



The Impact Of Economic Reforms On Industrial Growth In India

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Industrial investment is the seed which germinates under the condition of congenial atmosphere and grows into plant and tree of industrial development bearing green leaves beautiful flowers and precious fruits of sustainable economic development with stability. Present Paper studies the impact of new Economic policy on industrial investment with particular reference to the inflow of foreign capital in Indian economy.

Keyword : Economic Reform, Industrial Growth

Introduction

Economic reforms was the need of the time but the achievements of economic reforms on industrial development have been a combination of both positive and negative impacts on Indian economy. The index of industrial production, although, started rising after the implementation of economic reforms, but it is not very encouraging so far as long run sustainable development and stability is concerned.

The new economic policy of India formulated in 1991 comprising liberalization, privatization, globalization and market oriented regime was a significant departure from its earlier policy regime reflecting a major breakthrough in the Indian economic system in general and Indian industrial sector in particular. The main objective enshrined in the new policy was to raise the efficiency and competitiveness of the Indian industries to excel foreign countries in world economics competition. The cause of slow rate of economic development was detected in the weaknesses of earlier policy regimes since independence and was therefore, resolved to bring about radical reforms in the Indian economic policy for achieving the objective of rapid economic development through industrialization and other all round improvements.

Pre-Reforms Scenario

Economic reforms were initiated on account of the draw backs in the policies of state intervention, export promotion, import substitution, dominant role of public sector, direct control on Private investment etc. formulated and implemented during pre-reforms period since 1950, reducing efficiency and competitiveness of the economy and thereby obstructing rapid growth of national income and employment.

The average annual growth rate of national income of India⁽¹⁾ fell 3.2% per annum during the two annual plans of 1990-91 and 1991-92 which was below the average annual growth rate of 3.26% during the first three decades of economic planning and much below the 5.5 percent per annum

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during the 1980's

The average growth rate in value added of manufactured goods which was 7.6 percent per annum from 1980-81 to 1990-91 fell to a negative rate of 0.77 percent per annum in 1991-92. The average rate of growth of capital⁽²⁾ goods which was 11.5 percent per annum from 1980-81 to 1991-92. tell to 1.3 percent per annum in 1991-1992. The main factor responsible for this slow rate of growth was a system of intensive control and defective licensing system.

Industrialization is inseparable from sustainable economic development because it not only leads to greater income and means of higher productivity but it also acts as an instrument for creating capacity to absorb excess labour power and helping to diversification of the market required at higher stages of economic development.

The industrial policies of 1948, 1956, 1977 and 1980 could not accomplish the desired objective of sustainable growth rate in the industrial sector. The performance and profitability of most of the P.S. Us were discouraging.

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Investment is the prime factor of industrial development. The new Economic policy opened the door of the economy for foreign investment because the rate of investment in the beginning of 1990s was not considered adequate for continuing sustained growth in Indian economy. The mitigating and low level of foreign exchange was another impediment of industrial growth because we cannot import developed technology as well as modern machinery without adequate foreign exchange reserve. The external foreign borrowing was already very high and foreign debts should not be increased beyond a limit. Foreign capital therefore became necessary for industrialization and rapid economic development of the country. The growth augmenting role of external trade and foreign capital inflows have assumed critical importance in Indian economy in recent years. It is widely believed that export of goods and services plays important role in accelerating the growth process.

Foreign capital consists of concessional assistance, non concessional assistance, F.D.I. portfolio investment, foreign collaboration, intergovernmental loan, external commercial borrowing and other sources.

Following table shows the domestic and foreign investment in Indian economy :

TABLE 1

**Table Of Indian Industrial Public Investment And Foreign Investment Including Their
Estimated Values By Five-year Plans**

