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TAX INCENTIVES & INVESTMENT BEHAVIOUR: THE IMPACT OF REMOVAL OF INVESTMENT ALLOWANCE & REDUCED DEPRECIATION RATES

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Tax incentives are often claimed to influence investment behaviour of firms. Present study aims at examining the relationship between level of investment and investment allowance and depreciation rates. Based on the regression analysis of data belonging to 195 companies over a period of 12 years the study concludes that for the corporate sector as a whole incentive show significant contribution towards corporate investment.

I. BACKGROUND

For several decades in the past, the corporate sector in India has been playing a very important role in the economic development of India. The increasing profits on the part of the corporate sector have also called for increasing taxes as a result of which a corporate taxation structure has come into being. The long term need to help the corporate sector to grow and with it the nation's economy to grow and the short term needs to secure funds for the different tasks of administration, corporate taxation in recent years has had to make compromises of all sorts,

offering tax incentives to promote corporate investment and expansion.

II. RELEVANCE OF STUDY

Tax incentives have been defined by the United Nations as "... reduction in the effective tax burden on the favoured activity as against the currently imposed upon it. Though the definition of 'tax incentive' given by the United Nations is not very explicit as to its purpose, it is now universally accepted that the objective of tax incentives is to instill in the tax payer an encouragement to a particular line of action. Tax incentives facilitate quick recovery of capital and a higher rate of return and thereby

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induce domestic and foreign industrialists either to establish new industrial units that otherwise would not be established or to expand their activities in the already existing one. In the developing countries like India, tax incentives may therefore be interpreted as the conscious attempts to use taxation as an instrument for promoting economic growth. The technique of allowing tax incentives for promoting economic growth in the desired direction and dimension started being widely used only after World War-II.

The timing of the incentive should be known before the specific investment or expenditure is incurred or the activity is undertaken. The gains from a fiscal incentive improve the profit prospects before the investment decision is made and is not available on investments already made. Fiscal incentives are, by and large, of a temporary nature for a specified period of time and for specific purposes. Further, in some cases the fiscal incentive may be restricted to certain industries and for operations in selected locations.

In the Post-war period in Great Britain, a number of fiscal devices have been tried for regulating private investment. In India also, over the years, a large number of tax incentives have been applied to encourage investment, each involving different arrangements and subject to fairly frequent changes in rates. Two main fiscal instruments were used to provide the nationally available incentives on selected types of assets,

namely initial allowances and investment allowance. Initial allowances enabled firms to write off a relatively large proportion of their expenditure on plant and machinery against pre-tax profits in the first year, which in effect, accelerated the depreciation provided by the normal writing down allowances. The second main incentive, investment allowances, represented a net addition to the depreciation allowed against tax over and above the actual cost of the asset.

Although these measures are taken partly to compensate for the effect of inflation on the value of existing depreciation allowances, their main aim was to stimulate manufacturing investment by raising post-tax rates of return and by leaving firms with more profits after tax to finance their capital expenditure programmes.

In this connection, the present Income Tax Act, which was introduced in the year 1961, has always been subject to various amendments, addition of new provisions and other important legal interpretations. For example, in assessment year 1991-92, investment allowance was abolished with a view to closing the escape route for the corporate sector to go out of the tax net and, instead, accelerated depreciation for tax purposes represented the main policy instrument. There have also been changes in corporate tax rates: In assessment year 1992-93, the Government felt that despite relative labour abundance, the economy has shown a shift towards

higher capital intensity. Fiscal incentives provided by the Government have indeed, helped in this capital bias. It is in this background that the budget envisaged a reduction in the rates of depreciation of plant and machinery to 25 per cent from the existing 33.3 percent and from 50 per cent to 40 per cent in the case of motor buses, motor taxies and other equipment. The argument for these changes is that they will affect the profitability/liquidity of business firms and may, thus, affect the rate of investment. Since corporate tax is a major instrument for mobilising resources for a growth-oriented economy; it is desirable to study the impact of existing system.

III. OBJECTIVE OF THE STUDY

In view of the above discussion, the chief objective of the study is to examine the following:

1. Impact of fiscal incentives and other important factors like, profits after tax, long term loans and depreciation, on investment behaviour of the firms.
2. Impact of removal of investment allowance on the investment behaviour of the firms.

