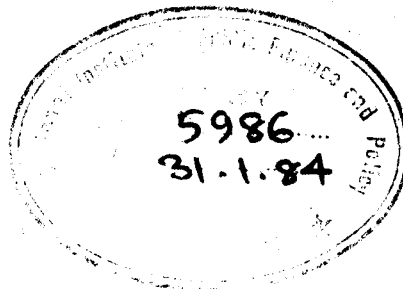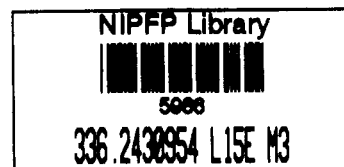# ECONOMIC EFFECTS OF THE
CORPORATE PROFITS TAX

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NATIONAL INSTITUTE OF PUBLIC FINANCE AND POLICY
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PREFACE

The National Institute of Public Finance and Policy is an autonomous, non-profit organisation whose major functions are to carry out research, do consultancy work and undertake training in the area of public finance and policy. In addition to carrying out on its own research studies on subjects that are considered to be important from the national point of view in terms of policy formulation, the Institute also undertakes research projects on subjects of public interest, sponsored by member governments and other institutions.

The present study is the second part of an overall study of the theoretical and quantitative aspects of corporate profits taxation in India. An earlier study, <u>Fiscal Incentives and Corporate Tax Saving</u> (1983) examined the provisions in the income tax law relating to fiscal incentives and assessed the tax base diminution effect of individual incentives and the tax savings that accrue to corporate assessees. The focus in this study is again on the provisions relating to the income tax law as applicable to corporate assessees (excluding the fiscal incentives) and an assessment of the economic effects of the corporate profits tax. Apart from estimates on the elasticity and buoyancy coefficients of the corporate profits tax at the aggregate level, estimates are also made at disaggregated levels and explanations are offered for the observed sensitivity of the tax. Finally, an assessment is made of the effect of the corporate profits tax on aspects of corporate behaviour, namely, investment, profitability, dividend policy and capital structure.

It is hoped that the results presented here would provide the basis for a more meaningful discussion on corporate tax reform.

The study was self-sponsored by the Institute. It was conducted by Vinay D. Lall, who has also drafted the Report. At different times research assistance was provided by A.K. Gupta, Sujata Dutta and Geeta Kanwar among others. The data were processed on the NIPFP computer and K.K. Atri and A.K. Halen did the necessary programmes.

The Governing Body of the Institute does not take responsibility for any of the views expressed by the authors in the Report. The responsibility for the conclusions arrived at and the views expressed belongs to the Director and the staff of the Institute and more particularly to the author of the Report.

R.J. Chelliah
Director

September 11, 1983

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I. OBJECTIVES

1. Introduction

The corporate profits tax in India has remained largely unchanged for over two decades. The last major change was made through the 1959-60 Budget, when the partial imputation system was replaced by the classical system of taxation of corporate-source income. Under the present system, the company is treated as a separate economic entity and the shareholder gets no credit or allowance for any part of the tax levied at the corporate level. Under the earlier system, the shareholder was given credit for the corporate tax paid by the company on the distributed component of profits.[1]/

The present Income-tax Act, 1961, which replaced the Indian Income-tax Act of 1922, is now also over two decades old. Over the years, the Act has been subject to several revisions through amendments, additions of new provisions and important judicial rulings. As a result, what Kaldor (1956) observed more than a quarter century ago is perhaps even truer today. The company tax provisions in India are, to quote Kaldor, "a perfect maze of unnecessary complications, the accretion of years of futile endeavour..." (p. 84).

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[1]/ For a discussion on the corporate profits tax system before and after the 1959-60 change, see Chapter II, Sections 2 and 3.

There has been some discussion during the last few years on the need to replace the Income-tax Act, 1961. A number of Commissions/Committees have examined particular aspects of the income tax system. At the same time, there has been a noticeable absence of scientific quantitative studies on the actual operations and effects of the income tax system. This may be attributed partly to inadequacies in the data base.

However, to keep any discussion on tax reform in its proper perspective, it is necessary to analyse the impact of the existing tax system, identify its weaknesses and propose and assess an alternative tax system. Such a study is all the more desirable in the case of the corporate profits tax, as not only is this tax a major instrument for mobilising resources but it also directly affects operations in a growth-oriented segment of the economy.

There have been few studies of issues relating to the Indian corporate profits tax. Sahota (1961), Rao (1979) and Khadye (1981) have presented estimates on the elasticity and buoyancy of the corporate profits tax system on the basis of time-series data, but they did not offer any economic explanation for the results obtained. Lall (1967), the Expert Committee on Unemployment, Ministry of Labour and Rehabilitation (1972), Jhaveri (1973), NCAER (1976), Somayajulu (1977) and the Expert Committee on Tax Measures to Promote Employment (Dandekar Committee, 1980) have presented some estimates on the tax-saving effect of selected fiscal incentives, in particular, the development

rebate, investment allowance and tax holiday, mainly on the
basis of ex-post data from published annual reports and
assessment data from income tax returns. These studies
related to selected years and did not cover all the fiscal
incentives. More recently, Lall (1983) has estimated the
tax saving effect of all fiscal incentives using ex-post
assessment data from assessed income tax returns on major
incentives and from published annual reports and also
ex-ante data from appraisal reports of a financial institu-
tion. Laumas (1966), Lall (1967 and 1974), Gandhi (1968)
and Rao (1979) have presented some evidence on the shifting
of the corporate profits tax in India. A few econometric
studies on corporate finances in India have been made over
the last decade and a half, but these /¯for example,
Sastry (1966), Krishnamurty and Sastry (1971, 1975), Swamy
and Rao (1975), Rao (1979), Johar, Kumar and Singh (1982)_7
have not assessed the impact of the corporate profits tax.
Among the few studies that have assessed econometrically
the effect of the corporate profits tax on selected aspects
of corporate operations, namely, retentions, gross resource
mobilisation, equity finance to debt finance ratio and
retentions to fresh issues ratio are those of Dixit (1976),
Venkatachalam and Sarma (1978) and Lall, Srinivasa and
Atri (1982).

2. Objectives

This study presents empirical evidence on the
impact of the corporate profits tax in India. Specifi-
cally, the objectives of the study are:

(i) To measure the sensitivity of the corporate
profits tax and interpret in economic terms
the observed results;

(ii) To measure the effect of a change in the
corporate profits tax on operations in the
manufacturing segment of the corporate
sector, as reflected in:

(1) corporate investment in gross fixed assets;

(2) corporate profitability after tax;

(3) corporate dividend policy; and

(4) corporate capital structure; and

(iii) To examine at the disaggregated level whether
factors like age, size, growth rate of
companies and type of industrial activities
have a bearing on the impact of the corporate
profits tax on corporate operations.[2]

3. Framework of the Study

In order to place the quantitative analysis in
proper perspective, the following two chapters analyse the
main provisions of the income tax law, as applicable to

[2] Another study (Lall, 1983) brings out the main provisions of the income tax law relating to fiscal incentives available to companies and assesses the impact of individual incentives on the corporate tax base, tax liability and rate of return.

companies (Chapter II) and the developments in the corporate
sector and growth .in corporate tax revenue collections and
assessments (Chapter III). Chapter IV presents the analysis
relating to the sensitivity of the corporate profits tax.
The results of the econometric exercises assessing the impact
of the corporate profits tax on corporate investment and
profitability are presented in Chapter V and those on the
impact on dividend policy and capital structure in Chapter
VI.

II. THE CORPORATE PROFITS TAX UNDER
THE INDIAN INCOME TAX LAW

1. Evolution of Corporate Profits Tax System

The first piece of income tax legislation in India
dates back to 1860, when the tax was applicable uniformly
to all income (personal, corporate, business and agriculture).
This tax was abolished in 1865. Thereafter, corporate income
was taxed through various levies like the 'licence' tax and
the 'certificate' tax, until the Indian Income-tax Act, 1886,
was introduced; in fact, 23 Acts dealing with taxes on
income were enacted between 1860 and 1886. The 1886 Act,
which was in force till 1918, constituted, in effect, the
framework of the general structure of the subsequent
Income-tax Acts, including the present Income-tax Act, 1961.
This Act classified income into four categories, namely,
salaries and pensions, profits of companies, interest on
securities and other sources of income. Agricultural income
was exempt and each category was assessed separately without
reference to any income falling in the other categories.
Partial integration of the tax on corporate income with
the tax on personal income was introduced as distributed
profits were not taxed again at the dividend recipient
level.

The next important step in tax legislation was the
Indian Income-tax Act of 1922. Three major innovations
were introduced by this Act: First, there was a stipula-
tion that the tax assessment would relate to the income of

the preceding year rather than (as hitherto) the previous
year's income merely serving as a measure of the income
of the assessment year; secondly, the Indian Income-tax
Act of 1918 and the Indian Super Tax Act of 1920 were
merged; and thirdly, this Act stipulated only the bases,
methods, machinery and administration of assessment; the
tax rate was to be determined by annual Finance Acts.
The 1922 Act was in force until 1961 when it was replaced
by the Income-tax Act of 1961.$\underline{3}/$

2. Tax System Before 1959-60

The base of the corporate profits tax in India has
always been corporate profits since the time a separate
tax was levied on profits of companies in 1886. In recent
times, the last major change in the corporate profits tax
system was made in the budget of 1959-60; first, in the
rates of the income tax on companies and the super tax were
combined the net incidence of the then existing taxes on
income, excess dividends and wealth, and the wealth tax on
companies and the excess dividends tax were abolished;$\underline{4}/$
and, secondly, the system of grossing-up of the shareholder's
dividend income was abolished.

$\underline{3}/$ For a discussion on corporate tax legislations in
India, see Ambirajan (1964) and Pophale (1965).

$\underline{4}/$ For purpose of advance payment of tax under Section
18A of the Income-tax Act, 1922, separate tax rates
of 20 per cent for income tax and 25 per cent for
super tax were specified, a total tax rate of 45
per cent. The two taxes were merged in 1965, as
in the case of the taxes on non-corporate income.

Prior to the 1959-60 change, a company had to pay income tax (the general rate for an Indian company was 30 per cent), a surcharge of 5.0 per cent on the income tax and a super tax at 20 per cent. The income tax component of the tax (but not the super tax component) was deemed to have been paid by the company on behalf of its shareholders, under section 18(5) of the Income-tax Act of 1922. At the corporate level, the rationale for the system was that the company was nothing more than a 'withholding agent' of the Government as regards the income tax payable by shareholders on their dividend income. At the shareholder's level, the taxable dividend income consisted of the net dividend received and the corporate tax paid on it (i.e., the gross dividend) and this gross dividend was added to the shareholder's income from other sources to compute the taxable income. The shareholder was, however, entitled to a credit for the corporate income tax component of the gross dividend against his personal income tax liability; in case the tax withheld at the corporate level exceeded the tax liability at the personal level, a refund was permissible.[5/] In effect, the corporate profits tax was partially integrated with the personal income tax (to the extent of the income tax on the dividend component of corporate profits). Integration was not extended to the retained

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[5/] The gross dividend for every unit of dividend received was worked out by applying to the net dividend, the formula:

$$\frac{1}{1 - (\frac{X}{100} \times \frac{r}{192})}$$

where X was percentage of corporate income liable to tax and r the corporate income tax rate in pies per rupee.

component of corporate profits or to the super tax, for
the shareholder did not get any credit for the tax on his
proportionate share of such profits (in accordance with
his proportionate holdings of the total equity share
capital), as he would under a fully integrated system of
corporate and personal taxation.

The super tax was not included in the grossing-up
scheme as it was deemed to have been paid by the company
on its own behalf and not on behalf of its shareholders.
The Taxation Enquiry Commission (Matthai Commission)
(1953-54) recommended the perpetuation of the legal
fiction but only as far as the income tax was concerned
and it did not recommend the extension of this provision
to the super tax. No credit was, therefore, given to the
shareholder for the super tax paid by the company under
the pre-1959-60 grossing-up system. The super tax was,
therefore, rightly called the 'corporation' tax.

The pre-1959-60 grossing-up system of corporate
profits taxation was found to be highly complicated,
inconvenient, uncertain in determination of tax liabili-
ties and discriminatory in its effect on the total amount
of dividend (after the personal income tax) received by
shareholders belonging to different income tax brackets.
The rate of grossing-up depended upon the effective rate
at which the corporate profits were initially taxed, and
this effective tax rate, in turn, depended upon the
composition of the corporate income. Further, when
dividends were paid out of past reserves, the determination

of the effective tax rate at which profits were to be taxed became even more complicated. The assessment at the shareholder's level had to await completion of assessment at the corporate level. Finally, the tax credit system raised the amount of total dividends received by the shareholders, but while the level of total dividends was the same for all the shareholders, the effective rate of dividends after the personal income tax depended upon the marginal personal income tax rate applicable to the shareholder. While such a discrimination exists even under a classical system of corporate profits taxation, the degree of discrimination is greater under the imputation system.

3. The Present Tax System

a. **No dividend credit.** Under the present system, a company is chargeable to corporate profits tax as a distinct taxable entity (in its own capacity as an income earner) and pays tax in discharge of its own liability and not on behalf of, or as an agent of, its shareholders. The legal fiction of deeming the income tax paid by the company as having been paid by the shareholder is no longer in force. At the shareholder's level, no credit is given for any portion of the tax paid by the company on the dividend component of corporate profits, but the shareholder is permitted to deduct from his personal taxable income base dividend income upto a specified limit.[6] As such, the

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[6] The specified monetary ceiling for deduction of dividend income from the personal income tax base presently in force under Section 80L of the Income-tax Act, 1961, is Rs 4000. However, this is not an exclusive ceiling for dividend income but also applies to interest income and income from units of the Unit Trust of India (UTI). Interest income from deposits with post offices and with nationalised commercial banks and income from units of UTI are further eligible for an additional separate ceiling of Rs 3000 each. The combined monetary ceiling for all types of preferentially tax treated income under Section 80L now stands at Rs 10,000 effective from the assessment year 1983-84.

tax liability of the shareholder is no longer related to
the tax liability at the corporate level. However, there
is withholding of tax on dividend income: the company
deducts tax at a prescribed flat rate and pays it to the
government, except in the case of shareholders who declare
or show that they do not have taxable incomes. An assessee
can also claim refund of the tax withhold by the company
if he is so entitled.

The basic rate of corporate income tax is now 55.0
per cent for Indian companies in which the public are
substantially interested; the rate was 45.0 per cent in
1960-61 and 1961-62, 50.0 per cent from 1962-63 to 1965-66
and was raised to 55.0 per cent in 1966-67. A surcharge is
being levied on the corporate income tax since 1972-73.
The rate was 2.5 per cent for 1972-73, 5.0 per cent during
the period 1973-74 to 1979-80, 7.5 per cent for 1980-81
and again 2.5 per cent from 1981-82 to 1982-83. The
present rate of surcharge (for 1983-84) is 5.0 per cent.

Another important tax levied on companies is the
sur tax, introduced in substitution of the super profits
tax in 1964. The super profits tax had been introduced
in the 1963-64 Budget against the background of the
aggression against the country. The super profits tax
was justified politically on the ground that the corporate
sector, like the rest of the community, had to bear its
share of the increased national responsibility; the
economic justification was that the levy would act as a
disincentive to excessive profits and would help keep
down the prices. In effect, it was even then felt, as

has been pointed out by the Direct Tax Laws Committee
(Choksi Committee, 1978) "that the super-imposition of a
separate tax was a better alternative than revising the
system of corporate taxation in general" (p. 94).

The basic objectice of the sur tax is to mop up
excess profits and the tax was justified on the ground
that there was no correlation between the rate of corporate
tax and the profit-earning ability of the company. It is,
however, pointed out that the sur tax in effect amounts to
a tax on efficiency and both the Committee for Ratio-
nalisation and Simplification of the Tax Structure
(Bhoothalingam Committee, 1968) and the Direct Taxes
Enquiry Committee (Wanchoo Committee, 1971) advocated its
abolition. The Choksi Committee, however, supported the
continuance of the tax because the high return on capital
employed in the Indian industry having a captive market
under the prevailing system of licensing "is to some extent
fortuitous in that it is brought about not so much by any
positive effort of the management as by the general economic
climate resulting from Governmental policies" (p. 94). The
Choksi Committee, therefore, felt that an additional tax
on such extra profits would not only meet the needs of
social justice but would also not affect efficiency.
Therefore, the Choksi Committee was not in favour of
merging the levy of sur tax with the income tax of
companies but recommended that it be allowed to continue
separately. At present there are two rates of sur tax,
one at 25 per cent applicable to the slab of chargeable
profits representing a return between 15 per cent and 20
per cent of the capital having regard to the fact that
the statutory deduction is 15 per cent.

A higher rate of sur tax of 40 per cent. is applicable to
the residual chargeable amount. The Choksi Committee
recommended a flat rate of 40 per cent for all chargeable
profits, on the ground that the sur tax is intended to
mop up surplus profits not reasonably attributable to
management effort and, therefore, a two-tier rate was
inappropriate.

In earlier years, some additional taxes on
corporate profits were levied: namely, the excess profits
tax (1940-41 to 1946-47) and the business profits tax
(1947-48 to 1950-51). These taxes as well as the super
profits tax and the sur tax were aimed at mopping up
'surplus' profits in the corporate sector for the benefit
of the national exchequer and were in the nature of 'an
additional duty of income tax'. Besides, excess dividend
tax (1956-57 to 1958-59) was levied to discourage
excessive distributions and to stimulate retentions and
a tax on bonus shares (payable by the company) was levied
from 1956-57 to 1965-66 on the ground that the issuing
company had a greater ability to pay.

b. **Classification of companies and statutory tax rates.**
An element of differentiation exists in the statutory tax
rates applicable to corporate income based on the category
to which the income-earning company belongs and also on
the size of such income. Section 2(17) of the Income-tax
Act, 1922 (amended by the Finance Act (No.2) of 1971)

classifies all companies[7] either as an Indian company or a foreign company[8], the criterion being the possession of a 'registered' office in India or outside India. Domestic companies are further classified as those in which 'the public are substantially interested'[9] (or widely-held companies) and those in which 'the public are not substantially interested' (or closely-held companies), the latter being mainly private limited companies.[10]

Two features of Indian companies, relevant for purposes of income taxation, need to be noted. In the first place, a 'domestic' or Indian company is statutorily

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7/ Under the Income tax law, the term 'company' has a much wider connotation than under the Indian company law as the Finance Acts generally include also an unincorporated institution, association or body, Indian or non-Indian, as a company, if declared so by the Central Board of Direct Taxes, Ministry of Finance, Government of India.

8/ A foreign or non-domestic company is one which does not declare and distribute any dividends within India.

9/ Section 2(18) of the Income-tax Act, 1961, stipulates that a company is one in which the public are substantially interested if it is owned by the Government or by the Reserve Bank of India or if they hold at least 40 per cent of the shares or if at least 50 per cent of the shares carrying voting rights are held by public sector financial corporations or by the general public.

10/ Under the Indian Companies Act, 1956, a private limited company has restricted right of transfer of shares, the number of shareholders are limited to 50 and it does not invite subscription to its shares and debentures from the public.

obliged under Section 194 of the Income-tax Act, 1961[11], to deduct tax on dividends paid to non-residents, and secondly, private limited companies (only domestic non-industrial) are required under Section 104 to distribute a 'statutory percentage' of their 'distributable income' as dividends within 12 months of the expiry of the relevant year.[12] An additional (penal) tax is otherwise imposable under Section 109 in the event of failure to distribute the 'statutory percentage' of 'distributable income'. The base for the penal tax is confined to the distributable income, as reduced by the amount of the dividends actually distributed. The penal tax rate is 50 per cent for an investment company, 37 per cent for a trading company and 25 per cent for any other company. The penal provision is, however, not applicable to a subsidiary company if the whole of its share capital is held by the parent company or by its nominees during the relevant year. It is also not applicable to private limited companies on their income generated from manufacturing operations.

Another element of differentiation in the statutory tax rate applicable to companies upto the assessment year 1982-83, was based on the size of their income. The income of a domestic company below a specified amount

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11/ Unless otherwise stated, the sections mentioned in this study refer to those of the Income-tax Act, 1961.

12/ Section 104 replaced Section 23A, which was incorporated into the Indian Income-tax Act, 1922, in 1930, following the practice in the UK.

(Rs 1 lakh for a company in which the public are substan-
tially interested and Rs 2 lakh for an industrial company
in which the public are not substantially interested) was
subject to a lower tax rate than those with a higher income.
This differentiation in the statutory tax rate could not
be taken to represent progressivity of the corporate profits
tax in India, because once the income exceeded the preferen-
tially-treatable level, the whole income was liable to be
taxed at the higher tax rate. The Bhoothalingam Committee
rejected the case for progression in the corporate profits
tax rate on the ground that companies were only juristic
personalities and the principle of progression should be
restricted to taxation at the shareholder's level. The
Committee favoured a preferential treatment to industrial
companies or companies producing specified articles through
a straight deduction rather than a lower tax rate. It also
expressed doubts on whether the corporate form of business
organisation was more prevalent or was the most desirable
form for small-scale industries. Subsequently, the Wanchoo
Committee also favoured a uniform tax rate (55 per cent)
for all categories of companies.

A differentiation in the statutory tax rate is
also incorporated into the tax system on the basis of the
source of the corporate income. If an Indian company in
which the public are not substantially interested is a
non-industrial company, the tax rate is higher than if it
is an industrial company (i.e., engaged in manufacturing
operations). In the case of a foreign company, a lower tax

rate is applicable on income received by it as royalties, fees, etc., on the basis of an agreement with an Indian company entered before April 1, 1976, and approved by the Government of India.

The statutory tax rates as applicable to different categories of companies are presented in Table II.1.

c. Taxable income. The major sources of taxable corporate income in India are profits and gains from business operations, capital gains, interest, dividend and property income.[13] Agricultural income falls outside the purview of the corporate profits tax. The 'total income' which forms the final stage for computing taxable income, is the residual after all operating and non-operating expenses are deducted from 'total receipts' in accordance with the principles of the mercantile system of accounting, subject to the expenditure and allowances that are statutorily tenable under the income tax law. While computing gross or 'total income', capital receipts are distinguished from revenue receipts according to tests evolved through judicial rulings.- In general, receipts arising out of the substitution or conversion of fixed

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[13] In the assessment year 1980-81, 91.1 per cent of the total assessed corporate income was generated from business and professions, 2.4 per cent from dividends, 1.0 per cent from interest, 0.4 per cent from capital gains, 0.6 per cent from property and 4.5 per cent from other sources. For details, see Chapter III, section 2d.

TABLE II.1

Statutory Tax Rates on Corporate Profits

	Finance Act 1982			Finance Act 1983		
	Income tax	Sur-charge	Total	Income tax	Sur-charge	Total
1. Domestic company[1] in which public are substantially interested						
a. if income does not exceed Rs 1 lakh	45	2.5	46.13	55	5.0	57.75[3]
b. if income exceeds Rs 1 lakh	55	2.5	56.37	55	5.0	57.75
2. Domestic company in which public are not substantially interested						
a. in case of industrial company[2]						
i. total income not exceeding Rs 2 lakh	55	2.5	56.37	60	5.0	63.00[3]
ii. total income exceeding Rs 2 lakh	60	2.5	61.50	60	5.0	63.00
b. in case of non-industrial company	65	2.5	66.63	65	5.0	68.00
3. Non-domestic company						
a. on royalties, fees, etc., on which agreement made with Indian company before 1.4.1976 and approved by Government of India	50	2.5	51.25	50	5.0	52.50
b. on the remaining income	70	2.5	71.75	70	5.0	73.50

Notes: 1/ A domestic company is one which has made the prescribed arrangements for declaration and payments within India of dividends payable out of such income in accordance with the provisions of Section 194 of the Income-tax Act, 1961.

2/ An industrial company means a company engaged mainly in the business of generation or distribution of electricity or any other form of power or in the construction of ships or in the manufacture or processing of goods or in mining. The Finance Act 1983-84 widened the scope of the terms 'industrial' company, to include companies engaged in road and inland water ways transport and execution of projects.

3/ The Finance Act 1983, abolished the differentiation in tax rates based on size of income, effective from the assessment year 1983-84.

capital assets or from replacement of a source of income, or through their sale, exchange or transfer, constitute capital receipts and do not form part of taxable income. The base on which the tax is levied is, thus, not comparable with the economist's concept of comprehensive income.

'Total income', in terms of Section 5, is all income that is actually received or is deemed to be received or accrues or arises or is deemed to accrue or arise in India. While in the case of a resident company, the 'total income' is the 'total world income', in the case of a non-resident company, it is the 'total Indian income'.[14] Section 28 deals with the charging of tax on business profits under the head 'business or profession' and the expression used is 'profits and gains', which by convention is determined in the light of commercial accounting principles.

The Finance Act, 1983 introduced a major innovation in the computation of the corporate tax base. A minimum tax base would be mandatory in the case of profit-making companies, thereby eliminating the phenomenon of 'zero-tax base' and 'zero-tax payable' companies. The minimum actual tax base is statutorily fixed at 30 per cent of the operating profits before deduction of fiscal incentives. In effect, the diminution in the tax base due to use of fiscal incentives is now restricted to 70 per cent of the hypothetical tax base.

d. <u>Admissible deductions</u>. The admissible deductions from total receipts' to derive taxable income can be broadly classified into four broad categories:

14/ The tests of residence are laid down in Section 6.

(i)   cost of earning income;

(ii) depreciation allowance;

(iii) off-setting the loss of earlier years; and

(iv) fiscal incentives.

All expenditures involve the outgoing of funds based on some volution. The deductions under (i) are made from 'total receipts' to derive the current year's operating profits. Only revenue expenditures are deductible, according to tests evolved through judicial rulings which distinguish capital expenditure from revenue expenditure.[15] The deduction under (ii), namely, depreciation allowance, is then admissible, followed by deductions under (iii), after which deductions under (iv) can be claimed. The taxable income is thus obtained after all the entitled revenue expenditure, carried-forward losses and fiscal incentives are claimed from the current year's operating profits.

The expenditures and allowances that are permitted to be deducted to arrive at 'taxable income' have to be, according to Section 37, 'wholly and exclusively' incurred for the purpose of carrying on the business or profession. Such expenditures should not be in the nature of a 'personal' or 'capital' expenditure or on account of incentives not being debited in the ordinary course as expenditure. It is in the interpretation of these terms in computing taxable income that differences may and do arise between the assessee and the tax assessor.

15/ Broadly, a capital expenditure is one (i) which is made not only once and for all, but also made with a view to bring into existence an asset for the enduring benefit of trade, (ii) or is made for the initiation of a business, for extension of a business or for a substantial replacement of equipment, (iii) or is incurred to acquire a concern or goodwill, (iv) and is referred to as fixed capital or capital assets and not as circulating capital or stock-in-trade.

