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TAX CONCESSIONS AS INVESTMENT INCENTIVES TO AGRO-INPUT
INDUSTRIES IN INDIA

Martin H. Billings

This paper is an attempt to evaluate the role played in the investment decision on the part of Indian businessmen by tax concessions. Two types of decisions will be examined: the decision to enter an industry and the decision to expand. The findings of this study indicate that tax concessions as a whole have a very limited role in the decision to invest, but a somewhat more important one in the decision to expand. The reasons for this are developed in this paper.

This paper is limited in its scope and does not penetrate many aspects of the subject which merit examination. It attempts little in the way of quantitative analysis. It does, however, rest heavily upon a base of first hand investigation. The paper reflects interviews with some thirty persons in senior management of ten firms whom I typically met in small groups in Allahabad, Kanpur, New Delhi, Bombay, Madras, Hyderabad, Ahmedabad and Poona, and also with the managements of several public sector fertilizer plants. In this context I believe the paper does show the role, and an explanation of the role, played by tax concessions in the decision to invest in this critical sector.

INTRODUCTION^{1/}

The effectiveness of tax incentives to promote investment in agro-input Industries in India is a timely topic. India's requirements for greatly increased quantities of new inputs produced by the industrial sector is becoming critical as the Green Revolution takes hold on Indian farms. By the early 1970's (according to the Fourth Five Year Plan) some five million tons of fertilizer (in nutrient terms) will be required annually; over 60,000 tons of plant protection materials will be consumed; some 2,000,000 energized pump-sets will operate and the market for powered field equipment will increase manifold. But will they be produced?

To produce these inputs great additional investment in plant and equipment will be necessary. Private investment in particular will be sorely needed. If private investment is not forthcoming India will have to make up the difference from imports or with additional public investment (or both) if it is to sustain food self-sufficiency. Public investment will have to come from high taxes, deficit financing (with its accompanying push toward greater inflation) or foreign aid (an increasingly scarce good). The ability to support the farm revolution with sufficient investment in the input sector can therefore become a critical factor if India is to realize its hopes for the next decade.

If India can increase the ability of firms to finance their own activities by attracting new investment the threat to these hopes can by that amount be diminished.

^{1/} The information used in preparing this paper was gathered from interviews with the management of ten agro-input firms, two producer associations, the Indian Investment Center, and the Ministries of Finance, Food and Agriculture, Petroleum and Chemicals, and Small Industry. Their generous help is gratefully acknowledged. The author is an Agricultural Economist with the USAID Mission, New Delhi, who makes the usual disclaimer regarding the views, and conclusions expressed herein.

India has provided a palette of tax (and other fiscal incentives) since the First Plan to try to ensure that needed private investment would in fact be forthcoming. This paper will examine:

1. What tax incentives are available, and **their manner** of operation.
2. What effect separately and collectively they have upon profitability, using as an example a fertilizer firm.
3. What role these tax incentives have upon the (i) decision to invest, ^{and} (ii) decision to reinvest.
4. What factors seem to explain these effects upon investment **behavior.**
5. What factors inhibit or **promote** the incentive effect of tax incentives.
6. In view of the above make recommendations.

2. BACKGROUND TO PUBLIC POLICY REGARDING THE AGRO-INPUT INDUSTRY^{2/}

The Indian economy is a mixed one, involving both public and private participation. Although successive plans have set as their objective a socialist pattern of society; private ownership and investment are expected to have, and do have, a large role in productive activities. In practice, public policy has been one of regulation and balance in the public interest.

^{2/} Terms of reference are in order. Agro-input industries will be defined as those industries in the modern industrial sector which produce new and more technically sophisticated inputs for use in agricultural production. Firms in five industries were visited in connection with this study: fertilizers, pesticides, improved implements, power-tillers (and tractors) and energized pump-sets and sprayers. Four tax incentives will be considered: tax holiday, development rebate, priority industry incentive and depreciation. Lack of time precluded the inclusion of important incentives to equity shareholders, and holding companies. These are not less important on account of their exclusion.

The Industrial Policy Resolution of 1956 classifies industries into three broad groups. The first, Schedule A, are basic and defence industries reserved entirely to the public sector. Schedule B industries are to become progressively state-owned in that the state would take the initiative in establishing new undertakings, but private firms are not to be denied the right to participate if they were licensed to do so (either alone or in partnership with the state)^{3/}.