IV. HYPOTHESIS OF THE STUDY

The hypotheses formulated for testing the objectives of the study are that :

1. The fiscal incentives are important determinants of corporate investment behaviour.
2. Investment allowance has been

an important contributor to investment behaviour of corporate sector and the removal of the same has had an impact on this investment behaviour.

V. PERIOD

The analysis is done for a period of 13 years i.e. from previous year 1984-85 to 1996-97. The study is also divided into two phases: one, from previous year (P.Y.) 1984-85 to 1989-90 and other, from previous year 1991-92 to 1996-97. The purpose of bifurcation in this time period is that since the investment allowance was removed w.e.f. A.Y. 1991-92, the first phase of study includes this fiscal incentive while the second phase of study excludes it.

At the time this study was undertaken, the data was available till the P.Y. 1996-97. Since investment allowance was abolished in P.Y. 1990-91, the period of study covered is six years, i.e., from P.Y. 1991-92 to P.Y. 1996-97. To keep uniformity for the purpose of comparison between two phases of study, the first phase of study, when investment allowance was available also covers a period of six years, i.e. from P.Y. 1984-85 to P.Y. 1989-90.

VI. SELECTION OF SAMPLES

All the companies covered under different industries are public limited companies. The minimum amount of total assets of each of these companies is worth Rs. 400,00,000 (Rupees four crore) in each of the two phases. The

data for the respective variables has been mainly collected from Bombay Stock Exchange Directories.

Due care has been taken to study the same set of firms for a particular industry group in both the phases of study for the purpose of consistency in results.

VII. CHOICE OF VARIABLES OF INVESTMENT FUNCTIONS

The dependent variable chosen for the purpose of studying the investment behaviour of the firms is the rate of investment. It is defined as the ratio of change in capital stock to the stock of the 'previous' year. Symbolically,

$$\text{Rate of investment} = \frac{K_t - K_{(t-1)}}{K_{(t-1)}}$$

The explanatory variables considered are as follows:

1. Profit net of taxes (PAT)
2. Long-term borrowings (LTB)
3. Depreciation (Dep)
4. Fiscal incentives other than investment Allowance (F. Inc.)
5. Investment allowance (IA)

In some of the studies, depreciation provision has been clubbed with retained earnings as depreciation also forms part of the liquidity of the firm. This study, however, treats depreciation provision as an independent explanatory variable, so that its impact on investment behaviour can be independently studied.

Long-term loan has been considered as an explanatory variable where internal funds are not sufficient for the firms to meet their investment requirements i.e. if the desired growth in investment is higher than that warranted by the internal funds i.e. PAT, and depreciation, the long-term loans are resorted to. Profits, as an explanatory variable, has been taken as profits net of taxes but gross of dividends. Dividends, however, have not been considered independently as a significant factor influencing the investment behaviour and therefore, have been excluded from the list of explanatory variables. Retained earnings also have been deleted on account of high collinearity between profits after taxes and retained earnings. Tax incentives is a very important variable, which has a favorable impact on profitability and on supply of internal funds, and in turn, on the investment behaviour of firms. For the reasons of importance of tax incentives, as has been given in detail in chapter-1 and also for the reasons of non-collinearity between tax incentives and remaining variables, these incentives have been taken as an independent explanatory variable affecting the investment behaviour of different set of firms. This list of determinants of investment behaviour is not exhaustive but only illustrative.

The tax incentives, therefore, have been estimated in an indirect manner as follows :

Profits before tax may be

considered to represent the hypothetical tax base (HTB), and fiscal reliefs may be assumed to be implicitly taken into account when determining the tax provision, as presented in the profit and loss account statements. This is evidenced by the fact that tax provision as per cent of profits before tax (the effective tax rate) is generally lower than the statutory tax rate. This HTB, thus amounts to operating profits net of brought – forward loss and depreciation and also inclusive of fiscal reliefs. The actual tax base (ATB) is then, determined by, dividing the tax provision by the statutory tax rate. Symbolically,

$$ATB = \left[\frac{X}{Y} \times 100 \right], \text{ where}$$

X = tax provision

Y = statutory tax rate, and

ATB = actual tax base.

The difference between the HTB and the ATB represents the total fiscal incentives enjoyed by the corporate sector. When investment allowance is deducted from the figure of total incentives, we come to arrive at the figure of other incentives, i.e. total fiscal incentives exclusive of investment allowance.

The statutory tax rates taken are those applicable under the income tax laws; for the respective years, i.e. tax rates applicable from A.Y. 1985-86 to A.Y.