The areas of disputes on expenditure items claimed
by companies in India under the income tax law has been
reduced considerably after 1972, when specific formulae
were prescribed. Prior to the introduction of these pres-
criptions, there used to be conflicts between the assessor
and the assessee on the determination of entertainment
expenses, advertisement expenses, commissions and salaries
and benefits to directors.16/ At present, the areas of
disputes relate mainly to the determination of capital and
revenue expenditure, capital and revenue loss, bad and
doubtful debts, computation of incentives and computation
of sur tax; some disputes also arise on the determination
of capital and revenue receipts. In case of disputes, the
claimed expenses are partially disallowed by the assessing
authority, against which decision an appeal may be, and is
often, preferred.

The wholly disallowable expenditures which are
stipulated under Section 40 include cesses and taxes on
profits, contributions to provident funds not recognised
by the Commissioner of Income Tax, interests and salaries
paid outside India without deduction of taxes and provisions
against future contingencies. The partial and wholly
disallowed expenses are added back by the assessing authority
to arrive at taxable income.

16/ The Finance Act 1983, introduced clause 3A and 3B in
   Section 37 to curb certain types of business expendi-
   ture, relating to advertisement, publicity, sales
   promotion, travel by rail, motor car, ship, powered
   craft or aircraft and payments to hotel. The terms
   'entertainment expenditure' and 'guest house' have
   been defined to reduce disputes on conceptual grounds.
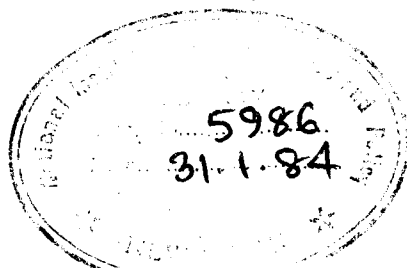
e. <u>Set-off of loss.</u> A loss, as distinct from an expenditure, is an outgoing without volution and Section 72 provides for carry-forward of business loss upto eight years and for set-off against income in the subsequent years. Thus, the tax liability in year 2 will be computed as follows:

$$TL_2 = (Y-X) \cdot t_2$$

where

X = loss in year 1 ;

Y = profits in year 2 ;

t_2 = tax rate in year 2; and

TL_2 = tax liability in year 2.

Only loss incurred in business can be carried forward, and only as long as the business continues; once the business ceases, the carried-forward loss lapses. This system gives rise to a paradoxical situation under which ordinarily a healthy unit has to be merged with a sick unit (known as reverse merger) to allow for carry-forward of loss. Further, a private limited company is not allowed to carry-forward its loss in case there is a change in the controlling interest. The carry-forward of loss is distinguished in the income tax law from the carry-forward of unabsorbed depreciation and fiscal incentives; among the latter two, only in the case of depreciation there is no time period limitation for carry-forward.

f. <u>Depreciation allowance.</u> The permissible deductions examined in sub-section 2(d) are in the nature of current expenses. An important allowable deduction, which is conceptually in the nature of replenishing a capital

asset but whose incidence falls on the revenue account, is
depreciation. The real nature of annual depreciation is
such that a capital cost becomes transferred into a succession
of annual charges against revenue. In terms of commercial
accounting, depreciation is a charge on profits before they
are ascertained (and does not come out of the profits) and
hence, it is not a 'reserve' but only a 'provision'.

The term 'depreciation' is not specifically defined
in the Income-tax Act. It is conventionally used to refer
to wear and tear of plant and machinery on account of its
use. Depreciation is, thus, the diminution in the value of
an asset which occurs with the passage of time, notwithstand-
ing proper and adequate expenditure on maintenance and
repairs.

The purpose of permitting depreciation to be fully
deductible is to enable the company to recover the value of
the ·capital asset over a specified period; the depreciation
provision, however, does not take into account the impact
of inflation, for recoupment of the value of the capital
asset is in terms of its book value and not its real value.
Depreciation provision, as provided under Section 32 also
does not take into account the 'economic life' of the
depreciable asset but is based on a legal fiction of the
'physical life' of the asset. [17]

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[17] That the income tax law takes into consideration only
the 'physical life' of the depreciable capital asset
is clear from Section 32(1), which lays down that a
capital asset has to be physically used to claim
depreciation. Rule 5 of the Income-tax Rules, 1962,
stipulates that the asset should be used for six months
or more in a year to qualify for full depreciation and
that if the asset was used for less than six months,
only a part of the normal depreciation can be claimed.
Under the Taxation Laws (Amendment) Act, 1970, deprecia-
tion is admissible if an asset is used even for a single
day during the assessment year, but prior to this
amendment, an asset had to be used for a minimum period
of 30 days to qualify for depreciation.

Under the income tax law, an assessee is entitled to four types of depreciation allowance:

(i) Normal depreciation allowance on buildings, machinery, plant and furniture under Sections 32(1)(i) and (ii).

(ii) Extra depreciation allowance on machinery and plant for double or triple shift working as specified in Income-tax Rules 1962 (part I of Appendix I).

(iii) An additional depreciation allowance in the first year in the case of any new machinery or plant (other than ships and aircraft) installed after March 31, 1980, but before April 1, 1985, at the rate of one-half of the amount admissible under the normal depreciation allowance, exclusive of extra allowance for double or multiple shift working.

(iv) A special depreciation allowance is granted in selected cases in addition to the above:

(1) In the case of energy saving devices, an additional depreciation of 30 per cent over and above 100 per cent of the actual cost of the asset, effective from the assessment year 1982-83.

(2) An additional depreciation is available under Section 32(1)(iv) for a new building erected after 31st March, 1961 and used for purpose of residence of low-income staff (annual income less than Rs 10,000) as well as for their welfare like creche, hospital, school, library, recreation centre, etc. The additional depreciation is available at the rate of 40 per cent of actual cost of building from the assessment year 1979-80; prior to that the rate applicable was 20 per cent. Further under Section 32(1)(v), additional depreciation is available at 25 per cent of cost to an Indian company in respect of a building completed after 31.3.1967 and used as a hotel.

Generally, the depreciation allowance is computed as a per cent of the written-down value of the 'actual' or 'original' cost of acquiring the capital asset, as defined under Section 43(1). In the case of ships which do not ordinarily ply in inland waters (i.e., ocean-going ships), depreciation allowance is granted on the straight-line basis on the actual cost. Thus, while in the case of assets in general a fixed proportion of the written-down balance of the actual cost is allowable as a depreciation deduction every year, depending on the life of the plant as worked out for fixing the rate of depreciation, in the case of ocean-going ships, the actual cost is annually depreciated equally within the depreciable period (the absolute amount of depreciation remains the same in each

year). While the former system is known as the reducing or declining balance method of depreciation, the latter is known as the straight line method. In both cases, the historical or original cost of the capital asset forms the base for the permissible depreciation. The replacement or present cost concept is not incorporated in the Indian income tax law. The 'physical life' of the asset assumed in the income tax law is implicit in the depreciation rates.

Prior to 1970, assets were classified for purposes of depreciation into 17 different categories, the rate of depreciation ranging from 2.5 per cent to 100 per cent. These categories were reduced to 7 under a scheme for simplification notified on December 12, 1969. These categories were fixed by taking into consideration the useful physical life of an asset and the depreciation rates were fixed at 5 per cent, 10 per cent, 15 per cent, 20 per cent, 30 per cent, 40 per cent and 100 per cent. The depreciation rates for specified plant and machinery are stipulated in Rule 5 of the Income-tax Rules, 1962 (Appendix I, Part I). These rates are reproduced in Table A.1.

No depreciation allowance is admissible for land. The depreciation rates for non-factory buildings are 2.5 per cent, 5.0 per cent and 7.5 per cent, the rates being inversely related to the quality of construction. These rates are doubled for factory buildings. A 100 per cent depreciation is admissible in the case of purely temporary erections, such as wooden structures. The depreciation rate for furniture and fittings is 10 per cent. The general depreciation rate for machinery and plant is also 10 per cent.

Expenditure on small capital assets in the form of machinery and plant upto Rs 5,000 are depreciable fully in the first year, effective from the assessment year 1983-84 and upto Rs 750 prior to that year. An extra depreciation allowance at the rate of 50 per cent of the normal depreciation rate is admissible for hotels and an extra-shift depreciation allowance at the rate of 50 per cent of the normal depreciation is available for a double eight-hour shift and at 100 per cent for a triple shift. All the depreciation allowances are cumulative and the aggregate amount cannot exceed the actual cost; the additional depreciation allowances, thus, only reduce the time period within which the depreciation can be claimed.

The Finance Act, 1983 effective from the assessment year 1983-84, has raised the rate of depreciation by 50 per cent. Thus, the present rates of depreciation are as presented in Table II.2.

In addition to depreciation, an assessee can claim investment allowance on the basis of investment in machinery and plant. The normal rate of investment allowance is 25 per cent of the value of the new asset installed. A higher rate of investment allowance at 35 per cent is granted on assets utilising indigenous technologies and know-how developed in approved national research institutions. The cumulative effect of depreciation and investment allowance is that an assessee can claim between 47.5 per cent and 72.5 per cent of his investment in the first year of operations, provided he has adequate income, as is shown in Table II.2.

Bhoothalingam recommended the abolition of higher rates of depreciation for extra shifts on the ground that in the absence of progressivity in the corporate income tax, the total tax liability over the period of the life-time of the capital asset remained unchanged. This recommendation was not accepted and additional depreciation

TABLE II.2

Rates of Depreciation and Investment Allowances

	Assessment year		(Per cent)	
			1982-83	1983-84
1.	Normal depreciation		10.00	15.00
2.	Double-shift depreciation		15.00	22.50
3.	Triple-shift depreciation		20.00	30.00
4.	Additional depreciation for new plant and machinery[1]		5.00	7.50
5.	Investment allowance[2]	a	25.00	25.00
		b	35.00	35.00
6.	1 + 4 + 5	a	40.00	47.50
		b	50.00	57.50
7.	3 + 4 + 5	a	50.00	62.50
		b	60.00	72.50

Notes: [1] Installed after March 31, 1980 and before April 1, 1985.

[2] a: at 25 per cent, which is the normal rate.

b: at 35 per cent for machinery and plant utilising indigenous techniques and know-how developed in approved national research institutions.

allowance is still permissible under the income tax law.
Among the other recommendations of Bhoothalingam on the
subject of depreciation were: to continue the written-down
value basis, to raise depreciation to 120 per cent of
actual cost so as to mitigate the price effect and to have
only four broad categories of depreciation rates to avoid
unnecessary complications, viz., 5 per cent, 10 per cent,
15 per cent and 20 per cent. The Choksi Committee in its
Interim Report (1977) recommended that the present practice
of allowing depreciation on the reducing balance method,
"which provides for accelerated depreciation by larger
write-offs in the earlier years for assets in general,
should continue" (p. 11) and in the exceptional case of
ocean-going ships, the existing straight line method should
be retained. The Choksi Committee also recommended that in
the case of assets in general, the assessee "should have
the option in respect of the actual quantum of depreciation
to be claimed against the profits from year to year" (p. 11)
subject to some maximum annual rates. The recommended
maximum annual rates of depreciation were 10 per cent for
buildings (including roads, culverts, bridges, etc.), 20
per cent for furniture and fixtures and 40 per cent for
machinery and plant.

The income tax law provides under sub-section
32(2) for carry-forward of the unabsorbed depreciation
allowance indefinitely to be set-off against profits of
subsequent years, if in any particular year the profits
are not adequate to fully provide for the entitled depre-
ciation. There is no question of a lapse of the deprecia-
tion allowance, though Sections 37(4)(ii), 40(e)(ii) and

40(A)(5) permit disallowance of certain expenditure,
partially or wholly. The facility of allowing unabsorbed
depreciation to be carried-forward indefinitely,whereas
loss and investment allowance can be carried-forward only
upto eight years, with unabsorbed depreciation claiming
priority before unabsorbed investment allowance and other
fiscal 'incentives, can give rise to a situation wherein an
assessee may not claim depreciation for a number of years
so that unabsorbed investment allowance and other fiscal
reliefs can be first claimed. It is not specifically
provided in the income tax law that an assessee has to
claim depreciation every year and so he could commence to
claim depreciation from whichever year of the life of the
machinery and plant that he chooses. The year in which the
assessee claims depreciation for the first time would then
be treated as the first year of claim and he can then claim
depreciation according to the stipulated rates for the full
depreciable written-down value. The income tax law also
does not prohibit an assessee from not claiming depreciation
in any particular year/s even if he had claimed it in the
preceding year. According to Section 32 of the Income-tax
Act, depreciation has to be actually claimed and the value
of the machinery and plant has to be actually written off
in the books of the assessee. Thus, an assessee can plan
his depreciation claim in such a way that, in the event of
inadequate income, he may fully claim other fiscal incen-
tives which are time-bound and only subsequently claim
depreciation. [18]

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[18] The spirit of the income tax law would, however, require
that full depreciation be claimed as and when due and
when income is available against which to charge it.
The issue whether an assessee can be compelled to claim
depreciation in the year when it is ordinarily due or
he can claim it in any particular year of his choice
is still an unsettled one.

In case the capital asset is sold, destroyed, demolished or discarded, the difference between the written-down value and the scrap value (if the latter is lower) is allowed as a deduction, known as a 'terminal' benefit. In case the sale proceeds exceed the written-down or book value, the surplus known as a 'balancing charge' is chargeable under Section 41(2) to corporate profits tax in the same way as any other category of income earned by the company.

While the income tax law on depreciation is fairly well-settled, controversies between the assessee and the assessor do arise, mainly in relation to (a) classification of the asset, (b) period of use of the asset, and (c) the 'actual cost' concept, especially in relation to pre-operative expenses and exchange rate fluctuations.

g. **Fiscal incentives.** The major fiscal incentives now available to corporate assessees are the investment allowance (Section 32A), tax holiday (Section 80I) and backward area relief (Section 80HH)[19]. The Finance Act, 1982, introduced two new fiscal incentives relating to, namely, export turnover (Section 89A) and construction contracts abroad (Section 80HHB). The Finance Act, 1983, abolished some of the fiscal incentives like export market development allowance (Section 35B), rural development allowance (Sections 35CC, 35CCA and 80GGA), promotion of livestock breeding, poultry farming or dairy farming (Section 80JJ), and cultivation of mushrooms (Section 80JJA). Further, for promotion of exports, Section 89A relief was replaced by Section 80HHC relief.

19/ For a discussion on individual fiscal incentives, see, Lall (1983).

h. <u>Priorities for set-off.</u> The income tax law
provides for the following priority in the matter of set
off of carry-forward losses, unabsorbed depreciation and
fiscal incentives:

(i) Current year's depreciation and amortised
expenditure on scientific research (Sections
32 and 35).

(ii) Carried forward losses of earlier years (only
from business under certain conditions)
(Section 72(1)).

(iii) Unabsorbed depreciation and amortised expendi-
ture on scientific research for earlier years
(Sections 32(2) and 35(4)).

(iv) Unabsorbed development rebate (Section 33(2)
(ii)).

(v) Current development rebate (Section 33(2)(i)).

(vi) Unabsorbed development allowance (Section
33A(2)(ii)).

(vii) Current development allowance (Section
33A(2)(1)).

(viii) Unabsorbed investment allowance (Section
33A(3)(ii)).

(ix) Current investment allowance (Section
33A(3)(i)).

(x) Unabsorbed capital expenditure on scientific research (Section 35(4)).

(xi) Expenditure on prospecting for certain minerals (Section 35E(4)).

(xii) Expenditure for promoting family planning (Section 36(1)(ix)).

(xiii) Backward area relief (Section 80HH)

(xiiv) Deduction in respect of profits from a new industrial undertaking, ship or hotel (Section 80I(3)).

Symbolically, the taxable income or the tax base could be reduced to the following algebraic form:

$$TI = R_{ct} - E_{ct} + (ED_{pt} + ED_{wt}) - \sum_{i=0}^{i=t} UD_{ti} -$$

$$\sum_{i=(t-7)}^{i=(t-1)} IC_{ti} - \sum_{i=(t-7)}^{i=t} UFR_{ti}$$

where,

TI = taxable income

R_c = current revenue

E_c = current expenditure

ED_{pt} & ED_{wt} = expenditure disallowed, partially and wholly

UD = unabsorbed depreciation

LC = carry-forward loss

UFR = unabsorbed fiscal reliefs

t = current year

t_o = first year of business; and

$t-1$ to $t-7$ = the past seven years.

The statutory corporate profits tax rate is applicable to this taxable income. The effective corporate profits tax rate is the proportion of the actual tax liability to the taxable income plus the value of the fiscal incentives (i.e., the hypothetical tax base in the event of no fiscal incentives). As such, the effective tax rate can be lower than the statutory tax rate.

III. THE CORPORATE SECTOR AND CORPORATE
TAX REVENUE

1. The Corporate Sector

     a. Introduction.   The developments and operations in
the corporate sector appear to be a barometer of the deve-
lopments in the organised sectors of the economy. In the
overall fiscal system, this sector has a crucial role to
play. A large proportion of the tax revenue of the Central
government and to a substantial extent of State governments
too, is generated through operations in this sector. Excise
duties, custom duties, corporate profits tax, income tax,
sales tax and octroi are mainly collected from the corporate
sector directly or indirectly through non-corporate entities
and individuals who provide the inputs and services to the
corporate sector or consume its output and services or
channelise them towards the ultimate consumers. In the case
of the corporate profits tax, the whole revenue is directly
contributed by this sector.

     b. Growth and diversification in corporate sector.
study of the corporate profits tax has to be necessarily
made in the perspective of the developments in the corporate
sector. Over the years, the corporate sector has not only
grown substantially but its activities have also diversified.
In terms of the number of domestic corporate units in opera-
tion in the country, there are, as at the end of March, 1980,
54,780 companies in the public and the private sectors, with
a paid-up share capital of Rs 13,411.6 crore. A decade ago,
there were only 29,009 companies (paid-up share capital of
Rs 4,325.3 crore) and two decades ago, 26,149 companies
(Rs 1,818.5 crore)(Table III.1).

TABLE III.1

Growth of the Indian Corporate Sector

(Rs crore)

Year 1/	Number of companies	Paid-up capital
	(1)	(2)
1960-61	26,149	1,818.5
1961-62	24,975	2,019.1
1962-63	25,622	2,256.4
1963-64	25,932	2,600.8
1964-65	26,153	2,849.8
1965-66	26,765	3,116.3
1966-67	26,918	3,230.1
1967-68	27,332	3,450.2
1968-69	28,024	3,974.3
1969-70	29,009	4,325.3
1970-71	30,461	4,423.6
1971-72	32,612	4,765.0
1972-73	34,922	5,457.3
1973-74	38,383	7,187.3
1974-75	41,804	7,596.1
1975-76	44,489	8,836.9
1976-77	46,856	9,943.5
1977-78	49,179	11,419.6
1978-79	50,653	12,054.6
1979-80	54,780	13,411.6

Note: 1/ As on March 31 of the respective years.

Sources: 1. Government of India, Central Statistical Organisation, Statistical Abstract of India.

2. Government of India, Ministry of Law, Justice and Company Affairs, Annual Reports

The industry-wise composition of corporate enter-
prises and their paid-up share capital brings out clearly
the changing pattern of industrial activity that has taken
place over the last two decades. It highlights the shift
in the direction of corporate investment towards capital-
intensive and non-traditional industries as well as
diversified activities, as can be seen from Table III.2.
Processing and manufacturing industries (in particular,
iron and steel, petroleum, chemicals and other engineering
products) account for 52.4 per cent of the corporate paid-
up share capital in 1979-80 as compared to 38.7 per cent in
1960-61; on the other hand, the share of traditional
activities like agriculture and allied operations, banking
and insurance and services has fallen.

c. <u>Corporate savings and capital formation.</u> The
corporate sector is expected to contribute during the Sixth
Plan period (1980-85) 19.9 per cent of the gross domestic
savings in the economy. While the share of the public
sector enterprises is expected to be 13.9 per cent, that of
the private sector would be 6.0 per cent. Corporate savings
have risen to Rs 2,609 crore in 1978-79 as compared to
Rs 1,472 crore in 1973-74, accounting for 2.9 per cent and
2.5 per cent, respectively, of the gross national product
(Table III.3).

According to the estimates of the Raj Working
Group (1982), gross domestic capital formation by the
private corporate sector increased by over three times
from Rs 661 crore in 1969-70 to Rs 2,756 crore in 1979-80;
in terms of national gross domestic capital formation, the

TABLE III.2

Industrial Composition of the Corporate Sector

(Rs crore)

Industries	1960-61		1970-71		1975-76		1979-80	
	Number of companies	Paid-up capital	Number of companies	Paid-up capital	Number of companies	Paid-up capital	Number of companies	Paid-up capital
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. Agriculture and allied activities	1283 (4.9)	46.2 (2.5)	1253 (4.1)	86.7 (2.0)	1589 (3.6)	107.9 (1.2)	1739 (3.1)	211.0 (1.6)
2. Mining and quarrying	873 (3.3)	134.4 (7.4)	907 (3.0)	401.7 (9.1)	1062 (2.4)	974.1 (11.0)	1078 (2.0)	2021.5 (15.1)
3. Processing and manufacturing	10111 (38.7)	1207.4 (66.4)	13853 (45.5)	3324.5 (75.2)	22056 (49.6)	5218.0 (59.0)	28572 (52.1)	7022.6 (52.4)
4. Construction and utilities	669 (2.6)	54.2 (3.0)	745 (2.4)	81.6 (1.8)	1146 (2.6)	179.4 (2.0)	1537 (2.8)	288.1 (2.1)
5. Commerce (trade and finance)	9461 (36.2)	289.1 (15.9)	9843 (32.3)	398.0 (9.0)	13132 (29.5)	667.9 (7.6)	15655 (28.6)	968.2 (7.2)
6. Transport, communication and storage	1764 (6.7)	61.0 (3.4)	1737 (5.7)	87.4 (2.0)	2101 (4.7)	126.6 (1.4)	2609 (4.8)	187.8 (1.4)
7. Community and business services	613 (2.3)	9.6 (0.5)	857 (2.8)	20.5 (0.5)	1535 (3.5)	1520.9 (17.2)	1256 (2.3)	2629.7 (19.6)
8. Personal and other services	1375 (5.3)	16.5 (0.9)	1266 (4.2)	23.2 (0.5)	1867 (4.2)	42.1 (0.5)	2334 (4.3)	82.7 (0.6)
TOTAL	26149 (100.0)	1818.5 (100.0)	30461 (100.00)	4423.6 (100.0)	44489 (100.0)	8836.9 (100.0)	54780 (100.0)	13411.6 (100.0)

Note: Figures in parentheses are per cent of total.　Source: As in Table III.1

TABLE III.3

Domestic Savings by Sector of Origin, 1973-74,
1978-79 and 1980-85

(Rs crore)

Sector	(at	1973-74 1973-74 prices)	(at	1978-79 1975-76 prices)	(at	1980-85 1979-80 prices)
(1)		(2)		(3)		(4)
1. Public sector		1423		4045		34200
i. government		772		2704		13430
ii. autonomous public enterprises		651		1341		20770
2. Private sector		6824		9868		115447
i. corporate		821		1268		9053
ii. co-operative		65		95		1535
iii. household		5938		8505		104859
3. TOTAL		8247		13913		149647

Note: Figures in parentheses are per cent of GNP.

Source: Government of India, Fifth and Sixth Five Year Plans.

proportionate contribution of the private corporate sector
increased from 10.2 per cent to 11.0 per cent and in terms
of the GDP, it increased from 1.8 per cent to 2.5 per cent.
The gross savings of the private corporate sector has
increased by 62.3 per cent during 1975-76 to 1979-80,
namely, from Rs 1,056 crore to Rs 1,714 crore (Table III.4
and Table III.5).

It needs to be pointed out that in addition to
direct contributions to the gross domestic savings and the
investment effort in the economy as was seen above, the
activities in the corporate sector also generate income,
and consequently savings, in other sectors of the economy,
such as the government sector (through various taxes paid
by the corporate sector) and the household sector (through
payment of factor incomes).

2. Trends in Corporate Profits Tax Revenue

a. Share of corporate profits tax collections. The
significance of the corporate sector in the economy can
also be seen from the contribution of the income tax revenue
from this sector to the total tax revenue of the Government
of India. While the tax[20] contributed 13.1 per cent of the
total tax revenue of the Government of India in 1982-83, in
terms of the tax revenue from all direct taxes its contribu-
tion was 55.0 per cent and in terms of all income taxes it
was 59.9 per cent. These shares show a substantial improve-
ment in the proportionate contribution of the corporate

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[20] Includes the income tax on companies plus surcharge on
the income tax.

TABLE III.4

Gross Domestic Capital Formation and Gross Savings
of the Private Corporate Sector

Year	Gross domestic capital formation					Gross saving in the private corporate sector
	G.D.C.F. [1] (Rs crore)	Per cent of total G.D.C.F.	Per cent of GDP [1]		Per cent of GDP [2]		Per cent of GDP [3]
	(1)	(2)	(3)		(4)		(5)
1950-51	214	18.9	2.2	(...)	2.9	(...)	-
1951-52	251	21.6	2.5	(1.7)	3.1	(3.3)	0.9
1952-53	73	8.5	0.7	(1.1)	0.9	(1.3)	0.9
1953-54	5	0.6	neg.	(0.7)	0.1	(0.8)	0.9
1954-55	144	13.2	1.5	(1.2)	1.5	(1.2)	1.1
1955-56	219	15.4	2.1	(2.2)	2.2	(3.3)	1.2
1956-57	341	18.0	2.9	(2.8)	3.2	(3.0)	1.2
1957-58	390	20.1	3.3	(2.7)	3.7	(2.9)	1.1
1958-59	238	13.7	1.8	(2.4)	1.8	(2.6)	1.1
1959-60	297	14.1	2.1	(2.5)	2.2	(2.5)	1.4
1960-61	535	20.7	3.6	(3.1)	3.5	(3.4)	1.7
1961-62	738	27.5	4.6	(3.8)	4.4	(3.6)	2.0
1962-63	533	17.5	3.1	(4.0)	3.0	(3.6)	2.0
1963-64	861	24.4	4.4	(3.8)	4.3	(3.8)	1.9
1964-65	898	22.1	3.9	(3.7)	4.0	(3.8)	1.8
1965-66	696	15.7	2.9	(3.0)	3.1	(3.8)	1.6
1966-67	615	11.6	2.2	(2.5)	2.4	(3.2)	1.4
1967-68	809	14.2	2.5	(2.3)	2.7	(2.7)	1.3
1968-69	756	13.7	2.3	(2.2)	2.4	(2.5)	1.3
1969-70	661	10.2	1.8	(2.2)	1.8	(2.3)	1.5

TABLE III.4 (Contd.)