Analysis

5 Year Plans	Plan Expen.	Industrial Invest.	IVI as Percentage of (I)	Estimated Value of IV	Foreign Investment (Direct + Pro fit)	VI as % (I)	Estimated Value of VI	Aggregate of Estimated Value (V) + (VII)
1	2	3	4	5	6	7	8	9
Pre Reforms Phase								
First	1860	55	2.8	-	-	-	-	-
Second	4672	938	20.1	2020	-	-	-	2020
Third	8576.5	1726	20.1	21.04	-	-	-	21.04
Fourth	15779	2864	18.2	18.88	-	-	-	18.88
Fifth	39436	8889	22.8	16.72	-	-	-	16.72
Sixth	109292	15002	13.7	14.55	2274	-	-	14.55
Seventh	218700	25971	11.9	1240	2274	-	-	1240
Post Reforms Phase								
Eight	488457	40620	8.4	8.01	69009.57	14.22	13.57	21.58
Ninth	889200	40408	5.0	5.76	122412.86	14.24	15.46	21.22
Tenth	1525609	58809	3.9	3.51	253480.39	18.00	17.35	20.86

Source : Data plotted and Calculated from Economic Survey, Government of India (2007-08) and other issues.

It is clear from the above table that in the first five year plan industrial investment in India was only 55 crores. Which is 2.8 percent of the total plan expenditure of Rs. 1960 crores. In the Second five year plan,⁽³⁾ Industrial investment was 938 crores constituting 20.1 percent of the total plan expenditure or Rs. 4672 crores. In the Third five year plan the percentage of industrial public investment was only 20.1 percent of the total plan expenditure. In the Forth, Fifth, Sixth and Seventh⁽⁴⁾. Five year plans the percentage of public industrial investment were 18.2 percent 22.8 percent 13.7 percent and 11.9 percent respectively of the total plan expenditure. It is now clear that the percentage of industrial investment to plan expenditure went on falling in the pre reforms phase excepting Fifth five year plan. In the post reforms phase, in the eight five year plan the percentage of industrial investment was only 8.4 percent of the total plan expenditure which fell to 5.0 percent in the Ninth five plan and in the Tenth Five year plan, the percentage of public industrial investment further fell to 3.9 percent of the total plan expenditure. It is thus obvious that in the post reforms phase, percentage of public industrial investment was miserably low due to the influx of foreign investment on account of new economic reforms. The graph of the percentage of domestic public industrial investment and foreign industrial investment to plan Indian expenditure is given below. Graph added in the following we have also plotted the estimated value of above variables. The following linear equation explained the relationship between the domestic public industrial investment as percentage of plane expenditure to the five years plan.

Pre-Reforms Phase

$$Y_1 = \hat{a}_1 + \hat{I}_1 (X_1) \text{----- (i)}$$

Where

Y_1 = Domestic public industrial investment as percentage of plan expenditure in pre-reforms phase.

X_1 = Five years plan in the pre-reforms era.

Using ordinary least square method parameters J_1 and S_1 have been estimated.

Gradient parameter $\hat{I}_1^* = -2.16$

Intercept parameter $\hat{a}_1^* = 17.8$

Standard error of estimation of $\hat{a}_1^* = 3.49$

Standard error of estimation of $\hat{I}_1^* = 00.83$

The estimated equation is

$$Y_1^* = \hat{a}_1^* + \hat{I}_1^* (X_1) \text{.....(ii)}$$

$$\text{Or, } Y_1^* = 17.8 - 2.16 (X_1) \text{.....(iii)}$$

The data of first five year plan being extremely low has not been taken in to account for econometric calculations because it will unnecessarily affect the result too much.

Post-Reforms Phase

In the post reforms phase we want to establish a linear relationship between the percentage of domestic public industrial investment a percentage of plan expenditure and the five years plans by the following linear equation

$$Y_2 = \hat{a}_2 + \hat{I}_2 (X_2) \text{.....(iv)}$$

Y_2 = is the domestic public investment as percentage of plan expenditure in post-reforms phase, X_2 is five years plan in post-reforms phase. \hat{a}_2 and \hat{I}_2 are parameters.

Using ordinary least square method for the estimation of parameters.