1997-98. These tax rates are those applicable to Indian public limited companies, in whom the public are substantially interested, i.e. widely held public limited companies.

Factors like entrepreneurship, technological differences of plants of the various firms, differences in skills or in organisation and other factors tend to vary widely for large firms while they do not vary considerably in small firms. Therefore, the model tends to be heteroscedastic in nature.

To remove this problem of heteroscedasticity the explanatory variables have been taken in ratio form.

The explanatory variables, thus, are :

1. Profit after taxes as a ratio of previous year capital stock.
2. Long-term borrowings as a ratio of previous year capital stock.
3. Depreciation provision as a ratio of previous year capital stock.
4. Fiscal reliefs as a ratio of previous year capital stock.
5. Investment allowance as a ratio of previous year capital stock.

VIII. METHODOLOGY

The analysis of investment behaviour is done in two parts Part A and Part B. To arrive at the best possible combination of different explanatory variables and to study their impact on investment behaviour of different industries, the technique of step-wise multiple regression analysis has been

used. In part "A" of the study, the analysis is done for a period of 13 years i.e. from assessment year 1985-86 to assessment year 1997-98. Since the investment allowance was removed w.e.f. A.Y. 1991-92 and it is attempted to find out as to whether or not this removal was significant, it has been used as a dummy variable. The analysis is done for :

- (i) each industry individually,
- (ii) all the companies taken together belonging to different industries, and
- (iii) the companies belonging to the three different size groups—small, medium and large. The companies have been classified into three size groups on the basis of the composition of their total assets during the terminal year of study i.e., asset composition for the assessment year 1997-98. According to gross fixed assets, three size-groups have been classified:

1. Small-size group consisting of fixed assets of less than Rs. 50 crores.
2. Medium-size group consisting of fixed assets of Rs. 50 crores and more and less than Rs. 100 crores.
3. Large-size group consisting of fixed assets of Rs. 100 crores and more.

In part B of the study, the analysis of investment behaviour is based upon

two phases: One, for the assessment year 1985-86 to 1990-91 and the other, for the assessment year 1992-93 to 1997-98. In the first phase, investment allowance was available and in the second phase, it was not available. In the first phase, the figures of investment allowance taken are those as are actually availed of by the companies. The analysis is once again done for:

- (i) each industry individually for both the phases,
- (ii) all the companies taken together belonging to different industries, for both the phases, and
- (iii) the companies belonging to the three different size groups—small, medium and large.

Here, the companies studied have been classified into three size groups on the basis of asset composition during the terminal year in both the phases of study i.e. asset composition for the assessment year 1990-91 for phase-I and assessment year 1997-98 for phase-II. With respect to the percentage of companies falling in the each size group, (phase-I) about 59% of total companies fall in the small size group, 13% fall in medium-size group and 28% of companies fall in the large-size group of fixed assets. During the second phase, the percentage of companies falling in the small size group of assets is 26%, in the medium size group is 19% and in the large size group, it is 55%.

The industries studied and the number

IX. RESULTS AND DISCUSSION

PART - A

**Table 1 : Step-wise Regression results of investment Behaviour of Different Industries
(1984-85 – 1996-97)**

Explanatory Variables	Paper	Cement	Food Products	Sugar	Metals	Chemicals	Electronics	Cotton	Synthetic Fibres
	B	b	b	B	b	b	b	b	b
PAT	2.2841* (.9228)	—	(-).4085* (.0562)	1.1927* (.3772)	—	(-).17156* (.2673)	(-).1140* (.0005)	(-).14670* (.6378)	2.3005* (.2262)
LTB	.7007* (.0946)	.9440* (.1376)	(-).0822* (.0218)	.1823* (.0845)	.3822* (.0332)	—	—	.2874* (.0729)	.3945* (.0521)
Depreciation	—	8.9070* (.8324)	7.1334* (.6441)	3.0249* (.8984)	1.8133* (.5969)	15.7945* (.5355)	1.7765* (.0012)	6.2402* (.6267)	—
Fiscal Incentives	1.8084* (.8818)	—	.5389* (.1032)	—	.5162* (.1438)	2.1239* (.3621)	.0049* (.0007)	2.9965* (.7193)	.9648* (.3577)
Investment Allowance	—	(-).2275* (.0767)	—	(-).2525* (.1028)	—	—	—	—	—
R ²	.71	.73	.77	.49	.35	.86	.99	.66	.96

Notes: 1. Figures in parentheses below the b - coefficients represent the standard error of b.

