturing Industries, 1987-88 estimates*

<u>Industry Sectors</u>	<u>Four Firm Concentration Ratios</u>			
	<u>Largest</u>	<u>Largest 2</u>	<u>Largest 3</u>	<u>Largest 4</u>
Metal Furniture	84.69	93.31	97.29	100
Television	48.61	69.63	88.99	100
	<u>Industry-wide Concentration Ratios*</u>			
	<u>Largest</u>	<u>Largest 2</u>	<u>Largest 3</u>	<u>Largest 4</u>
Metal Furniture	30 to 50	N/A	N/A	35 to 60
Television	22	31.5	40.3	45.3

Note: * = Aggregate industry totals are not available due to a large number of unregistered units; the figure supplied is the range of 'best estimates' supplied by the concerned unit, their competitors, and a number of dealers.

Sources: TV Veopar Journal; Economic Intelligence Service, Center for Monitoring the Indian Economy, Bombay, 1989; Confederation of Engineering Industries, Directory of Members, February 1988; and personal interviews.

The state also influences the demand for products manufactured in these sectors through a variety of means. Taxation is, perhaps, the most direct means of affecting demand. Curiously, the high-end products of the metal furniture and television industries face almost identical aggregate tax rates. The combined excise (a form of sales tax) and local taxes for color television receivers is about 55 percent of the ex-factory cost, while that of steel furniture manufactured in large manufacturing units ranges between 50 and 55 percent. However, differential tax rates apply to metal furniture manufacturers according to their total output, with low-volume producers receiving preferential treatment. Thus, incentives of maintaining small levels of output are greater for the smaller firms. In the case of television, taxation is not based on firm size, but on the type of product, with black-and-white sets attracting concessional rates of taxation. Since most television manufacturers produce both color and black-and-white sets, the taxation policies shift the relative demand for the type of products with little effect on the aggregate production levels of the manufacturing unit. While output-specific taxation continues to be biased for certain size classes of firms, product-specific taxation affects all firms equally in the specific industry. There is evidence to believe that the differential taxation has led to differences in dynamism and competitive endeavor of individual firms in each industry. This partly explains the highly competitive market in television relative to the metal furniture industry.

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The state's role in the expansion of the television industry and in encouraging the small-scale sector within metal furniture manufacturing is substantial. The proliferation of television broadcasts has no doubt played a major role in the rapid growth of the television industry. However, this relationship has generated benefits for both the state and the industry. While the industry profited from increased sales, the state also benefited from the increased revenue from television sales. Such a symbiotic relationship creates conditions for the pursuit of mutual goals through long-term commitments. Small-scale firms in metal furniture manufacturing, on the other hand, remain dependent on the state because incentives for doing so are substantial. Prior to 1986, the government purchase organization, Director General of Supplies and Disposal, procured metal furniture items exclusively from small-scale firms. However, this relationship has been discontinued due to persistent complaints about quality of materials and workmanship. This loss of government contracts resulted in closure of a large number of small-scale firms and highlights the transient nature of dependency relationships.

A comparison of state involvement in redefining market structures of the two industries suggests that differences between the sectors can be largely attributed to policies affecting them. Since the sociological and economic aspects of the two industries show little inherent disparity, similar policies for the two sectors should yield similar results. Notwithstanding the above conclusion, this analysis fails to justify the reservation of metal furniture items exclusively for small-scale manufacturing units. The next section examines the incidence of policy-induced and market-induced 'rent-seeking' in the two industry sectors. Both forms of rent-seeking can be destructive; however, market-induced rent-seeking in a highly competitive market may generate a certain amount of utility to both consumers and the producers. In contrast, rent-seeking resulting from rigidities in bureaucratic procedure creates social wastes that are politically difficult to eliminate. The incentive for those who benefit from undue rents, as well as for those who actually have a right to the rents, generates an inertia for continuing the policy of reservation for exclusive manufacture in the small-scale sector.

IV. STRATEGIC RESPONSES TO POLICY

A major part of informed policymaking is the search for sound theoretical foundations. However, the assumptions of these theories often fail to include strategic responses of the concerned actors to ensuing policies. Experience has shown that the larger and more powerful actors in the market make strategic choices that are often not anticipated. Also, interventions in the market are costly in terms of policing and administration. Thus, the consequences of well-intended policies to smooth socioeconomic imperfections often create a spiral of cumulative imbalances in the market process.¹¹ The protection granted to the small-scale sector in India has provided opportunities for the large industries to reduce costs and increase profits in spite of government efforts to curtail their monopoly powers. A theoretical understanding of the strategies for ensuring long-term profits in large industries falls under the general rubric of rent-seeking theories.