Gradient parameter (\hat{I}_2^*) = -2.25

Intercept parameter (\hat{a}_2^*) = 5.76

Standard error of estimation of $\hat{I}_2^* = 0.93$

Standard error of estimation of $\hat{a}_2^* = 0.66$

$$g_2^* = \hat{a}_2^* + \hat{I}_2^* (X_2) \text{.....(v)}$$

$$g_2^* = 54.76 - 2.25 (X_2) \text{.....(vi)}$$

Where g_2^* estimated value of g_2

Foreign Investment in the post-reforms era with respect to five years plans is represented by the following linear equation

$$Y_3 + \hat{a}_3 + \hat{I}_3 (X_3) \text{.....(vii)}$$

Using ordinary least square method for the estimation of parameter.

$$\text{Gradient parameter } ((x^*_3) = 1.89$$

$$\text{Intercept parameter } (\ddot{a}^*_3) = 15.46$$

Standard error of estimation of

$$Y^*_3 = 2.332$$

$$\text{Standard error of estimation of } x^*_3 = 1.16$$

The estimated equation is

$$Y^*_3 = \ddot{a}^*_3 + x^*_3 (X_3) \dots\dots(\text{viii})$$

$$Y^*_3 = 15.46 + 1.89 (X_3) \dots\dots(\text{ix})$$

Where Y^*_3 foreign investment as percentage of respective plan expenditure in post reforms phase.

$$Y^*_3 = \text{Estimated value of } g_3$$

$$X_2 = \text{Five years plan in post pre-reforms era.}$$

It is clear from the above graph and equation that in the pre-reforms period the trend of domestic public industrial investment was falling. The trend in the post-reforms phase was greater than in the pre-reforms phase. It was due to the fact that the foreign investment in the post-reforms phase was adequate so, the government actually didn't feel the need of increasing public industrial investment as percentage of plan expenditure. If we compare equation no. iii (three) and equation no. v (five), there is shift in the intercept by $-17.8 - 5.76 = 12.04$. The gradient parameter clearly exhibits that the rate of decrease in the post-reforms phase was higher than that in the pre-reforms phase. It is further reflected by equation no. ix that in the post-reforms phase the trend of the percentage of foreign investment to plan expenditure is rising.

Direct Investment And Portfolio Investment

In the post-reforms phase from 1991-92 to 2005-06 the total direct investment was \$48772 million constituting 45.9 percent of the total foreign investment of \$106206 million comprising of 36.5 percent by foreigners and 9.4 percent by NRIs. The total portfolio investment in the post-reforms phase during the above period was \$57554 million constituting 64.1 percent of the total foreign investment. The portfolio investment comprises 40.5 percent by FIIS and 13.6 percent by others. The total foreign investment in the post reforms phase from 1991 to 2005-06 was \$106206 million.

The portfolio investment is more volatile than direct investment. We should, therefore, encourage direct investment to portfolio investment.

Financial And Technical Collaboration

It is also important to examine financial and technical collaboration out of the total foreign collaboration. Technical collaboration leads to improved technology inflow. Therefore technical collaboration is more important than financial collaboration. The following table shows financial as well as technical collaboration

Table 2

Table Of Financial And Technical Foreign Collaboration By Years

Years	Financial Collaboration	Technical Collaboration	Total	% Share of Technical Collaboration	% Share of Financial Collaboration	Investment approved (Rs. Crores)
1981-85	698	2740	3438	79.9	20.1	37.5
1986-90	1154	2853	4007	71.2	28.8	899
1991-92	289	661	950	69.6	30.4	534
1992-93	692	828	1520	54.5	45.5	3879
1993-94	785	691	1476	46.8	53.2	8863
1994-95	1052	792	1844	42.7	57.3	14190
1995-96	1355	982	2337	42.0	58.0	32070
1996-97	1559	744	2303	32.3	67.7	36190
1997-98	1955	690	2645	26.4	71.6	54890
1998-99	820	433	1253	34.6	65.4	22990

Source: India, Ministry of Industry, Statistical Abstract of Industrial Statistics Series Annuals of Industrial Approvals (SIAI) New Delhi (1990-91) and after issues

.From 1981-85 and 1986-90 i.e. during pre-reforms out of total foreign collaboration the percentage of share of technical collaboration was 79.9% and 71.2 percent respectively, whereas the share of financial collaboration where 20.1 percent and 28.8 percent respectively.

In the post-reforms phase in 1991-92, 1992-93, 1993-94, 1994-95, 1995-96, 1996-97, 1997-98, and 1998-99 out of total foreign collaboration the share of technical collaboration was 69.6%, 54.5%, 46.8%, 42.7%, 42.0%, 32.3%, 28.4% and 34.6% respectively, whereas the share of financial collaboration was 30.4%, 45.5%, 53.2%, 57.3%, 58.0%, 67.7%, 71.6% and 65.4 percent respectively.