2. * – Significant at 5% level.

of companies selected in each industry is given below :

S.N.	Industry	Number of companies
1.	Paper, pulp and hard board	20
2.	Cement	18
3.	Food products	10
4.	Sugar and Breweries	16
5.	Metals, alloys, metal products and structurals	29
6.	Chemicals, dyes, pharmaceuticals, refineries and plastics	28
7.	Electrical equipment and electronics	29
8.	Cotton spinning and weaving mills	23
9.	Synthetic fibers, silk and woollen textiles	22
Total		195

X. VARIABLE-WISE ANALYSIS

After having tabulated the significance of the different variable affecting the investment behaviour of different industries, an attempt is made to analyse the significance of each of these variables along with other variables, for different industries. The variables identified are :

1. Profits after tax.
2. Long-term borrowings.
3. Depreciation.
4. All fiscal incentives except investment allowance.

5. Investment allowance.

The relative significance of these variables (at 5% level of significance) for different industries is as follows :

X.1. Profit after tax

This variable along with other variables, happens to be a significant contributor to the investment behaviour of following industries :

Paper, pulp and hardboard, Food products, Sugar, Chemicals, dyes and pharmaceuticals, Electrical equipments and electronics, Cotton, Synthetic fibres.

Profits after tax is, thus, a significant contributor to the investment behaviour of seven industries out of a total of nine under survey. It has a negative impact on investment in case of Food Products, Chemical, dyes and pharmaceuticals, Electrical equipments and electronics and cotton industries.

X.2. Long-term borrowings

Long-term borrowings/loans, along with other variables, is a significant variable affecting the investment behaviour of following industries.

Paper, pulp and hardboard, Cement, Food products, Sugar, Metals and metal products, Cotton, Synthetic fibres.

Seven out of nine industries under survey are significantly affected by long-term loans along with other variables. While it has a negative impact on the investment behaviour in case of Food products industry, it has a positive impact in case of rest of the industries. This variable, thus, seems to be an important contributor to the investment behaviour of the corporate sector.

X.3. Depreciation

Depreciation, along with other variables happens to be a significant contributor to the investment behaviour of following industries:

Cement, Food products, Sugar, Metals and metal products, Chemicals, dyes and pharmaceuticals, Electrical equipments and electronics, Cotton.

It can be observed that depreciation positively contributes to the investment behaviour of seven out of nine industries under survey. It may, thus, be concluded that even after the reduction in the rates of depreciation with effect from financial year 1991-92 with a view to promote the labour intensity, it continues to be an important contributor to the investment behaviour of the corporate sector.

X.4. Fiscal incentives other than investment allowance

Fiscal incentives, along with other significant variables, have affected the investment behaviour of following industries.

Paper, pulp and hardboard, Food products, Metals and metal products, Chemicals, dyes and pharmaceuticals, Electrical equipments and electronics, Cotton, Synthetic fibres.

It can, thus, be observed that fiscal incentives are significant contributors to investment behaviour of the corporate sector, as these incentives, along with other significant variables prove to be significant in case of seven industries. In case of each of these industries, these incentives have a positive impact on investment. It is only in case of Cement and Sugar industries, that these incentives, for the given period of study, have not shown any contribution to the investment behaviour. In fact, for these two industries, while these incentives are not significant as such, investment allowance has an impact on the investment behaviour, though it is negative in nature. The results, thus, support the hypothesis that fiscal incentives are important determinants of corporate investment behaviour.

X.5. Investment allowance

This variable, along with the

other variables, proves to be significant only in case of two industries, i.e. Cement, Sugar.

Even in these two industries, though the variable is significant, as has been said earlier, it has a negative impact on investment. It may be concluded that investment allowance, along with other variables, is not a very significant variable while it affects the investment behaviour of the corporations. The removal of investment allowance, thus, does not seem to have had any impact on corporate investment behaviour.

XI. RESULTS FOR THE CORPORATE SECTOR AS A WHOLE.

Though different industries depict different results, an overall view of all the companies belonging to different groups of industry show the following results :

Table - 2 : Step-wise regression results of investment behaviour

S.N.	Explanatory Variables	b
1.	PAT	(-) .1194* (1.3399E ⁻³)
2.	LTB	.2016* (.0144)
3.	Depreciation	1.4883* (.0208)
4.	Fiscal Incentives	.0170* (1.8388 E ⁻³)
5.	Investment Allowance	—
	R ²	.99

Notes: 1. Figures in parenthesis below the b co-efficients represent the standard error of b.