Fertilizer alone of the agro-input industries is in Schedule B, and only in fertilizer is there at present any public production capacity (in nitrogenous fertilizers)^{4/}. All of the other agro-inputs - tractors, power-tillers, energized pumps, sprayers, power and bullock drawn implements and pesticides fall into Schedule C - reserved for private development. Basic public policy regarding investment, therefore, leaves agro-inputs largely in the private sector, open to private investment.

There has not been, however, complete freedom of entry. In order to be able to invest, produce and market as a new firm, or to expand beyond 25% of present capacity as an established one, a license is required from the Government of India (GOI) for a certain schedule of industries. Under the Industries (Development and Regulation) Act of 1951 most agricultural inputs were put on the scheduled list: powered

^{3/} It is worth noting, and businessmen believe, that the 1956 statement carries no threat of nationalization of presently operating firms.

^{4/} There is talk of establishing a public capacity in tractor production as well using Czech or Soviet models. In addition, some states produce limited quantities of bullock-drawn implements. These later are 'improved' implements, factory-made, not the traditional home-made variety.

agricultural machinery, plant protection materials, fertilizers, and power-driven pumps. Industries which appeared on the license schedule (and there are 38 categories of them) are those which India wants most to develop. By requiring certain industries to be licensed (being those expected to be most dynamic) the government is able to control capacity and therefore demand for scarce raw materials and foreign exchange.

An industrial license outlines very specifically just **what** is permitted in terms of installed capacity, types and composition of products, volume and value of production, the chronological phasing of the manufacturing program, the needed raw materials (on an annual basis), requirements for capital equipment (indigenous and foreign), need for power, transport, water, and composition of the labor force. With such control the GOI is able to limit private sector competition with the public sector for resources which would keep the latter from reaching its goals under the plans. In each plan the share of the private sector is spelled out and licenses are issued upto this level.^{5/}

Some industries are viewed as having a special role to play in economic growth and are consequently placed on a special schedule of 'Priority' industries. All agro-input industries which require licenses are on this schedule.^{6/} The fifty-nine priority industries get special consideration in the allocation of scarce materials and foreign exchange.

^{5/} Getting a license takes time, usually about three years, and it may be five to seven years from the time of initiating the letter of intent to the time when production actually begins.

^{6/} The only non-licensed agro-input industries are power and bullock-drawn implements.

In addition they are entitled to a permanently lower tax base.^{7/}

The licensing procedure has, moreover, allowed government to control the level of private involvement in an industry (as in the case of fertilizer) and to prohibit a line of development whose relative urgency did not appear impressive (for example, tractors before 1959-60)^{8/}. With this weapon government has been able to channel and control private investment across a broad range of modern activities.^{9/} In 1968 many agro-input industries were delicensed: small internal combustion engines and electric motors, power-driven pumps, agricultural sprayers, mixed fertilizers, tractors and power-tillers. Even delicensed, however, government exercised strong regulatory power over their activities. Exchange and raw materials controls, marketing and price restrictions exist for some or all of these industries. Nonetheless, one echelon of control has been largely relaxed as an incentive to new private investment.^{10/} Given this shifting pattern of entry opportunity, I shall now turn to the decision to invest and the factors which enter into that decision.

3. THE DECISION TO INVEST - THE INFLUENCING FACTORS

To get some insight into the decision-making process a number of relevant questions were directed to the managements of ten agro-input

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- ^{7/} There exists a schedule of key industries being of special importance for attaining self-sustaining growth which classification entitles them to prompt disposal of their applications for licenses. Fertilizer and pesticides are the only agro-input industries on this schedule.
- ^{8/} Tractors were finally licensed only in 1959-60 and then in very limited quantity.
- ^{9/} Similarly, priority licensing policy was sufficiently broad so as to encourage as much investment as possible away from traditional lines of activity into almost any 'modern' activity. There is reason to believe some success has been scored in this regard.
- ^{10/} A case can be made to the effect that the licence itself was a strong incentive to invest in a particular industry in that the license practically guaranteed a sellers market would exist for some time to come.

firms (which were of quite divergent size, history, product, prospect and outlook). The responses were remarkably similar considering the heterogeneity of the respondents. Their answers were interesting and important in that they indicate how the decision-maker views his own problems and put in relief the array of incentives and disincentives which confront the manager and how these are weighed.^{11/}

Most important in arriving at a business decision (to initiate or expand) is the possibility of earning a steady stream of income, of some desired size over a fairly long-term (15-20 years). A high rate of profitability was viewed as less important than assuredness of receiving such a stream of income. Hence, from a field of alternative possible investments minimization of risk is an all important and perhaps the most important criterion.^{12/} Tax incentives do have some effect on increasing yield but do not and cannot affect the reliability of the income stream.

