Chapter I

Introduction
Introduction

1.1 The Objective:

In the literature of economics, the logic behind both regulation and deregulation is well established. Government regulation on industries opens up an alternative method of resource allocation mainly when reliability on market mechanism is questioned. In this case the popular mechanisms are price and technology control, barrier to entry, control on inputs and their distribution and other administrative restrictions. Apart from this "qualitative" regulations are also quite often observed. They include restrictions on environmental pollution, fixing norms on health and occupational safety, product quality etc. So the objective of regulation is to improve efficiency of poorly functioning market and to increase overall social welfare imposing some conditions on the production and marketing process. Some regulations are always justified but some are over restrictive and often self-defeating as believed by several economists. They believe that in all such cases markets should be opened. A regulatory reform towards deregulation is suggested mainly on the ground of enhancing efficiency, productivity, profitability, competitiveness and overall welfare. If regulatory process is sensitive to deadweight losses then less wealth will be available for redistribution and deregulation is deserved.

While talking about Indian economy, we know that Indian industry has been controlled by several regulations and restrictions since independence until the sweeping reversal of policy in 1991. Industrial licensing, import substitution and price control were the important features of industrial control in India. It was believed that those controls would help Indian industries to become self-sufficient and confident. It was also expected to help in balanced distribution of resources. But the period of regulations coincided with a prolonged stagnation in industrial front. Indian industries experienced a growth rate of around 4% in between 1965 and 1980 (Srivastava, 1996; Chandrasekhar, 1994). However, it registered a higher growth rate during 1980s, which is around 7% (Srivastava, 1996). This recovery or turnaround of 1980s may be due to productivity gain as result of easing out of some restrictions and improvement in investment climate (Jalan 1996;
Ahluwalia, 1991). According to Ghosh (1992), the rising growth rate of Indian industries in 1980s was possibly due to shift of policy from old towards new approach with an increased emphasis on productivity and efficiency which is believed to be achieved through the liberalisation policy. The preceding piecemeal move towards liberalisation of control was consolidated in a comprehensive wave of deregulation through the New Industrial Policy of 1991. Though it was started in early 1980's the post 1990 reform is the extreme one in this direction. Delicensing of industries, dilution of MRTP act, encouragement towards foreign participation, reduction in control over imports, capital market reform etc are important examples of deregulation in the industrial front. The industrial performance in 1980s have been analysed extensively by several researchers (Ahluwalia, 1991; Balakrishnan and Pushpa gandan, 1994; Rao, 1996; Srivastava, 1996; etc). But these studies are not able to compare the performance in pre and post 1991 due to lack of substantial post reform data. Moreover, most of these studies looked into aggregate industry data (except, Srivastava, 1996) thus hiding the source of changes in the performance. Performance indicators like productivity and efficiency change due to the dynamics of the behaviour of firms. As restriction on investment, capacity generation, input use and price control has been relaxed, firms have also started to behave in a different way. In a deregulated environment, productivity and efficiency change will occur due to the firm’s behaviour regarding input use, capacity utilisation and its attempt to adjust optimally considering the long run cost minimisation exercise. Therefore there is a need for a firm level study to understand the deregulation and changes in the performance of Indian industries.

In this study, an attempt has been made to illuminate the performance of industries vis-à-vis deregulation. To understand the performance technical efficiency, productivity, and productivity growth have been calculated. Efficiency has been calculated considering ‘frontier production function’ approach. Efficiency can be measured through a ‘mathematical programming approach’ or an ‘econometric approach’ considering ‘frontier production function’. This study considers the second approach as econometric techniques can separate statistical noise from inefficiency (Bauer, 1990; Lovell, 1993). Here efficiency has been calculated from panel data (without any assumption on distribution of errors) to
understand the change in performance in pre and post reform period. Productivity has also been measured estimating a production function to avoid the possible biases originates from other approaches such as 'growth accounting' approach. The importance of quasi-fixed factors and capacity utilisation is overlooked in the traditional method of productivity calculation. Traditional productivity is subject to a bias as quasi-fixed factors are generally over or under utilised. In this study capacity utilisation has been measured considering the quasi-fixity of some factors of production and analysed with respect to deregulation. Productivity and efficiency measures have been recalculated considering the issue of capacity utilisation.