2. * - Significant at 5% level.

It is observed that all the variables except investment allowance show a very high degree of variation with respect to the investment behaviour of the corporate sector. Investment allowance does not prove to be significant even at 20% level of significance (t- value: (-) .210). It may, thus, be concluded that while fiscal incentives have been important determinants of corporate investment behaviour, investment allowance, as such, has not been an important contributor to the investments made by the corporate sector. The removal of this allowance again does not seem to have had any impact on the corporate investment.

The reduction in rates of depreciation also seems to have had no negative impact on the investment behaviour of the corporate sector.

XII. GROUP-WISE ANALYSIS

While all the companies belonging to the different industries have been divided into three groups, small, medium and large, the results for the same are as shown below:

Table - 3 : Step-wise regression results of investment behaviour

Explanatory Variables	Small	Medium	Large
	B	b	b
PAT	(-) .1147* (6.1048E ⁻⁴)	.4994* (.2044)	.4127* (.1455)
LTB	.0277* (8.3215E ⁻³)	.8137* (.0719)	.5310* (.0327)
Depreciation	1.7369* (.0120)	1.7305* (.3571)	6.3724* (.3576)
Fiscal Incentives	6.5843E ⁻³ * (8.7434E ⁻⁴)	1.5809* (.3602)	1.2545* (.2369)
Investment Allowance	(-) .0763* (.0309)	-	-
R ²	.99	.59	.75

Notes : 1. Figures in parentheses below the b co-efficients represent the standard error of b.

2. * – Significant at 5% level.

It is observed that all the four variables, profits after tax, long-term loans, depreciation and fiscal incentives are significant contributors to the investment behaviour of different-sized companies. Investment allowance is significant only in case of small-sized companies, but there also it shows a negative relationship with the investment pattern. Medium and large sized companies are not affected by investment allowance at 5% level of significance. In case of medium-sized companies, this allowance is insignificant even at 20% (t- value: .148) and in case of large-sized companies, the significance of this allowance is proved at 10% (t- value:

1.935). The hypothesis that fiscal incentives are important determinants of corporate investment, thus, stands proved in case of companies belonging to different size groups also. The removal of investment allowance again, seems to have had no impact on the corporate investments. Depreciation is also positively contributing to the corporate investments and reduction in their rates seems to have had no impact on the corporate investments.

PART - B

XIII. PHASE-WISE ANALYSIS (RESULTS AT A GLANCE)

An attempt is also made to study the impact of these fiscal incentives and

investment allowance together with other variables, on corporate investment, in two phases: phase - I, when investment allowance was available, i.e. from previous year 1984-85 to 1989-90 and phase - II, when this allowance was not available, i.e. from previous year 1991-92 to 1996-97. The results for phase -I for all the industries are as shown page No. 38-39,

It is observed that during phase - I, while fiscal incentives along with other variables assume significance only in case of Electronics and Synthetic fibres industries, investment allowance, along with other significant variables shows significance in case of Metals, Electronics, Synthetic fibres and Cotton industries. Thus, on the whole, these four industries are positively affected by fiscal incentives. During the second phase, fiscal incentives happen to be significant in seven out of nine industries under survey. Cement and sugar are the two industries, which are not affected by these incentives. One may, thus, conclude that while investment allowance was present, it was a significant determinant of investment behaviour of the industries, but the removal of the same has made them switch over to other fiscal incentives. The hypothesis that fiscal incentives are important determinants of investment behaviour thus, seems to have been proved even when a study of investment behaviour has been made in two different phases and the removal of investment allowance does not seem to have had any impact on

the investment behaviour. Depreciation, along with other variables, assumes a significant role to play in affecting the investment behaviour of different industries in both the phases. Synthetic fibres is the only industry which has not been affected by depreciation during both the phases, else wise, each of the remaining industries' investment behaviour has been positively affected by depreciation in either or both of the two phases.