	(1)	(2)	(3)	(4)	(5)
1970-71	1030	14.0	2.6 (2.5)	2.6 (2.3)	1.6
1971-72	1287	15.3	3.0 (2.8)	3.0 (2.5)	1.6
1972-73	1331	15.6	2.8 (2.9)	2.9 (3.0)	1.7
1973-74	1630	14.4	2.8 (3.2)	3.0 (3.0)	1.8
1974-75	2707	18.6	3.9 (3.2)	3.9 (3.2)	1.8
1975-76	2139	13.0	2.9 (2.9)	2.6 (2.8)	1.6
1976-77	1628	9.2	2.0 (2.5)	1.9 (3.3)	1.4
1977-78	2237	12.1	2.5 (2.3)	2.4 (2.2)	1.5
1978-79	2475	10.9	2.5 (2.5)	2.3 (2.3)	1.6
1979-80	2756	11.0	2.5 (...)	2.3 (...)	-

Notes: 1/ At current prices

     2/ At 1970-71 prices

     3/ Three yearly moving averages at current prices.

     Figures in parentheses represent three-yearly moving averages.

Source: Report of the working group on savings (Raj Group), 1982.

TABLE III.5

Gross Savings in the Economy

Year	Household sector	Private corporate sector	Public sector	(Rs crore) Total
	(1)	(2)	(3)	(4)
1975-76	10,448	1,056	3,339	14,853
1976-77	12,454	1,161	4,124	17,739
1977-78	14,025	1,385	4,088	19,498
1978-79	17,177	1,543	4,657	23,377
1979-80	17,326	1,714	4,015	23,055

Source: Report of the working group on savings (Raj Group), 1982.

profits tax during the last two decades as can be seen from Table III.6. While the proportion of corporate profits tax to total tax revenue has gone up from 12.7 per cent in 1960-61 to 13.1 per cent in 1982-83 (only during 1961-62 to 1966-67 was the proportion higher than the present level). In terms of total income tax revenue, the contribution has gone up from 39.4 per cent to 59.9 per cent during the same period. In absolute terms, the revenue from corporate profits tax increased more than twenty-fold from Rs 109.7 crore in 1960-61 to Rs 2,339 crore in 1982-83 (revised estimate); it was expected to rise to Rs 2,386.0 crore in 1983-84 (budget estimate).

b. Growth of corporate profits tax revenue collections. The average annual corporate profits tax revenue in India over the 23-year period 1960-61 to 1982-83 works out to Rs 725.5 crore; a comparison of this with the annual averages for five-year sub-periods shows how this tax has grown over the years. The average annual corporate profits tax revenue during the quiquennium 1960-61 to 1964-65 was Rs 215.3 crore; it increased to Rs 325.8 crore during 1965-66 to 1969-70, to Rs 547.8 crore during 1970-71 to 1974-75 and to Rs 1,139.6 crore during 1975-76 to 1979-80; it averaged Rs 1,937.3 crore during 1980-81 to 1982-83.

The average annual compound growth of corporate profits tax revenue was 12.5 per cent during the period 1960-61 to 1982-83. This overall growth rate conceals sharp year and sub-period variations. Thus, for instance, during the period 1960-61 to 1964-65, the average annual

TABLE III.6

Share of Corporate Profits Tax Revenue in Central Government Revenue

(Rs crore/per cent)

Year	Corporate profits tax revenue	Total tax revenue[1]	Share of corporate profits tax in total revenue	Total direct tax revenue[2]	Share of corporate profits tax in total direct tax revenue	Total income tax revenue[3]	Share of corporate profits tax in total income tax revenue
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1960-61	109.70	854.81	12.68	292.06	37.56	278.43	39.40
1961-62	156.46	1038.28	15.07	336.72	46.47	321.85	48.61
1962-63	221.50	1267.48	17.48	422.69	52.40	407.46	54.36
1963-64	274.05	1613.94	17.01	549.61	49.96	533.19	51.50
1964-65	314.05	1798.05	17.47	599.04	52.43	580.60	54.09
1965-66	304.84	2035.19	14.98	598.30	50.95	576.64	52.86
1966-67	328.90	2275.58	14.45	656.43	50.10	637.59	51.58
1967-68	310.51	2515.85	12.71	639.92	49.95	620.00	51.57
1968-69	299.77	2592.04	12.42	680.09	47.35	660.00	48.79
1969-70	353.40	2774.21	12.73	826.59	42.75	801.85	44.07
1970-71	370.52	3152.11	11.75	869.54	42.61	843.69	43.92
1971-72	472.07	3803.56	12.41	1046.79	45.10	1008.81	46.79
1972-73	557.86	4422.78	12.61	1241.89	44.92	1187.79	46.96
1973-74	582.60	5073.38	11.48	1390.70	41.89	1327.76	43.88
1974-75	709.48	6321.75	11.22	1652.61	42.93	1583.89	44.79

TABLE III.6 (Contd.)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1975-76	861.70	7608.78	11.33	2163.60	39.83	2076.06	41.51
1976-77	984.23	8270.95	11.90	2276.65	43.24	2178.61	45.18
1977-78	1220.77	8858.38	13.78	2311.14	52.82	2222.79	54.92
1978-79	1251.47	10525.10	11.89	2534.70	49.37	2428.86	51.52
1979-80	1391.90	11973.65	11.62	2825.75	49.26	2732.21	50.94
1980-81	1310.79	14667.86	8.94	2917.18	44.93	2817.18	46.53
1981-82	1962.00	15754.32	12.45	3591.93	54.62	3482.00	56.35
1982-83 4/	2339.00	17910.54	13.06	4254.00	54.98	3902.00	59.94
1983-84 5/	2386.00	20680.26	11.54	4337.10	55.01	4063.60	58.72

Notes: 1/ Includes tax revenue from direct and indirect taxes, including States' shares of taxes which are collected by the Centre but shared with the States.

2/ Includes taxes on income, estate duty, wealth tax and gift tax, including States' share in them.

3/ Includes taxes on personal and corporate income, including States' share in them.

4/ Revised estimate.

5/ Budget estimate.

Sources: 1. Government of India, Ministry of Finance, Indian Economic Statistics, Public Finance.

2. Government of India, Ministry of Finance, Union Budgets.

growth of corporate profits tax revenue was 30.6 per cent;
the growth rate declined sharply to 2.7 per cent during
1965-66 to 1969-70 and then improved to 15.3 per cent
during 1970-71 to 1974-75; it was 17.1 per cent during
1975-76 to 1982-83 (Table III.6).

c. Trends in assessed corporate income. The data on
assessed income and assessed tax relate to assessment years
and are compiled from the All India Income Tax Statistics
(AIITS), published by the Ministry of Finance, Directorate
of Inspection (Research, Statistics and Publications).
These data are not wholly comparable with the actual
revenue collection data presented in the annual budgets of
the Central government. A difference arises because the
budget data relate mainly to advance payments of the tax
for the current year and the collections of arrears of
earlier years; in effect, a large part consists of non-
assessed collections relating to the income in the same
financial year. On the other hand, the AIITS data relate
to assessments completed during the year, relating to the
previous financial year and to pending assessments of
earlier years.

There were 13,395 corporate profits tax assessees
in India in the assessment year 1980-81 as compared to
15,386 in 1960-61; the highest number of assessees were
in the assessment year 1971-72, namely, 19,722. There
was, however, a substantial increase in assessed corporate
income and assessed tax during the last two decades,
assessed corporate income increasing from Rs 258.2 crore

to Rs 1,511.3 crore and assessed corporate tax from Rs 189.7
crore to Rs 876.3 crore. Assessed corporate tax as a per
cent of assessed corporate income, which represents the
average tax rate of all the corporate assessees taken
together, was 58.0 per cent in 1980-81 and ranged between
53.4 per cent and 60.0 per cent during the seventies.
In earlier years, this proportion fluctuated between 48.2
per cent and 73.5 per cent (Table III.7).

d. Composition of assessed corporate income. Over the
period 1960-61 to 1980-81, for which comparable income tax
assessment data are available, some changes in the composi-
tion of assessed corporate income and tax were observed and
which reflect the structural changes that took place in the
organised corporate sector. The most significant change
was seen in the case of assessees earning income through
'business and professions', a category of assessees repre-
senting direct corporate activities in the trading, manufac-
turing and services sectors. The proportion of such
corporate assessees to all corporate assessees increased
from 53.8 per cent in 1960-61 to 59.0 per cent in 1971-72
and 70.2 per cent in 1977-78 and 74.5 per cent in 1980-81;
their share of total assessed corporate income and total
assessed corporate tax increased from 83.7 per cent in both
cases in 1960-61 to 91.1 per cent and 92.4 per cent,
respectively, in 1980-81. Therefore, the contribution of
other sources of corporate income declined. Dividend
income which contributed 8.6 per cent of total assessed
income in 1960-61, accounted for only 2.4 per cent in
1980-81. Capital gains became more important than in the
past, but its contribution to total corporate income was

Year/Source of income	Interest on securities	Property income
(1)	(2)	(3)
1960-61		
a. Number of companies	1585 (10.30)	1360 (8.84)
b. Assessed income	7.92 (3.07)	2.48 (0.96)
c. Tax yield	5.81 (3.06)	1.89 (1.00)
1965-66		
a. Number of companies	1187 (6.77)	1232 (7.03)
b. Assessed income	6.67 (1.69)	7.26 (1.84)
c. Tax yield	3.27 (1.72)	4.12 (2.17)
1971-72		
a. Number of companies	1030 (5.22)	1412 (7.16)
b. Assessed income	17.85 (1.45)	13.46 (1.09)
c. Tax yield	10.06 (1.43)	7.98 (1.14)

TABLE III.7

Corporate Income and Tax Yield

(Number/Rs crore)

Business and professions	Dividends	Capital gains	Others	Total
(4)	(5)	(6)	(7)	(8)
8280 (53.82)	1750 (11.37)	202 (1.31)	2209 (14.36)	15386 (100.00)
21.60 (83.65)	22.28 (8.63)	0.93 (0.36)	8.60 (3.33)	258.18 (100.00)
158.69 (83.67)	16.60 (8.7)	0.28 (0.15)	6.31 (3.33)	189.67 (100.00)
9341 (53.29)	1972 (11.25)	363 (0.07)	3433 (19.59)	17528 (100.00)
321.05 (81.32)	35.92 (9.10)	2.19 (0.55)	21.71 (5.50)	394.80 (100.00)
160.88 (84.59)	14.17 (7.45)	0.87 (0.46)	6.87 (3.61)	190.18 (100.00)
11631 (58.97)	1639 (8.37)	880 (4.46)	3130 (15.87)	19722 (100.00)
1090.59 (88.59)	53.15 (4.32)	14.98 (1.21)	41.15 (3.34)	1231.11 (100.00)
620.79 (88.50)	31.68 (4.52)	6.99 (1.00)	23.95 (3.41)	701.45 (100.00)

	(1)	(2)	(3)
1975-76			
a.	Number of companies	536 (3.21)	985 (5.90)
b.	Assessed income	15.44 (1.73)	6.23 (0.70)
c.	Tax yield	8.76 (1.67)	3.85 (0.74)
1976-77			
a.	Number of companies	482 (2.85)	924 (5.45)
b.	Assessed income	11.13 (1.19)	6.58 (0.70)
c.	Tax yield	6.75 (1.20)	3.86 (0.69)
1977-78			
a.	Number of companies	521 (2.86)	1008 (5.54)
b.	Assessed income	12.89 (1.18)	5.24 (0.48)
c.	Tax yield	7.53 (1.16)	3.24 (0.50)

III.7 (Contd.)

(4)	(5)	(6)	(7)	(8)
11362	1018	572	2223	16696
(68.05)	(6.10)	(3.43)	(13.31)	(100.00)
803.25	32.94	11.03	23.74	892.63
(89.99)	(3.69)	(1.24)	(2.66)	(100.00)
470.33	21.35	5.20	14.28	523.75
(89.80)	(4.08)	(0.99)	(2.73)	(100.00)
11911	953	605	2034	16939
(70.32)	(5.80)	(3.57)	(12.01)	(100.00)
855.17	26.47	11.22	22.11	932.70
(91.69)	(2.84)	(1.20)	(2.38)	(100.00)
512.89	17.42	5.49	13.58	559.98
(91.59)	(3.12)	(0.98)	(2.42)	(100.00)
12789	1105	572	2213	18208
(70.24)	(6.07)	(3.14)	(12.15)	(100.00)
1005.14	25.99	13.34	37.49	1100.08
(91.37)	(2.36)	(1.20)	(3.41)	(100.00)
595.26	14.37	6.44	21.73	648.57
(91.78)	(2.22)	(0.99)	(3.35)	(100.00)

	(1)	(2)	(3)
1978-79			
a.	Number of companies	437 (3.07)	716 (5.04)
b.	Assessed income	28.52 (2.06)	5.89 (0.42)
c.	Tax yield	16.65 (2.09)	3.61 (0.45)
1979-80			
a.	Number of companies	437 (3.03)	817 (5.66)
b.	Assessed income	35.58 (1.69)	12.77 (0.61)
c.	Tax yield	20.72 (1.85)	8.24 (0.73)
1980-81			
a.	Number of companies	340 (2.54)	573 (4.28)
b.	Assessed income	14.68 (0.97)	8.70 (0.58)
c.	Tax yield	8.60 (0.98)	5.41 (0.62)

Note: Figures in parentheses are   Source
       percentages to total.

TABLE III.7 (Contd.)

(4)	(5)	(6)	(7)	(8)
10157	853	449	1607	14219
(71.43)	(6.03)	(3.16)	(11.30)	(100.00)
1291.14	26.03	6.51	28.09	1386.23
(93.14)	(1.83)	(0.47)	(2.03)	(100.00)
746.23	14.13	3.45	14.32	798.39
(93.47)	(1.77)	(0.43)	(1.79)	(100.00)
10225	864	442	1655	14440
(70.81)	(5.9)	(3.06)	(11.46)	(100.00)
1970.62	49.6	4.54	27.67	2100.80
(93.80)	(2.3)	(0.22)	(1.32)	(100.00)
1044.91	28.5	2.55	15.89	1120.84
(93.23)	(2.55)	(0.22)	(1.42)	(100.00)
9974	703	396	1409	13395
(74.46)	(5.25)	(2.96)	(10.51)	(100.00)
1376.50	36.88	6.71	67.87	1511.34
(91.08)	(2.44)	(0.44)	(4.49)	(100.00)
809.76	17.77	3.77	31.02	876.33
(92.40)	(2.03)	(0.43)	(3.54)	(100.00)

?: Government of India, Ministry of Finance, "All India Income Tax Statistics". Data for assessment years 1970-71 and 1973-74 have not been published.

still small (0.4 per cent). There was a substantial decline in the share of corporate income from interest on securities and from property (Table III.7).

e. Generation of corporate income,[21] Together with the structural changes in the composition of assessed corporate income, changes were also observed in the relative contribution of corporate income from different economic activities in conformity with the structural transformation that took place in the corporate sector. The proportion of total corporate assessees engaged in the engineering and chemical manufacturing industries increased from 14.1 per cent in 1960-61 to 23.2 per cent in 1980-81; the proportion of their assessed corporate income and assessed tax also increased. The share of assessed corporate income and tax also increased in the case of assessees operating in other capital-intensive industries like cement, rubber and paper, while those of assessees engaged in traditional activities like primary industries (such as foodstuff and beverages), textiles and leather goods, commerce, transport and communications and finance, declined. In a few activities such as construction, utilities, and professional services, there was also some increase in their proportionate shares (Table III.8).

21/ The analyses in sub-sections 'e' and 'f' relate to corporate income from 'business and professions' - a source accounting for over 90 per cent of assessed corporate income and tax.

TABLE III.8

Assessees, Assessed Income and Tax Yield of Companies : Industry-Wise Break-Up

(Number/Rs crore)

Year/Industry group	Forestry, mining and quar- rying	Primary industries (manufac- ture of foodstuffs and bever- ages)	Textiles and leather	Metals and chemicals and their products	Cement rubber and paper	Construc- tion and utilities	Commerce transport and commu- nication	Finance	Profess- ions	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1960-61										
a. Number of companies	229 (2.77)	722 (8.72)	508 (6.14)	1169 (14.12)	675 (8.16)	317 (3.83)	2885 (34.84)	1419 (17.14)	355 (4.29)	8280 (100.00)
b. Assessed income	7.75 (3.59)	25.21 (11.67)	26.13 (12.10)	45.95 (21.27)	17.10 (8.15)	7.64 (3.54)	47.14 (21.84)	35.39 (16.38)	3.16 (1.46)	215.16 (100.00)
c. Tax yield	0.57 (0.36)	18.67 (11.76)	19.02 (11.98)	34.96 (22.03)	13.07 (8.23)	5.80 (3.66)	36.16 (22.79)	23.04 (17.74)	2.31 (1.45)	158.69 (100.00)
1965-66										
a. Number of companies	223 (2.50)	631 (6.76)	570 (6.11)	1498 (16.05)	866 (9.28)	287 (3.08)	3842 (41.07)	1123 (12.04)	291 (3.12)	9341 (100.00)
b. Assessed income	6.09 (1.89)	29.53 (9.20)	50.20 (15.63)	78.84 (24.55)	30.80 (9.60)	12.64 (3.94)	69.90 (21.77)	39.68 (12.36)	3.38 (1.05)	321.05 (100.00)
c. Tax yield	3.15 (1.96)	14.97 (9.31)	24.10 (14.98)	39.57 (21.59)	14.31 (8.90)	6.33 (3.93)	36.29 (22.55)	20.51 (12.75)	1.65 (1.03)	160.88 (100.00)
1971-72										
a. Number of companies	302 (2.60)	861 (7.40)	721 (6.20)	2470 (21.24)	1211 (10.41)	319 (2.74)	4102 (35.27)	1158 (9.96)	487 (4.19)	11631 (100.00)
b. Assessed income	21.77 (2.00)	112.60 (10.32)	116.91 (10.72)	300.86 (27.59)	132.21 (12.12)	29.76 (2.73)	186.20 (17.07)	183.42 (16.82)	6.86 (0.63)	1090.59 (100.00)

		(1)	(2)	(3)	(4)	(5)
c.	Tax yield	12.13 (1.95)	63.65 (10.25)	64.96 (10.46)	170.35 (27.44)	

1975-76

		(1)	(2)	(3)	(4)	(5)
a.	Number of companies	197 (1.73)	726 (6.39)	683 (6.01)	2298 (20.23)	
b.	Assessed income	10.80 (1.35)	81.77 (10.18)	81.63 (10.16)	310.15 (38.61)	
c.	Tax yield	6.43 (1.37)	47.96 (10.20)	47.35 (10.07)	182.75 (38.86)	

1976-77

		(1)	(2)	(3)	(4)	(5)
a.	Number of companies	167 (1.40)	700 (5.88)	634 (5.32)	2487 (20.88)	
b.	Assessed income	19.14 (2.23)	68.99 (8.07)	106.40 (12.44)	278.82 (32.60)	
c.	Tax yield	12.58 (2.45)	41.05 (8.00)	62.53 (12.19)	164.04 (31.98)	

1977-78

		(1)	(2)	(3)	(4)	(5)
a.	Number of companies	138 (1.08)	920 (7.19)	772 (6.04)	2954 (23.09)	
b.	Assessed income	29.84 (2.97)	86.94 (8.65)	141.22 (14.05)	293.66 (29.22)	
c.	Tax yield	16.89 (2.84)	52.61 (8.84)	82.42 (13.85)	173.50 (29.15)	

III.8 (Contd.)

(6)	(7)	(8)	(9)	(10)	(11)
72.50	17.80	113.70	101.61	4.09	620.79
(11.68)	(2.87)	(18.32)	(16.37)	(0.66)	(100.00)
1239	228	4212	1217	562	11362
(10.90)	(2.01)	(37.07)	(10.71)	(4.95)	(100.00)
90.25	11.02	106.07	103.14	8.43	803.26
(11.24)	(1.37)	(13.20)	(12.84)	(1.05)	(100.00)
54.28	6.43	66.95	53.33	4.84	470.32
(11.54)	(1.37)	(14.23)	(11.34)	(1.02)	(100.00)
1167	257	4817	1113	569	11911
(9.79)	(2.16)	(40.44)	(9.34)	(4.79)	(100.00)
144.69	11.30	159.36	57.92	9.26	855.18
(16.85)	(1.32)	(18.63)	(6.78)	(1.08)	(100.00)
86.49	6.47	91.46	35.43	5.86	512.91
(16.86)	(1.26)	(17.20)	(6.91)	(1.15)	(100.00)
1319	286	4505	1159	736	12789
(10.31)	(2.24)	(35.23)	(9.06)	(5.76)	(100.00)
139.52	33.21	104.46	162.15	14.11	1005.13
(13.88)	(3.30)	(10.39)	(16.13)	(1.41)	(100.00)
80.94	20.29	67.45	91.91	9.23	595.24
(13.60)	(3.40)	(11.33)	(15.44)	(1.55)	(100.00)

	(1)	(2)	(3)	(4)	(5)
1978-79					
a. Number of companies	131 (1.29)	790 (7.78)	597 (5.88)	2191 (21.57)	
b. Assessed income	20.55 (1.59)	91.07 (7.05)	129.84 (10.06)	439.82 (34.06)	
c. Tax yield	12.10 (1.62)	56.07 (7.51)	75.97 (10.18)	240.27 (32.21)	
1979-80					
a. Number of companies	111 (1.09)	734 (7.18)	569 (5.56)	2311 (22.60)	
b. Assessed income	40.15 (2.04)	102.94 (5.22)	157.85 (8.01)	539.99 (27.40)	
c. Tax yield	24.52 (2.35)	64.72 (6.19)	96.02 (9.19)	313.44 (29.99)	
1980-81					
a. Number of companies	111 (1.11)	662 (6.64)	599 (6.01)	2312 (23.18)	
b. Assessed income	46.05 (3.35)	112.03 (8.14)	137.51 (9.99)	465.54 (33.82)	
c. Tax yield	26.72 (3.30)	68.09 (8.41)	79.65 (9.84)	271.71 (33.55)	

Notes: 1. Relates to income of companies from business

2. Figures in parentheses are percentages t

TABLE III.8 (Contd.)

(6)	(7)	(8)	(9)	(10)	(11)
935	269	3693	1024	527	10157
(9.21)	(2.65)	(36.36)	(10.07)	(5.19)	(100.00)
105.88	11.29	191.31	289.46	11.91	1291.13
(8.21)	(0.87)	(14.82)	(22.42)	(0.92)	(100.00)
61.43	6.86	122.99	163.14	7.38	746.21
(8.23)	(0.92)	(16.48)	(21.86)	(0.99)	(100.00)
994	269	3724	1002	511	10225
(9.72)	(2.63)	(36.42)	(9.80)	(5.00)	(100.00)
224.78	62.63	179.16	642.41	20.71	1970.62
(11.41)	(3.18)	(9.09)	(32.60)	(1.05)	(100.00)
121.21	39.33	111.05	260.99	13.54	1044.92
(11.60)	(3.76)	(10.63)	(24.98)	(1.31)	(100.00)
817	219	3972	878	404	9974
(8.19)	(2.20)	(39.82)	(8.80)	(4.05)	(100.00)
192.08	56.45	182.01	176.93	7.89	1376.49
(13.95)	(4.10)	(13.22)	(12.85)	(0.58)	(100.00)
109.89	32.69	113.43	102.75	4.84	809.77
(13.57)	(4.04)	(14.01)	(12.68)	(0.60)	(100.00)

and professions. Source: Same as in Table III.6

;o total.

The above trends relating to both private and
public sector corporate assessees were thus found to be in
line with the diversification that occurred in the industrial
sector in favour of relatively modern and capital-intensive
activities.

f.   Concentration of assessed income among the assessees.
The annual taxable income of the majority of corporate
assessees was found to be small; more than two-third of the
12,789 corporate assessees in 1980-81 with corporate income
from 'business and professions' had an annual income of upto
R's 50,000. The combined assessed income of this large pro-
portion of the corporate assessees was only 1.3 per cent of
the total assessed income of all corporate assessees and their
assessed tax was 1.4 per cent of the total assessed corporate
profits tax revenue of Rs 809.8 crore obtained from corporate
income originating in business or profession. Further, the
relative share over time of such small-income assessees fell
from 4.6 per cent of the total assessed income and 4.5 per
cent of total assessed tax in 1960-61. On the other hand,
corporate assessees with annual assessed income of Rs 1 lakh
or more, who constituted 23.2 per cent of the total corporate
assessee population in 1980-81, accounted for 97.8 per cent
of the total assessed income and 97.2 per cent of the total
assessed tax. These proportions were higher than in 1960-61,
when such assessees accounted for 97.1 per cent of total
assessed income and total assessed tax (Table III.9).

TABLE III.9

Size-Wise Distribution of Assessed Corporate

Income and Tax Yield

Year/Income class (Rs)	0 - 25,000	25,001 - 50,000	50,001 - 1,00,000	1,00,001 and above	Total
(1)	(2)	(3)	(4)	(5)	(6)
1960-61					
a. Number of companies	4419 (53.37)	1019 (12.31)	864 (10.43)	1978 (23.89)	8280 (100.00)
b. Assessed income	6.06 (2.81)	3.88 (1.79)	6.53 (3.03)	199.49 (92.37)	215.96 (100.00)
c. Tax yield	4.29 (2.70)	2.85 (1.80)	4.89 (3.08)	146.66 (92.42)	158.69 (100.00)
1965-66					
a. Number of companies	4567 (48.89)	1135 (12.15)	1093 (11.70)	2546 (27.26)	9341 (100.00)
b. Assessed income	5.61 (1.75)	4.07 (1.27)	7.52 (2.34)	303.85 (94.64)	321.05 (100.00)
c. Tax yield	2.89 (1.80)	2.06 (1.28)	3.89 (2.42)	152.05 (94.51)	160.88 (100.00)
1971-72					
a. Number of companies	4559 (39.20)	1363 (11.72)	1314 (11.29)	4395 (37.79)	11631 (100.00)
b. Assessed income	6.56 (0.60)	5.60 (0.51)	10.02 (0.92)	1068.42 (97.97)	1090.59 (100.00)
c. Tax yield	3.99 (0.64)	3.33 (0.54)	5.91 (0.95)	607.56 (97.87)	620.79 (100.00)
1975-76					
a. Number of companies	5130 (45.15)	1390 (12.23)	1338 (11.78)	3504 (30.84)	11362 (100.00)
b. Assessed income	6.20 (0.77)	5.45 (0.68)	10.40 (1.29)	781.20 (97.25)	803.25 (100.00)
c. Tax yield	3.70 (0.79)	3.45 (0.73)	6.51 (1.38)	456.67 (97.10)	470.33 (100.00)
1976-77					
a. Number of companies	5194 (43.61)	1538 (12.91)	1532 (12.86)	3647 (30.62)	11911 (100.00)

TABLE III.9 (Contd.)