Most imperfectly competitive markets generate opportunities for both policy-induced and market-induced forms of rent-seeking. An analysis of the market structure of the two sectors, metal furniture and television manufactur-

ing, shows that while policy-induced rent-seeking is prevalent in metal furniture industries, television manufacturers rely on other forms of 'non-price' competition. Aggressive sales promotion through non-price mechanisms prevalent in the television industry, although wasteful in many instances, has some advantages which policy-induced rent-seeking lacks. An attempt will also be made to explain the persistence of the policy of reservation for small-scale manufacturing of metal furniture items for over two decades. An examination of various levels of rent-seeking opportunities can provide some insights into the incentives for all concerned actors to maintain reservation policies.

There is some debate about whether advertising and promotional expenditures are social wastes. However, they are necessary in certain kinds of markets. When income elasticity of demand for a commodity is less than unity and inversely proportional to income, demand for that commodity may not grow steadily over time. In such cases, the demand function becomes relatively flat after an initial stage when it shows the normal positive relationship. Both television and metal furniture items may be viewed to have demand functions that are relatively flat after an initial positive increase, as people do not necessarily consume more of these commodities with increased incomes. Thus, the rate of growth of consumption of these products can increase in only two ways: (1) grow with the growth of total market, i.e., population growth, or (2) grow at the expense of competitors.¹² Where population in relevant income categories is not growing rapidly, firms need to resort to competitive marketing to maintain their market share. Each firm is, therefore, compelled to observe the strategies of its competitors that include, in the absence of substantial price variation, the introduction of new models and an increase in advertising expenditure. This scenario adequately explains the increased advertising expenditures incurred by television manufacturers and the rapid growth in new television models since the decline of sales in this industry during 1988-89.

The increase in advertising by television manufacturers, according to the rent-seeking theorists, can be viewed as social waste. The assumption is that advertising has little social utility if it does not increase the total market for the industry. However, more mainstream economists contend that to the extent advertisements shift preferences for one brand of product over another, it must have some utility for both the consumers who switch to the advertised brand and the producer of that commodity.¹³ Given that 'successful' advertisements are probably not socially wasteful, there is still a possibility that all firms follow the same strategy, resulting in the cancellation of each other's efforts. In such a scenario, the argument that advertising is socially wasteful can be very compelling. However, a more favorable perspective on advertising expenditure may be found if we look at the search costs and the costs of information accrued to the consumers of a commodity.

In a market differentiated by small variations in appearance, functions, and uses, as in the case of most consumer electronic products, consumers are overwhelmed by choices. The search cost to a consumer of such a commodity would be a multiplicative function of the number of manufacturers, the number of models available in each brand, and the rate at which new models are introduced and older ones are discontinued. With over two hundred television manufacturers in India and over a thousand television models, the search costs to a typical consumer can be quite high. This is accentuated by rapidly evolving technology, which contributes to the introduction of new models in

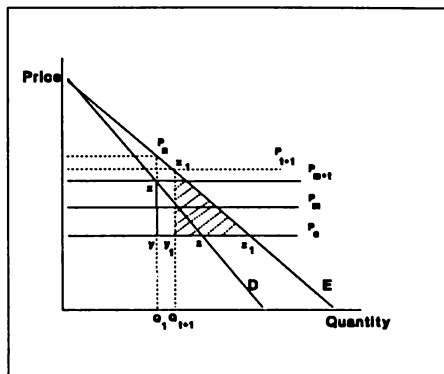
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quick succession. Perhaps one possible way to estimate search costs would be to observe the increase in the number of consumer journals and in their sales or subscriptions. Such an analysis is beyond the scope of the present research. However, it is safe to assume that search costs to consumers of television sets in India are increasing as rapidly as the advertising expenditures of the manufacturers. The increased costs of 'non-price' competition are partly responsible for providing information to the consumers and reducing their search costs. Therefore, they do not fall into the category of 'social waste'. It is also possible that successful advertising will make the demand curve of a specific product more inelastic, thus generating monopoly profits for the producer. But, to the extent that similar producers and similar products exist, profit margins will not be abnormal.