XIV. RESULTS FOR THE CORPORATE SECTOR AS A WHOLE

While the significance of variables differs with respect to different industries, the significance of these variables for all the companies taken together, i.e. for the corporate sector as a whole, is depicted through the following results :

Table - 6 : Step-wise regression results of investment behaviour (Phase - I)

S.N.	Explanatory Variables	b
1.	PAT	(-) .1633* (.0211)
2.	LTB	.4242* (.0392)
3.	Depreciation	1.2077* (.0282)
4.	Fiscal Incentives	.0548* (.0259)
5.	Investment Allowance	3.0042* (.4748)
	R ²	.93

- Notes: 1. figures in parentheses below the b co-efficients represent the standard error of b.
2. * - Significant at 5% level.

Table - 4 : Step-wise regression results of investment behaviour of different industries (Phase-I)

Explanatory Variables	Paper	Cement	Food Products	Sugar	Metals	Chemicals	Electronics	Cotton	Synthetic Fibres
	b	b	B	b	b	b	b	b	b
PAT	—	—	(-) .0540*	1.4237*	.3872*	—	(-) .1259*	—	—
			(.0204)	(.1761)	(.1673)		(4.4271E ⁻³)		
LTB	1.0774*	.9941*	.2355*	—	.3930*	—	—	.1838*	.4455*
	(.1580)	(.1977)	(.1034)		(.0780)			(.0675)	(.0866)
Depreciation	5.0340*	9.7508*	1.6426*	1.4861*	—	—	1.7873*	2.0705*	—
	(.8094)	(1.1445)	(.3623)	(.4044)			(4.0877E ⁻³)	(.5426)	
Fiscal Incentives	—	—	—	—	—	—	.0132*	—	.7381*
							(3.1205E ⁻³)		(.2228)
Investment Allowance	—	—	—	—	2.1844*	—	.9593*	1.8635*	3.0727*
					(.6363)		(.3542)	(.4880)	(.3655)
R ²	.56	.79	.54	.73	.31	—	.99	.45	.98

Notes : 1. Figures in parentheses below the b co-efficients represent the standard error of b.

2. *— Significant at 5% level.

The results for the second phase are tabulated below:

Table - 5 : Step-wise regression results of investment behaviour of different industries (Phase-II)

Explanatory Variables	Paper	Cement	Food Products	Sugar	Metals	Chemicals	Electronics	Cotton	Synthetic Fibres
	b	b	B	B	b	b	b	b	b
PAT	—	—	—	—	—	(-) 1.7015* (.2669)	(-) .6227* (.1877)	—	—
LTB	.8950* (.1435)	.3420* (.0863)	—	—	.3479* (.0415)	—	.1667* (.0575)	.3185* (.0991)	.1723* (.0626)
Depreciation	—	4.8541* (1.1567)	—	8.5487* (1.3874)	2.0780* (.9300)	15.8293* (.5348)	1.8220* (.3487)	9.1150* (.9477)	—
Fiscal Incentives	4.3133* (.3787)	—	2.1617* (.0611)	—	.5624* (.1810)	2.1095* (.3613)	1.0310* (.2473)	1.2435* (.3986)	1.4338* (.2728)
Investment Allowance	—	—	—	—	—	—	—	—	—
R ²	.81	.41	.97	.53	.38	.86	.35	.78	.25

Notes : 1. Figures in parentheses below the b co-efficients represent the standard error of b.

2. * - Significant at 5% level.

Table - 7 : Step-wise regression results of investment behaviour (Phase - II)

S.N.	Explanatory Variables	b
1.	PAT	—
2.	LTB	3.7879* (.2193)
3.	Depreciation	.9800* (.0710)
4.	Fiscal Incentives	.7000* (.0552)
5.	Investment Allowance	—
	R ²	.80

Notes : 1. Figures in parentheses below the b co-efficients represent the standard error of b.

2. *— Significant at 5% level.

It is observed that during both the phases, long-term loans, depreciation and fiscal incentives depict positive contribution to the investment behaviour of the corporate sector. Profits after taxes are significant during phase-I but they show negative contribution towards

investment. During phase-II, profits after tax are not significant at 5%. They tend to be significant at 10% level of significance but here also, they show negative contribution to the investment decisions (t- value: (-) 1.955)

It may, thus, be concluded that fiscal incentives have been important contributors to investment behaviour of the corporate sector for both the phases of study. Investment allowance was also significant when it was present during phase - I.