It is, therefore clear that out of total foreign collaboration the percentage of technical collaboration went on falling without any exception till 1997-98 indicating a falling trends. But of the total foreign collaboration the percentage share of financial collaboration went increasing reflecting rising trends. The foreigners are not very much interested in technical collaboration which is much more important in achieving a sustainable growth rate of the economy. The financial collaboration is more susceptible to fluctuations. Therefore we should request and insist upon the foreign collaboration for increasing technical collaborators. This is the negative impact of new economic reforms on industrial development.

F.D.I. plays most important role in the industrial development for achieving higher rate of economic development.

FDI Policy Of Government Of India

The FDI policy of government of India can be divided into the following four phases.

Pre-reforms Phase

Phase-I (1950-67) : In this first phase we very cautiously welcome FDI framing non-discretionary treatment policy to FDI remittances, profits were also not restricted rather we preferred to retain ownership and control with Indians.

Phase-II (1967-80) : Equity above 40% stake was not allowed excepting priority areas. FDI was controlled by FERA. We retained discretionary power in sanctioning the project. So this phase is called restrictive phase.

Phase-III (1980-90) : This is called the phase of gradual liberalization. Higher foreign equity in export oriented units was allowed. Secondly procedure for remittance of royalty and technical fees were also liberalized. A foster channel was set-up in 1988 for expediting clearances of FDI proposals from major investing countries.

Phase IV (Post reforms phase) (1991 to onwards) : This phase is called open door policy representing a major shift in the FDI policy. In this phase FERA restrictions were placed on foreign companies. FERA has been replaced by FEMA (Foreign Exchange maintenance Act) under this provision foreign investors are required only to inform the RBI within 30 days of bringing in their investment companies. Companies with more than 40 percent of foreign equity are not treated at par with fully Indian owned companies. New sectors such as Mining, Banking, Telecommunications, Highways constructions, Airports, Hotel and Tourism, Courier service and management have been thrown open for FDI. Even the Defense Industry Sector is open up to 100 percent per Indian Private Sector participation with 26% FDI, subject to Licensing. FDI Is Not Permitted In The Following Industrial Sectors;

1. Arms and Annimations
2. Atomic Energy
3. Railway Transport.
4. Coal and lignite.
5. Mining of Iron, Magnege, Chrome, Gypsum, Sulphar, Gold, Diamonds, Copper and Zinc.

Table 3
FDI Approvals And Inflow (In crores of Rs.)

Year I	Amount Approved II	Actual inflow III	III As % of II
1991-92	534	351	65.7
1992-93	3888	675	17.74
1993-94	8859	1787	20.2
1994-95	14187	3289	23.2
1995-96	32072	6820	21.3
1996-97	36147	10389	28.7
1997-98	54891	16425	29.9
1998-99	30814	13340	43.3
1999-00	28367	16868	59.5
2000-01	37039	19342	52.2
2001-02	26875	19265	71.7
2002-03	11140	21286	191.1
2003-04	6042	14301	236.7
2004-05	-	27168.99	52.0
2005-06	-	34131.24	-

Source – Ministry of commerce and Industry; Annual Report (Different Year)

Above table of FDI approval and inflow reveals that there was a wide gap between the amount approved and actual inflow. Actual inflow lagged behind the amount approved. The percentage of actual inflow started increasing at a faster rate from 1998-99 but in 2002-03 the actual inflow was about double the amount approved which increased to more than the double in 2003-04. This shows that the rate of actual inflow become much faster from 2001-02 compared to the amount approved.

Impact Of Economic Reforms On Industrial Production

Foreign investment was liberalized for the fast industrial development to realize the goal of rapid

economic development. It is therefore intended to examine the impact of economic reforms on industrial investment as well as the impact of investment on industrial production. In order to analyses the rate of growth of industrial production Vis-à-vis industrial growth, the only suitable variable is the index of industrial production. The index of industrial production will give us the exact and appropriate conclusion only when it is compiled at a single “base year”. The government publication on the index of industrial production provides two base years. First is 1980-81 and the second is 1993-94. Therefore all the base years have been Shifted to 1980-81 to make it reform for all years.