In state-created monopolies, as in metal furniture manufacturing, very little of the monopoly profits are transferred to the consumers. Especially when an established brand is protected from competition through regulation, the need for transfer of monopoly rents to consumers in the form of price or non-price methods is minimal. There may be a need to transfer some of these rents to the state to maintain their privileged status but, as discussed later, even this is unnecessary in the case of large-scale metal furniture manufacturers. In fact, the options for rent-seeking have been increased with the introduction of product lines reserved for the exclusive manufacture in the small-scale firms. The incentives and subsidies provided for small-scale units actually attract sizeable resources from the large operations to bypass regulations and avail themselves of such lower rents. The existence of a large number of 'ghost' small-scale units (which exist only on paper), as well as operating units owned by subsidiaries of large businesses, confirms the suspicion that incentives are being appropriated as rents by owners of large businesses.¹⁴ Of course, the resources spent on obtaining these rents are social wastes and are proportional to the expected benefits. The larger the economic incentives offered by the state to particular sectors of the economy, the larger will be the resources wasted in obtaining these benefits. However, this does not imply that small-scale businesses should be left to fend for themselves. The society has a stake in creating and maintaining competitive pressure on the monopolists as well as in avoiding a sharply divided society. A framework for reducing rent-seeking opportunities, while providing incentives for small-scale entrepreneurial activity, is suggested in a later section.

Let us now consider a state-created monopoly whose competitors are very small-scale units that independently, and without collusion, have little power to influence the market. The monopolist is aware of his competition and refrains from drastic price increases, fearing reduced sales. The monopolist is also aware of its superior brand image and reinforces this from time to time with sophisticated advertising. For simplicity, assume that the monopolist is facing constant supply costs and declining demand. This scenario is a close approximation of the metal furniture industry in India. Without resorting to sophisticated models, a simple conceptual diagram of rent transfers is presented in Figure 4. In this case, P_c is the price of the commodity under perfect competition and is equal to the marginal cost. P_m is the price charged by the monopolist and $P_m + t$ is the final monopoly price including taxes. Since taxes constitute a very high portion of the cost to consumers (about 50 percent in the case of metal furniture), they contribute to a much larger loss in social wel

Figure 4



fare, denoted by the triangle *xyz*. If we assume, as the government does, that very close substitutes are available for the product manufactured by the monopolist, then an argument can be made that the revenues denoted by *xyz* are transferred to the small-scale manufacturers. Therefore, social losses are not entirely the triangle *xyz* but somewhat lower, with the small manufacturers gaining from the increased taxation. Thus, the incentive for all concerned actors – the state, the monopolist, and the small entrepreneurs – in keeping the status quo is great; and this explains why the policy of reservation is difficult to eliminate in spite of heavy social losses.

Social losses accrue because, in reality, the scenario is a little different. First, if the consumer does not consider the products of the small-scale manufacturers to be close substitutes, the demand may be postponed. Second, the desirability of the product manufactured by the monopolist may increase, causing a shift in the demand function to *E*. This can occur if: (a) small-scale manufacturers are unable to match the monopolist in the quality of the products, which could cause adverse publicity for their products; (b) the monopolist uses effective advertising to increase the gulf between his product and the other producers, using a small portion of his monopoly profits;¹⁵ or (c) there is a widespread perception that high-quality products, similar to the ones manufactured by the monopolist, will not be available from other producers at better prices in the near future. The fact that consumers often have to wait for several months to receive metal furniture merchandise from established industrial houses, even though similar items are available from small-scale producers, indicates that demand is increasing without a decrease in real prices.

The shift in the demand function offers more favorable opportunities to extract rent both for the monopolist and the state. The monopolist, however, is wary about raising prices (to P_n) too drastically to clear the market. Instead

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production is increased slightly, together with a modest price increase. The quantity produced is now Q_{t+1} at the higher price, P_{t+1} , as shown in Figure 4. The loss in revenue and consumer utility is the larger triangle $x_1y_1z_1$. Thus, the more desirable the product of the monopolist becomes, social waste increases along with the benefits to the state and to the large producer. Social costs are even greater if we assume that the large producer faces increasing marginal costs, which is realistic considering the investment limits imposed by the state. The producer is compelled to use inefficient production methods that contribute to social losses. Furthermore, the largest share of losses involved in maintaining a monopoly can be attributed to the transfers to the state in the form of taxes. Even if one assumes that the government only acts in good faith to provide a number of social benefits with its rents, still we know that the transaction costs involved are extremely high. Thus, a large share of the rents are dissipated in maintaining the large bureaucracy rather than in making social investments.