XV. GROUP-WISE ANALYSIS

An attempt has also been made to study the impact of these explanatory variables on investment behaviour of different sized companies (classified on the basis of their asset composition). An analysis of each of these different sized-groups of companies for both the phases of study has been done as follows:

Table - 8 : Step wise regression results of investment behaviour (Phase - I)

Explanatory Variables	Small	Medium	Large
	B	b	b
PAT	(-) .1344* (2.7500E-3)	—	.4670* (.0915)
LTB	.0173* (7.8206E-3)	.2351* (.0517)	1.2480* (.0730)

(Table - 8 contd.)

Depreciation	1.7698* (.0116)	1.7422* (.5945)	5.0590* (.5078)
Fiscal Incentives	.0199* (1.9931E-3)	—	—
Investment Allowance	1.6105* (.2191)	—	—
R ²	.99	.31	.89

- Notes : 1. Figures in parentheses below the b co-efficients represent the standard error of b.
2. * - Significant at 5% level.

Table - 9 : Step-wise regression results of investment behaviour (Phase - II)

Explanatory Variables	Small	Medium	Large
	B	b	b-
PAT	(-).4948* (.0706)	.7235* (.2180)	(-) 1.5807* (.2637)
LTB	.0462* (.0179)	1.0991* (.0857)	—
Depreciation	3.0873* (.3244)	1.5484* (.3642)	12.5460* (.3825)
Fiscal Incentives	.7548* (.1016)	1.2693* (.4004)	2.2888* (.3521)
Investment Allowance	—	—	—
R ²	.44	.74	.73

- Notes : 1. figures in parentheses below the b co-efficients represent the standard error of b.
2. * - Significant at 5% level.

It is seen that in case of small-sized group of companies, fiscal incentives have been positive contributors to investments made by the companies during both the phases of study. Investment allowance was also a significant determinant of investment behaviour during the first phase.

Medium and large sized companies' investments were neither affected by fiscal incentives nor by investment allowance during phase-I. In fact, both these variables are insignificant at 20% level of significance also in case of medium sized companies. Their respective t- values are (-).470 and

.505. In case of large-sized companies, fiscal incentives were insignificant at 20% level (t- value: (-) .879) while investment allowance was significant at 20% level (t- value: 1.643). During the second phase, these incentives became positive contributors to the investment behaviour of these companies.

It may, thus, be concluded that in case of small-sized group of companies while investment allowance was a significant determinant of investment, incentives other than this were also significant during phase - I and continued to remain so during phase - II also. The removal of investment allowance, thus, has not affected the companies' investment decisions. In case of medium and large sized companies, while both investment allowance and other, fiscal incentives were not important determinants of investment behaviour during phase - I, these incentives positively contribute to the investments during the second phase. The removal of investment allowance, thus, again seems to have had no impact on the investment behaviour of these companies.

Depreciation is a positive determinant of investment behaviour of each of the different sized group of companies during both the phases of study. The reduction in the rates of depreciation, thus, also seems to have had no impact on corporate investments.

XVI. CONCLUSION

The impact of tax incentives has been

studied on investment behaviour of different industries in two parts, Part-A and Part-B. In each of these parts, the analysis of investment behaviour has been done in three different ways, one, for the industries individually; two, for the corporate sector as a whole; and three, for the industries belonging to different size groups, small, medium and large. In Part-A of the study, the results, over a period of 13 years i.e. from 1985-86 to 1997-98 have been studied. The broad conclusions are as follows.

While the industries have been studied individually (except Cement and Sugar industries), investment behaviour of all other industries is positively affected by the fiscal incentives. (Table - 1)

When the results of all the industries are studied together, even then fiscal incentives tend to show positive contribution towards investment behaviour of the corporate sector. (Table - 2)

On analysing the results of these industries by classifying them into small, medium and large-sized groups, once again fiscal incentives significantly affect the investment behaviour of companies belonging to different sized groups. (Table - 3)

All these results, thus, support the hypothesis that fiscal incentives are important determinants of corporate investment behaviour.

On studying the impact of investment allowance, when the investment behaviour of industries is individually studied, only Cement and Sugar

industries are affected by this incentive but the impact explained is negative in nature. (Table - 1) This allowance also shows no impact on the investment behaviour of all the industries studied together (Table - 2) and when the analysis is done for different groups of companies, this allowance shows no significant contribution towards investment behaviour of medium and large-sized companies while in case of small-sized group of companies, it has a negative impact on investment. (Table - 3)

It may, thus, be concluded that during the 13-year period of study, investment allowance does not seem to have shown any impact towards that corporate investment behaviour and that the removal of the same has had no impact on this investment behaviour.