The second significant consideration is the presence of a good market.^{13/} In this regard the rural sector in India, resulting from the quite rapid adoption of the new high yielding variety seeds based technology, is becoming a progressively exciting market. By 1973-74, 60,000,000 acres will be under these new varieties, which will use large quantities of

^{11/} It should be pointed out so as to be entirely fair, that a number of firms visited do not fully understand how the incentive system works nor are they fully aware of the incentives which are actually available to them.

^{12/} The rather rigid cost structure of many agro-input firms (raw materials and depreciation representing a high proportion, typically, of cost of operation) requires that revenue to the firm be reasonably constant and reliable.

^{13/} There are of course numerous other considerations involved in the decision to invest: availability of power (reliably in sufficient quantities), the minimization of labor troubles, availability of rail and road transport to the market and from suppliers. The basic one of political stability is largely satisfied in the Indian case.

complementary inputs. The cost-cutting and yield increasing effect of these inputs will provide a continuing economic incentive to farmers to use more such inputs more intensely. Businessmen recognize this trend, and have been moving to supply this new market.

The third important consideration is accessibility to the market (and businessmen distinguish between a market and access to it). Firms in most cases felt that it is very difficult to reach even very promising markets which fact represents a considerable disincentive to new investment. On the other hand the rapid growth of market opportunities over the past decade has represented the most yeasty influence explaining new investment in this area (Table 1). Businessmen felt that with better access to the market this level of investment would have been even greater.^{14/}

The experience of the fertilizer industry may be instructive in this regard. Until 1965 the marketing of fertilizer to farmers was a cooperative monopoly in many states.^{15/} Subsequent to the findings and recommendations the Sivaraman Report of 1965 progressive steps have been taken to liberalize fertilizer marketing. Briefly the two most important steps are:^{16/}

1. Progressive opening of the fertilizer market to private marketing such as to allow fertilizer to be sold through private channels
As of October 1, 1968, 100% of fertilizer marketings have been freed to any new producer for seven years.

^{14/} One businessman expressed the belief that "even with zero levels of taxation with present market opportunities, and thus income possibilities would not be much affected. What is needed are more sales."

^{15/} And remains so in a few states. This restriction was for Nitrogenous only.

^{16/} While remaining a Schedule B industry, private investors are to be encouraged. In addition, foreign investors are now allowed a larger and even majority share in the equity holdings.

T A B L E - 1

GROWTH OF AGRO INPUT PRODUCTION IN INDIA SINCE 1954

Year	Fertilizer (tons) (1)		Pesticide material (tons) (2)	Tractors '000 (3)	Power tillers '000 (3)	Engined pumpsets		Engines for pump sets
	N	P ₂ O ₅				Diesel	Electric	
1954-55	52,905	13,831	432	-	-	-	-	-
1955-56	68,478	14,345	2,303	-	-	-	-	-
1956	76,859	12,365	1,584	-	-	1,23,000	47,000	-
1957	78,788	17,585	2,054	-	-	-	-	-
1958	81,144	25,785	5,460	-	-	-	-	-
1959	80,766	30,987	5,497	-	-	-	-	-
1960	83,694	51,407	7,442	-	-	-	-	-
1961	111,987	53,722	8,984	-	-	2,34,000	100,000	-
1962	154,326	65,360	8,591	880	-	-	-	-
1963	194,194	88,300	9,573	1,414	-	-	-	-
1964	219,072	107,836	10,863	1,983	-	-	-	-
1965	243,230	131,021	12,670	4,323	266	-	-	-
1966	237,889	118,779	14,137	5,714	585	4,80,000	500,000	-
1967	308,993	145,678	18,500	8,816	471	-	-	20,000*
1968-69	361,977	204,889	28,500	11,394	-	6,40,000	1,000,000	-
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1974 (est.)	2,914,000	1,230,000	50,000* 62,705 (required)	35,000* 68,000 (D) 30,000 (S.C.)	10,000* 80,000 (D) 26,000 (S.C.)	8,00,000	1,500,000	-

* Estimated

- (1) Fertilizer Statistics, 1966-67, p. 113, The Fertilizer Association of India.
- (2) Pesticide Industry - 15 years of progress by P.R. Mehta.
- (3) Working Group Report on agricultural implements and machinery, Ministry of Food, Agr., CD & Cooperation.