In this context it should be mentioned that Indian industries have experienced three kinds of deregulation: price deregulation, investment deregulation and decontrol in use of imported inputs. In general, price deregulation will have an effect in the product market, as price will be determined through market mechanism. Investment decontrol results into capacity generation and decontrol regarding the source of inputs will help firm to use cheap and quality inputs. As a result of all these we expect a rise in investment, profitability, productivity and efficiency. This hypothesis will be examined considering the firm level data from few Indian industries viz. cement, pharmaceutical and sugar. The reason behind choosing these industries is that each of them either experienced all these decontrols or is still experiencing some of these regulations that have been phasing out gradually. Moreover, due to the existence of enough number of corporate firms in these industries data is available to conduct a firm level study. In this context it is important to mention that cement industry is experiencing deregulation since the announcement of partial decontrol in the form of dual price in 1982. Full decontrol in this industry was declared in 1989. Sugar is a food product and this agro-based industry is still under control though it is experiencing periodic fluctuations in dual prices through changes in the levy percentage. Moreover, time-to-time government has softened some other regulations in this industry. In pharmaceutical industry Drug Price Control Order (DPCO) controls price and profit of selected drugs. Decontrol process in this industry was initiated in 1987 with the announcement of DPCO’87. Decontrol process was accelerated through DPCO’ 1995. In the presence of
many big MNCs with significant market share and in the context of patent act under WTO regime pharmaceutical industry is quite interesting to study. In case of cement and pharmaceutical industry the sample period considered in this study is 1979/80 to 1995/96 and for sugar industry it is from 1975/76 to 1996/97. The time period is selected looking at the availability of data and its relevance for this kind of study. Here, pre 1991 is considered as regulated period and post 1991 as deregulated period. Apart from this, industry specific regulatory phases have also been taken into consideration.

So, there are two kinds of policy changes: one is overall relaxation, since 1991 and applicable for all industries, and the other one is industry specific decontrol. In this study these two types of decontrol movement have been analysed. The data for this study have been taken from Bombay Stock Exchange Official Directory, Annual survey of Industries, RBI and CMIE publications and various reports from different industrial associations.

1.2 Outline of the Study

The main issue in this study is to evaluate the impact of deregulation on some Indian industries. For case studies these industries namely cement, pharmaceuticals and sugar have been taken into consideration. Here, an attempt has been made to analyse the dynamics of several performance indicators of industries during the period of pre and post deregulation. As the time period after deregulation is not very long, we do not expect to get a clear picture of the impact of deregulation. So, we have tried to analyse the several hints of deregulatory impacts reflected in the performance indicators.

The study is divided into seven chapters including introduction and conclusion. Introductory chapter first states the objective and scope of the study. Next it provides a discussion on the contesting ideas between the theories of regulation and deregulation. A discussion on Indian industries in the context of regulation and deregulation is made after that.

Chapter II considers the brief reviews of the three selected industries. In this context, certain issues like the nature of regulation and deregulation of the selected industries, their
production, demand, capacity, input structure, cost of production, investment and profitability etc. have been analysed.

Chapter III discusses data sources and construction of important variables. This chapter provides the methods for preparation of main variables like output, labour, material etc. A separate model for firm level capital stock calculation is also provided.

In chapter IV, some elementary performance indicators are calculated and analysed with respect to deregulation.

Chapter V considers the discussion on industry wise calculations of technical efficiency, productivity and productivity growth. The nature of efficiency and productivity in pre and post 1991 is analysed in detail. The question whether big firms become more productive thus contributing more in industry average productivity in post 1991 period is also answered.