(1)		(2)	(3)	(4)	(5)	(6)
b.	Assessed income	5.61 (0.66)	6.07 (0.71)	11.42 (1.34)	832.07 (97.29)	855.17 (100.00)
c.	Tax yield	3.53 (0.68)	3.83 (0.75)	7.10 (1.38)	498.43 (97.19)	512.89 (100.00)
1977-78						
a.	Number of companies	6355 (49.69)	1475 (11.53)	1383 (10.82)	3576 (27.96)	12789 (100.00)
b.	Assessed income	5.50 (0.55)	5.70 (0.57)	10.60 (1.05)	983.34 (97.83)	1005.14 (100.00)
c.	Tax yield	3.32 (0.56)	3.64 (0.61)	6.59 (1.11)	581.71 (97.72)	595.26 (100.00)
1978-79						
a.	Number of companies	4319 (42.52)	1217 (11.98)	1899 (18.70)	2722 (26.80)	10157 (100.00)
b.	Assessed income	6.54 (0.51)	5.48 (0.42)	21.72 (1.68)	1257.39 (97.39)	1291.14 (100.00)
c.	Tax yield	3.61 (0.48)	3.47 (0.47)	13.55 (1.82)	725.61 (97.23)	746.23 (100.00)
1979-80						
a.	Number of companies	4301 (42.06)	1312 (12.83)	1982 (19.38)	2630 (25.73)	10225 (100.00)
b.	Assessed income	4.98 (0.25)	6.08 (0.31)	22.75 (1.15)	1936.82 (98.29)	1970.62 (100.00)
c.	Tax Yield	3.16 (0.30)	3.82 (0.37)	14.55 (1.39)	1023.39 (97.94)	1044.91 (100.00)
1980-81						
a.	Number of companies	3889 (38.99)	1463 (14.67)	1809 (18.14)	2813 (28.20)	9974 (100.00)
b.	Assessed income	3.94 (0.29)	6.74 (0.49)	28.11 (2.04)	1337.70 (97.18)	1376.50 (100.00)
c.	Tax yield	2.53 (0.31)	4.28 (0.53)	17.04 (2.10)	785.92 (97.06)	809.76 (100.00)

Notes: 1. Data relate to corporate income from business and professions only.

2. Figures in parentheses are percentages to total.

Source: Same as in Table III.6.

If a further break-up of such large income corporate assessees were available, say, of corporate assessees having annual assessed income exceeding Rs 10 lakh or Rs 25 lakh, the degree of concentration might be found to be even greater.

The fact that a small proportion of corporate assessees (less than 3,000) account for almost the entire assessed corporate income and assessed tax revenue, carries with it policy implications for corporate profits tax administration.

IV. SENSITIVITY OF THE CORPORATE
PROFITS TAX

Conceptual Issues

The degree of responsiveness or sensitivity of the corporate profits tax to changes in national income is reflected in its buoyancy and elasticity coefficients. Both these coefficients are relevant in a sensitivity analysis as the growth in corporate profits tax yield may be the result of natural growth through the built-in income elasticity of the tax (as the tax base expands with an increase in the national income) or it may be the result of discretionary changes (such as changing the tax rate, introducing a new tax measure, say a surcharge or a relief, or abolishing an existing tax measure or relief).

The measure of buoyancy shows the percentage change in the actual yield of the tax for a one per cent change in national income or other relevant base and the elasticity coefficient gives the percentage automatic change in the net yield of the tax in response to a one per cent change in national income or the relevant base. The basic difference between these two measures of tax sensitivity is that the tax elasticity coefficient shows what the revenue response would have been, had no tax law changes taken place, while the buoyancy coefficient measures the actual relationship between the change in tax and the change in income. [22]

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[22] The major techniques that have been developed for removing the effects of discretionary changes in order to measure the elasticity coefficient are the proportional adjustment method, the constant rate method, the dummy variable method and the Divisia index method. For a discussion on the conceptual differences and the relative merits of the alternative methods, see Bahl (1971, 1972) and Rao (1979)

The elasticity of the corporate profits tax with respect to national income is a product of the elasticity of the tax yield with respect to the tax base and the elasticity of the tax base with respect to national income. If the ratio of the tax yield to the tax base rises over time, the elasticity of the tax yield with respect to the tax base will be ' greater than one and when this ratio falls over time, the elasticity will be less than one. However, under a proportional tax system, like the corporate profits tax system in India, the ratio of the tax yield to the tax base will remain constant and the elasticity of the tax yield with respect to the tax base will be equal to one. This being so, the elasticity of the corporate tax yield with respect to national income will depend only upon the elasticity of the tax base with respect to national income.

2. Earlier Estimates

a. Sahota's estimates. The estimates of Sahota, G. S., (1961) related to the period 1951-52 to 1957-58. The coefficients were found to be high, the elasticity coefficient being 1.25 and the buoyancy coefficient 1.47. These values indicated a highly elastic and buoyant corporate profits tax.

Sahota did not specify the data used to compute the coefficients. During the period which he covered, the super tax was shown as corporation tax and the income tax on companies was shown under the general category 'income tax'. It would seem that he included both the super tax and the income tax on companies, the break-up of which was available in the Explanatory Memorandum to the Budgets, because our

own estimate of the elasticity coefficients, based on such
data for the same period, gives a fairly similar result
(1.19).

Sahota did not offer any explanation for the highly
buoyant and elastic corporate profits tax which he
observed. 23/ One possible reason for the high coefficients
seemed to be the negligible role of fiscal incentives during
the Sahota study period. The main tax base-reducing fiscal
relief was the development rebate, which was available only
towards the end of the study period, i.e., from 1955. 24/
Further, a fiscal relief can reduce the base to income
elasticity but not the tax to base elasticity. On the other
hand, corporate activity increased sharply during this
period, the total paid-up share capital rising from Rs 855.8
crore in 1951-52 to Rs 1,306.3 crore in 1957-58 end.

23/ He did examine the reasons which could explain the
overall inelasticity of the Indian tax structure during
the study period, pointing out in particular to the
inelasticity of the (personal) income tax and the land
tax.

24/ The difference between the statutory tax rate for public
limited companies (45.0 per cent) and their average
effective tax rate (44.1 per cent) was, therefore,
negligible. In the case of private limited companies
for the period for which comparable effective tax rate
data are available in the RBI studies on company
finances (1955-56 to 1957-58), a difference between the
statutory corporate profits tax rate (60 per cent) and
the effective corporate profits tax rate (56.2 per cent)
was observed, but tax provision by private limited
companies constituted about one-third of the corporate
profits tax provision of the private corporate sector,
as estimated by the RBI for the period 1955-56 to
1957-58.

oorporate tax revenue growing annually by 2.68 per cent as compared to the annual compound growth in NDP by 2.26 per cent. As a result of these factors, the elasticity of the corporate profits tax was observed to be more than unity.[25]/

b. **Rao's estimates.** Rao, V.G., (1979) estimated the elasticity of the corporate profits tax to be 0.77 for the period 1960-61 to 1973-74. This low elasticity was shown to be the result of a low tax-to-base elasticity (0.76), whereas the proxy base to income elasticity was high (1.01). It was hinted (but not specifically stated) that deductible expenses and exemptions were responsible for the low elasticity.

c. **Khadye's estimates.** Khadye, I.K., (1981) covered a longer period than Rao. Her elasticity coefficient of corporate profits tax was estimated to be 0.91 for the period 1960-61 to 1978-79 and lower at 0.81 for a shorter time period 1960-61 to 1976-77. Buoyancy coefficients were estimated at 0.93 and 0.85, respectively. Khadye did not go into an economic explanation of the results obtained, including the difference in the coefficients between the different periods.

25/ If a tax is proportional, the elasticity of the tax yield to the tax base over any range of income is not expected to deviate from 1. In case the overall elasticity deviates from 1, it can be explained only by the elasticity of the tax base to national income; if the overall elasticity is greater than 1, the elasticity of the tax base to national income is greater than 1, i.e., the tax base is growing at a faster rate than national income.

3. Our Estimates[26]/

a. Entire sample period, 1960-61 to 1979-80. Over a period of years, the sensitivity of the corporate profits tax in India has undergone a change. While Sahota's estimates for the period 1951-52 to 1957-58 indicated a highly elastic and buoyant corporate profits tax, our estimates for a later and substantially longer period, from 1960-61 to 1979-80, indicate an inelastic tax, for revenue collections did not keep pace with the growth in the relevant part of national income (i.e., net domestic product at factor cost, exclusive of income from agriculture and allied sectors and community and personal services sectors).[27]/ For this 20-year period,

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26/ The proportional adjustment method was used to clean the series of the effects of discretionary changes for estimating the elasticity coefficient. The following log-linear equations were used to estimate the tax-income relationships:

$$\text{Log } T = \quad + \quad \log Y + u$$
$$\text{Log } AT = \quad + \quad \log Y + v$$

where, T = actual tax revenue;

AT = adjusted tax revenue;

Y = national income; and

u and v = stochastic error terms with the usual properties.

27/ The net concept is preferable to the gross concept of national income (i.e., GDP) as depreciation is, for tax purposes, a fully deductible allowance and the tax base is determined after all permissible depreciation (that of the current year as well as unabsorbed depreciation of earlier year/s) has been fully deducted.

the elasticity coefficient works out to 0.82 and the buoyancy
coefficient to 0.97.[28] In other words, for every increase
in national income of one per cent, corporate profits tax
revenue increased by 0.97 per cent and would have increased
by only 0.82 per cent in the absence of discretionary tax
changes, i.e., if the tax structure had not changed
(Table IV.1).

Our estimate of the elasticity of the corporate
profits tax is found to be higher than that of Rao (0.77) but
lower than that of Khadye (0.91). Our estimate of the
buoyancy of the corporate profits tax is higher than that of
Khadye (0.93).

In order to capture the changes within the abnormal
sub-period, 1965-66 to 1969-70, which included the years of
industrial recession, a dummy variable was used. The
introduction of the dummy improved the sensitivity of the
corporate profits tax to national income marginally, the
elasticity coefficient improving from 0.82 to 0.83 and the
buoyancy coefficient from 0.97 to 0.98.

b. Estimates for sub-periods. We then estimated the
elasticity and buoyancy coefficients for three sub-periods,
1960-61 to 1969-70, 1960-61 to 1974-75 and 1970-71 to
1979-80, so as to identify the periods which would account
for the low overall sensitivity of the tax.

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[28] R^2 are 0.94 and 0.95, respectively, and the elasticity
and buoyancy coefficients are significant at 99 per
cent level of confidence.

TABLE IV.1

Elasticity and Buoyancy of the Corporate Profits Tax

(1960-61 to 1979-80)

Period		Elasticity			Buoyancy		
		R^2	F-value	DWS	R^2	F-value	DWS
1. 1960-61 - 1979-80							
	a.	0.824 (17.972)***	0.944	322.999***	0.665 (AC)	0.973 (19.481)***	0.952	379.492***	0.649 (AC)
	b.	0.826 (16.764)***	0.942	155.066***	0.700 (AC)	0.982 (18.180)***	0.950	179.612***	0.652 (AC)
2. 1960-61 - 1969-70							
	a.	0.760 (3.781)***	0.596	14.296***	0.609 (No AC)	0.997 (4.480)***	0.679	20.071***	0.545 (No AC)
3. 1960-61 - 1974-75							
	a.	0.753 (8.840)***	0.846	78.223***	0.668 (AC)	0.932 (9.748)***	0.870	95.032***	0.618 (AC)
	b.	0.752 (8.543)***	0.836	36.603***	0.681 (AC)	0.932 (9.368)	0.860	43.902***	0.617 (AC)
4. 1970-71 - 1979-80							
	a.	0.928 (17.337)***	0.971	300.564***	1.579 (No AC)	1.053 (17.875)***	0.973	319.527***	1.618 (No AC)

Notes: 1. a = Without dummy variable.

2. b = With dummy variable. One dummy variable was used to capture the change within the abnormal sub-period 1965-66 to 1969-70.

3. Figures in parentheses are 't' values of the regression coefficients.

4. *** indicate that the coefficient is significant at 99 per cent level of confidence.

5. AC: indicates that the Durban-Watson Statistic suggests positive auto-correlation among the residuals

No AC: indicates that the Durban-Watson Statistics suggests no positive auto-correlation among the residuals.

The low overall sensitivity of the corporate profits tax during the entire study period, 1960-61 to 1979-80, was found to be mainly due to the low sensitivity during the sixties. The elasticity coefficient for the period 1960-61 to 1969-70 has been estimated at 0.76, and for the period 1970-71 to 1979-80 at 0.93; the respective buoyancy coefficients are 1.00 and 1.05. During the seventies, the sensitivity seems to have improved during the latter half of the decade as the elasticity and buoyancy coefficients for the period including the first half of the seventies (i.e., 1960-61 to 1974-75) are lower than for the entire study period, (viz., 0.75 and 0.93, respectively, as against 0.82 and 0.97) (Table IV.1).

The various estimates of the sensitivity of the Indian corporate profits tax, thus, show that during the fifties, the Indian corporate profits tax was elastic and buoyant, then it became inelastic during the sixties, but again became more sensitive during the seventies, particularly during the latter half of the decade.

c. Year-to-year elasticities. The analysis in Section 3(b) above indicated that while the corporate profits tax was insensitive to changes in national income during the entire study period 1960-61 to 1979-80, it was, however, sensitive during the seventies and that further, the overall period insensitivity was due to the low elasticity during the sixties. In order to investigate this issue in more detail and to also identify the years of low insensitivity, year-to-year elasticities were estimated.

The year-to-year elasticities were computed on the basis of the growth rate of the corporate tax revenue and the relevant part of NDP (i.e., NDP net of income from agriculture, personal and community services and allied sectors) at factor cost. The annual elasticities were computed by dividing the per cent change in tax revenue (with reference to the previous year) by the per cent change in NDP. It was observed that the years of low elasticities were mainly in the second half of the sixties (1965-66 to 1968-69), a period marked by recessionary conditions. Low elasticities were also observed in three other years, two of them being in the first half of the seventies (1970-71 and 1973-74) and one in the second half (1978-79) (Table IV.2).

These estimates of annual elasticities substantiate the findings which emerged earlier on the sensitivity of the corporate profits tax during the sixties and the seventies.

It may be pointed out here that the overall elasticity for the whole period 1961-62 to 1979-80 was found to be fairly high (0.98), mainly due to the high elasticities observed during the first half of the sixties and some of the years during the seventies. These estimates, however, are not wholly comparable to those presented earlier due to differences in the method of estimation adopted, the earlier method being superior.

d. <u>Decomposition of tax to income elasticity.</u> In order to assess the sensitivity of the corporate profits tax in more detail, the tax revenue to income elasticity was decomposed into the tax base to income elasticity and the

TABLE IV.2

Estimates of Year-to-Year Elasticities

(1961-62 to 1979-80)

Year	Corporate tax revenue[1]	Net domestic[1] product (adjusted)	Year-to-year elasticity[2]
	(1)	(2)	(3)
1961-62	40.86	8.03	5.09
1962-63	41.53	9.67	4.30
1963-64	23.97	14.13	1.70
1964-65	14.39	14.12	1.02
1965-66	-2.96	8.36	0.35
1966-67	7.91	12.75	0.62
1967-68	-5.65	11.27	0.50
1968-69	-3.38	6.76	0.50
1969-70	17.88	11.91	1.50
1970-71	4.84	11.79	0.41
1971-72	27.42	9.77	2.81
1972-73	18.15	10.30	1.76
1973-74	4.45	17.05	0.26
1974-75	21.76	25.98	0.84
1975-76	21.45	11.30	1.90
1976-77	14.22	12.98	1.10
1977-78	24.04	11.44	2.10
1978-79	2.51	14.59	0.17
1979-80	11.22	11.88	0.94
Average compound growth rate	12.16	12.37	0.98
Variance	384.09	155.64	-
Coefficient of variance	130.83	101.27	-

Notes: 1/ Percentage change over the preceding year.

2/ Column (1) divided by column (2).

tax revenue to tax base elasticity. While corporate tax
collections and adjusted NDP could be taken to represent tax
revenue and income, the selection of an appropriate proxy for
the tax base raised a difficulty as the Budget documents,
which present data on tax revenue collections, do not
indicate the tax base, and in view of the different statu-
tory tax rates applicable to different categories of
companies, the tax base cannot be estimated from the tax
revenue collection data. The RBI data (blown-up on profits
before tax), do not capture the operations of some segments
of the corporate sector as smaller companies, foreign
companies and public sector companies are excluded. Assess-
ment data (published in AIITS) on total assessed income,
however, are available on the tax base and these data have
been used to represent the tax base. Alternatively, one
could apply the proportionate contribution to assessed tax
revenue of different categories of corporate assessees to
the tax revenue collection data to estimate their respective
tax base. As it would be necessary to use comparable data
on tax revenue, the assessed corporate tax revenue is taken
to represent tax revenue (instead of the tax revenue
collections in the Budgets).

As assessment data relate to operations largely in
the preceding year and partly in even earlier years,
(but not to operations in the current year), the NDP
variable is used with a one-year time lag.

The aggregate analysis presented in sub-section 3a above had shown that the corporate profits tax was insensitive during the study period 1960-61 to 1979-80, a one per cent increase in the NDP leading to a 0.82 per cent increase in the tax revenue collection. The estimate of elasticity using assessment data on corporate tax revenue for the period 1960-61 to 1977-78 also brings out the insensitivity of the tax: a one per cent increase in NDP leading to 0.74 per cent increase in assessed tax revenue. The decomposition of tax revenue to income elasticity into its two components, tax base to income elasticity and tax revenue to tax base elasticity shows that while the former elasticity coefficient was 0.62, the latter was 1.16; thus, the effect of the high tax revenue to tax base elasticity was nullified by the low tax base to income elasticity, which resulted in a low tax revenue to income elasticity (Table IV.3).

The observed result that the tax base does not grow as fast as national income may suggest the tax base diminution effect of fiscal incentives. On the other hand, the observed result that tax revenue grows faster than tax base may seem unlikely in the case of a proportional tax. However, the elasticity of tax revenue to tax base can be greater than unity due to two possible causes:

(i) The composition of assessees subject to differing tax rates has changed, as the assessment data relate to all categories of assessees, and

(ii) The reduction in effective tax rate due to fiscal incentives has changed.

TABLE IV.3

Decomposition of Tax to Income Elasticity

(1960-61 to 1977-78)

	(1)	(2)	$\bar{R}^2$ (3)	t-value (4)	F-value (5)	DW Statistic (6)
1.	**Assessed Tax Revenue to Income**					
a.	Total	0.737	0.795	8.191***	67.099***	1.475 (No AC)
b.	DCWH[1]	1.035	0.660	5.830***	34.026***	0.909 (AC)
c.	DCCH[2]	0.373	0.052	1.390*	1.931	0.590 (AC)
d.	Non-DC[3]	0.461	0.569	4.842***	23.447***	1.604 (No AC)
2.	**Assessed Tax Base to Income**					
a.	Total	0.620	0.760	7.398***	54.728	1.590 (No AC)
b.	DCWH	0.929	0.600	5.151***	26.584***	0.896 (AC)
c.	DCCH	0.215	0.021	0.812	0.659	0.600 (AC)
d.	Non-DC	0.321	0.369	3.307***	10.936***	1.304 (Incon)
3.	**Assessed Tax Revenue to Assessed Tax Base**					
a.	Total	1.156	0.985	33.209***	1102.826***	1.857 (No AC)
b.	DCWH	1.064	0.995	60.477***	3657.412***	0.568 (AC)
c.	DCCH	1.040	0.980	28.843***	831.913***	0.159 (AC)
d.	Non-DC	1.156	0.943	16.835***	283.399***	0.497 (AC)

TABLE IV.3 (Contd.)

	(1)	(2)	(3)	(4)	(5)	(6)
4.	Tax Revenue Collections to Income[4/]	0.824	0.944	17.972***	322.999***	0.665 (AC)
5.	Tax Revenue Collections to Assessed Tax Base	1.167	0.626	4.944***	24.447***	1.021 (AC)

Notes:

1. DCWH = Domestic companies widely-held

2. DCCH = Domestic companies closely held

3. Non-DC = Non-domestic companies

4. Period extends from 1960-61 to 1979-80

5. ***, ** and * indicate that the regression coefficient is significant at 99 per cent, 95 per cent and 90 per cent level of confidence, respectively.

6. AC : evidence of positive auto-correlation

No AC : no evidence of positive auto-correlation

Incon : The Durban-Watson Statistics is in the inconclusive range.

e. <u>The disaggregated analysis.</u>   As was seen in
Chapter II, the corporate sector is segmented into different
tax-rate groups, each being liable for tax at different
statutory tax rates. Thus, we have domestic companies in
whom the public are substantially interested (widely-held
companies), domestic companies in which the public are not
substantially interested (closely-held companies) and non-
domestic companies; the statutory tax rates for them range
from 55 per cent to 70 per cent with a surcharge of 5.0 per
cent, though in some of the earlier years, the rate of
surcharge was lower. The effective tax rate, which deter-
mines the elasticity, shows even wider differences depending
upon the type of industry in which the companies operate,
their location, expansion and investment programmes, export
performance, R & D activities, etc.

It was felt that an analysis at the disaggregated
level for companies liable for taxation at different statu-
tory tax rates might shed some more insight into the overall
sensitivity of the corporate profits tax. Tax data,
however, are not available in the annual budgets for different
categories of companies having different effective tax
liabilities. Assessment data (<u>AIITS</u>) for the period 1960-61
to 1977-78 were used for these exercises. Disaggregated data
on assessed corporate income and assessed corporate tax
revenue are available for domestic companies, both closely-
held and widely-held and for non-domestic companies.

The estimates of elasticity at the disaggregated
level show that tax revenue is highly sensitive to an
increase in income in the case of widely-held domestic
companies, as a 1 per cent increase in NDP leads to a 1.04
per cent increase in tax revenue. In the case of other
categories of companies, however, the elasticity coefficient
is low, namely, 0.37 per cent for closely-held companies and
0.46 per cent for non-domestic companies. Thus, the overall
low sensitivity of the corporate profits tax is found to be
due to the insensitivity of closely-held companies and non-
domestic companies, whose contributions to total corporate
tax revenue increased during the study period. We found
that during the sixties when the overall tax system was
inelastic, the proportionate contribution of the low-sensitive
segments of the corporate sector was not only high but was
also rising sharply, their combined share of total assessed
tax revenue increasing from 51.3 per cent in 1961-62 to 77.9
per cent in 1969-70. The share in total corporate tax
revenue of the inelastic segments of corporate sector started
declining in the early seventies (the share was 35.9 per cent
in 1974-75 and 23.7 per cent in 1977-78), leading to a rise
in the sensitivity of the corporate profits tax (Table IV.3).

The decomposition of the elasticity of tax revenue to
income for each disaggregated category of companies shows
that in each case the tax revenue is responsive to tax base
but the tax base is not sensitive to national income.

f. <u>Estimates with some alternative income bases.</u> In order to examine whether the estimates of the sensitivity of the corporate profits tax were influenced by the specific definition of national income used for the estimation, the elasticity and buoyancy coefficients for the entire study period, 1960-61 to 1979-80, were re-estimated with alternative definitions of national income. As the bulk of the corporate profits tax revenue originated from corporate operations in sectors other than agriculture, community and personal services, NDP exclusive of income from such sectors was selected as the national income base for all the exercises, whose results have so far been presented. We then incorporated, as the national income base, a similarly adjusted base in gross terms, that is, gross domestic product (GDP), and further gross national product (GNP), net national product (NNP), GDP and NDP without any adjustment, each at factor cost and market prices.

The sensitivity of the corporate profits tax was seen to increase as the national income base was extended to include income from agriculture, services and allied sectors. The elasticity coefficients with extended national income as base are estimated to be between 0.90 and 0.93 and the buoyancy coefficients are between 1.07 and 1.10, clearly higher than those with adjusted GDP and NDP as base (Table IV.4). The improvement in the sensitivity of the corporate profits tax to an extended national income base was due to the lower growth rate of national income of the non-industrial sector (annual growth rate being 9.77 per cent in net terms and 9.80 per cent in gross terms) as compared to that of the industrial sector (12.54 per cent and 12.51 per cent, respectively).

TABLE IV.4

Elasticity and Buoyancy of the Corporate Profits Tax

With Respect to Some Alternative Bases

(1960-61 to 1979-80)

Independent variable	Elasticity			Buoyancy		
		R^2	t-value		R^2	t-value
1. GNP (F)	0.922	0.930	15.448	1.089	0.942	17.051
2. GNP (M)	0.904	0.933	15.771	1.069	0.944	17.447
3. NNP (F)	0.932	0.927	15.168	1.102	0.940	16.781
4. NNP (M)	0.906	0.932	15.665	1.071	0.944	17.348
5. GDP (F)	0.925	0.929	15.365	1.093	0.941	17.004
6. GDP (M)	0.902	0.932	15.756	1.066	0.944	17.446
7. NDP (F)	0.930	0.928	15.257	1.100	0.941	16.892
8. NDP (M)	0.908	0.931	15.614	1.073	0.943	17.307
9. GDP (F)[2]	0.825	0.947	17.874	0.972	0.954	19.320
10. NDP (F)[2]	0.824	0.944	17.972	0.973	0.952	19.481

Notes: 1. (F) and (M) refer to factor cost and market value, respectively.

2. Income from agriculture and allied sectors and from community and personal services sector is excluded and all other independent variables are inclusive of such income.

g. **Determinant analysis.** Finally we attempted to identify the major determinants of the corporate profits tax, and in the process also estimate its sensitivity. In addition to NDP, we incorporated into the model the effect of the tax system. The tax effect was represented by:

(i) The effective tax rate $(CPTR_e)$ as measured by tax provision as shown in company finances data, as a per cent of the estimated actual tax base.[29/] When $CPTR_e$ is computed from assessment data, it is assessed tax as a per cent of the hypothetical tax base, or

(ii) The statutory tax rate $(CPTR_s)$ as applicable to the category of companies whose data are used in the model. For the analysis based on company finances data, the statutory tax rate applicable to Indian companies in which the public are substantially interested has been used. In the case of the equations using assessment data, $CPTR_s$ is assessed tax as per cent of the actual tax base. When $CPTR_s$ is taken as the tax

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29/ The company finances data show only the profits before tax and before the impact of fiscal incentives tax is taken into account; this is the hypothetical tax base. The actual tax base is estimated as follows:

$$ATB = \frac{a}{b} \times 100$$

where,

ATB = actual tax base,
a = tax provision, and
b = statutory tax rate

variable in the equations, an additional
explanatory variable is incorporated to capture
the effect of fiscal incentives (FRE), but FRE
is not included in the equations which represent
the tax variable through $CPTR_e$, as the effect of
fiscal incentives is already captured.