MB

2. Formerly the GOI 'pool' price for fertilizer determined the price structure for this input. Now prices are to be market determined (subject to regulation if they become too high to farmers).

Private investors have been responsive to this opportunity to market and promote their own lines of fertilizers which are viewed as the strongest possible incentive. Widening the market has the effect, or at least affords the opportunity, of developing a more assured stream of earnings from the wider market.

A fourth consideration entering into the investment decision is the consistency of public policy towards an industry. Past fluctuations in public policies have had a discouraging and disincentive effect upon investment. One case in point is the fluctuation in rates given for tax incentives - such that a businessman is unsure as to how long and on what terms the incentives now being offered will in fact be available to him. Similarly subsidies to farmers on these products have varied which affects market expectation away from that initially anticipated ^{17/} by planners.

Improved bullock implements are an example of an agro-input industry which was adversely affected by shifts in public policy (in this case state policy). From the mid 1950's, as part of the Community Development program, improved implements were offered to farmers at concessional

^{17/} A few businessmen believed that one effect of the 'on again off again' provision of subsidy was to cause farmers to postpone their purchases of inputs such as sprayers, to those periods when the subsidy was on. Past experience has taught them that subsidy is not available today, but once was, may be again.

prices which together with strong promotion rapidly built-up demand. States purchased all the implements they could obtain and rather quickly became the sole customers for the product in turn selling the implements to farmers at below the market price. This did develop an "assured" market for implements and many firms entered or expanded operations. Then, in the early 1960's the program was rather suddenly terminated. The effect upon suppliers, who had either lost or failed to develop alternative outlets, was predictable. Farmers, on the other hand, were familiar with concessional prices, and were consequently reluctant to buy the suddenly more expensive goods. This is an extreme but by no means unique case. The presence of public marketing activities can therefore be as alarming as re-assuring to private producers in this context.

A fifth factor affecting new investment is the problem of obtaining initial capital with which to invest in a new enterprise. Here tax incentives are of no immediate help, but the stimulus of the tax holiday can be substantially dampened if the firm borrows a large portion of its initial investment.

Putting together this investment can be the most difficult part of initiating a new firm. All of the small businesses interviewed have relied heavily upon equity gathered from relatives of the entrepreneurs. This base is usually supplemented with a loan from the Industrial Credit and Investment Corporation or similar public development loan bank and more rarely a loan from a commercial bank. In addition the entrepreneur himself usually has some money to put into the venture. Although family

money is welcomed, entrepreneurs find that it introduces a special hard-to-cope difficulty into young firms. Indian shareholders have typically expected an immediate flow of earnings back from their investment, and have not often regarded appreciation of the value of shares as a satisfactory alternative. Several firms have had to declare dividends against their better judgement to meet such claims. To offset the need to use direct family investment, and to get larger sums more directly a more liquid capital market is desirable. A more attentive capital market would be useful as well.

Commercial banks understandably extend loans to old and familiar faces more readily than to new ones. With the limited credit available banks have given priority to the older customers which typically are stable slow growth industries (such as textiles). The recent steps taken by the Reserve Bank of India to cause commercial banks to restructure their criterion for extending loans will be a useful incentive and one to which credit-needy firms will be responsive.

Familiar themes, therefore, influence decisions in Indian firms as elsewhere. Tax incentives, however, do not appear among this array. To understand this apparent oversight it is necessary to first ponder the concessions in detail and then go on to calculate their effect as to earnings for one representative firm.

4. TAX CONCESSIONS TO INFLUENCE BUSINESS DECISIONS^{18/}

The tax incentive program in India goes back almost to Independence. A tax holiday provision was put in the tax law in 1949. The development rebate dates from 1953 and priority industries have received special consideration since 1956.^{19/} Before plumbing the details of these concessions and later their effects, it will be worthwhile to briefly consider some of the objectives which Indian tax planners had in mind in designing them.