Chapter VI provides a discussion on the slow adjustment of quasi-fixed factors and their importance on the calculation of capacity utilisation. How far capacity utilisation affects productivity calculation is also an important issue to study. In this chapter a new set of productivity and efficiency results are reported considering the capacity utilisation.

Concluding remarks will be provided in Chapter VII.

1.3 Regulation versus Deregulation:

In this section, I will discuss the theoretical background of regulation and deregulation of industries and their importance in the literature of economics. Though both of them are related to economics but in real life they are very much influenced by politics and in many cases their success depends on the degree of implementation.

Regulation implies imposing of some conditions and rules over the production and market operation of goods. Here the regulator (in most cases government authorities) puts some constraints or makes some contracts with industries keeping some objectives in his mind. Industries have to consider all those constraints and behave accordingly. On the other hand the clearest definition of deregulation is the replacement of government controls
with effective competition. Although an industry's regulatory status is commonly
classified as regulated or deregulated. However, none of these characterizations is ever
completely accurate. Regulatory policy has various facets that include an industry's
economic issues - pricing, entry, exit, distribution of the product, and social conducts, like -
health and safety of its workplaces and products, noise and pollution externalities, and the
accuracy of the information it disseminates about its product. Any regulatory reform
considers the degree to which several industries are subject to various economic regulations.
Deregulation in particular industries does not signal the end of regulation. It may be
accompanied by new sets of regulations with a different focus, like in India, regulatory
reform encompasses delicensing, more foreign portfolio investment, price decontrol, and
less restriction in product distribution etc., but at the same time, regulation regarding
pollution, health safety etc. are becoming more strict. In many cases de-regulations are
partial, and there is a possibility of reversal of it by subsequent government decision.

One of the most important causes of regulation is the presence of market failure.
Regulation is the standard corrective action that government can undertake to ameliorate
them. The positive theory of regulation mainly follows from this argument. Regulatory
programmes are justified on the basis of lack of competition, monopolistic abuse, higher
deadweight losses etc. Apart from that, regulation is also justified when market failure
occurs due to imperfect information. Here regulation increases supply of information and
reduces uncertainties about the consequences of market decisions, uncertain, thereby
crushing the market to make a better match between suppliers and demanders. For example,
it discloses quality, standard of the product mainly in food products and medicines.
Sometimes regulation sets "a minimum standard" of the product to protect uninformed
people. Moreover, market failure may occur due to the presence of external effects and
public goods. The regulation on environmental pollution is a good example for this. Two
more causes of market failure which are highly debatable are scarcity rents and destructive
competition. Scarcity rents are socially undesirable particularly from the income distribution
point of view. Oil and natural gas being scarce in the economy, its price is likely to be high
and a high price of a necessary good like this is not at all desirable. So price-control is a
proposed policy in this case. On the other hand destructive competition leads to unstable equilibrium. If regulator finds any thing like this in the economy and for which firms are producing inefficient output then regulation is justified.

The next question, which is more or less obvious, is that whether regulation is the best policy instrument to cope with market failures. The literature suggests several alternatives like instead of regulating the prices of natural monopoly, the government could assist in the formation of customer co-operatives for providing the same service or could go for a competitive bidding and awarding monopoly franchises for a limited time duration (Demsetz 1968). Government also can use tax - subsidy intelligently to cope with a variety of market failure issues ranging from environmental problem to scarcity rent (Pigou 1920). Apart from that, some market failures are amenable to solution simply by redefining property rights and creating market in them (Coase 1960). Infact, Coase theorem needs perfect and cost less flow of information and no transaction costs. But both these assumptions are not very realistic. If we consider the presence of transaction cost to correct market failure then we have to compare it between regulations and negotiated settlements among government and firm and sometimes direct negotiation is a prolonged one to convince the interest group and it creates several other political issues. Hence, if government’s objective is to correct the market failure in maximum cases it finds regulation a better option. Regarding information, government can collect those facts, which create problem in the market and reports to those who are harmed. But even here government has to consider the cost of collecting and reporting information and comparison between these and regulations become the most important thing. Finally, while implementing the policy government has to consider not only its economic costs but also its political costs like its stability and its interactions with different interest groups etc.