FRE is measured by corporate tax savings generated by
the fiscal incentives as a per cent of the hypothetical tax
base. The corporate tax savings are, in turn, computed as
the difference between the actual tax liability (tax provi-
sion in the company finances data or assessed tax in the
income tax assessment data) and the hypothetical tax liability,
the latter estimated by applying the statutory tax rate to the
hypothetical tax base.

The national income variable is net domestic product
at factor cost, relevant to the corporate sector, that is,
exclusive of income from agriculture and allied sectors and
personal and community services sectors.

The results of four pairs of log-linear and linear
equations are presented in Table IV.5, using comparable data
on the dependent and explanatory variables. In equations 1
and 2, the dependent variable CTR is the corporate tax
provision relating to the 223 NIPFP sample companies and the
variables incorporating the effect of the tax system also
relate to this sample. In equation 1, the explanatory
variable, $CPTR_s$ is the statutory tax rate applicable to the

TABLE IV.5

Determinants of Corporate Tax Revenue

Equation number	Dependent variable : Corporate tax revenue (CTR)						
	Constant	CPTR	FRE	NDP	R^2	F-value	DW Statistic
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. a. Linear	-83.453 (0.497)	2.251 (0.590)	-2.861 (1.639)*	0.008 (4.187)***	0.933	66.051***	1.971 (No AC)
b. Log-linear	-4.645 (0.650)	0.126 (0.048)	-0.169 (1.106)	0.976 (2.983)***	0.914	50.394***	1.321 (Incon)
2. a. Linear	-49.922 (1.489)*	1.230 (1.447)*	–	0.009 (11.167)***	0.926	87.962***	1.283 (Incon)
b. Log-linear	-5.749 (5.132)***	0.446 (1.666)*	–	0.931 (11.006)***	0.908	70.300***	0.764 (AC)
3. a. Linear	-89259.110 (2.099)*	1611.559 (1.988)*	-4.619 (0.009)	0.449 (3.077)**	0.793	8.653**	2.610 (No AC)
b. Log-linear	-29.376 (2.095)*	7.623 (1.947)*	-0.090 (0.198)	0.819 (3.353)**	0.851	12.441***	2.591 (No AC)

TABLE IV.5 (Contd.)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
4. a.	Linear	-15785.736 (0.527)	400.235 (0.582)	-	0.454 (2.465)**	0.596	5.426	2.110 (No AC)
b.	Log-linear	-6.079 (0.726)	1.827 (0.719)	-	0.853 (2.969)**	0.729	9.055***	1.998 (No AC)

Notes: 1. Equations under 1 and 2 relate to 223 companies and cover a 15-year period 1961-62 to 1975-76. Equations under 3 and 4 relate to 108 assessees and cover a 7-year period 1970-71 to 1976-77.

2. CPTR is $CPTR_e$ in equations under 2 and 4 and $CPTR_s$ in equations 1 and 3; the latter group of equations also include FRE.

3. Equations 1 and 2 include current year NDP and equations 3 and 4, includes NDP_{t-1}.

4. Figures in parentheses are 't' values of the regression coefficients.

5. AC: evidence of positive auto-correlation among the residuals.

No AC: No evidence of positive auto-correlation.

Incon: The Durban-Watson Statistic is in the inconclusive range.

6. ***, ** and *: indicate that the regression coefficient is significant at 99 per cent, 95 per cent and 90 per cent level of confidence, respectively. In other cases, the regression coefficient is not significant.

NIPFP sample and FRE (estimated for the NIPFP sample) is incorporated to capture the effect of fiscal incentives, but in equation 2, FRE is not included as the estimated. effective tax rate, $CPTR_e$, for the NIPFP sample is used. The dependent variable, CTR, in equations 3 and 4 relate to assessed tax of a sample of 108 income tax assessees; whereas equation 3 includes both $CPTR_s$ and FRE relating to the 108 assessees; equation 4 includes $CPTR_e$ relating to the 108 assessees.[30]

In each of the above equations, adjusted NDP represents national income; however, while in equations 1 and 2 NDP is the current year's NDP, in equations 3 and 4 we have used a one-year time-lagged NDP (i.e., NDP_{t-1}), as assessment data relate largely to corporate operations in the preceding year and partly in some of the earlier years also.

A priori, the signs of NDP and CPTR are expected to be positive, whereas that of FRE negative. In other words, an increase in CPTR and NDP is expected to increase CTR and an increase in FRE would reduce it. While equations 1 and 2 cover the period 1961-62 to 1975-76, equations 3 and 4 relate to the assessment years 1970-71 to 1976-77.

The 'F' values of all the equations suggest that they provide a suitable explanation for the changes in CTR and their R^2 are also high. Further, all the explanatory variables in these equations have a priori signs (Table IV.5).

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[30] Data was obtained from assessed income tax returns for major corporate assessees for assessment years 1970-71 to 1976-77. For details, see Lall (1983).

The econometric exercises show that national income is a very significant determinant of corporate tax revenue. In all the equations, the regression coefficient of this variable is significant at either 1 per cent or 5 per cent level of confidence. The impact of income is substantial, showing that a 1 per cent increase in NDP leads to between 0.82 per cent and 0.98 per cent increase in corporate tax revenue. It is interesting to find that tax revenue (tax provisions) is more responsive to NDP_t than is tax revenue (assessed) to NDP_{t-1}. However, the corporate tax is not fully responsive to changes in income.

The tax system, on the other hand, is found to be a less important determinant of corporate tax revenue. Comparatively, the fiscal incentive component of the tax system is more important and relevant than the statutory tax rate component of the tax system because, in the first place, the statutory tax rate has not been altered substantially during the study period and secondly, the statutory tax rate becomes meaningless when a company utilises the fiscal incentives which reduce the tax base and, therefore, the effective tax rate becomes lower than the statutory tax rate.

The equations under 2, both in linear and log-linear forms, are the only ones which yield significant regression coefficients for all the explanatory variables. These significant results, together with the significant F values and high R^2 values of the equations, suggest that this model offers the best explanation for changes in corporate tax revenue. In these equations, the explanatory variables are $CPTR_e$ and NDP_t. The effect of the tax system is, thus, captured through the composite tax variable, namely, effective tax rate, and not by the two separate tax factors, namely, the statutory tax rate and the fiscal incentive variable. Hence, the results suggests that the composite tax factor is more relevant than separate tax factors in explaining the variations in corporate tax revenue.

The linear form of equation 2 suggests that a one percentage point increase in $CPTR_e$ leads to an increase in actual CTR by Rs 1.23 crore. In the case of the NIPFP

sample companies who, on the average, annually provided
Rs 117.21 crore for meeting their corporate tax liability
during the period 1961-62 to 1975-76, a one percentage point
increase in $CPTR_e$ would lead to an increase in CTR by 1.05
per cent. For the corporate population of 431 large manufac-
turing companies in the private corporate sector (each with
paid-up share capital of Rs 1 crore or more) from which the
NIPFP sample was selected, the corporate tax provision is
estimated to increase by Rs 2.17 crore in response to a one
percentage point increase in $CPTR_e$, i.e., the total tax
provision would be Rs 208.53 crore instead of Rs 206.36
crore. In the log-linear form, equation 2b indicates that a
one per cent increase in $CPTR_e$ would lead to a 0.45 per cent
increase in CTR. In either case, the results show that an
increase in the statutory tax rate does not lead to a subs-
tantial increase in corporate tax revenue. This result would,
however, not suggest that the converse would be true, i.e.,
a reduction in corporate tax rate would not lead to
a substantial fall in corporate tax revenue.

The impact of FRE on actual CTR is expected to be
more substantial than that of $CPTR_a$, a one percentage point
increase in it, as is shown in equation 1a, resulting in a fall
in CTR by Rs 2.86 crore for the NIPFP sample and Rs 5.04
crore for the relevant corporate population (in the same
equation, the impact of $CPTR_s$ on CTR is lower and the coeffi-
cient is not significant). In such a situation, CTR would
fall by 2.4 per cent in response to a one percentage point
increase in FRE.

h. **Some factors influencing sensitivity.** Broadly, four factors can be identified which have a bearing on the sensitivity of the corporate profits tax. These factors are fiscal incentives, non-fiscal incentives, individual fortunes of large taxpayers and industrial recession, unaccompanied by recession in other sectors.

Fiscal incentives are the most important provisions in the income tax law which, through diminution in the corporate tax base, leads to a substantial difference between corporate profits and corporate taxable profits, (see Lall, 1983). Judicious tax planning at the corporate level can either eliminate or reduce substantially the tax liability for a number of years. Therefore, while on the one hand, the number of corporate assessees and total corporate profits in a growing economy can be expected to rise and would have ordinarily raised the elasticity of tax revenue to national income under a proportional tax, the diminution in the tax base, on the other hand, tends to reduce the sensitivity of the tax by affecting the tax base to income relationship. This was seen in the analysis relating to the decomposition of the revenue to income elasticity, when we also found that tax revenue was responsive to tax base.

Various non-fiscal incentives, such as concessional finance and inputs at concessional cost for projects in backward areas and in priority sectors, also contribute to a fall in the sensitivity of the corporate profits tax. The preferential treatment for such growth-oriented segments of the corporate sector changes the ratio of taxable profits to

corporate profits. If this ratio improves, the elasticity
would improve and vice-versa. Further, even if the share
of corporate profits in national income does not change
but the ratio of taxable corporate profits to corporate
profits changes, the elasticity would change. It is also
possible that when the share of corporate profits in
national income falls, a rise in the ratio of taxable
corporate profits to corporate profits would neutralise
any adverse effect on elasticity.

The individual fortunes of large corporate tax-
payers in a system where a small proportion of corporate
assessees account for the bulk of corporate tax revenue
also has a bearing on the sensitivity of the tax. In the
Indian context, it was seen in sub-Section 3(f) that the
overall sensitivity of the corporate profits tax was
influenced by operations in different segments of the
corporate sector. If due to some special factors, there
is a sudden setback in the corporate operations of some
large taxpayers and it adversely affects corporate profits
(and also, therefore, taxable corporate profits), the
sensitivity of the corporate profits tax will fall, and
vice-versa. This would be particularly so when there is
an industrial recession, which is unaccompanied by
similar economic conditions in the non-corporate sector.
Thus, for example, an industrial recession with stagfla-
tion would tend to raise the contribution of the non-

corporate sector to the national income but corporate
profits, taxable corporate profits and the tax contribu-
tion of the corporate sector would fall, resulting in a
decline in the sensitivity of the tax system. On the
other hand, when such large corporate taxpayers experience
a sudden boom, there would be a tendency for corporate
profits and corporate profits tax to increase faster than
the national income and thereby raise the sensitivity of
the tax. Such variations are thus analogous to those of
a "fixed price" system, in which imbalances lead to
changes in volume of inventories, thereby affecting the
sensitivity of the tax.

V. THE CORPORATE PROFITS TAX, CORPORATE INVESTMENT AND PROFITABILITY

1. Introduction

a. Objectives. In any comprehensive study of a tax measure, an analysis of the effect of the tax on the economic transactions to which it is related is not only desirable but also necessary. However, the simultaneous operation of other tax measures and public expenditure programmes within the ambit of fiscal policy as well as other economic policies makes it difficult to isolate and quantify the separate effect of the tax measure under consideration. Econometric techniques can, however, isolate to a reasonable extent the effect of individual factors.

In this and the following Chapter, we study the determinants of corporate behaviour, and in particular, assess the effect of a change in the corporate profits tax rate on salient aspects of operations of large manufacturing Indian companies. The aspects studied are:

(i) corporate investment or gross fixed asset formation;

(ii) **corporate rate of return or profitability;**

(iii) corporate dividend policy; and

(iv) corporate capital structure.

The gross fixed assets represent the fixed capital stock in the corporate sector and changes in its

level as well as in its rate of growth are important
indicators of corporate behaviour. The traditional
hypothesis is that the corporate profits tax has a
detrimental effect on gross fixed assets formation
activity. An increase in the tax rate leads to a set-
back in the rate of corporate capital formation. Such an
effect is expected to occur as an increase in the rate of
the corporate profits tax reduces the net disposable profits
and, therefore, the rate of return on investment. A fall
in the rate of return reduces the availability of internal
resources as well as the capacity of the corporate entity
to mobilise external resources, debt as well as equity.
In this study we therefore assume that the profit-
investment relationship operates, i.e., an increase in
profitability or the rate of return stimulates investment.[31]
The rate of return is measured here by profits after tax as
a per cent of net worth, which is one of the accepted measures
of efficiency of corporate operations. The traditional
hypothesis on the tax effect on profitability is that an
increase in the corporate profits tax has an adverse impact on
profitability after tax. An explanation of the determinants
of corporate capital formation would, therefore, also need
an assessment of the determinants of corporate profitability.[32]
We, therefore, study the determinants of corporate investment
and profitability and in particular, assess the tax impact.

31/ For an exhaustive and interesting discussion on the
alternative theories of investment, see Jorgenson
(1967, 1971).

32/ This kind of analysis requires a simultaneous exami-
nation of the determinants of profitability and invest-
ment but in the present study, the problem of simulta-
neity has been kept outside the purview.

Dividend policy, represented by the dividend
rate (i.e., equity dividend as a per cent of equity share
capital) is another important indicator of corporate
operations. It shows the changing rate of dividend in
response to a change in the level of distributable
profits following a change in the tax rate as well as other
determinants. The results would throw light on an
important corporate policy, whether or not corporate
managements maintain a specified dividend rate. The
traditional hypothesis is that over the long-run,
companies tend to maintain a stable rate of dividend by
changing the dividend pay-out ratio   in response to a
change in the amount of distributable profits.[33/]   A
second hypothesis relating to corporate taxation and
dividend policy is that dominating shareholders may
try to adjust the dividend policy in such a way as to
minimise their total tax liability by converting corporate
retentions into a tax shelter zone for the dividend
component of their total income. These two hypotheses
relating to dividend policy, namely, dividend stabilisa-
tion and tax shelter, are, therefore, examined.

[33/]   Only when the change in the level of profits is
expected to be of a permanent nature, the company
may change the dividend rate. The maintenance of
a stable dividend rate may be termed as the
dividend stabilisation policy.

Finally, we study the determinants of the ratio of debt capital to equity capital, which represents the corporate capital structure and reveals the financial strength of the companies; with increasing capital intensity of corporate operations, there has been a tendency for the debt-equity ratio to fall. As far as tax policy is concerned, the tax preferential treatment granted to interest payments, it is held, tends to make the corporate capital structure biased in favour of debt. The traditional hypothesis is that an increase in the tax rate would make the capital structure more prone towards debt financing, as the tax savings generated by the use of debt increase with an increase in the tax rate applicable to payments for use of equity capital.

The four specific aspects of corporate operations that are studied are inter-related and; together, they can be considered to cover the corporate strategy of financing an investment. While a number of studies in the country have attempted to assess the determinants of corporate behaviour, such as investment, capital structure, profitability and dividend policy, their objective was not, specifically, to analyse the effects of the corporate profits tax[34], which is the primary objective of this study. Among recent studies, Lall (1983), Sarma (1982), Lall, Srinivasa and Atri (1982) and Venkatachalam and

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[34] See, for example, Johar, Kumar and Singh (1982), Rao (1979), Krishnamurty and Sastry (1975), Rao and Sarma (1971).

Sarma (1978) have assessed specifically the effect of the corporate profits tax and/or fiscal incentives granted to companies on corporate operations.

b. Data. The econometric exercises in this study are based on data of a purposive sample of 223 large public limited companies operating in the manufacturing segment of the private corporate sector (hereinafter called the NIPFP sample)[35/]. The time-series data cover a 15-year period from 1961-62 to 1975-76. The data were obtained from annual reports of companies, as published in the Bombay Stock Exchange Directory.

The Reserve Bank of India (RBI) data on company finances were not used as the RBI not only keeps on changing the companies constituting the sample but also the size of the sample. As such, the RBI data were not found to be suitable for the kind of analysis undertaken in this study. The RBI data also do not allow for an analysis to be made at the disaggregated level for groups that are felt to be more relevant; this problem does not arise when data are available for individual companies and in a specially constituted sample. In view of these considerations, only the data for NIPFP sample companies have been used.

35/ The selection of the sample and its composition are discussed in Annexure I.

2. Corporate Profits Tax and Corporate Investment

a. Choice of dependent variable. Studies on the investment function have taken as the dependent variable the flow concept of investment, i.e., investment or incremental capital stock between two points of time. These studies have examined mainly the impact of factors like the accelerator factor, represented by sales or output, profitability and selected sources of funds used for the purpose of fixed asset formation or investment. The impact of the tax system on corporate investment has largely not been studied.

A study of the effect of the tax system raises the question as to whether the flow or stock concept of corporate investment should be taken as the dependent variable. The important fiscal incentives which can be utilised by a corporate entity under the income tax law in India are related to some stock base or can be claimed against profits generated by operations using the total capital stock or gross fixed assets (GFA) and not necessarily corporate investment or incremental GFA. Thus, in the past development rebate was available, and at present the investment allowance is available, at a specified percentage of the value of new plant and machinery installed. But investment allowance (and development rebate earlier) can be claimed not only against profits generated by the relief-generating investment but also by investments made earlier in the same plant or any other plant of the company, in the case of multi-plant units. Similarly, the tax holiday and backward area reliefs are calculated as a percentage of profits and gains generated by the use of the total productive capacity

or assets installed after a certain date and they are,
during the entitlement period (eight and ten assessment years,
respectively), not related to profits and gains gene-
rated by incremental value of productive capacity or
assets in each of the relief - eligible years. However,
these tax reliefs cannot be claimed unless investment is
made.

While on the basis of the income tax law, there
may be justification in using the stock of capital,
economic theory on investment functions would justify only
the use of the flow concept, as at any particular point of
time, it is the decision on the new investment that is
relevant and the capital stock is only the sum of invest-
ments in the past. Also, the fiscal incentives are genera-
lly granted only in response to an investment or expenditure
incurred after a certain date even though the tax benefits -
may spread over to profits generated by earlier investments.
We have, therefore, selected the flow concept of
corporate investment as reflected in incremental GFA as the
dependent variable.

The use of data in real or in nominal terms is
another issue that needs to be considered. In a cross-
section analysis, there is no need to deflate the variables
like GFA, sales and financial resources, for all the
data relate to a common period, but in a time-series
analysis, deflation becomes necessary due to an extended
time horizon.[36] Problems arise in the selection of

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[36] Some time-series studies have used the variable data
in nominal terms and for a discussion, see, for
example, Anderson (1964).

appropriate deflators and the selection often has to be done arbitrarily. The general purpose machinery deflator has been used to deflate GFA, accumulated depreciation and financial resources and the wholesale price index to deflate sales.[37] While technically, the land and buildings components of GFA should be deflated by the construction index, this is not absolutely necessary as land and buildings account for about one-sixth of the GFA.

b. Explanatory variables. Theoretical developments and quantitative evidence in the area of determinants of investment behaviour relate largely to three economic principles, namely, the accelerator factor, the profit motive, and the liquidity factor. In addition to testing the effect of these theories of investment behaviour, we have incorporated an additional factor, namely, the tax effect factor. Hence, the explanatory variables selected in the model measure four categories of effects;

(i) the accelerator effect (Acc_e);

(ii) the profitability effect (Pro_e);

(iii) the liquidity or financial resources availability effect (FRA_e); and

(iv) the tax effect $(\overline{T}_e)$.

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[37] As the process of deflation is based on some restrictive assumptions regarding price effects, an alternative could be to use prices also as an explanatory variable.

(i) <u>The accelerator effect</u>. The accelerator effect
rests on the technical relationship between output and invest-
ment.[38/] The adjustment of capital stock to the desired level
is, however, not necessarily instantaneous but it may be a
gradual process due to time lags between a change in demand and
an adjustment in corporate productive assets because of technolo-
gical, institutional and expectational factors. Further, it is
assumed that there is no excess capacity which might be utilised
to meet the increase in demand and that the change in demand is
of a permanent character. Finally, the accelerator effect can
be assessed only with respect to new investment.

Sales is most commonly used to represent the accelerator
principle in investment functions, both in time-series and cross-
section analysis. The sales-investment relationship is based on
the hypothesis that an increase in sales (which represents the
effective demand), would ordinarily encourage an entrepreneur to
expand his operations to meet the increasing demand, and, there-
fore undertake an investment programme. In this study, sales is
represented by net sales, i.e., gross sales, less excise duties.
Alternatively, we could use value of production (i.e., sales plus
net stock), as a measure of the accelerator but we did not do so
because the valuation of stock is not exposed to the full impact
of the market prices as in the case of actual sales. In the
Indian context, stock holdings are also influenced by
speculative pressures and, therefore, they may vitiate

38/ Investment behaviour studies centre around either the
    accelerator principle or the profit hypothesis, though in
    recent years some variant of profits has been brought into
    the context of accelerator models to account for const-
    raints imposed by the supply of funds in an imperfect
    market.

the output and investment relationship. Finally, most studies have used the sales measure $/$ see, for example Eisner (1963), Krishnamurty and Sastry (1975)$/$.

The change in capital stock is a function of a change in sales $/(S_t - S_{t-1})$ or $\triangle$ S $/$ and not of the total level of sales in the respective or the preceding year/s. Therefore, we have used the change in sales as the explanatory variable to capture the accelerator effect. Further, the demand factor may have a lag and so we have taken '$S_t - S_{t-r}$', where r is the number of the year preceding the current year 't'. The period (t-r) represents the period taken to fructify an investment proposal into incremental GFA in response to an increase in sales, and it takes into account procedural delays and infrastructural bottlenecks which confront the implementation of an investment programme. Investment theory does not give any clue as to what should be the distributed lag. Two RBI studies (1968 and 1969) have provided evidence of a time lag of 3 to 4 years in Indian industry. We experimented with 1, 2 and 3 year lags and found the 2-year lag to be statistically most appropriate.

(ii) The profitability effect. Investment theory suggests that another important determinant of investment is profitability or the rate of return. The economic viability of an investment rests in its potential to earn an attractive rate of return. Hence the profit motive is expected to play an important role.

The assessment of the profitability effect on corporate investment is attempted though the profitability

indicator, namely, profits before tax as a per cent of net worth (PBT/NW_{t-r}) , where 'r' denotes the time lag in terms of years). As an investment decision will be influenced more by the rate of return in the past than in the present year, we experimented with lags of 1, 2 and 3 years and found that only the 2-year lag profitability after tax yielded a coefficient with the appropriate sign. A priori, profitability is expected to have a positive impact on corporate investment because an increase in it generates hopes and expectations for the future. Investment will be, therefore, attracted to take advantage of the higher profits potential of the specific investment programme.

(iii) The liquidity or financial resources availability effect. The profitability factor represents only the price effect and not the quantity effect, for supply of financial resources would still be a constraining influence on investment. To accommodate this supply influence, an explicit resources availability factor has to be introduced in the model to explain the variations in investment. The availability of financial resources has been found generally to be an important determinant of corporate investment in Indian industries (see, for example, Krishnamurty and Sastry, 1975). In fact, the financial resources-investment relationship is very close, as an investment programme depends upon the availability of financial resources, which alone can procure the physical inputs needed to build up GFA. It is, thus, a good proxy for the capacity to procure inputs that are needed to meet the demand for goods and services provided by the corporate sector.

Total funds or total capital employed would
represent all financial resources available and this may
be split up into two parts, namely, internal finances (IF) and
external finances (EF). Internal finances include retained
profits and depreciation, while external finances include
fresh equity and preference share capital, debentures and
long-term loans from all-India financial institutions
like the IFCI, IDBI, ICICI, and the commercial banks.
Short-term loans are ordinarily not expected to be
utilised for a GFA formation but this is not necessarily
always the case. 39/

In an investment determinant analysis, the above
variables are taken as flow variables and not as stock
variables on the ground that incremental financial
resources are used for capital formation. Conceptually,
however, there is a difference between the external
resources variable and the internal resources variable.
While resources mobilised externally are available to
finance an investment as soon as they are mobilised,
the amount of internal resources generated during a year
can, however, be determined only at the end of the
financial year and would not be available during that year.

39/ It is possible to use short-term loans for long-term
purpose and studies on resource mobilisation in the
private corporate sector have brought this out / see,
for example, Lall, Srinivasa and Atri (1982)7 .

Therefore, in any given year incremental financial resources available for investment would be:

$$FRA = \triangle EF_t + \triangle IF_{t-1} \qquad\qquad (1)$$

The above formulation would, however, not take into account the available capital stock at the beginning of the year. Such financial resources may be particularly important in the case of established companies and as our study relates to companies established and in actual operation for 15 years or more, it would be desirable to include such resources also in the financial resources availability variable. The capital stock at the beginning of the financial year is partly invested in fixed assets and inventory and this proportion of the total capital stock would not be available for an investment that would be undertaken during the year but the capital stock net of investment in fixed assets and inventory would be available for any investment during the year. Hence, FRA is represented as follows:

$$FRA = NAAI_{t-1} + \triangle EF_t + \triangle IF_{t-1} \quad .. \qquad (2)$$

where, $NAAI_{t-1} = TCE_{t-1} - NFAI_{t-1}$ (or net available assets for investment, i.e., total capital employed net of the sum of net fixed assets and inventory);

$$\triangle EF = EF_{t-1} - EF_t; \text{ and}$$

$$\triangle IF_{t-1} = IF_{t-2} - IF_{t-1}$$

(iv) <u>The tax effect.</u> Investment theory does not take cognisance of the tax effect. It is, however, held by the corporate sector and investors that the corporate profits tax has an adverse effect on the investment climate, the investment decision making process and corporate investment. This is generally known as the investment-inhibitive effect of the tax hypothesis. The effect is expected to take place through a reduction in corporate capacity to mobilise resources for financing a capital formation programme. The resource mobilisation capacity is affected in two ways. In the first place, there is a direct reduction in the level of internally generated resources (statutory as well as free reserves), and secondly, a fall in profitability after tax will affect the capacity of the company to mobilise resources from external sources, like the equity market, financial institutions, commercial banks and trade associates. As such, an increase in the tax variable is ordinarily expected to have a negative or depressive impact on incremental GFA through its direct and indirect effect on mobilisation of investible resources by the corporate sector.