The dominant role of the bureaucracy in India is well-known and well-documented.¹⁶ Obviously, the political and ideological framework of the nation-state, as developed in India, has its own dynamics and imperatives beyond simplistic social welfare accounting. It is also well-known, however, that the Indian polity is not homogeneous; fundamental changes are taking place, albeit at a slow pace. Thus, it is important to point out the most glaring examples of social wastes through misdirected regulations so that they may serve as prime areas for social reform. The transformation in the electronics industry highlights the potential for regulatory reform in generating higher levels of growth and dynamism.¹⁷ The lessons of liberalization in the electronics industry can provide an example for several other sectors of Indian industry. Especially in metal furniture manufacturing, which is not unlike consumer electronic industry in many important respects, the elimination of restrictions can provide the required impetus for higher competitiveness and superior performance.

V. TOWARD A SOCIALLY RELEVANT SMALL-SCALE SECTOR POLICY

To view all redistributive measures of the government as 'social waste' is to ascribe no value to the ideal of an equitable society. In other words, if we can justify the end, we may be able to justify the means, which, in this case, is government intervention. The leakage of resources through transfers may not seem as irrational or unwarranted if, on some acceptable measure of social equity, significant progress is observed. Such measures would have to transcend the narrow economic criteria of efficiency in competitive markets. However, even if social equity has some intrinsic value that justifies 'economic' losses, questions of the accountability of such policies do not disappear. Especially in the uncharted, and consequently uncertain, territory of social policymaking, constant evaluation is necessary to select the best possible means to the desired end. Thus, to the extent a more effective strategy for achieving a stated objective is known and applicable, the use of any other means would constitute a drain of social resources.

Policies for the small-scale sector have shown elements of both successes and failures. One expects that the essential elements of the success stories are retained and adapted for spurring small-scale industrial activity while the

Table 4

Achievements Recorded by Various District Industries Centers (DICs) in Small-Scale Industry Development, 1985-86.

<u>Indicators of Success</u>	<u>Total for 396 DICs</u>	<u>Average per DIC</u>
1. Entrepreneurs Identified (nos.)	522,254	1,319
2. Project Profiles Prepared (nos.)	218,439	552
3. New Registrations (nos.)	342,298	864
4. New Units Established		
(a) Artisans	285,838	722
(b) Other Small-Scale	91,551	231
5. Credit Provided by Financial Institutions (Rs. Million)	6,113.1	1.54
6. Sick Units Assisted (Nos.)	1,178	3
7. Cash Subsidy (Rs Millions)	756.3	0.2
8. Additional Employment Generated (No. of Persons)	1,148,258	2,900
9. Units Given Technical Assistance (nos.)	50,621	128

Source: Development Commissioner, Small-Scale Industries, "Annual Report of Small Industries Development Organization," 1985-86.

Table 5

Growth of Small-Scale Industries 1980-86

	<u>1980-81</u>	<u>1981-82</u>	<u>1982-83</u>	<u>1983-84</u>	<u>1984-85</u>	<u>1985-86</u>
No. of Units (thousands)	874	962	1,059	1,158	1,242	1,349
(cumulative)	(8.57)	(10.07)	(10.08)	(9.35)	(10.73)	(8.62)
Production at Current Prices (in Rs. Million)	280,600	326,000	350,000	416,200	505,200	611,000*
	(29.70)	(16.18)	(7.36)	(18.91)	(21.38)	(20.94)
Production at 1970-71 Prices (in Rs. Million)	109,060	118,370	128,000	141,200	149,700	178,600
	(8.79)	(8.54)	(8.14)	(10.31)	(6.02)	(19.31)
Employment (in thousands)	7,100	7,500	7,900	8,415	9,000	9,600
	(5.97)	(5.63)	(5.33)	(6.52)	(6.95)	(6.67)
Export at Current Prices (in Rs. Million)	16,430	20,710	20,970	22,190	25,800	N.A.
	(34.0)	(26.05)	(1.25)	(5.82)	(16.27)	

Notes:

1. Figures in brackets indicate percentage increase over the previous year
2. * denote estimates
3. N.A. = Not Available

Source: Development Commissioner, Small-Scale Industries, "Annual Report of Small Industries Development Organization," 1985-86.