Their basic goal has been to encourage reinvestment by management back into an activity. There are excellent grounds for planners to have cause for concern that such reinvestment would not take place. Indian business has been, and to a large extent remains, commercial rather than production-oriented. Commercial managers are accustomed to earn a quick return on their investment and then pull out of a venture. Such practices carried on in an industrial concern would effectively retard its growth which is directly opposed to the goal sought by Indian planners. Further

^{18/} Tax concessions are one type of fiscal incentives. A fiscal incentive in any mechanism whereby government can, by affecting the transfer of income into, or out of, a firm, influence investment. This may be done by shifting the terms of trade between buyers and sellers through administrative price manipulation subsidies or tax concessions. In India the major fiscal incentive to manufacturers has been the tax incentive. Subsidies, price manipulation and input tax remission are used but more to influence consumer behavior. Monetary incentives, especially favorable credit conditions, are used and will be discussed below.

^{19/} The Finance Act of 1968 provided a new tax incentive available to companies which use farm products as a raw material. This permits a 120 per cent deduction to the company for the dissemination and demonstration of improved farm practices to farmers.

investors in these activities have traditionally put great pressure on managers to behave in this fashion. Recognizing that this investment mentality represented a serious disability to industrial growth, tax planners devised tax schemes which would at once force management to plow back and to make them want to plow back earnings into new investment.

Several strategies were used. First, managers were given a disincentive foil against the shareholders' clamour for dividends by imposing a dividend tax on the firm. Secondly, the development rebate was so structured as to require management to reinvest in new plant and equipment. Thirdly, by increasing the size of reinvestment managers could substantially reduce, if not eliminate, the surtax on taxable income. This at once gave the firm's more liquidity and fortified managements' stand against frittering away income as dividends. Finally, a rapid depreciation write-off has been deliberately avoided, as this 'incentive' would act to increase distributable income. To recapitulate, the objective of these tax concessions has been to encourage firms to retain reserves for reinvestment. With this basic philosophy in mind we turn to the specific concessions offered to investors.

While no tax incentives are offered specifically and exclusively to them, agro-input industries in India are eligible for incentives under a number of general titles. New firms are eligible for a concessional tax holiday. All new firms and firms which expand are entitled to a development rebate. All priority industries receive the incentive bonus of a permanent reduction in income tax base.

The objective of the tax incentive, is to make the internal rate of return to capital invested or the discounted present value of future income streams from an investment more inviting to the would-be investor than otherwise would be the case. Increased profitability, following from the incentive, provides the firm greater liquidity enabling it to finance internally more of its activities and future expansion. Ideally the profit advantage deriving from the incentive, is sufficiently wide to encourage investors to try and earn it. Beneficiaries are expected (in India) to use the extra income to strengthen their internal resources first, and only secondarily to distribute these as dividends to shareholders.

The Indian Income Tax Act (revised many times) offers at present the following tax concessions to, among others, producers of agro-inputs. ^{20/}

A. Tax Holiday

New industrial undertakings are exempt from the income tax on earnings up to 6% of the value of the capital employed in the undertaking, for a period of five years (or up to eight years if there are no profits during some part of the period. ^{21/} The 'value of capital employed' is defined as the net value of the fixed assets (cost less depreciation), cost of current

^{20/} The list of incentives outlined here is somewhat more abbreviated than that stated by the GOI. I have selected as incentives only those tax arrangements which a firm can earn from entering or expanding directly productive activities. Other so-called 'incentives' are actually write-offs to specific costs not necessarily associated with introducing new activities or expanding old ones.

^{21/} Until recently this concession was only permitted during the first five years of production, it is now to cover the first five years of profit.

business assets and half the current income of the accounting year, less borrowed money and accounts payable.

In practice the tax holiday credit is deducted from net earnings (net of operating and fixed costs and depreciation) to reduce the tax base. Firms which reach a high stable income fairly quickly, such as fertilizer and pesticide producers, can earn a respectable extra income over the five year holiday period. Rapid depreciation write-off, however, will diminish the tax holiday credit. For a fertilizer producer operating on a three shift basis the depreciation write-off will be substantial. As a result, a high depreciation write-off will act to both reduce net earnings (from which the bonus is deducted) and reduce the size of the bonus deduction which factors jointly act to postpone the tax holiday incentive.