The tax effect variable is defined as tax provision as a per cent of profits before tax, i.e., T/PBT. This variable, also known as the effective tax rate, is prefe-rred to the statutory tax rate as given in the Central government budgets because it takes into account all the deductions, exemptions and fiscal incentives. The use of the statutory tax rate as the tax effect variable would have needed another variable to capture the effect of fiscal incentives available under the tax law.

c. Model specifications. The investment function
has been estimated from the following equation:

$$\Delta I = f(Acc_e, Pro_e, FRA_e, T_e) \qquad (1)$$

where, $\bar{I}$ = capital stock or GFA;

Acc_e = accelerator variable;

Pro_e = profitability variable;

FRA_e = financial resources availability or liquidity
variable; and

T_e = tax variable

The above equation may be expanded as follows:

$$I_t - I_{(t-1)} = (S_t - S_{t-r}), (PBT/NW_{t-r}), (TCE_{t-1} - NFAI_{t-1}),$$
$$(EF_{t-1} - EF_t), (IP_{t-2} - IP_{t-1}), (T/PBT) \;.. \qquad (2)$$

The equation is derived only in the linear form
as the Acc_e variable was negative for some years and that
reduced the number of observations. The a priori sign
of Acc_e, Pro_e and FRA_e variables would be positive and
that of the T_e variable negative.

d. Analysis of results. Several combinations of
the explanatory variables were tested. The accelerator
factor and the profitability factor were tried
simultaneously with 1, 2 and 3 year lags and also
individually with each of these lagged time periods. In
the case of the accelerator factor, only the two-year lag
accelerator yielded statistically acceptable coefficients

and the one-year lag and three-year lag accelerator yielded
insignificant regression coefficients, which also had the
wrong signs. In the case of the profitability factor also,
only the two-year lag variable had the proper sign but
the regression coefficient was not found to be signifi-
cant in any of the models in which this factor was
included.

The model which was finally selected includes
the tax factor as represented by tax provision as a per
cent of profits before tax, a two-year lagged accelerator
factor as represented by change in net sales, the finan-
cial resources availability factor as represented by the
net assets available for investment at the beginning of
the year (which excludes the value of net fixed assets and
inventory from the total capital stock), resources
mobilised during the year from external sources and
resources internally generated in the preceding year.
The profitability factor was not included because inclusion
of this factor, together with the other factors in the model,
only marginally improved the explanatory power of the
model but the regression coefficient of the variable
itself was not found to be significant and the sign of
the coefficient was not proper (see equation 2 in
Table V.1). The exclusion of the profitability factor
from the model also does not reduce the significance of
the other variables; in fact, it improves the significance
of the accelerator and the tax variables.

TABLE V.1

Determinants of Corporate Investment

Dependent Variable: Δ GFA

Equation No.	Intercept	T/PBT_t	ΔNS_{t-2}	$NAAI_{t-1}$	ΔIF_{t-1}	ΔEF_t	PBT/NW_{t-2}	F value	R^2	SEE	DWS
1.	1064.225	-19.565*** (1.996)	0.236* (1.667)	2.006*** (4.822)	1.787*** (2.661)	0.296 (1.146)	–	10.885***	0.886	116.098	1.498
2.	2367.947	-15.237 (1.313)	0.180 (1.122)	2.026 (4.742)	1.670*** (2.375)	0.271 (1.014)	-10.060 (0.812)	8.740***	0.897	119.025	1.633

Notes: 1. Equations are in linear form.

2. Figures in parentheses are t-values of the regression coefficients.

3. *** and * indicates that the regression coefficient is significant at 1 per cent or 10 per cent level of confidence; in other cases, the regression coefficient is not statistically significant.

The main conclusions which emerge from an analysis of the results on the determinants of corporate investment are as follows:

(i) The three important determinants of corporate investment are the availability of financial resources, the accelerator and the corporate tax. Whereas the availability of resources and the accelerator have a positive impact on corporate investment, the tax factor has an inhibitive effect on incremental GFA. The model is statistically acceptable, as can be seen from the high and significant F values, and it captures 88.6 per cent of the variations in corporate investment. The regression coefficients of all the explanatory variables have a priori signs and they are significant at 1 per cent level in the case of the net assets available for investment, internal resources and tax factors and at 10 per cent level in the case of the accelerator; only in the case of the external resources factor the regression coefficient is not found to be significant. This insignificance of the external resources factor is due to the fact that established companies have sufficient financial resources internally generated, to largely implement an investment programme. Recent studies have shown that corporate savings constitute a major proportion of total capital employed in the case of the Indian manufacturing companies and one of the reasons for such a situation was the low rate of capital formation in real terms. (See, for example, Lall, Srinivasa and Atri, 1982).

(ii) The model provides empirical evidence in support of the investment inhibitive effect of the corporate profits tax hypothesis. The sign of the tax effect coefficient is negative as expected, implying that corporate investment is adversely affected by an increase in the effective corporate tax rate.[40/] Our results indicate that a one unit increase in the effective tax rate leads to 19.6 units decrease in corporate investment.

Our results on the tax effect on corporate investment indicate that a one unit increase in the effective tax rate, in percentage terms, as far as the sample companies are concerned, would reduce corporate investment by 6.2 per cent from Rs 315.15 crore in 1975-76 (last year of the study) to Rs 295.55 crore and for the census population of 431 large manufacturing companies, corporate investment would reduce from Rs 554.84 crore to Rs 520.44 crore.

It needs to be pointed out that the above result measure the tax effect in terms of the effective tax rate, i.e., the statutory tax rate as provided in the income tax law, minus the tax base diminution effect of fiscal incentives that would have been availed of. As has been shown in a recent study (Lall, 1983), fiscal incentives in the case of companies successfully undertaking investment programmes and having substantial profits, significantly reduce the effective tax rate, and in many cases postpone tax liability for several years. Therefore, when the effective tax rate rises, in spite of the tax base diminution effect of fiscal incentives, there would be an inhibitive effect on new investment. Such a situation is likely to arise when either the statutory tax rate is raised and the utilisation of the fiscal incentives remains unchanged or the statutory tax rate is unchanged but the utilisation of fiscal incentives remains unchanged or the statutory tax rate is unchanged but the utilisation of fiscal incentives is reduced.

40/ A similar evidence on the depressive effect of the corporate tax on corporate investment is provided by model 2, which includes the profitability factor also as an explanatory variable.

It may be mentioned that while our results show that an increase in the effective tax rate may lead to a reduction in corporate investment, the converse may not be true, i.e., a reduction in the effective tax rate may not necessarily lead to an increase in corporate investment due to the possibility of asymmetrical effect, and unless this asymmetrical effect of changes in corporate tax rate is actually tested, no firm conclusion can be derived.

In addition to the multi-variable model, we also experimented with a single variable model, testing the effect of only the tax variable on corporate investment and found that by itself, the tax factor offers a very poor explanation of the determinants of corporate investment.

(iii) The results on the financial resources factor bring out the dominant role of the financial inputs on corporate investment. The results substantiate the hypothesis that established companies take recourse to net assets available with them to finance a new investment programme, and internal resources like depreciation and retained profits generated in the preceding year. We thus, find a high responsiveness of the net available assets and internal resources factors on corporate investment. A one unit increase in the NAAI leads to a 2.01 units increase in corporate investment, and a one unit increase in IF leads to a 1.79 units increase in investment.

The significant contribution of outstanding net available assets and freshly generated internal resources reduced the dependence on external resources, particularly because the available resources were largely adequate.

Hence, we found that in the case of established large Indian
manufacturing companies, the external resources factor is
not an important determinant of investment. The importance
of financial inputs or the liquidity factor in investment
determination has also been brought out in several other
studies, such as those of Swamy and Rao (1975) and
Krishnamurty and Sastry (1975). Venkatachalam and Sarma
(1978) have found both internal finances and external
finances playing an important role in financing corporate
fixed investment.

(iv) The accelerator investment relationship is
found to be relevant in the Indian corporate sector but it
is less important than the liquidity and tax factors: a
unit increase in the variable results in a 0.24 unit
increase in corporate investment. This finding is contrary
to the findings of Johar, Kumar and Singh (1982) and
Somayajulu (1977) who found a weak relationship between
the accelerator and corporate investment. However, the
findings are in line with those of Krishnamurty and Sastry
(1975), who observed the importance of the accelerator
factor, along with the financial factor, as was also
observed in the present study. Swamy and Rao (1975) also
identified the accelerator, along with internal and
external funds and capital intensity as significant
determinants of corporate fixed investment and Krishnamurty
(1974) found public investment expenditure, a surrogate for
aggregate demand, to be a major determinant. More recently,
Venkatachalam and Sarma (1978) found the accelerator provid-
ing an acceptable explanation of corporate fixed investment
the long-term elasticity of capital stock with respect to
sales being generally in the range of 0.70 to 0.80.

It is interesting to find that appropriate time
lag in the case of the accelerator factor is two years,
which is supported by RBI studies on the gestation period
in the Indian manufacturing sector.

The two-year lag arises as an increase in net sales
at the existing level of production is only the first
indicator to the corporate investor that there might be an
economic and financial viability of undertaking an invest-
ment programme. Therefore, the relationship between sales
and investment is not a straight or a simple one in the actual
corporate situation. Discussions with leaders of industry
have revealed that a corporate investment programme is
formulated and implemented when there is an expectation
of the project being viable and yielding a positive and
attractive rate of return. This decision has to be
followed up by a series of actions involving several
clearances from different government ministries and depart-
ments, financial institutions, and suppliers of equipments
and inputs, and then encounter construction and production
bottlenecks, etc. These factors may also explain the
relatively low significance and magnitude of the accele-
rator effect on corporate investment.

(v) The profitability factor is not found to be
a relevant determinant of investment, partly because the
past levels of profitability in the Indian manufacturing
sector were on the low side. That the profitability factor
is irrelevent is seen from the lack of any effect on the
explanatory power of the model or the quality of the
results by its exclusion from the model. In an

economy subject to price controls and other regulatory
practices, which inhibit the free play of market prices,
the profitability factor may not have much of a bearing
on investment decision. It has been shown recently by
Johar, Kumar and Singh (1982), that industries like
cotton textiles and cement which were subject to price
controls, had a lower rate of growth of investment than
industries like chemicals (including drugs), which were
largely outside the ambit of price controls and
experienced high rates of capital formation. It
was also found in the same study that when price control
was removed in cement industry from January 1966 to
January 1968, the rate of growth of fixed investment
was 11.2 per cent against the cut-off rate of 9.0
per cent and in cotton textile industry, the rate
of growth from 1954 to 1963, when price control did
not exist, was 9.1 per cent against 7.8 per cent
during their entire study period of 1950-51 to
1974-75.

Further research work may be required
before coming to a firm conclusion on the role of the
profit motive on the investment decision making process.
Among the issues that need to be examined are the "non-profit"
benefits that may accrue to the corporate entity (and more
importantly, to the dominating shareholders and/or management)
from an investment programme that may not yield an attractive

rate of return after tax, the formulation of high expecta-
tions of the potential of the new investment, unrelated to
the past experience and the role of price controls and
regulatory practices.

e. **Disaggregated analysis**. In order to assess whether
the determinants of corporate investment differ at the
disaggregated level, the NIPFP sample data on 223 companies
were reclassified under three broad categories, namely, by
industry, rate of growth of GFA and the size of total assets,
with 5 disaggregated groups under the first category and
3 disaggregated groups each under the other two categories.

The disaggregated results show that for 8 out of the
11 disaggregated groups, the models provide an acceptable
explanation of the variations in corporate investment, as
can be seen from their high and significant F-value and also
the high R^2 values, the latter ranging from 0.79 to 0.96;
only in the case of engineering industry , average growth-rate
and fast growth-rate companies were the F-values and R^2 values low.

The regression coefficient of the tax factor is
found to be highly significant in the case of chemicals,
small companies, food products, medium-size companies and
miscellaneous companies. The signs of the coefficients
are also appropriate in the case of the last 3 mentioned
groups. We may, therefore,conclude that the tax factor is a
relevant determinant of corporate investment in
relatively small and medium-sized companies but
it is not a significant determinant in large companies.
Further, the tax factor is a relevant determinant of
corporate investment in industries which have grown quite
substantially during the study period, as can be seen from their
annual compound rates of growth of GFA presented in Table V.3

Dependent variable: △ GFA

Categories	Intercept	T/PBT_t
(1)	(2)	(3)
I. Industry Groups		
1. Engineering	706.77	3.81 (0.67)
2. Textiles	113.19	2.28 (1.63)
3. Chemicals	411.03	-6.39*** (3.50)
4. Food products	-47.93	1.58*** (3.19)

TABLE   V.2

<u>Corporate Investment: Disaggregated</u>
   <u>Analysis</u>

ΔNS_{t-2}	ΔIF_t	ΔEF_{t-1}	$NAAI_{t-1}$	F-value	R^2	SEE	DWS
(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
-0.03	1.49	0.31	1.07	0.28	0.17	106.13	0.50
(0.08)	(0.44)	(0.44)	(0.41)				
0.16***	2.00	0.63***	1.72***	27.10***	0.95	13.93	1.80
(2.13)	(1.78)	(3.36)	(7.66)				
0.39	-0.29	0.62	1.20	5.28**	0.79	27.05	1.48
(1.07)	(0.14)	(1.18)	(2.16)				
0.08**	2.38***	0.45***	0.76***	16.20*	0.92	2.97	1.89
(1.95)	(4.04)	(4.99)	(2.93)				

Contd.

TABLE V.2 (Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
5. Miscellaneous	-77.77	13.41*** (4.44)	0.32* (1.74)	5.12*** (3.96)	0.39*** (2.22)	0.46 (1.34)	6.21**	0.82	44.05	2.29
II. Size Groups										
1. Small companies	189.09	-1.52*** (2.35)	0.06 (1.03)	-0.22 (0.23)	0.70*** (5.58)	1.55*** (7.60)	18.52***	0.93	11.08	0.97
2. Medium size companies	-1.30	3.84** (1.88)	0.21*** (2.37)	1.69 (1.12)	0.67*** (3.53)	1.48*** (6.68)	15.91***	0.92	17.43	1.69
3. Large companies	-109.52	-4.87 (1.17)	0.02 (0.17)	1.37 (1.23)	0.65*** (3.02)	1.21*** (10.54)	32.01***	0.96	51.43	1.85
III. Growth Rate Groups										
1. Slow growth rate companies	338.08	-5.15 (1.43)	0.21 (1.20)	2.28 (0.76)	0.84*** (2.18)	2.87 (3.48)	5.58**	0.80	49.90	1.00

TABLE V.2 (Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
2. Average growth rate companies	857.64	-0.58 (0.22)	-0.09 (0.29)	-0.30 (0.12)	-0.02 (0.16)	-0.09 (0.49)	0.09	0.06	90.20	0.78
3. Fast growth rate companies	246.48	-8.41 (0.65)	-0.04 (0.10)	-1.35 (0.34)	0.85 (0.83)	2.60*** (2.97)	2.34	0.63	169.40	0.93

Notes: As in Table V.1.

TABLE   V.2 (Contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
2. Average growth rate companies	857.64	-0.58 (0.22)	-0.09 (0.29)	-0.30 (0.12)	-0.02 (0.16)	-0.09 (0.49)	0.09	0.06	90.20	0.78
3. Fast growth rate companies	246.48	-8.41 (0.65)	-0.04 (0.10)	-1.35 (0.34)	0.85 (0.83)	2.60*** (2.97)	2.34	0.63	169.40	0.93

Notes: As in Table V.1.

as there is a collinearity between the tax variable and the profitability variable, and we have experimented with excluding the profitability variable only. It may also be desirable to experiment with the profitability variable but excluding the tax variable.

TABLE V.3·

Annual Compound Rates of Growth of GFA
(1961-62 to 1975-76)

		(Per cent)
1.	Chemicals	13.41
2.	Food products	10.45
3.	Miscellaneous	10.45
4.	Textile	10.23
5.	Engineering	9.80
6.	TOTAL	10.40

The econometric results show that the corporate profits tax has a substantial inhibitive effect on corporate investment in the fastest growing industry groups, namely, chemicals, and that the relationship between the tax factor and corporate investment is also significant and substantial. In food products and miscellaneous industry, which had a faster rate of growth of capital formation during the study period than the corporate sample taken as a whole.

In line with our findings at the aggregated level, we found that at the disaggregated level also, the liquidity factor is an important determinant of corporate investment. The net assets available for investment is a highly

significant determinant in the case of textile industry, chemical industry, and food product industry, among the five industry groups, whose data were studied; it is also significant in all the size groups and in slow-growth rate companies and fast-growth rate companies. The internal resources factor is a relevant and significant determinant in food products industries and miscellaneous industries. We, however, found, contrary to our findings at the aggregated level, that the external resources factor is a significant determinant of corporate investment at the disaggregated level (in 7 out of the 11 groups studied).

The accelerator factor has some relevance to corporate investment, but it is highly significant only in the case of textile industry, food product industry and medium-size companies; in other groups, the relationship is either weak or irrelevant. It is must be pointed out that in the engineering industry, in particular, the accelerator-investment relationship is irrelevant. The profitability factor is found to be significant only in the size-wise analysis and in the engineering industry, but the regression coefficients generally do not have a priori signs.

3. Corporate Profits Tax and Corporate Profitability

a. **Choice of dependent variable.** The analysis of
the determinants of corporate investment indicated that
the profit factor is not a major determinant of
investment. We have, therefore, attempted to assess the
determinants of corporate profitability. The traditional
hypothesis is that the corporate profits tax has an adverse or
depressive effect on profitability after tax because an increase in
it leads to a fall in the amount of profits after tax that
can be allocated between dividends and retentions.

The dependent variable, profitability after tax
or net rate of return, is profits after tax as a per cent
of net worth, the latter being share capital plus reserves.
This measure of profitability (PAT/NW) shows the rate of
return after tax on the owned funds of the shareholder and
is, therefore, preferred to other measures of the rate of
return, such as those related to total capital employed
or net worth plus debt. The return to other categories of
capital, such as debt, deferred credit, borrowings from
associates, etc., is determined in advance and is paid
before the rate of return to equity shareholders can be
considered.

b. **Explanatory variables.** While it is not possible
to capture quantitatively the impact of all the possible
factors, an attempt is made here to assess the tax effect,
the capacity utilisation effect and the financing pattern
effect, factors which a priori have an important bearing
on the net rate of return on corporate investment.

(i) <u>Financing pattern effect.</u> The pattern of
financing corporate fixed assets has a bearing on the
rate of return, as debt capital receives a **preferential tax**
treatment as compared to equity capital. Further, in
the case of a high-profit company, with a good dividend
record, debt capital turns out to be even more economical,
if the rate of dividend exceeds the rate of interest on
debt capital.

The pattern of financing of corporate fixed assets
is represented in the model by the debt equity ratio (i.e.,
D/E). An increase in the D/E ratio suggests that a larger
proportion of assets are being financed through debt and this
would have a favourable effect on profitability through re-
duction in post-tax cost of capital. A fall in the D/E
ratio will indicate a larger use of owned funds, internal
plough-back and/or fresh equity. An increase in the
variable would, thus, improve net profitability and
conversely.

(ii) <u>Turnover effect.</u> The percentage of net sales
to gross fixed assets (NS/GFA) is taken to measure the
turnover effect. An increase in the variable suggests
that sales are growing faster than fixed assets. To the
extent that sales may reflect actual production, the
increase in the variable would also suggest that capacity
utilisation is improving. As NS is measured in terms of
current prices, it takes into account not only the
increase in output in physical terms but also the increase
in it due to changes in prices. An improvement in the
variable would favourably affect net profitability.

(iii) <u>Tax effect.</u> The effective tax rate $(\overline{T}/\overline{P}BT)$ is the final factor that determines the rate of return after tax. An increase in T/PBT would reduce net profitability and the traditional hypothesis is, therefore, that the tax effect is detrimental to net profitability.

c. <u>Model specification.</u> The profitability function has been estimated from the following equation:

$$P = f\ (FP_e,\ Tur_e,\ T_e) \quad \cdot \quad \cdot \quad \cdot \quad (1)$$

where, P = rate of return or profitability after tax variable;

FP_e = financial pattern variable;

Tur_e = turnover or capacity utilisation variable, and

T_e = tax variable.

The equations are derived in the log-linear and linear forms. <u>A priori,</u> while the sign of T_e would be negative, those of the other determinants would be positive, suggesting that an increase in T_e would reduce P, while an increase in the other determinants would improve P.

d. <u>Analysis of results.</u> The model offers an econometrically acceptable explanation of the determinants of profitability after tax, as can be observed from the significant F values in both its linear and log-linear forms and the high values of $\overline{R}^2$, namely, 0.75 in linear and 0.83 in log-linear variant of the model. There is also no auto-correlation among the residuals and the model is found to be useful for predictive purposes. Further,

the regression coefficients of two of the three explana-
tory variables have a priori signs and they are also
significant. Only the regression coefficients of the tax effect
variable are not significant and they also do not have a
priori signs, suggesting that the factor is not a relevant
determinant of profitability after tax.

TABLE V.4

Determinants of Corporate Profitability

Dependent variable: PAT/NW

	Inter-cept	T/PBT	D/E £	NS/GFA	F-value	R^2	SEE	DWS
1. Log-linear	- 4.814	0.554 (1.022)	0.440*** (4.095)	1.144*** (1.987)	17.900***	0.830	0.161	1.662
2. Linear	-15.538	0.258 (1.377)	19.688*** (2.788)	0.069 (1.201)	11.007***	0.750	2.295	1.794

Notes: 1. Figures in parentheses are t-values of the regression coefficient.

2. *** indicates that the regression coefficient is is significant at 1 per cent level of confidence.

The main conclusions that emerge from an analysis
of the results of the model presented in Table V.4 are:

(i) The important determinants of corporate profita-
bility are the pattern of corporate financing and the turnover
rate. The regression coefficient of the two variables are
significant at 0.1 per cent level of confidence in the log-
linear form and that of the former only in the linear form
of the model.

(ii) The econometric results on the effect of the
pattern of corporate financial suggest that an increase in
expenditure on debt has a favourable impact on profitability,
through the preferential tax treatment granted to payments
made for use of debt capital under the income tax law. We
find that a one per cent increase in D/E leads to a 0.44 per
cent rise in profitability after tax.

A study of the trends in the proportion of external
finances and retained profits in their combined total
finances provides further evidence in support of the impact
of the pattern of financing on profitability, for we find
the former to be the dominant component.

(iii) The turnover ratio also has a favourable impact
on net profitability and the magnitude of the impact is more
substantial than that of the pattern of financing. A higher
turnover of GFA reduces the operational and overhead costs per
unit of output and sales, resulting in higher gross profita-
bility and net profitability, assuming that the tax rate does
not increase. The regression coefficient of the turnover
variable is 1.14 in the log-linear model, indicating a more
than elastic response of net profitability to a change in
sales turnover.

(iv) Among the three explanatory variables whose
effects on net profitability were assessed, only the tax
effect variable has regression coefficients which are not
significant, both in the log-linear and linear forms of the
model. Further, the signs of the coefficients are negative,
which is contrary to a priori expectations. The results
suggest that the tax factor is not a relevant determinant

of net profitability, because while other factors have a
bearing on pre-tax profits, the tax factor, as incorporated
in the model, has no influence on pre-tax profits and it has
a bearing only on post-tax profits.

We, thus, see that in the context of large manufac-
turing companies in India, the profitability after tax is
most substantially influenced by the turnover ratio and the
pattern of corporate financing. Improvement in sales turn-
over, by resulting in lower average per unit cost of produc-
tion and of sales improves profitability after tax. Debt
capital, with its inherent tax benefits, also has a favourable
impact on profitability. The impact of the tax factor
does not seem to be significant and we may consider the tax
variable to be an unimportant factor in determining net
profitability. The fiscal incentives blunt the regressive
effects of the corporate tax. In fact, if profitability
before tax does not improve (and which is influenced by both
the pattern of financing and sales turnover), there is no
possibility of the profitability after tax improving, unless
the tax rate is reduced.

e. Disaggregated analysis. Among the determinants of
corporate investment at the disaggregated level, we find
that the past debt equity ratio and the effective tax rate
are significant determinants of corporate profitability
after tax.

The tax factor has the expected depressive effect
on corporate investment in four out of the five disaggre-
gated industry groups and the regression coefficients of the
tax factor are found to be highly significant in chemicals,food
products and miscellaneous industries. The size-wise
analysis reveals a significant relationship between the tax

TABLE V .5

Determinants of Corporate Profitability : Disaggregated Analysis

Dependent Variable: PAT/NW

Categories		Intercept	T/PBT	D/E	NS/GFA	F-value	R^2	SEE	DWS
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
I. Industry Groups									
1. Engineering	a.	-0.66	0.08*** (0.19)	-0.61 *** (2.52)	0.47 (0.99)	2.27	0.38	0.17	1.53
	b.	14.40	0.04*** (0.34)	-20.94 *** (2.65)	0.04 (0.95)	2.50	0.41	2.06	1.58
2. Textiles	a.	5.77	-0.35 (1.24)	0.30 *** (2.39)	-0.34 (0.99)	2.17	0.37	0.12	1.40
	b.	13.34	-0.51 (0.85)	-4.58 *** (2.99)	0.04 (1.47)	3.13*	0.46	1.20	1.49
3. Chemicals	a.	8.86	-1.96 *** (7.77)	-0.17 *** (2.84)	0.22 (1.04)	63.70***	0.95	0.08	1.92
	b.	34.78	-0.51 *** (9.85)	-4.58 *** (3.83)	0.04 *** (2.28)	89.84***	0.96	0.83	2.66
4. Food products	a.	11.30	-2.11 *** (3.35)	-0.06 (0.67)	-8.09 (0.22)	8.37***	0.70	0.17	1.28
	b.	45.31	-0.56 *** (3.32)	-8.66 (0.43)	-0.04 (0.22)	8.17***	0.69	2.29	1.41
5. Miscellaneous	a.	2.53	-0.65 *** (2.22)	0.21 (1.23)	0.41 (0.99)	2.12	0.37	0.14	2.02
	b.	19.54	-0.19 *** (2.08)	-13.17 (1.43)	0.03 (0.95)	1.98	0.35	1.85	2.07
II. Size Groups									
1. Small companies	a.	0.51	-2.34 *** (6.11)	-0.57 *** (3.38)	1.95 *** (3.69)	15.95***	0.81	0.14 c	1.53

TABLE V.5 (Contd.)