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Table 6

Plan Outlays for Small-Scale Industry Promotion

<u>Plan Period</u>	<u>Outlay in Current Rs. Million</u>
First Plan (1951-56)	52.0
Second Plan (1956-61)	560.0
Third Plan (1961-66)	1,130.6
Annual Plan (1966-69)	534.8
Fourth Plan (1969-74)	961.9
Fifth Plan (1974-79)	2,217.4
Annual Plan (1979-80)	1,048.1
Sixth Plan (1980-85)	6,161.0
Seventh Plan (1985-90)	11,205.1

Source: Development Commissioner, Small-Scale Industries, "Annual Report of Small Industries Development Organization," 1985-86.

losing strategies are rejected. Reservation of product lines for the small-scale sector has been a conspicuous failure, especially in the metal furniture manufacturing sector. Such a restrictive policy strengthened the initial inequities while contributing to economic stagnation and high social losses. In contrast, the small-scale units in the electronics sector have developed winning strategies to survive in a competitive market. Through the creation of a scheme to provide material, technology, and marketing support to the small-scale units in electronics, the state was able to improve their competitive strength. This was achieved without any onerous restrictions on the activity of other sectors in the industry.

The elaborate organizations created for promoting small-scale industry can claim several other successes as well. An impressive measure of their performance is presented in Table 4 for the year 1985-86. Table 5 charts the growth of small-scale industries in India between 1981 and 1986. However, the organizational structure developed to assist small-scale industries is also pursuing self-aggrandizement. As a result, the Plan outlays for these organizations are increasing sharply (Table 6). This cost cannot be sustained if real wealth is not created in other sectors of the economy in the short run. Therefore, unrestricted industrial activity to achieve scale economies must be permitted. The threat of foreign competition can be an effective means to make larger industries, enjoying protected markets, strive for efficiency and international competitiveness. This is even more critical, at present, in view of India's increasing debt burden and worsening terms of trade. Thus, it is necessary to provide limited support to activities that can stand on their own in the near future while allowing higher levels of industrial competitiveness through liberalization policies.

Small industries most critically feel the lack of infrastructural services that increases their costs of doing business many-fold. In spite of the best intentions of the state to support small-scale activity, there is a belief that it has failed in the most fundamental areas of government concern – the provision of public goods. The paucity of power, the poor maintenance of transport facilities, and the insufficient telecommunication facilities contribute to the high cost of doing business

in India. The ensuing delays and red tape in transfer of commodities (including money) compel businesses to maintain high inventories and large amounts of cash on hand. Smaller industries are usually not equipped to do this and thus face shutdowns and idle capacity. Furthermore, small units are adversely affected by their location in rural and semi-urbanized areas where infrastructure facilities are especially poor. Thus, more attention must be paid to developing the 'lifelines' of India's economy, without which small businesses will not be able to sustain themselves and ultimately cause a drain on scarce state resources.

Finally, progress is being made on all fronts and priorities are shifting toward developing a high-quality infrastructure. In areas such as telecommunication and electrification, substantial advancements have been made. Power generation has increased several-fold in the 1980s, and increasing resources are being earmarked for future expansion.¹⁸ However, certain rigidities in industrial policies persist in other areas. The political incentives for maintaining the existing system of extracting rents while creating social waste confound any attempt to relax restrictive policies, such as reservation for the small-scale sector. The absence of political will to take certain risks and the lack of strong commitment to public service principles among most policymakers creates conditions for the sustenance of destructive rent-seeking and industrial stagnation.