For a smaller firm, such as an implement or power tiller manufacturer, which for a number of reasons reach a stable income stream only slowly (and then may well earn only small profits) the credit is not too important a deduction.

The tax holiday credit favors equity as opposed to debt financing. The larger the share of debt in the firm's initial capitalization the smaller will be the size of the credit. As more credit for industrial starts becomes available, and is used, the incentive effect of the tax holiday will be reduced accordingly. Moreover, the import tariff on imported capital equipment ~~equipment~~ further increases the size of initial investment and consequently the need for borrowed capital. The high import tariff, therefore, also acts to reduce the incentive effect of the holiday.

B. Tax Reduction for Priority Industries

A firm on the priority schedule is entitled to a special deduction of 8% on gross earnings from the tax base; the normal rate then being levied on the balance^{22/}. For a public liability firm this rate is 55% for all incomes above Rs.50,000 and for family-owned industrial firms the rate is 55% on the first million rupees and 60% thereafter. The concession represents a quite respectable increment to income and is available over their entire life of the firm. This tax has the same internal effect upon the firm as the tax holiday, in that it increases the annual liquidity of the firm, it is certain, and by increasing the anticipated level of income receipts it reduces risk. One weakness is that it provides its extra income in annual dribblets and so at any one time is a very modest increment to net income.

C. Development Rebate

Any firm, new or established, is eligible for a subsidy on their new investment for all new plant and machinery used (in addition to the normal depreciation allowance). This development rebate enables a firm to deduct from current income (reducing its taxable base) a value of 20% (35% for priority firms) of the cost of the plant and equipment. Part of this extra income (75%) has to be put into a special reserve fund which may be carried forward eight years and which must be used for reinvestment, thus enhancing the firm's ability to finance its internal

^{22/} This concession was introduced in 1966 and replaced an earlier rebate of 10% income tax (reducing the tax rate to 45% of taxable income and 20% of the surtax).

growth. If any part remains, however, at the end of the term the balance may be put into the general fund.

The presence of the development rebate may have some influence on the chronological phasing of investment and perhaps ^{on} its magnitude as well, by encouraging the investor to increase investment in equipment (and reportedly more costly capital equipment than otherwise would have been the case). By allowing an eight year life to the rebate (thereby providing a three year lag beyond the normal end of the tax holiday) the firm receives a stream of benefits which can set the stage for a more rapid expansion of the firm.

D. The Depreciation Allowance

The Indian firm is entitled to a normal depreciation allowance on plant and equipment at varying rates depending upon the type of equipment. ^{23/} The depreciation allowance is calculated by the declining balance method. An extra shift allowance equal to 50% of the basic allowance is permitted for each extra shift the machinery is used (thus a triple shift gets 200% of the base).

Of the ten firms visited it was found that only the fertilizer compounder was in fact using its equipment for a ^{24/} triple shift. The other firms were operating well below full capacity on a single shift basis. In view of India's needs for such inputs this fact raises an apparent paradox. Those

^{23/} The general rate for plant and machinery is 7%, with an extra 50% being allowed (10.5%) for a second shift use and a further (50%) allowed if the equipment is used for a third shift. For pesticides compounding equipment the base rate is 15%.

^{24/} In fact due to chronic power shortages, the plant was idle for more than a few shifts. Eighty hours loss of production a month has been experienced.

firms relying on imported components or raw materials (magnetos, carburetor jets, copper etc.) found the arrival of inputs so irregular as to cause them to use their capacity only intermittently (giving their production curves a very wavy appearance). Other firms were so new as to be still trying to build up their sales and were consequently using less than full capacity. Still others, implement and spray manufacturers especially, found their sales currently depressed as the result of the removal of subsidies to consumers of their products. All the firms had experienced some set-backs resulting from the two year drought-induced agricultural depression. For all these reasons producers were: operating at less than full capacity; earning comparatively modest rates of return and in some cases were barely able to utilize their depreciation write-offs.^{25/}

If the profits on a business in any year are insufficient to absorb the allowances the balance can be brought forward indefinitely and set off against profits in any later year or years (provided there is no change in ownership). In fact it is not uncommon for new businesses to make use of this clause, and indeed not have to pay any tax for a year or two.