(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	b.	12.78	-0.35 (6.23)***	-26.48 (3.90)***	0.12 (4.55)***	16.28***	0.82	1.09	2.12
2. Medium size companies	a.	-1.23	0.57 (1.26)	1.32 (3.04)***	0.68 (3.84)***	8.86***	0.71	0.09	2.22
	b.	-15.66	0.13 (1.24)	62.31 (2.82)***	0.04 (3.35)***	7.06***	0.66	1.05	2.28
3. Large	a.	3.57	-0.55 (1.71)*	-0.11 (0.85)	0.18 (0.49)	1.03	0.22	0.13	1.89
	b.	19.61	-0.18 (1.92)**	-5.27 (1.15)	0.02 (0.54)	1.36	0.27	1.56	1.87
III. Growth Rate Groups									
1. Slow growth rate companies	a.	4.19	-0.69 (1.21)	0.14 (0.36)	0.17 (0.28)	0.69	0.16	0.20	1.45
	b.	11.75	-0.15 (1.32)	6.15 (0.40)	0.02 (0.49)	0.75	0.17	1.73	1.42
2. Average growth rate companies	a.	4.20	-1.20 (7.89)***	-0.62 (1.71)***	0.41 (0.92)	21.70***	0.86	0.17	1.06
	b.	31.90	-1.02 (6.19)***	-24.06 (0.62)	0.21 (2.27)***	13.20***	0.78	5.55	0.91
3. Fast growth rate companies	a.	6.42	-0.64 (1.70)*	-0.02 (0.22)	-0.27 (1.22)	4.46**	0.55	0.09	1.59
	b.	33.92	-0.32 (2.71)***	-5.71 (1.50)	-0.02 (1.77)*	5.99**	0.62	1.11	1.58

Notes: 1. a. Log linear

b. Linear

2. Other notes as in Table V.1.

factor and net profitability in the case of small companies and large companies but not in the case of medium-size companies. The tax factor is also found to be highly significant, and has a depressive effect on net profitability in average growth-rate companies and fast growth-rate companies. We, thus see that for groups of companies which experienced an average rate of growth or above average rate of growth of capital formation, the tax factor is a more relevant determinant of corporate net profitability than companies which did not experience a good rate of growth of capital formation. This can also be seen from a comparison of the results presented in Table V.3 and Table V.5.

As regards the effect of past debt equity ratio on corporate profitability, the disaggregated results support the aggregated level findings of a substantial impact of the capital structure factor on corporate profitability in the case of 6 out of the 11 disaggregated groups, but in some of the equations, the sign of the regression coefficient is not appropriate. As regards the effect of sales turnover or capacity utilisation on corporate net profitability, the econometric results support the aggregated-level findings in the case of 4 disaggregated groups.

VI. THE CORPORATE PROFITS TAX, DIVIDEND POLICY AND CAPITAL STRUCTURE

1. Introduction

We examined in Chapter V the determinants of corporate investment and profitability and in particular, have assessed the effect of the corporate profits tax. In this chapter we study the determinants of corporate dividend policy and capital structure.

As far as the policy relating to variable dividend (i.e., equity dividend)[41] is concerned, the traditional hypothesis is that under the classical system of taxation of corporate income, the personal income tax liabilities of dominating shareholders may get reflected in corporate dividend policy. Under the classical system of taxation of corporate income, as the one we have in India, the corporate entity and the individual shareholder are regarded, for purposes of income taxation, as separate entities, and this results in double taxation of the dividend component of shareholder's income[42]. The inclusion of dividend income in the personal income tax

[41] The dividend policy is expressed only in terms of variable dividend, since the rate of preference dividend is pre-stipulated. Further, we have assumed in this study that dividends form the active core of the profit allocation decision.

[42] Alternative systems of taxation of corporate income which seek to integrate, partially or wholly, the taxation of corporate income with that of personal income, attempt to reduce or eliminate such double taxation of dividend income. These systems would therefore, restrain the use of pressure tactics by dominating shareholders to influence corporate dividend policy.

base of the individual dividend recipient under a **progressive**
system of personal income taxation, as in India, might
change the marginal income tax rate bracket of the dividend
recipient. Such a possibility can, theoretically, induce
the dominating group of shareholders to influence corporate
dividend policy in such a way as to reduce their total tax
liability under the personal income tax law by changing
the dividend rate.

Secondly, it is hypothesised that companies tend
to maintain the dividend rate and this is known as the
dividend stabilisation hypothesis. An increase in the rate
of the corporate profits tax would ordinarily affect the
corporate capacity to maintain the dividend rate, because
it reduces the amount of distributable profits.

As regards the corporate tax effect on corporate
capital structure, the traditional hypothesis is that the
preferential tax treatment granted to interest payments as
compared to dividend payments makes the tax system inheren-
tly biased in favour of debt financing and against equity
financing and an increase in the tax rate would further
accentuate these biases.[43] As such, the corporate tax
has an impact on capital structure decisions.

43/   As long as the marginal personal income tax rate is
      higher than the corporate profits tax rate, such a
      bias in favour of debt financing exists and only
      when the marginal personal income tax rate is lower
      than the corporate profits tax rate, would equity
      financing get a preferential tax treatment. The
      income tax-system would be neutral in its effect
      on equity and debt financing when the marginal
      personal income tax rate is identical to the corpo-
      rate profits tax rate.

2. Corporate Profits Tax and Corporate Dividend Policy

a. **Choice of dependent variable.** Dividend policy
is represented by the dividend rate, which is the ratio
of equity dividends to equity share capital (ED/ESC).
Earlier studies in India and abroad $\underline{/}$ (Venkatachalam and
Sarma, 1978), (King, 1977), (Swamy and Rao, 1975), (Rao
and Sarma, 1971), and (Britain, 1966) among others $\underline{/}$ have
taken the level of dividends as the dependent variable
and have attempted to assess its determinants. The level
of annual dividends, however, is not an adequate indicator
of corporate dividend policy for we do not get any idea
of the dividend rate. The level of dividends may change
following a change in the size of the equity share capital,
without any change in the dividend rate or the dividend
pay-out ratio. Similarly, the dividend rate and the divi-
dend pay-out ratio may change with or without a change
in the level of dividends. Finally, to examine the dividend
stabilisation hypothesis, the level of dividends would not
be a suitable indicator of dividend policy. The dividend
rate and the dividend pay-out ratio are better indicators
of corporate dividend policy than the absolute level of
dividends. We have used the dividend rate to represent
corporate dividend policy.

b. **Explanatory variables.** The explanatory variables
included in the model attempt to capture four effects which

have a bearing on dividend policy. The four effects[44]/ studied are:

(i) the tax effect (T_e);

(ii) the lagged-dividend effect (D_e);

(iii) the shareholder's marginal personal income tax liability effect (PIT_e); and

(iv) the profitability effect (P_ρ).

(i) **The tax effect.** The effective tax rate (T/PBT) affects the dividend rate through its direct effect on the amount of profits after tax available for allocation as dividends and retentions. Ordinarily, an increase in T/PBT would reduce the profits available for allocation between dividends and retention, and depending on the corporate dividend policy, (dividend stabilisation or not), their respective shares would be altered. If the company wants to maintain the goodwill of the shareholders and this may be considered desirable if it expects to bring out an equity issue in the near future, it would maintain the dividend rate, by raising the dividend pay-out ratio when the level of profits after tax falls due to an increase

44/ Some of the other variables included in dividend models are rate of interest, level of investment, internal liquidity, growth rate of profits, level of sales and degree of liberality of depreciation allowance. The well-known Lihtner model includes lagged dividend, and alternative measures of income. There is no unanimity on the selection of the variables. Dhrymes and Kurz (1967) bring out a significant relationship between investment and dividends. Kuh (1965) also established some influence of investment on dividends but Brittain (1964 and 1966) found that investment and also internal liquidity did not make any significant contribution to the explanation of dividends. It must be mentioned that these variables are more relevant in explaining the level of dividends than the ratio of dividends to profits after tax or the rate of dividends. For details, see (Brittain, (1966), (Fama and Babiak, 1968), (Fama, 1974), (Darling, (1957), (King, 1977) and (Swamy and Rao, 1975).

in T/PBT. This possibility is greater if the fluctuations
in the tax rate are not a regular feature of the tax system
and/or the magnitude of the fluctuations is small. However,
if the shifts in the tax rates are substantial and/or they
have become a regular feature of the tax system, an increase
in the tax rate might have a negative effect on the rate of
dividends.

The a priori sign of the T_e variable is expected to
be negative, i.e., an increase in T/PBT would reduce the
dividend rate, and would provide evidence against the
dividend stabilisation hypothesis. A positive sign of the
T_e variable would be indicative of the operation of the
dividend stabilisation policy. The latter evidence,
however, might not be conclusive as the dividend rate may
be maintained or increased due to an improvement in profit-
ability and it may not necessarily be due to the adoption
of a dividend stabilisation policy.

(ii) The lagged-dividend effect. The past rate
of dividend is generally believed to have a bearing on the
current dividend rate and so the popular view is that
companies tend to maintain the dividend rate, especially
in the short-run. The past dividend record is incorporated
into the model by a lagged average of the dividend rate
(D_e) in the preceding two years. An increase in the D_e
variable would raise the dividend rate and conversely.
The a priori sign of the D_e variable would be positive,
and this evidence may be suggestive of the corporate
management's policy of protecting the dividend rate.

(iii) The shareholder's marginal personal income
tax liability effect. The personal income tax liability of
shareholders is considered to have an important bearing on
the dividend rate, because under a progressive income tax
system, an addition to income can change the tax rate of
the shareholder. To capture the influence of dominant
shareholders on the dividend rate, the marginal personal
income tax rate (PIT_e) variable is included in the model.

The practice of retaining a part of corporate
profits within the company provides a type of tax shelter
to the shareholder and this can taken four forms. Firstly,
and immediately, the non-distribution of the retained
component of profits may reduce the marginal income tax
rate otherwise applicable to an individual dividend income
recipient; secondly, corporate retentions may lead to
realised capital gains which are taxed at rates lower than
those applicable to ordinary income; thirdly, if dividends
are declared subsequently out of the profits retained
earlier, the investor benefits from tax deferral and,
finally, capital gains unrealised at the time of the
investor's death completely escape tax, even though they
are realized from the heirs.

The behavioural rationale underlying the tax
shelter hypothesis is, to quote Brittain (1966,p.13),
"that the pay-out ratio adopted by boards of directors is
influenced by the desire of stock-holders for a tax
shelter. This influence could be transmitted in a number
of ways so that pay-out may lag as income tax rates rise
if directors themselves are interested in a tax shelter,
or are forced to take the interests of stockholders into
account". An important implicit assumption, as Brittain

emphasises (p.79), is that the shareholders do not inter-
pret the dividend lag as indicative of a dark future,
requiring disposal of existing stocks. Thus, it is believed
that the progressive nature of the personal income tax,
under which different income categories of shareholders are
liable to income tax on their dividend income at different
marginal rates, offers a stimulus for manipulating the
dividend rate to reduce the total tax burden of the cont-
rolling shareholders on their corporate-source income.
A priori, the personal income tax will have a negative
effect on the dividend rate, an increase in the marginal
personal income tax rate will encourage the dividend policy-
influencing shareholders to lower the dividend rate in order
to reduce the level of their dividend income. A positive
sign of the PIT_e variable would, however, suggest the non-
operation of the hypothesis, i.e., the shareholder's personal
income tax liability does not influence corporate dividend
policy.

As different shareholders are liable for personal
income tax at differend marginal rates, we used the assess-
ment data on dividend income distribution according to
ranges of total assessed income of individual shareholders,
as published in the All India Income Tax Statistics (AIITS)
by the Ministry of Finance, Government of India. The
marginal personal income tax rate applicable to different
income ranges was applied to these data to obtain a per-
centage distribution of assessees with dividend income
taxed at the respective marginal personal income tax rates
in different years. The arithmetic mean of the marginal
income tax rates applicable to dividend income was worked
out from these assessed dividend income data and is used
to measure the personal income tax effect on the dividend
rate.

(iv) <u>The profitability effect</u>. The profitability effect
is measured through the profitability rate, i.e., profits before
tax as a per cent of net worth (PBT/NW). The pre-tax, rather
than the post-tax, measure of profitability has been included in
the model in view of the inclusion of also the tax variable
separately. A change in profitability has a close bearing on the
dividend rate because it affects the level of profits available
to corporate management to decide upon the amount of dividends
that may be paid to equity shareholders. An increase in profitabi-
lity would tend to raise the dividend rate.

c. <u>Specification of the model</u>. The model for assessing the
determinants of corporate dividend policy takes the following
functional form:

$$ED/ESC = f(T_e, D_e, PIT_e, P_e)$$

where

ED/ESC = dividend rate;

T_e = tax variable;

D_e = lagged dividend variable;

PIT_e = shareholders marginal personal income
tax liability variable; and

P_e = profitability variable.

d. <u>Analysis of results</u>. Table VI.1 presents the results of
two models on the determinants of corporate dividend policy,
incorporating the tax effect, lagged-dividend effect and share-
holder's marginal personal income tax effect in model 1, and
including also the profitability effect in model 2. Both the
models offer us statistically acceptable explanations of the
determinants of dividend policy as can be judged to their
significant F-values and high R^2 values. We have accepted the

TABLE VI.1

Determinants of Dividend Policy

		Intercept	T_e	D_r	PIT_e	P_e	F-value	R^2	SEE	DWS	RHO
1.	a. Linear	22.156	-0.213* (1.463)	0.253*** (2.726)***	-0.415*** (2.148)	-.	7.565***	0.716	2.352	1.203	0.393
	b. Log linear	4.816	-1.150** (2.015)**	1.461*** (2.786)***	-1.146* (1.633)*	-	7.239***	0.707	0.200	1.188	0.404
2.	a. Linear	19.912	-0.173 (1.052)	0.283*** (2.650)	-0.387* (1.890)	-0.125 (0.637)	5.401***	0.730	2.433	1.236	0.377
	b. Log linear	4.181	-0.977* (1.514)*	1.582 (2.623)***	-1.086* (1.459)	-0.201 (0.481)	5.024***	0.715	0.209	1.212	0.392

Notes: 1. Figures in parentheses are 't' values of the regression coefficient.

2. *, ** and *** : regression coefficient is significant at 10 per cent, 5 per cent and 1 per cent, respectively, level of confidence.

explanation provided by model 1. Even though model 2 explains a marginally larger proportion of the variations in dividend policy than model 1, the sign of the regression coefficient of the profitability factor is not significant and also inappropriate. On the other hand, the regression coefficient of all the explanatory variables in model 1 are significant and they also have a priori signs.

The accepted explanation of corporate dividend policy thus rests on the corporate tax variable, the lagged-dividend variable and the personal income tax variable. In other words, the income tax system and past corporate dividend rate provide an adequate and acceptable explanation of corporate dividend policy of large manufacturing companies in India, and profitability, in particular, is not found to be a relevant determinant.

The major conclusions that emerge from an analysis of the econometric results presented in Table VI.1 are:

(i) Dividend policy is responsive to all the three determinants whose effects were studied in the model. It seems to be more influenced by the past dividend rate and the personal income tax liability of shareholders than by the effective corporate profits tax rate.

(ii) The highly significant regression coefficients of the past dividend rate variable in model 1, with a positive sign (and also significant coefficient in model 2) provides evidence in support of the dividend stabilisation hypothesis.

The log-linear results show that a 1.0 per-
cent increase in the past dividend, rate
would lead to 1.5 per cent increase in the
present dividend rate. The highly elastic
response of the current dividend rate to the
past dividend rate may be due to the high
expectations aroused among the shareholders
by rising dividend rate in the past and
which corporate management may try to meet.

(iii) Corporate managements seem to keep in pers-
pective the personal income tax liability
of dominating groups of shareholders, when
determining their current dividend rate.
The regression coefficient of the PIT effect
variable (log-linear equation) suggests that
a 1 per cent increase in the marginal personal
income tax rate of shareholders would lead
to a 1.1 per cent fall in the dividend rate.
The highly elastic response of dividend rate
to the personal income tax variable may be
due to the progressive income tax rates
applicable to individuals. Our results
indicate that corporate dividend policy
is used to provide a tax shelter to major
groups of shareholders, but this may act as
a contraint to the operation of a dividend
stabilisation policy.

(iv) The corporate profits tax has a depressive
effect on the dividend rate because an
increase in the rate reduces the profits
available for allocation between dividends
and retentions. As a proportion of profits
after tax are statutorily required to be
retained to avail of the fiscal incentives
like the investment allowance, such propor-
tion of net profits cannot be used for
distribution. The econometric results
(log-linear equation 1), therefore, show
that a 1.0 per cent increase in the effective
tax rate (i.e. after investment allowance
and other incentives have been taken into
account) would lead to a 1.2 per cent fall
in the rate of dividend. The estimates
reveal that corporate dividend policy is
highly sensitive to the corporate tax.

The negative sign of the regression
coefficient of the corporate profits tax
effect variable on dividend policy indicates
that corporate managements do not necessa-
rily try to maintain the dividend rate when
there is an increase in the effective tax
rate. Evidence on the personal income tax
impact also suggests that the dividend
stabilisation policy may not be followed if
the corporate entity has to provide a tax
shelter to dominating group of shareholders.
The past dividend rate impact, however, suggests
the operation of the dividend stabilisation
policy. We may, therefore, conclude that the

net effect of the tax factor (corporate tax and
personal income tax) and the past dividend rate
factor would depend on which of the two forces
play a more dominant role. In the present
exercise, we find that the tax factor is a more
important factor indicating, that corporate mana-
gements of large manufacturing companies in India
do not necessarily follow a dividend stabilisation
policy.

(v) It is interesting to find that the result on the
impact of the P_e variable (in model 2) suggests
that an increase in profitability after tax would
lead to a decline in the dividend rate. This
result is contrary to general expectations,
because ordinarily the dividend rate, even if it
does not increase, should not fall when profita-
bility after tax is rising. Such an unlikely
situation may arise only when companies follow a
policy of large retentions either to increase
their equity base or for reinvestment, or alter-
natively, as is also suggested by our results on
the PIT_e variable, to provide a shelter to the
dividend-influencing group of shareholders. A
study of the correlation between profits after
tax and retained profits provides evidence on the
tax shelter hypothesis (as the two are positively
and highly correlated, the correlation being of
the order of 0.7). It may, however, be pointed
out, as was shown earlier in chapter V, that
under a system of price controls and regulatory
practices, the profitability factor may not be
freely operative and the insignificant regression
coefficient of the profitability factor, therefore,
rightly suggests that it is not a relevant deter-
minant of dividend policy.

e. **Disaggregated analysis.** At the disaggregated
level, the model which assesses the effect of the effective
corporate profits tax rate, the personal income tax rate
and the past dividend rate offers a somewhat less acceptable
explanation of the determinants of corporate dividend policy
than at the aggregated level. In only one group, namely,
food products, the model captures 70 per cent of the
variations in corporate dividend policy and in five others,
it explains between 52.0 per cent and 68.0 per cent of the
variations.[45/] One reason for this may be the inappropria-
teness of the aggregated-level measure of PIT_e variable used
in the disaggregated-level exercises due to non-availability
of such data at the disaggregated level. It is also likely
that there are some special factors having a bearing on
dividend policy at the disaggregated level, which may not
have been captured through the other two variables included,
namely, past dividend rate and effective corporate profits
tax rate.

Among the six disaggregated groups for which the
model is able to explain more than one-half of the varia-
tions in corporate dividend policy, the PIT_e variable is a
significant explanatory variable in engineering industry,
miscellaneous industry, medium-size companies and large
companies. The corporate profits tax variable is found
to be important in food products, engineering and large
companies and the past dividend rate in slow-growth rate
companies (Table VI.2).

45/ Among the other five disaggregated groups, the model
explained between 30 per cent and 40 per cent of the
variations in dividend policy in 3 groups and between
14 per cent and 20 per cent in the remaining 2
groups.

TABLE VI.2

Determinants of Corporate Dividend Policy : Disaggregated Analysis

Dependent Variable : ED/ESC

Categories		Intercept	T_e	D_e	PIT_e	F-value	R^2	SEE	DWS	RHO
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
I. Industry										
1. Engineering	a.	11.95	0.13*** (2.02)	0.06 (0.86)	-0.23* (1.82)	4.57	0.60	1.05	1.73	0.13
	b.	4.02	0.65*** (2.14)	0.08 (0.39)	-1.19*** (2.07)	3.85	0.56	0.12	1.76	0.11
2. Textiles	a.	7.14	-0.10 (1.58)	0.19 (0.75)	0.12 (1.42)	1.41	0.32	1.14	1.77	0.10
	b.	1.69	-0.41 (1.46)	0.19 (0.73)	0.46 (1.23)	1.13	0.27	0.12	1.67	0.15
3. Chemicals	a.	12.87	-0.14 (0.66)	0.87 (1.22)	-0.06 (0.24)	1.63	0.35	2.23	1.44	0.05
	b.	4.57	-0.61 (0.66)	0.74 (1.55)	-0.37 (0.34)	2.06	0.41	0.21	1.57	0.01
4. Food products	a.	30.90	-0.38*** (3.32)	1.75 (1.32)	-0.05 (0.42)	8.16	0.73	1.34	1.55	0.16
	b.	9.80	-1.86*** (3.40)	0.26 (1.01)	-0.02 (0.05)	7.75	0.72	0.11	1.64	0.13
5. Miscellaneous	a.	6.34	0.05 (1.37)	-0.17 (1.24)	0.16*** (2.12)	3.90	0.57	0.75	1.86	0.06
	b.	0.67	0.17 (1.10)	-0.31 (1.09)	0.57** (1.98)	3.30	0.52	0.07	1.75	0.12

(1)		(2)	(3)	(4)
II. Size				
1. Small	a.	0.21	0.02 (0.50)	0.36 (1.29)
	b.	-0.27	0.11 (0.34)	0.34 (1.11)
2. Medium	a.	-6.68	0.18 (1.40)	-0.36 (1.15)
	b.	-4.74	0.93 (1.57)	-0.52 (1.27)
3. Large	a.	13.61	0.11* (1.76)	0.03 (0.51)
	b.	3.52	0.38 (1.77)*	0.03 (0.12)
III. Growth Rate				
1. Slow	a.	7.22	0.08 (0.83)	0.20*** (2.75)
	b.	3.28	0.43 (0.89)	0.27 (1.59)
2. Average	a.	6.15	0.02 (0.54)	0.02 (0.01)
	b.	0.91	0.02 (0.24)	0.01 (0.02)
3. Fast	a.	2.49	0.04 (0.67)	0.06 (0.69)
	b.	-0.01	0.12 (0.54)	0.18 (0.88)

Notes: a. : Linear
         b. : Log linear
         t-values in parentheses.

(5)	(6)	(7)	(8)	(9)	(10)
0.09 (0.97)	0.74	0.20	1.32	1.18	0.38
0.34 (0.72)	0.51	0.14	0.15	1.15	0.39
0.31*** (2.65)	3.26	0.52	1.15	1.88	0.03
1.29*** (2.65)	3.24	0.52	0.11	1.81	0.03
-0.17 (1.67)	2.06	0.41	1.05	1.97	-0.01
-0.68 (1.81)**	1.92	0.39	0.09	2.03	-0.04
-0.10 (0.59)	6.51	0.68	1.46	1.73	0.11
-0.91 (1.12)	3.24	0.52	0.18	1.81	0.07
0.11 (1.20)	0.73	0.20	1.18	1.22	0.37
0.38 (1.14)	0.48	0.14	0.11	1.08	0.43
0.13 (1.07)	3.57	0.54	0.87	2.15	-0.22
0.38 (0.79)	3.92	0.57	0.07	2.09	-0.16

No firm conclusions on the depressive effect of
the corporate profits tax on the dividend rate, of the tax
shelter hypothesis and the dividend stabilisation
hypothesis can, however, be drawn from the disaggregated
level results, in view of the insignificant regression
coefficients   for many of the explanatory variables.

3. Corporate Profits Tax and Corporate Capital Structure

a. **Choice of dependent variable.**   The dependent
variable is the debt equity ratio, defined as the ratio of
debt (i.e., long-term borrowings and debentures or LTD) to
net worth (i.e., equity share capital and reserves or EQ +
RP). While the optimal ratio is traditionally taken to be
1:1, with increasing capital intensity of operations,
higher ratios of 2:1 and 3:1 have become acceptable, both
by economists and financial analysts.

b. **Explanatory variables.**   The explanatory variables
chosen in the model assess the impact of the tax effect
(T_e), the risk effect (R_e) and the cost of debt capital
effect (CD_e) on the corporate capital structure.

(i) **The tax effect.**   The preferential tax treat-
ment of interest under the corporate profits tax system
has given rise to the traditional hypothesis that the tax
system encourages debt capital and discourages equity
capital. The bias towards debt gets accentuated when the
tax rate is increased, for the interest-deductibility
benefit, in terms of tax saved, increases. However,
the hypothesis is that the corporate tax constrains
corporate capital structure decision.

The tax effect is measured by the effective tax rate (T/PBT). An increase in the T_e variable will have a positive effect on the debt-equity ratio through its direct negative impact on retentions if the dividend rate is not slashed, and through its indirect negative effect on mobilisation of fresh equity if the dividend rate is slashed. It is possible that mobilisation of fresh equity capital is affected by reduced retentions (even if the dividend rate is maintained) as lower retentions reduce the possibility of a bonus issue, and consequently, an appreciation in the equity share price on that ground. An increase in the T_e variable also increases the tax benefits derived from use of debt capital. The a priori sign of the T_e variable would thus be positive and it would provide evidence in favour of the debt-bias hypothesis.

(ii) The risk effect. The difference in the tax treatment of the cost of debt capital and equity capital is expected to create distortions in corporate capital structure. While the cost of debt gets a preferential tax treatment vis-a-vis the cost of equity capital, the use of debt also increases the cost to the company, the marginal risk of bankruptcy and the bankruptcy cost (a fall in the market value of the company as a result of an increase in the debt-equity ratio). Such a possibility makes it non-optimal to have only debt capital in the capital structure. As such, the lagged past debt-equity ratio has a bearing on the present one. An increase in the lagged past debt-equity ratio increases risk as it allows for a lesser recourse to be made to debt, and vice-versa. While a negative sign of the risk

factor would suggest that the risk factor is relevant in
the determination of corporate capital structure, a positive
sign would suggest that it is not an important factor.

The risk factor effect is measured by a two-year
moving average debt-equity ratio $R_e = \dfrac{DE_{(t-1)} + DE_{(t-2)}}{2}$.

(iii) <u>The cost of debt effect</u>. An increase in the
cost of debt tends to lower the ratio through its negative
effect on use of debt and would support the hypothesis
that an increase in the cost of any source of capital would
lead to a reduction in its use. A shift is then expected
in favour of lower-cost capital, and the variable would
have a negative sign. A positive sign of the   variable
would provide evidence against the increasing capital cost
and falling capital use hypothesis. Such a possibility
exists, especially in the case of capital-intensive opera-
tions, for irrespective of the cost of borrowed capital,
the operations of a project under implementation cannot
be immediately stopped when the cost of that source of
capital funds may increase. At best, there may be a
slow-down in the rate of project implementation.