Table 4**Index Of Industrial Production With Its Growth Rate Base Year 1980-81 = 100**

From above index of industrial production and its annual growth rate over the proceeding period it is very disheartening that the average annual growth rate of IPP in the pre-reforms phase was 8.74% per annum which was higher than the average annual growth rate of IIP of 6.44% per annum in the post-reforms period. It therefore, needs a careful perusal to analyze the causes of slow rate of growth of industrial production in the post reforms phase when the foreign investment in different forms increased considerably.

It is therefore, imperative to study the trend of growth rate of industrial production in the pre-reforms period as well as post reforms period to study and analyze the impact of economic reforms on

Year	Index of industrial production (Iip)	Growth rate of IIP in percent per annum
PRE-REFORMS PHASE		
1982-83	112.80	12.80
1983-84	120.40	6.70
1984-85	130.70	8.50
1985-86	142.10	8.72
1986-87	155.10	9.14
1987-88	166.70	8.76
1988-89	180.90	8.76
1989-90	194.40	7.46
1990-91	212.60	9.36
POST-REFORMS PHASE		
1991-92	213.90	0.61
1992-93	218.90	2.33
1993-94	232.00	5.98
1994-95	253.70	9.35
1995-96	283.70	11.85
1996-97	299.53	5.70
1997-98	323.60	8.03
1998-99	336.80	4.07
1999-00	359.39	6.70
2000-01	377.26	4.97
2001-02	387.47	2.70
2002-03	409.74	5.74
2003-04	438.51	7.02
2004-05	475.17	8.36
2005-06	513.90	8.15
2006-07	573.08	11.51

Source : Compiled from economic survey, Government of India (Different issues)
Base year shifted to 1980-81=100 for all years

industrial production.

Table 5

Trend Of Growth Rate Of Index Of Industrial Production In Pre-reforms Period.

Year	Growth rate IIP over the proceeding period (In percent) (\tilde{a}_t)	Estimated value of Y_t
1982-83	12.8	9.58
1983-84	6.70	9.37
1984-85	8.60	9.16
1985-86	8.72	8.95
1986-87	9.14	8.74
1987-88	7.47	8.53
1988-89	8.54	8.32
1989-90	7.46	8.11

So time : Compiled from economic survey, government of India different issues

The growth rate of index of industrial production can be shown by the following tow variable equation

$$\tilde{a}_t = \bar{\alpha} + Q_t (X_t)$$

Where

\tilde{a}_t = Growth rate of IIP in percent per annum

X_t = Years in pre-reforms era, $\bar{\alpha}$ and Q = are parameter

The parameters have been estimated by least by least square method. The intercept parameter ($\bar{\alpha}^*$) is equal to 8.74.

The gradient parameter the gradient parameter (Q^*) = -0.21.

The standard error of estimation of ($\bar{\alpha}^*$) = 1.76

The standard error of estimation of (Q^*) = 0.19

The estimated general equation is : $\tilde{a}_t^* = \bar{\alpha}^* + Q^* (X_t)$

The particular equation is

$$\tilde{a}_t^* = 8.74 - 0.21 (X_t)$$

Where \tilde{a}_t^* is the estimated value of \tilde{a}_t

Now the graph of growth rate of industrial production is plotted.

From the above graph it can be observed that trend value of growth rate of IIP (in percent per annum) over the previous period in pre-reforms period is downward sloping to the right which is also evident from the negative sign of gradient parameter.

Table 6

Growth Rate Of IIP In Post Reforms Phase (Percent Per Annum) Over The Previous Period.

The linear relationship between the time periods (years) and the growth rate of IIP can be established by the following linear equation.

$$\tilde{a}_2 = \delta_2 + Q_2 (X_2) \dots\dots\dots(i)$$

The parameter of equation (1) are estimated by least square methods

The intercept parameter (δ_2^*) = 6.44 in all suffix.