The above said ideas are acknowledged as a part of ‘public interest theory’ in the literature of regulation. Though this theory has got its own position in the literature, it is criticised in many ways. The main weakness here is its assumption, that perfectly informed social welfare maximizers are either, managing the regulation or running the regulated firms.
Averch and Johnson (1962) attacked the public interest theory by bringing the point that the behaviour of regulated firm is not optimal if the rate of return on capital is regulated. Actually due to incomplete information only the profit and capital stock of the firm is observable to regulator and if regulator's objective is to control profit through allowing a 'fair' return on capital then this creates an incentive to expand the capital base provided that allowed rate of return is at least as great as the cost of capital. As a result, Averch and Johnson showed the possibility of over capitalisation and for which production will be inefficient. Joskow and Noll (1981) however pointed out that empirical tests were inconclusive as to whether firms actually engaged in such behaviour. But other empirical research did challenge the public interest theory by finding either that regulation was having no effect on firm conduct (Stigler & Claire Friedland - 1962) or that regulation was creating, not eliminating inefficiencies (Caves, 1962).

Apart from this public interest theory has been challenged by the Chicago theory of regulation headed by Stigler (1971), Peltzman (1970), Gary Becker (1983)) etc. According to them regulator's behaviour is the source of inefficiencies. Both Peltzman (1989) and Alfred Kahn (1971) opined that well organised body like producers always try to find out new strategies under regulatory constraints to increase their profits etc. and finally make regulation inefficient. So regulator's responsibility is to observe critically the ongoing policy and change it accordingly. Peltzman (1989) noticed that if regulation favours producers more than consumers then less wealth would be there for redistribution. As a result there will be a rise in the deadweight losses and deregulation is preferred in this context.

Leaving aside this Chicago theory, we find many other economists who criticised public interest theory. Noll (1971) derives the theory of regulation from the theoretical works of Marver Bernstein (1955), Anthony Downs (1957) and James Buchanan & Gordon Tullock (1962). Noll (1989) also described the competing theoretical explanation of deregulation James. Q. Wilson (1980) criticized the Chicago theory and developed an interest group theory of regulation where Chicago ideas may or may not be correct in particular circumstances. Infact, deregulation could lower social welfare because the
powerful groups that dominate, the regulatory agenda come to believe that their welfare can be enhanced at the expense of the rest of the society in a deregulated rather than a regulated environment.

William Baumal, John Panzar and Robert Willig (1982) have opined that for industries with scale economics and where technological development is relatively rapid deregulation may be superior to regulation. This theory is more accurately characterised as a theory of consequences of deregulation rather than as a theory of regulation. It argues that if there are no sunk costs potential competitors can provide the discipline that leads to optimal pricing behaviour and eliminates the need for formal regulation.

Noll (1989a) points out that according to the public interest theories, industries will be deregulated when costs of regulation exceed transaction costs of repealing it plus the cost of remaining market failure. Thus deregulation will produce efficiency improvements which could benefit consumers and producers especially where regulation thwarted them.

Deregulation would enhance efficiency either through increasing competition by giving a relief to the firm from inefficient regulation or reducing the rents that producers usually accrue in a regulatory environment by unregulated competition. Moreover theoretical literature also noticed the dynamic inefficiencies, low productivity growth, slow technological pace and poor management quality of regulated firms. On the other hand empirical studies of regulation and deregulation mainly focused on particular comparative static effects of regulation - price, profit, wage changes and their dynamic effects also.

According to Laffont & Tirole (1993) regulatory constraints are of three types - informational, transactional and political or administrative. Regulator faces these constraints to implement his preferred policy.