NOTES

¹Most notably the works of: E. F. Schumacher, *Small is Beautiful*, London: Sphere Books, 1974; Gunnar Myrdal, *Asian Drama: An Enquiry into the Poverty of Nations*, London: Penguin, 1968; L. K. Jha, *The Economic Strategy for the 1980s*, New Delhi: Allied Publishers, 1980; K. Prasad and T. V. S. Rama Mohan Rao, *Employment Potential of Manufacturing Industries*, New Delhi: Sterling Publishers, 1977; Ruddar Dutt and K. P. M. Sundaram, *Indian Economy*, 16th edition, New Delhi: S. Chand & Co., 1977, pp. 537-538; B. C. Tandon, *Pattern and Technique of India's Economic Development*, Allahabad: Chugh Publications, 1977; the works of Ram K. Vepa, including *Small Industry: Challenge of the Eighties* and *Small Industry in the Seventies*, both published by New Delhi: Vikas Publications, 1983 and 1971 respectively; also the highly quoted documents International Labor Organization, *Employment, Incomes and Equality: A Strategy for Increasing Productive Employment in Kenya*, Geneva, 1972; and also United Nations Industrial Development Organization, *Subcontracting for Modernizing Economies*, 1974, and *Effectiveness of Industrial Estates in Developing Countries*, 1978.

²The terms 'small businesses', 'small industries', and 'small-scale enterprises' are used interchangeably in this paper. The cases analyzed are, however, manufacturing enterprises.

³The small-scale sector in India is delineated by investments in plant and machinery (fixed capital). The investment ceiling has been periodically revised upwards to account for developments within this sector and inflation.

⁴For a critical evaluation of India's small-scale sector policies refer to: Ian M. Little, Dipak Mazumdar, and John Page in *Small Manufacturing Enterprises: Comparative Analysis of India and Other Economies*. World Bank: Oxford University Press, 1987.

⁵This view was strongly reflected in several documents produced by international organizations like the International Labor Organization (ILO) and United Nations. Refer to ILO, *Employment Incomes and Equality: A Strategy for Increasing Productive Employment in Kenya*, Geneva, 1972. Also United Nations Industrial Development Organization, *Subcontracting for Modernizing Economies*, 1974, and *Effectiveness of Industrial Estates in Developing Countries*, 1978.

⁶The use of the term 'dominant classes' in the plural form is unusual in Marxist literature but has a certain validity in the Indian context. The reader is referred to Pranab Bardhan's *The Political Economy of Development in India*, Basil Blackwell, 1984, for a complete critique.

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- ⁷Refer to author's *Electronics Policy and the Television Manufacturing Industry: Lessons from India's Liberalization Efforts*, Institute of Urban and Regional Development, Working Paper No. 571, April 1992.
- ⁸According to a 1977 survey, only the top 25 percent of metal furniture industries are included in the Annual Survey.
- ⁹Videocon International claims to have acquired a third of the market share in color television. Refer to *Business Standard*, November 23, 1989.
- ¹⁰Personal interviews with office bearers of Indian Television Manufacturers Association.
- ¹¹Perhaps the most vocal advocates of 'minimalist government' and the destabilizing forces inherent in market intervention are the economists from the Neo-Austrian school. Readers are referred to a volume edited by K. Groenveld, J. A. H. Moks, and J. Muysken called *Economic Policy and the Market Process: Austrian and Mainstream Economics*, Amsterdam: North-Holland, 1990.
- ¹²For a formal model of this exposition refer to: Mokhtar M. Metwally, *Price and Non-Price Competition*, New York: Asia Publishing House, 1976.
- ¹³For a persuasive explanation of this theory refer to: Donald J. Boudreaux, "Imperfectly Competitive Firms, Non-Price Competition, and Rent-Seeking," in *Journal of Institutional and Theoretical Economics* 145, 1989, pp. 597-612.
- ¹⁴Several authors have alluded to this without giving any clear picture about the extent of this occurrence. Richard P. and Doris L. Taub indicated in their work, called *Entrepreneurship in India's Small-Scale Industries* (New Delhi: Manohar, 1989), that about a third of their sample of small units were generated through transfers from larger firms seeking less regulation and more government subsidies.
- ¹⁵The cost of advertising for the monopolist can be considered small since few others can match it and its brand image is clearly far superior.
- ¹⁶Pranab Bardhan. *Political Economy of Development in India*, op. cit. Ashish Nandy. "The Political Culture of the Indian State," in *Daedalus*, Fall 1989, pp. 1-26.
- ¹⁷*Electronics Policy and the Television Industry: Lessons from India's Liberalization Efforts*, op. cit.
- ¹⁸From: *Economic Survey*, Ministry of Industry, various issues.

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