The gradient parameter (Q_2^*) = 0.26

The standard error of estimation of \tilde{a}_2^* = 2.96

Year	Growth Rate of IIP	Estimated value of
1981-82	0.81	4.49
1982-83	2.33	4.75
1983-84	5.98	5.01
1984-85	9.35	5.27
1985-86	11.85	5.53
1986-87	5.70	5.79
1987-88	8.03	6.05
1988-89	4.07	6.31
1989-90	6.70	6.57
2000-01	4.97	6.83
2001-02	2.70	7.09
2002-03	5.74	7.35
2003-04	7.02	7.61
2004-05	8.36	7.87
2005-06	8.15	8.13
2006-07	11.51	8.39

Source : Compiled and calculated from table 2.1 (Government of India Economic Survey)

The standard error of estimation of Q_2^* = .008

The estimated equation (\hat{a}_2^*) = $\hat{\alpha}_2^* + Q_2^* (X_2)$

$$Y_2^* = 6.44 + 0.26 X_2$$

Where Y_2 = Growth rate of IIP over previous period per annum

X_2 = Years in post reforms era

Y_2^* = Estimated value of Y_2

$\hat{\alpha}_2$ and Q_2 are parameters

Following graph indicates the trend line of growth rate of IIP over previous period in percent per annum

It is obvious that the trend of growth rate of IIP in the post-reforms period is upward rising to the right. This is also evident from the positive sign of the gradient parameter effect of economic Reform on the trend of growth rate of IIP an econometric.

Effect Of Economic Reforms On The Trend Of Growth Rate Of IIP

The econometric analysis of the trend of the estimated values calculated by ordinary least square method shows that the intercept parameter stood at 8.74 and the gradient parameter was measured to be -0.21 during the pre-reformed era where-as in the post-reform phase the intercept parameter and gradient parameter were estimated to be 6.44 and 0.26 respectively. After analyzing these data and the corresponding graph it can be concluded that the trend during the pre-reforms period was downward sloping to the right whereas in post reforms phase the trend has been upward rising to the right although with smaller slope. It means the rate of increase is low. Change in the direction of the trends of growth of IIP clarifies the positive effect of economic reforms on the growth rate of IIP. We had a very gloomy picture when we analyzed by the simple average method. The arithmetic average of annual growth rate of IIP in the pre-reforms phase during the period from 1980-81 to 1990-91 was 8.74% which fell to 6.44 percent in the post reforms phase for the period from 1991-92 to 2006-07.

If we look into the use base classification of growth rate of IIP (a) by simple average method. It will be clear that there has been a fall in the growth rate.

Of IIP of basic goods, capital goods and durable goods. Because the average value of the growth of IIP in the pre-reforms period from 1980-81 to 1991-92 were 7.4, 9.4 and 10.8 of basic goods, capital goods and durables respectively which fell to 5.4, 7.8 and 10.7 percent respectively in the post reforms phase. But the IIP of consumer goods, intermediate goods and non-durable increased in the post reforms phase compared to the pre-reforms phase.

Conclusion

The crux of the above discussions, analysis and conclusion is that new economic policy was the need of the time. But some conditions must be imposed on the "Open Door" policy of foreign investments for removing the drawbacks of the policy and achieving our objective of rapid growth with justice.

Following conclusion are drawn from the above analysis

1. During the pre-reforms as well as post reforms phase the industrial public investment as percentage of plan expenditure went on falling but the rate of fall in the post reforms phase was higher than the pre-reforms phase because in the post-reforms phase foreign investment started flowing in fast. The trend of growth of foreign investment as a percentage of plan expenditure had upward trend i.e. the rate of growth of foreign investment as percentage of plan expenditure

went on increasing

2. The share of portfolio investment was higher than the share of direct investment in the total foreign investment. This is not very encouraging because the increase of direct investment leads to economic stability whereas increase in portfolio investment leads to fluctuations and instability.
3. The percentage share of technical collaboration out of total foreign collaboration has been falling whereas the share of financial collaboration has been regularly increasing. This is also discouraging. Because our objective of acquiring advanced technology is not fulfilled.
4. The trend of growth rate of the IIP had a falling trend in the pre-reforms period followed by the rising trends in the post reforms phase. This exhibits positive impact.
5. So far as use base classifications of annual compound growth of IIP concerned the annual growth rate of basic goods, capital goods and durables declined in the post reforms phase but the average annual growth rate of intermediate goods and consumer goods increased the post-reforms phase.

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