Informational constraints are mainly of two types, ‘moral hazard’ and ‘adverse selection’. In case of moral hazard, regulator cannot observe variables, which are indigenous to the firm. For example, we can mention firm's effort to reduce cost or to improve quality etc. where as adverse selection arises when the firm has more information than the
regulator about some exogenous variables, like possibility of technological improvement, difficulty in implementing certain productive task.

Transactional constraint occurs due to regulators inability to go for a long term complete contracting with the firm as future is uncertain. Short run policies may not always be Pareto improving and regulator believes that wrong policies in the short run can be corrected in future.

Another constraint that regulators always face is mainly bureaucratic and political. Due to this sometimes optimal policy can not be taken. Several economists think that this constraint is not exogenous, rather is the outcome of an 'agency' problem between politicians and regulators.

In the recent literature we find a wide range of application of principal-agent methodology to analyse the contractual relationship between regulators and firms. The degree of regulatory reform or deregulation depends on the firm's freedom to pursue their own objectives i.e. how less the binding constraint is. Here regulators main objective is to maximise social welfare which is defined as the sum of consumer's net surplus and producer's surplus, whereas firm's objective varies from profit maximisation (Averch & Johnson 1962, Baron & Myerson 1982) to trade off between a variable called "effort" and money (Holmstrom 1982, Laffont & Trole 1986). Some British literature on privatisation considered several things like managers' or workers' interest and social objectives (Rees 1984, Gravelle 1984) etc.

These models consider asymmetric information problem in the form of adverse selection of moral hazard. Planner wants to restrict firms's selfish behaviour where as firm tries to avoid regulatory constraint using their private information and earns some rent out of it. In this framework acting as a Bayesian Statistician regulator tries to have a "prior" on the uncertain parameters and compute optimal contract. And in most cases the result has a second best flavour. Models by Baron & Myerson (1982) Sappington (1982) and Guesnerie & Laftont (1984 a,b) are worth mentioning for incomplete cost observability. In this kind of models planner prepares an incentive structure for true revelation of firm's behaviour.
through constructing a transfer function in tax-subsidy form and induce firms to participate in it. His, equilibrium is always second best as some amount of private "rent" remains even after the regulation is implemented and the extent of rent depends on the nature of distribution function of the knowledge parameter. In the framework of Baron & Myerson (1982) Baron & Besonko (1984a) introduce the possibility of observing cost with an error by having “noisy” estimate of marginal cost and minimizing this principal constructs an optimal contract.

In the context of dynamic regulation models by Baron & Besanko (1984b), Grossman & Hart (1986) Williamson (1984) are worth mentioning. In the real world private and public information may vary over time. The firm's true parameters may change over time either through exogenous shocks or through a non-observable action. And at the same time the nature of information will change. Moreover a party can obtain extra or more precise information about some unknown parameter from the other party's behaviour. Baron & Besanko (1984b) explain this by considering a two period Baron & Myerson (1982) model. Renegotiation problem is also modeled by Grossman & Hart (1986) and Williamson (1985). Dewatripont (1986) considered the tearing up of the current contract by both parties and renegotiation for a better contract.

The economics of regulation not only tries to restrict the firm's behaviour in the presence of imperfect competition or at the case of market failure but also it gives incentives to firm to produce efficiently. One of the popular regulation which include both restriction and incentives is price control, mainly price floor or price ceiling (or price bracket). Price floor is used to give incentives to producer or to give minimum wages to farmers, labourers etc. where as price ceilings are applied for natural resources or other basic and necessary goods. Market wide price controls always create a significant macroeconomic impact through redistribution of resources. Apart from total price control, there are evidences of partial or dual price controls. Any system of control which leaves some scope for the free play of market forces or some freedom of action to the individual enterprises regarding determination of prices of their products within the framework of government regulation could be called partial control. Dual pricing is a kind of partial
control where the government directly fixes the price or part of the production of a commodity and arranges its distribution. Such price control is partial, because although it may affect the entire quantity where price is fixed and where distribution is directly regulated by the government, it allows freedom of action to the market forces for the remaining quantity. Here we find two prices - one is controlled, other is determined by market forces. In this study, some industries have been selected and each of them is/was under price control mechanism.