In part B of the study, the investment behaviour has been studied in two phases. The results for the two phases have been concluded as follows.

In case of industry-wise analysis, while investment behaviour seemed to have been positively affected by investment allowance in four industries rather than other fiscal incentives (in this case, 2 industries) during phase I, these fiscal incentives became positive contributors to the investment behaviour of seven industries during phase II. (Table - 4, Table - 5)

On studying the results of the corporate sector as a whole, these incentives showed significant contribution towards the corporate investment during both

the phases of study. (Table - 6, Table - 7)

On analysing the results of the companies when classified according to different sizegroups, it has been observed that during phase - I these incentives showed significant contribution towards investment behaviour of only small-sized group of companies while during the second phase, investment behaviour of all small, medium and large-sized groups of companies was positively affected by these incentives. (Table - 8, Table - 9)

It may, thus, be asserted that the results again support the hypothesis that fiscal incentives are important determinants of corporate investment behaviour.

In so far as the impact of investment allowance on investment is concerned, it has proved to be a significant variable in four industries during Phase I. (Table - 4) It also proves to be a significant variable when the results for the corporate sector as a whole have been analysed. (Table - 6) In case of group-wise analysis, it significantly affects the investment behaviour of small-sized group of companies and not medium and large-sized group. (Table - 8) One may, thus, conclude that during Phase I, when investment allowance was available, it supports the hypothesis that it has been an important contributor to the investment behaviour of corporate sector. The removal of the same, at the same time, does not seem to have had any impact on the corporate investment.

XVII. SUGGESTIONS

Given the existing tax structure, one can possibly think of a few suggested measures.

Accelerated depreciation

It is a generally accepted fact that the point of recovery of capital investment is very important in investment decisions since the investors are interested in the speed at which they can recover their initial investment. An important measure in this direction is the provision of allowing depreciation generously. Besides normal depreciation, something extra could be given to induce investment, especially in developing countries.

Discriminatory tax structure

Some countries have adopted a policy of providing incentives according to the size of the firm, importance of the firm in the country (whether producing export products or producing goods to achieve national self-sufficiency). The process of industrial development can, perhaps, be speeded up by adopting a discriminating tax structure. A lower tax rate could be charged on companies, which channelise their savings into investments in certain specified channels (of national importance) and correspondingly, a higher tax rate could be charged on the basis of undesirability of investment in other investment outlets. There could, thus, be a differential tax rate structure on the basis of the importance of the nature of activities in which the companies are engaged. Economic

development also, can be enhanced by adopting a discriminatory tax rate structure as has been adopted in many other countries.

Labour intensive technology

Yet another important criterion for providing incentives is the amount of employment that is expected to be generated by the industry, i.e. fiscal incentives should be provided for promoting labour intensive technology. Countries like Mexico, Libya, Trinidad and Tobago consider a company's policy for employing local labour. Some countries do not employ a person who is a not ordinarily resident of that country. An attempt has been made in this direction in India also, to see if the incentives corresponding to the employment of local labour solves the problem of unemployment along with contribution to national output in the form of increased investment.

Growth and fiscal incentives

In case of industrial units which are not fully utilising their working capacity, an incentive can be given to them in the form of tax reduction for increase in production, particularly for items that are of national importance. Thus, the entire fiscal system can be made growth oriented.

Depreciation at replacement cost

To account for inflation, depreciation can be provided at replacement cost, particularly in case of companies, which are engaged in production of key sector items. This might turn out to be an

improvement over the existing system of providing depreciation at actual cost, in the initial year and on the written down value in the subsequent years.

Incentives for sick units

Fiscal incentives may also be provided for preventing the industrial units from getting sick. Rather than a sick unit being allowed to discontinue its business, an incentive could be provided to them whereby in the prosperous years, the assessee can deposit a part of its income with the Government for which a deduction can be claimed against the taxable profits. This money can be withdrawn by the assessee during the periods of financial

difficulties and in that year, the amount could be subject to taxation. This incentive, thus, can provide some financial support to the companies during the periods of financial crisis.

Carry backward of losses

Some of the countries allow their losses to be carried forward as also backward. Corporate sector in India may also be allowed to do the same.

It is felt that all these suggestive measures can make the entire fiscal system based on national priorities, and the savings arising to the corporate sector, shall be used for the purpose of investment in sectors which will lead to economic development.