We have used two measures of the cost of debt
variable, namely, interest as a per cent of profits before
tax plus interest (i/PBT+i), and interest as a per cent of
long-term loans and short-term loans (i/LTL+STL). The
i/PBT+i measure is the commonly used one and shows the
share of debt cost in corporate earnings.

c. <u>Specifications of the model</u>. On the basis of the
above considerations, the following is the specification
of the model used to assess the determinants of corporate
capital structure.

$$DE = f(T_e, RK_e, CD_e);$$

where, D/E = debt equity ratio;

T_e = tax variable;

R_e = risk variable; and

CD_e = cost of debt variable.

d. <u>Analysis of results</u>. The model offers an
acceptable explanation for the variations in the debt-
equity ratio, as can be observed from the significant 'F'
values and high R^2 values. The model using i/PBT+i as the
measure of cost of debt yields statistically superior
results than that using i/loans as the measure of cost of
debt, and the regression coefficients of the past D/E and
CD variables are both highly significant. There is also no
correlation among the residuals.

The main conclusions which emerge from an analysis
of the results on the determinants of corporate capital
structure, as presented in Table VI.3, are:

(i) The positive sign of the regression coefficient
of the risk variable suggests that an increase in the past
debt-equity ratio, while it does increase risk, it does
not, however, reduce recourse to debt capital in the case
of large manufacturing companies in India. Outstanding
debt is found to be highly and positively related to

TABLE VI.3

Determinants of Capital Structure

			Intercept	T/PBT	D/E	(i/PBT+i)	(i/loans)	F-value	R^2	SEE	DWS	RHO
1.	a.	Linear	-0.098	0.001 (1.162)	0.887 *** (22.155)	0.004 *** (3.214)	–	246.320***	0.987	0.119	1.754 (No AC)	0.006
	b.	Log linear	-1.680	0.112 (1.101)	0.876 *** (28.128)	0.343 *** (2.912)	–	384.739***	0.991	0.041	1.610 (No AC)	0.062
2.	a.	Linear	-0.011	-0.00004 (0.022)	0.970 *** (14.283)	–	0.003 (0.567)	123.401***	0.974	0.017	0.799 (AC)	0.591
	b.	Log linear	-0.166	-0.039 (0.160)	0.942 *** (18.004)	–	0.125 (0.648)	215.483***	0.985	0.055	0.784 (AC)	0.596

Note: As in Table VI.1.

current debt and this relationship is thrown up in all the equations. The relationship between the past debt equity ratio and the present debt equity ratio is, however, less than unity. Our results, show that, in the log-linear form of the model, a one per cent increase in the past average debt equity ratio leads to a 0.9 increase in the current debt equity ratio.

The above results indicate that in the Indian context the risk effect factor does not work. There is an economic explanation for this, namely, that when projects are under implementation (and the data used in this study relates to existing companies only), they cannot be suddenly abandoned and their progress can be, at most, slowed down. Therefore, companies would mobilise resources from whatever channels available to them in order to complete an on-going project. This would be particularly so during times of recession (a period covered in the study) when retained profits and other sources of finances do not yield adequate funds. The risk factor, thus, is non-operative when there is a faster growth of borrowings than equity. Data on the 223 sample companies indicate that the average annual compound rates of growth were 9.8 per cent for debt and 8.6 per cent for equity for the study period. A study of corporate operations also shows that debt financing is more easier to obtain than equity financing. Financial institutions generally regard it as a prudent long-term policy to support on-going projects when other sources of finances dry up, or are not realising as much resources as may be needed for the fruitful completion of the project.

(ii) The results on the cost of debt factor substantiates the above interpretation. An increase in the cost of debt is not found to have a negative impact on recourse to additional debt capital mainly because on-going projects cannot be suddenly given up. Further, a study of the trends in the cost of interest during the study period does not depict any sharp and sudden increases. What is more relevant than the cost of debt is the investor's ex-ante expectations on future profitability, irrespective of what aggregated-level ex-post data on profitability may indicate. An increase in the cost of debt would not deter additional investments if ex-ante expectations are bright. Disaggregated level case studies at the company level would be necessary to provide conclusive evidence on the role of ex-ante expectations on corporate investment and, in turn, on the capital structure.

(iii) The tax effect seems to be an irrelevant determinant of capital structure. In none of the equations, the regression coefficient of the variable is found to be significant. The insignificant result on the corporate tax impact on the capital structure can be explained by our findings on the impact of the cost of debt capital. Our results show that a corporate investor does not give primary consideration to changes in cost of capital when he implements an investment programme. Therefore, changes in the effective tax rate, which may further accentuate or reduce the theoretical bias of the tax system in favour of debt capital, would not really matter in the final determination of the capital mix, and as such, the corporate tax does not constrain capital structure

decisions. Rao and Rao (1975) also found the insignificant influence of corporate tax on financing decisions.

e. **Disaggregated analysis.** The analysis of the determinants of corporate capital structure at the disaggregated level provides an acceptable explanation for all the 11 disaggregated groups studied as can be observed from the respective F-values and R^2 values presented in Table VI.4.

As at the aggregated level, the risk factor is not found to be operative in all the 11 disaggregated groups. An increase of 1 per cent in the lagged debt-equity ratio leads to an increase in the present debt-equity ratio by almost the same proportion in most of the disaggregated groups, and by more than one per cent in the case of textile industry, chemicals, food products, large companies, average growth-rate companies and fast growth-rate companies. We, thus, find that while the past debt-equity ratio has a close bearing on the present debt-equity ratio of large manufacturing companies in India, it does not reduce the recourse to additional debt capital.

The cost of debt is not found to be a material factor in determining the corporate capital structure. The regression coefficient of this variable is found to be significant only in the case of chemical industry, small-size companies, large companies and slow growth-rate companies in model 1, and it is significant in the case of

TABLE VI.4

Determinants of Capital Structure : Disaggregated Results

Dependent Variable: D/E

Explanatory variables Group	Intercept	T/PBT	D_e	i/PBT+i	i/L	F-value	R^2	SEE	DWS	RHO
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1. Industry										
a. Engineering 1a	0.042	0.0002 (0.022)	0.944 *** (14.819)	-0.0003 (0.241)	–	103.579 ***	0.969	0.015	2.340	-0.248
1b	-0.060	0.013 (0.162)	0.932 *** (16.802)	-0.008 (0.091)	–	125.784 ***	0.974	0.036	2.183	-0.169
2a	0.034	0.0002 (0.160)	0.931 *** (7.725)	–	-0.0003 (0.141)	103.171 ***	0.969	0.015	2.355	-0.252
2b	-0.049	-0.001 (0.012)	0.955 *** (9.457)	–	0.014 (0.272)	126.629 ***	0.974	0.036	2.198	-0.205
b. Textiles 1a	0.042	-0.001 (1.208)	0.924 *** (12.684)	0.001 (0.683)	–	89.794 ***	0.964	0.013	2.197	-0.122
1b	0.125	-0.141 (0.987)	-0.897 *** (12.780)	0.081 (0.774)	–	122.866 ***	0.974	0.059	2.082	-0.068
2a	0.031	0.00004 (0.042)	1.006 *** (12.550)	–	-0.003 (0.969)	93.993 ***	0.966	0.013	1.790	-0.014
2b	0.258	0.038 (0.181)	1.003 *** (11.717)	–	-0.168 (0.994)	127.497 ***	0.975	0.058	1.657	0.057
c. Chemicals 1a	-0.308	0.008 *** (3.314)	1.299 *** (9.935)	-0.009 ** (2.448)	–	129.138 ***	0.975	0.043	1.239	0.334
1b	-1.416	0.720 *** (3.991)	1.273 *** (15.172)	-0.375 *** (3.187)	–	220.823 ***	0.985	0.071	1.751	0.011

TABLE VI.4 (Contd.)

(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	2a	-0.070	0.004 (0.976)	0.993 (16.616)***	-	-0.014 (1.651)	102.219***	0.968	0.048	1.323	0.290
	2b	-0.116	0.183 (0.820)	1.029 (27.885)***	-	-0.298 (3.997)***	285.555***	0.988	0.063	1.702	0.001
d. Food product	1a	0.036	-0.001 (0.803)	0.996 (7.658)***	0.001 (1.061)	-	66.512***	0.952	0.010	2.209	-0.208
	1b	1.470	-0.344 (0.516)	1.033 (7.612)***	0.012 (0.079)	-	79.002***	0.960	0.137	1.862	0.020
	2a	0.024	-0.001 (0.550)	1.049 (7.787)***	-	0.001 (0.405)	60.470***	0.948	0.011	1.909	-0.067
	2b	0.704	0.102 (0.155)	1.123 (11.533)***	-	-0.338 (1.360)	94.160***	0.966	0.126	1.844	-0.069
e. Miscel- laneous	1a	0.068	-0.001 (1.028)	0.889 (6.546)***	0.001 (0.329)	-	32.707***	0.908	0.017	1.747	0.072
	1b	0.503	-0.131 (0.727)	0.926 (6.498)***	-0.035 (0.267)	-	32.129***	0.906	0.065	1.612	0.138
	2a	0.026	0.001 (1.457)	0.955 (12.562)***	-	-0.009 (2.902)**	62.348***	0.949	0.012	1.757	0.062
	2b	-0.251	0.229 (1.904)*	0.973 (15.421)***	-	-0.320 (4.123)***	91.737***	0.965	0.040	1.879	-0.031
2. Size a. Small	1a	0.048	-0.001 (1.594)*	0.640 (6.228)***	0.002 (3.372)***	-	146.912***	0.978	0.007	2.651	-0.424
	1b	-0.878	-0.093 (1.123)	0.663 (6.615)***	0.214 (3.076)***	-	170.209***	0.981	0.035	2.214	-0.242

TABLE IV.4 (Contd.)

(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	2a	-0.029	0.0004 (0.858)	0.969*** (9.994)	-	0.001** (2.376)	36.989***	0.917	0.010	1.739	0.082
	2b	-0.477	0.057 (0.571)	0.954*** (9.603)	-	0.078** (2.305)	34.124***	0.911	0.044	1.681	0.115
b. Average	1a	-0.067	0.001 (1.774)	1.195*** (8.058)	-0.002 (1.718)	-	32.231***	0.906	0.016	1.603	0.052
	1b	0.069	0.141* (1.900)	1.167*** (8.652)	-0.124 (1.724)	-	33.896***	0.910	0.051	1.766	-0.057
	2a	0.042	0.001 (1.773)	0.945*** (9.549)	-	-0.007** (2.674)	43.770***	0.929	0.014	1.918	-0.048
	2b	0.088	0.059 (1.519)	0.942*** (10.214)	-	-0.181** (2.826)	48.293***	0.935	0.044	1.971	-0.091
c. Fast	1a	0.189	-0.003 (0.483)	0.969*** (4.826)	-0.003 (0.964)	-	66.760***	0.952	0.039	0.768	0.610
	1b	1.804	-0.262 (0.505)	1.009*** (6.502)	-0.253 (1.581)	-	103.964***	0.969	0.099	0.883	0.540
	2a	0.137	-0.001 (0.203)	0.947*** (6.802)	-	-0.009* (2.203)	91.930***	0.965	0.034	0.752	0.592
	2b	0.200	0.117 (0.290)	1.001*** (11.129)	-	-0.306*** (3.594)	193.363***	0.983	0.073	0.878	0.480

Notes: 1a   a = Linear

b = Log-linear

2.   Other notes as in Table VI.1.

chemical industry, miscellaneous industries, large companies, slow growth-rate companies, average growth-rate companies and fast growth-rate companies in model 2, but the magnitude of the effects are not substantial.

The corporate tax variable also does not seem to be   relevant factor. The disaggregated results provide evidence of a significant impact of the tax factor only in the case of chemical industry, medium-size companies and large companies at five per cent level of confidence and in miscellaneous industries, small companies, medium-size companies and average growth-rate companies at only 10 per cent level of confidence.

THE SAMPLE AND ITS SELECTION

1. Sample Selection

The list of all medium and large public limited companies operating in the private corporate sector with a paid-up share capital of Rs 50 lakh or more was obtained from the Company Law Board, Ministry of Company Affairs; there were 1,138 companies in this list compiled for the year 1975-76. From this list we first eliminated companies having a paid-up share capital of less than Rs 1 crore and secondly, from the remaining companies, also the companies which were not engaged in manufacturing activities but which were operating in the areas of trading, services, finance, agriculture and mining.

The company population from which the sample was constituted then consisted of 431 companies with a combined paid-up share capital of Rs 1,537 crore. We intended to have a sample coverage in terms of the number of companies, of about one-half of the company population as defined above. The sample of 223 companies finally selected constituted 51.7 per cent of the company population, with 56.8 per cent of its paid-up share capital.

A number of considerations were taken into account in the selection of the sample companies. As the basic purpose of the exercises for which the sample data were to be used was to assess the effect of the corporate profits

tax on the operations in the private corporate sector, such as corporate investment, corporate profitability, corporate capital structure and corporate dividend policy, the sample had to include companies whose data could appropriately shed light on these issues. As such, the specific considerations on the basis of which the sample companies were selected were that the companies should satisfy one or more of the following tests:

(i)   The company generally paid corporate profits tax during the study period.

(ii)   The company had some investment activity.

(iii) The company operated in diverse manufacturing lines, and

(iv)   The company had, in some of the years, non-taxable profits or even incurred losses and/or did not benefit from fiscal incentives.

As such, the sample is purposively selected for examining the issues relevant to the problems to be studied. The sample, however, is representative of the major industry groups and the weightage for major industry groups compares favourably with that in the RBI sample of large and medium public limited companies.

A special advantage of the sample is that it is homogenous throughout the study period and, therefore, a classification of companies, according to their growth rate is possible, which is not possible in the case of the RBI samples, where the sample size changes within the study period, and even for a sub-period when the sample size is unchanged, the constituting companies are changed.

Another advantage of a special sample is that, as the identities of the individual companies included in the sample are known (unlike in the RBI sample), disaggregated-level analysis under classifications thought useful, can be undertaken. Thus, in this study the disaggregated analysis is done on the basis of the size of the companies as measured by their total assets (and not share capital), by the growth rate of their gross fixed assets, by their age and by the main industrial activity.

The limitation of a homogenous sample, however, is that it does not reflect the operations of companies set up in more recent years. To some extent, the age-wise analysis of the sample companies reflect the position for companies which were "new" in their initial years of operations.

The sample finally selected, constitutes of 223 medium and large public limited companies engaged in manu-facturing activities in the private corporate sector. As in 1975-76, the combined paid-up share capital of the sample companies amounted to Rs 873.16 crore or 56.8 per cent of that of the company population from which the sample was constituted.

2. Sectoral Break-up

The analysis of the tax effect is made at the disaggregated level because it appears that different segments of the corporate sector might be affected differently, depending upon their specific characteristics and operational differentials. A disaggregated sample also enables us to see how representative is the sample as compared to that of the RBI.

Table A1.1 presents the distribution of the sample paid-up-capital by five major groups of industries, three size groups as measured in terms of total assets, three growth-rate groups as measured in terms of average annual compound rate of growth of their gross fixed assets, and three age groups as measured in terms of their year of registration as a public limited company.

The size-wise analysis for the NIPFP sample for the three size groups was based on the following definition of size in terms of total assets:

(i)	Small companies	Less than Rs 15 crore
(ii)	Medium size companies	Rs 15 crore to less than Rs 30 crore
(iii)	Large companies	Rs 30 crore and above.

Total assets rather than paid-up-share capital is taken as the base for the size-wise classification of companies in the light of the increasing debt component

of corporate capital structure. The classification into 'small', 'medium', and 'large' companies, as defined above, is with reference to only the NIPFP sample of 223 companies. If we take the corporate population as a whole, none of the NIPFP sample companies could be termed as small; in fact, they could be more appropriately termed medium and large companies. However, for facilitating our analysis of groups of companies within the NIPFP sample, the three-fold classification by size, as defined above, was adopted.

The age-wise analysis was made under the following three age groups:

(i) Very old companies: incorporated before and upto 1935;

(ii) Old companies: incorporated between 1936 and 1955; and

(iii) New companies: incorporated between 1956 and 1961.

It may be pointed out that the age-wise classification into 'very old', 'old', and 'new' was only introduced to facilitate the analysis of the differential behaviour of companies within the sample. As none of the sample companies were incorporated after 1961, and, therefore, all of them were in existence for 15 years or more, none of them could strictly be considered to be new.

An efficiency-wise analysis was made under the following three groups in terms of the annual compound rate of growth of gross fixed assets:

(i) Companies with low average rates: less than 7.5 per cent;

(ii) Companies with average rates: between 7.5 per cent and 12.5 per cent; and

(iii) Companies with above average rates: above 12.5 per cent.

3. Data Limitations

The problems and data limitations that arise in any study based on aggregation of financial data from annual reports of companies are applicable to this study also. In particular, the variations in accounting years among the sample companies, changes in currency values and amalgamation of companies by the sample companies over the study period are most relevant. Some other specific limitations which necessitate the interpretation of the results with caution are that the sample reflects the situation of large manufacturing companies only and cannot be taken to hold equally true for the corporate sector as a whole, because, firstly, the sample was purposive and secondly, particular segments of the corporate sector were

excluded; namely, small companies, private limited
companies, public sector companies, and trading, financing
and servicing companies. The only justification for the
restrictive coverage of the sample was that within the
private corporate sector, the large scale manufacturing
sector is most important in terms of industrial capacity,
value added, resource mobilisation and tax contribution
to the national exchequer. Another limitation arises from
the homogenity of the sample. The operations of new
companies are not fully captured (i.e., companies which
were established within the study period). The analysis
of new companies, as in this study, relates to new
companies only in the context of the sample companies.

TABLE A1.1

Distribution of 223 Sample Companies, 1975-76

Categories	Number of companies		Paid-up capital	
	Number	Per cent	Rs crore	Per cent
A. Size Groups				
1. Small companies	173	77.58	341.75	39.14
2. Medium size companies	34	15.25	227.84	26.09
3. Large companies	16	7.17	303.57	34.77
B. Growth Rate Groups				
1. Slow growth rate companies	62	27.80	208.88	23.92
2. Average growth rate companies	76	34.03	296.75	33.99
3. Fast growth rate companies	85	38.12	367.53	42.09
C. Age Groups				
1. Very old companies	90	40.36	348.19	39.88
2. Old companies	86	38.56	357.43	40.93
3. New companies	47	21.08	167.55	19.19
D. Industry Groups				
1. Engineering	72 (411)	32.29 (24.91)	314.26 (496.88)	35.99 (26.15)
2. Textiles	51 (320)	22.87 (19.39)	139.50 (288.09)	15.98 (15.16)
3. Chemicals	23 (185)	10.31 (11.21)	96.93 (318.13)	11.11 (16.74)
4. Food products	19 (105)	8.52 (6.36)	31.94 (99.24)	3.65 (5.22)
5. Miscellaneous	53 (629)	26.01 (38.13)	290.53 (698.07)	33.27 (36.73)
TOTAL	223 (1650)	100.00 (100.00)	873.16 (1900.41)	100.00 (100.00)

Note: Figures in parentheses relate to the RBI sample of 1650 medium and large public limited companies in the private corporate sector (RBI Bulletin, September, 1977).

RATES

Capital asset	(Per cent) Normal rate as per cent of actual cost
(1)	(2)

I. Buildings

1. General rate — 5

2. Special rate in respect of factory buildings (excluding offices, godowns, officers' and employees' quarters, roads, bridges, culverts, wells and tubewells) — 10

3. Purely temporary erections such as wooden structures — 100

II. Furniture And Fittings

1. General rate — 10

2. Special rate for furniture and fittings used in hotels, restaurants and boarding houses; schools, colleges and other educational institutions; libraries; welfare-centres; meeting halls; cinema houses; theatres and circuses; and for furniture and fittings let out on hire for use on the occasion of marriages and similar functions — 15

III. Machinery and Plant

1. General rate — 15

2. Special rates

    a. (i) Cinematograph films - Machinery used in the production and exhibition of cinematograph films (N.E.S.A.)

        1. Recording equipment, reproducing equipment, developing machines, printing machines, editing machines, synchronisers and studio lights except bulbs — 20

(1)	(2)

2. Projecting equipment of film exhibiting concerns)

(ii) Cycles (N.E.S.A.))

(iii) Data-processing machines including computers (N.E.S.A.))

(iv) Electrical machinery - Batteries; X-Ray and electro-therapeutic apparatus and accessories thereto (N.E.S.A.))

(v) Glass manufacturing concerns except direct fire glass melting furnaces - Recuperative and regenerative glass melting furnaces) 20

(vi) Juice boiling pans (karhais) (N.E.S.A.))

(vii) Machinery used in the manufacture of electronic goods or components)

(viii) Motor cars, motor cycles, scooters and other mopeds (N.E.S.A.))

(ix) Sugarcane crushers (indigenous kolhus and belans) (N.E.S.A.))

b. (i) Aeroplanes - Aircrafts, aerial photographic apparatus (N.E.S.A.))

(ii) Concrete pipes manufacture - Moulds (N.E.S.A.))

(iii) Drum container manufacture - Dies (N.E.S.A.))

(iv) Earthmoving machinery employed in heavy construction works, such as dams, tunnels, canals, etc. (N.E.S.A.)) 30

(v) Glass manufacturing concerns except direct fire glass melting furnaces - Moulds (N.E.S.A.))

(vi) Moulds in iron foundries (N.E.S.A.))

(1)		(2)
(vii)	Mineral oil concerns - Field operations (above ground) - Portable boilers, drilling tools, well-head tanks, rigs, etc. (N.E.S.A.)	)
(viii)	Mines and quarries - Portable underground machinery and earth-moving machinery used in open cast mining (N.E.S.A.)	)
(ix)	Motor buses and motor lorries other than those used in a business of running them on hire (N.E.S.A.)	)
(x)	Motor tractors, harvesting combines (N.E.S.A.)	)
(xi)	Patterns, dies and templates (N.E.S.A.)	)
(xii)	Renewable energy devices, being -	)
	1. Flat plate solar collectors	)
	2. Concentrating and pipe type solar collectors	)
	3. Solar cookers	) 30
	4. Solar water heaters and systems	)
	5. Air/gas/fluid heating systems	)
	6. Solar crop driers and systems	)
	7. Solar refrigeration, cold storages and air-conditioning systems	)
	8. Solar stills and desalination systems	)
	9. Solar power generating systems	)
	10. Solar pumps based on solar thermal and solar photovoltaic conversion	)
	11. Solar photovoltaic modules and panels for water pumping and other applications	)

(1)	(2)

12. Wind mills and any specially designed devices which run on wind mills

13. Any special devices including electric generators and pumps running on wind energy

14. Biogas plants and biogas engines

15. Electrically operated vehicles including battery powered or fuel-cell powered vehicles

16. Agricultural and municipal waste conversion devices producing energy

17. Equipment for utilising ocean waves and thermal energy

18. Machinery and plant used in the manufacture of any of the above sub-items

(xiii) 1. Air pollution control equipments, being -

   a. Electrostatic precipitation systems

   b. Felt-filter systems

   c. Dust collector systems

   d. Scrubber - counter current/ venturi/packed-bed/cyclonic scrubbers

2. Water pollution control equipments, being -

   a. Mechanical screen systems

   b. Aerated detritus chambers (including air compressor)

   c. Mechanically skimmed oil and grease removal systems

30

(1)	(2)

d. Chemical feed systems and flash mixing equipment	)
e. Mechanical flocculators and mechanical reactors	)
f. Diffused air/mechanically aerated activated sludge systems	)
g. Aerated lagoon systems	)
h. Biofilters	)
i. Methane-recovery anaerobic digestor system	)
j. Air floatation systems	)
k. Air/steam stripping systems	)
l. Urea hydrolysis systems	) 30
m. Marine outfall systems	)
n. Centrifuge for dewatering sludge	)
o. Rotating biological contractor or bio disc	)
3. Solid waste control equipments, being -	)
a. Caustic/lime/chrome/mineral/ cryolite recovery system	)
(xiv) Ropeway structures - Ropeways ropes and trestle sheaves and connected parts (N.E.S.A.)	)
(xv) Shoe and other leather goods factories - Wooden lasts used in the manufacture of shoes	)

(1)	(2)
c. (i) Aeroplanes - Aero-engines (N.E.S.A.)	
(ii) Motor buses, motor lorries and motor taxis used in a business of running them on hire (N.E.S.A.)	40
(iii) Rubber and plastic goods factories - Moulds (N.E.S.A.)	
d. (i) Artificial silk manufacturing machinery - Wooden parts	
(ii) Cinematograph films - Bulbs of studio lights	
(iii) Energy saving devices, being -	
1. Specialised boilers and furnaces:	
a. Inguifluid/fluidized bed boiler	
b. Flameless furnaces	
c. Fluidized bed type heat treatment furnace	
d. High efficiency boilers (thermal efficiency higher than 75 per cent in case of coal fired and 80 per cent in case of oil/gas fired boilers)	100
2. Instrumentation and monitoring system for monitoring energy flows:	
a. Automatic electrical load monitoring system	
b. Digital heat loss meters	
c. Micro-processor-based control systems	
3. Waste heat recovery equipment and co-generations systems:	
a. Economisers and feed water heaters	

(1)	(2)

  b. Recuperators and air pre-
   heaters

  c. Backpressure turbines for
   co-generation

  d. Heat pumps

  e. Vapour absorption refrigera-
   tion system

  f. Organic rankine cycle power
   system

  g. Low inlet pressure small steam
   turbines

 4. Power factor correcting devices:

  Shunt capacitors and synchronous   100
  condenser systems

(iv) Floor mills - Rollers

(v) Gas cylinders including valves and
  regulators

(vi) Glass manufacturing concerns - Direct
  fire glass melting furnaces

(vii) Iron and steel industry - Rolling mill
  rolls

(viii) Match factories - Wooden match frames

(ix) Mineral oil concerns -

 1. Plant used in field operations
  (above ground) - Distribution -
  Returnable packages

 2. Plant used in field operations
  (below ground), but not including
  assets covered by sub-item (ii)B(9)
  above

(1)	(2)
(x) Mines and quarries –	)
1. Tubs, winding ropes, haulage ropes and sand stowing pipes	)
2. Safety lamps	)
(xi) Salt works – Salt pans, reservoirs and condensers, etc., made of earthy, sandy or clayey material or any other similar material	) 100
(xii) Sugar works – Rollers	)

IV. Ships

1. Ocean-going ships –

    a. Fishing vessels with wooden hull   10

    b. Other ships   5

2. Vessels ordinarily operating on inland waters –

    a. Speed boats   20

    b. Other vessels   10

Notes: 1/ Double the normal rate for factory buildings, but excluding offices, godowns, officers' and employees' quarters.

2/ N.E.S.A. : No Extra Shift Allowance.

Source: Income Tax Rules, (1962) Appendix I (Part 1), Reproduced in U.K. and Bhargava, B.P. (ed.) Bhargava, G.K. (1983) Taxmann's Direct Taxes Manual, Volume II.

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