1.4 Regulation, Deregulation and Indian Industries:

India is perhaps the first among the developing countries, which launched an ambitious industrialisation programme in the post war period. From the very beginning the basic objective of industrialisation was rapid economic growth through heavy industrialisation and achieving of self-confidence in the production process. At the initial period, industrialisation was dependant on several regulations and restrictions mainly import substitution, price control and industrial licensing. The reasons behind these were to prepare the ground for self-reliance, balanced regional development, prevention of concentration, excess capacity etc. Gradually it was being felt that not all regulations were good. Some of them are over restrictive and often self-defeating. So policy makers took the decision of relaxing some regulations. Actually winds of change started to blow from late 1960s and early 1970s. It got its momentum in early 1980s when several price and distribution controls were relaxed. The liberalisation of industrial controls gathered further pace during 1985 and 1986 with broadening the area of delicensed industries. Along with these, restrictions against foreign technology acquisitions were diluted gradually in 1980s. More and more foreign collaborations were encouraged in this period. Infact, small but many changes in 1980s has laid the foundation stone of the revolutionary 1991 industrial policy. The New Industrial policy is a piecemeal move towards liberalisation with a comprehensive wave of deregulation. It has emphasised on the correction of distortion of weakness that may have crept in Indian Industries to achieve higher productivity growth, employment growth and international competitiveness. Policies prescribed are privatisation
of public sector, industrial delicensing, dismantling of many other restrictions, more foreign participation with new technologies, capital market development etc. While turning to the performances of Indian Industries, we find that its growth was not smooth in the last 50 years. From the analytical point of view we can say that Indian industries experienced few qualitative distinct phases - 1951-66, 1966-1980, 1980-1990 and 1991 onwards.

The first phase coincided with first three five-year plans and the average growth rate was 7.2\(^1\). This was mainly because of Mahalanabis strategy of giving importance on capital based industries.\(^2\) The growth rate fell steeply in late 60's and continued upto late 1970s. This is the second phase of industries which produced a long history of stagnation of Indian economy with the average growth rate around 4% This slow down was resulted from slow down of public investment, slower agricultural progress, emerging problems of co-ordination between critical intermediate goods producing enterprises within the public sector and several exogenous shocks like oil crisis, droughts etc. This prolonged stagnation period can also be divided into several parts 1966-70 is characterised by a slow growth of capital goods (-1.4%)\(^3\) and in the next period capital goods picked up a higher growth (around 5%) but consumer goods showed a major decline in 1971-75 (1.6%)\(^4\) and again a high one in 1976-80 (4.9%).\(^5\) Actually in late 1970s, slight improvement was noticed in the overall industrial growth but still some structural bottlenecks remained as believed by several economists.

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\(^3\) Source : Table 2 in Industrial growth Another look by C. Rangarajan in D Nayyar edited "Industrial Growth and Stagnation : The Debate in India", Oxford University Press, 1994.

\(^4\) Ibid.,

\(^5\) Ibid.,
In the third phase of industrialisation which was in the decade of eighties, Indian industries again came back to the track. The growth rate in 1980-85 was 5.9% \(^6\) while it increased to 8.5% \(^7\) in 1985-90. Some economists explained it as turn around phenomenon. This achievement is mainly due to diversification of industrial base and technological development, growth of consumer goods, electric machineries and chemicals. The consumers durable have also received a supply side fillip from liberalised regime of eighties, which permitted collaborative agreements between Indian business houses and foreign companies. Though demand constraints still continues, economists believe that easing out regulatory constraints have some impact on the turnaround of the economy.

The fourth phase has been started in 1991. The New Economic Policy has given thrust on privatisaiton, delicensing, more foreign participation and capital as well as financial market reform. The growth rate in the initial two years was very low. Only from 1993/94 market has shown some improvement but again after 1995/96 recession has gripped Indian economy. The detail list of deregulation is prepared and described in Annexe I.

The principal objective of domestic regulatory policies were to promote heavy industrialisation and import substitution which were undoubtedly achieved. In fact there are several examples of efficient production of importable like feed stock of fertiliser etc. But due to backward integration import of intermediate products were raised after 1960. As a result import substitution of final goods increased the import of other goods. So economy had to bear a high cost of this policy in terms of slack of factor productivity in under utilisation of capacities etc. Infact due to heavy industrialisation several capital based factories were set up but production was not increased in a rapid way, which is clear from the above discussion. Reasons for this the slow factor productivity growth, excess capacity etc, are also reflected in incremental capital output ratio (ICOR). High ICOR existed in industries with substantial import substitution, under utilisation of capacity, technological

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\(^7\) Ibid.,
obsolescence and diminishing return. While talking about ICOR, Desai opined that high level of industrial investment and a low rate of industrial growth was responsible for high capital output ratio. The calculation based on ICOR was also supported by Total Factor productivity (TFP) and labour productivity growth. Labour productivity was increasing but not in a significant way where as TFP growth rate is either negative or negligible in the post independence period.

Table 1.1

<table>
<thead>
<tr>
<th>Authors</th>
<th>Period</th>
<th>Estimates</th>
</tr>
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<tbody>
<tr>
<td>Brahmananda</td>
<td>1950-80</td>
<td>-0.2</td>
</tr>
<tr>
<td>Goldar</td>
<td>1951-65</td>
<td>1.3</td>
</tr>
<tr>
<td>Mehta</td>
<td>1959-70</td>
<td>-1.8</td>
</tr>
<tr>
<td>Ahuluwalia</td>
<td>1959-79</td>
<td>-0.6</td>
</tr>
<tr>
<td>Goldar</td>
<td>1959-79</td>
<td>1.3</td>
</tr>
<tr>
<td>Ahuluwalia</td>
<td>1959-86</td>
<td>-0.2</td>
</tr>
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The slow growth of TFP worsened Indian competitiveness in the world market affecting its export performance. Theoretically deregulation reduces several structural deficiencies and help industries to avail economies of scale and accumulate significant technological capabilities which will result in to high efficiency gain. Our one of the main objectives of this study is to check this argument for several industries, which are already decontroled, or in transition to decontrol.

The popular regulations in industries were industrial licensing, Monopoly Restricted Trade Practice act (MRTP), Foreign Exchange Regulation Act (FERA), price controls etc. all of them had noble objectives but either they were soft paddled after implementation or created confusing results due to bureaucratic hassles. These adversely affected investment by accentuating delays creating uncertainty of restrictions on foreign investment. Industrial licensing were first relaxed in 1975-76 but it was accelerated in 1985.

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It took two main forms delicensing of investment in certain industries and delicensed of projects below a given size. 25 industries were exempted initially from licensing and more were added subsequently to this list. Also 22 industries in which MRTP/FERA companies were encouraged to invest were delicensing subject to the condition that their projects were located in back ward areas In the 1991 policy change almost 80% of industries have been delicensed. Now only few industries listed in annexure II of the policy require license on the ground of social concern, strategic concern environmental issues etc. Now industries are free to take investment decision to increase capacity according to market needs as a result country started to experience a steep rise in investment in various sector. So question remains that how far this investment flow is going towards the right direction.

MRTP Act was introduced to restrict concentration in Indian industries. But even after implementation, the result shows a different picture. Infact, Indian industries suffered from a very high degree of concentration and monopoly practices. Surprisingly average size of the plant was less than optimal and the role of small-scale sector was never emphasised. Due to regulation small and medium site firms could not graduate into a big one while big firm's concentration was not restricted. For instance 55 of industrial segment had four-firm concentration ratio in 80-100% range. The most important relaxation in MRTP act was introduced in 1985 when limit for MRTP companies was raised from Rs 20 crores to Rs 100 crores at one stroke. Moreover MRTP & FERA companies were allowed to enter into several high technology items of manufacture. After that through several relaxations MRTP companies experienced a new direction in modernisation or expansion and product diversification. The new Industrial policy scrapped the assets limits for MRTP companies altogether. The Act was amended and chapter III on monopolies dropped so that now a company no longer needs prior permission of the Commission for investment decision the. Act now will concentrate to the prevention of restrictive and unfair trade practices so that consumers are adequately protected from such practices and also hope that Indian firms will grow properly to achieve economies of scale and compete effectively in global markets.

FERA was promulgated in 1973 with the objective of having a close look on foreign investment. It restricted the percentage of foreign equity in a company. Only a few number of companies were allowed to have more than 40% foreign equity provided they had to be engaged in core industries, export oriented production etc. In 1985 FERA companies were allowed freely to take up the manufacture of 83 items. Due to this relaxation foreign technology was started to come in which was highly deserved. The recent amendment of FERA removed several restrictions and eased the path for MNC to take considerable investment or setting up joint firms and also helped Indian Industries to become global.

Apart from all these regulations, we find a wide scale application of price control mechanism. Here the objective is either helping consumer to face a fair price or to give producers some incentives. But the way prices were fixed raises serious doubts as how far these objectives were fulfilled thereby rarely providing any incentives to generate cost effectiveness. Other than some exceptions where long-term costs were used most pricing schemes were backward looking, being rooted in the historical costs. There are several incidents of price control like uniform prices for all plants for a single product (e.g. Steel) or different prices for different plants for a same product (like fertiliser) or different prices for same product (levy and non levy prices in products like sugar, cement etc.). In Indian industries there are evidences of arbitrary price fixation. Any price control without detail introspection in the nature of the good and its cost structure may not be a good policy. Even where cost plus method of pricing was applied it could not give proper incentives to firms for technological advancement, while it fuelled general inflation and increased burden in the public exchequer by giving higher and higher amount of subsidies. The movement towards price decontrol was started in late 1970s. Gradually many commodities like iron & steel, cement, fertiliser, aluminium experienced partial or full decontrol in prices. Prices of automobiles first decontrolled in 1975. Prices of iron and steel and cement were first brought under partial decontrol through dual price system. Later they were fully decontrolled. In case of iron & steel supply of some categories of steel mainly used in government sector was subsidised where as other uses were overpriced. In 1992 it was
abolished. Cement was partially decontrolled in 1982 and fully in 1989. In case of cement, Dagli Committee found out that price control had been a strong factor to inhibit the growth of cement industry. It resulted into black market operation of the product, giving unmerited profits to the middleman. In fact decontrol after 1989, increased the capacity of cement production but the question is whether this decontrol really increased efficiency of productivity. On the other hand there are two kinds of control on pharmaceutical industry: product wise control and control on profitability. Government rule defines which drugs will be protected through control. Actually DPCO (Drug Price Control Order) controls the price mechanism of bulk drugs as well as formulations and certain percentage of net return has been allowed to be earned by manufactures. Number of drugs under DPCO has been come down through the announcement of DPCO in several years. Sugar is perhaps India's most tightly regulated industry with government regulating most aspects of business: entry, capacity expansion, raw material procurement and its pricing, pricing of the final product, the use of byproducts and distribution of sugar. Time to time government took initiative to soften the control on the industry. In this study, few industries like cement, pharmaceutical and sugar are taken into consideration and an attempt has been made to study the impact of several decontrol measures on certain performance indicators of the said industries.