E. Surtax

An additional tax incentive to re-investment may be found in the composition of the surtax.^{26/} In the event the chargeable profits of a firm exceed an amount equal to 10% of its capital a surtax of 25% is

^{25/} Only one was found to be making no current profit, but this involved a special case of complete reorganization; change in management associated with a heavy drop in production.

^{26/} In practice few of the agro-input firms (mainly the large ones) interviewed make enough to cause them to pay surtax.

levied. A rather elaborate calculation is required to produce this tax involving the following steps. The tax base net of the normal corporate income tax must be further reduced by the equivalent of ten per cent of the paid-up capital.^{27/} This figure includes the initial investment, 75% of the value of the development rebate plus the re-invested profits into the firm. By requiring that 75% of the development rebate be put in a re-investment fund tax planners in fact forced the surtax down deliberately, hoping thereby to encourage management to further reinvest of their own accord. The more firms reinvest the smaller will be the final surtax. The effect is magnified by permitting the tax payer to deduct the cumulative value of his reinvestment profit as part of paid-up capital. As a result, the surtax declines rapidly to the vanishing point. Thus a tax reducing (and tax eliminating) incentive exists from rapid and high reinvestment back into the firm.

5. THE EFFECTS OF TAX INCENTIVES ON PROFITABILITY

Given these deductions and tax concessions the firm is interested in how these affect the returns on investment and earnings marginal to those were the incentive not to exist. The incremental effect of tax incentives can be approximated in at least two ways. One by estimating the marginal effect of the tax concessions upon the rate of return to equity invested at the time the firm began. Two, by estimating the extra income which derive from the incentives discounted at the time of investment.

^{27/} The surtax is then computed as 25% of the value of this second deduction.

To prepare an example showing the effect of tax concessions, and to set the foundation so that their effect upon the decision to invest can be appraised, the experience of a hypothetical firm will be useful. This firm, a producer of nitrogenous fertilizer, is expected to operate for a period of fifteen years and then for purposes of demonstration, cease production, the plant being disposed as salvage.

The model assumes: (1) that tax incentives will remain unchanged over the fifteen year term; (2) that fertilizer prices would fall (during the 1970's) as a result of the development of a buyers market for nitrogenous fertilizers, causing gross revenues to decline gradually three years after production begins (1971); (3) that no exogenous reinvestment would occur, the plant being entirely self-sustained by profit-generated plow-back. And finally (4) that one-third of net income would be reinvested in the firm - which is under present Indian conditions on the conservative side.^{28/}

To obtain an estimate of the net of tax return on equity capital the net flow of cash had to be calculated on an annual basis beginning three years before production begun (when investments were first made) through the fifteen years of production. This figure, net of cash outflow and inflow, was then discounted such that the sum of the annual cash in-flow (discounted to their present value equals zero) equal the initial equity invested in the firm. This operation was repeated twice: once without tax concessions and once with them (Table 3).

^{28/} The figures used in this example were adopted from figures developed for a fertilizer project reviewed several years ago. Changes had to be made to reflect changes in tax law since that time. Values are expressed here in dollar terms as a universal denominator.

The outcome indicates that investor can expect a 35% return on invested equity capital in the fertilizer enterprise when no tax incentives exist. And a 47% return with the present tax incentives. The potential earning from an investment in nitrogenous fertilizer production, given the normal tax structure is substantial indeed, and should be sufficient, of itself, to excite investment into the field - ceteris paribus - under present Indian conditions.

Using the same basic data (Table 2) it is possible, and revealing, to estimate the effect of tax incentives on net income. Gross revenues were reduced by costs to produce net revenue. In the absence of tax incentives this represents the tax base on which 55% corporate income tax is levied and a surtax. The tax incentives are deducted from net revenue which new net figure is the reduced tax base. To make annual figures comparable they were discounted by 12%, the opportunity cost interest rate used by the Indian Planning Commission.

The collective value of the three tax incentives is about \$45,000,000 or an increment of 36% above what it would have been in the absence of the concessions (Figure 1 and 2).

The individual tax concessions provide quite varied increments to the total increment. The tax holiday comprises 15%; the development rebate 29% and the priority industry bonus 56%. However, these incentives make themselves felt at quite different times (Figure 3). Tax-reducing incentives are at their peak in the second year of production - the only

FIGURE 1

NET INCOME OF FIRM WITH
TAX CONCESSIONS

VALUE
Millions
of
Dollars

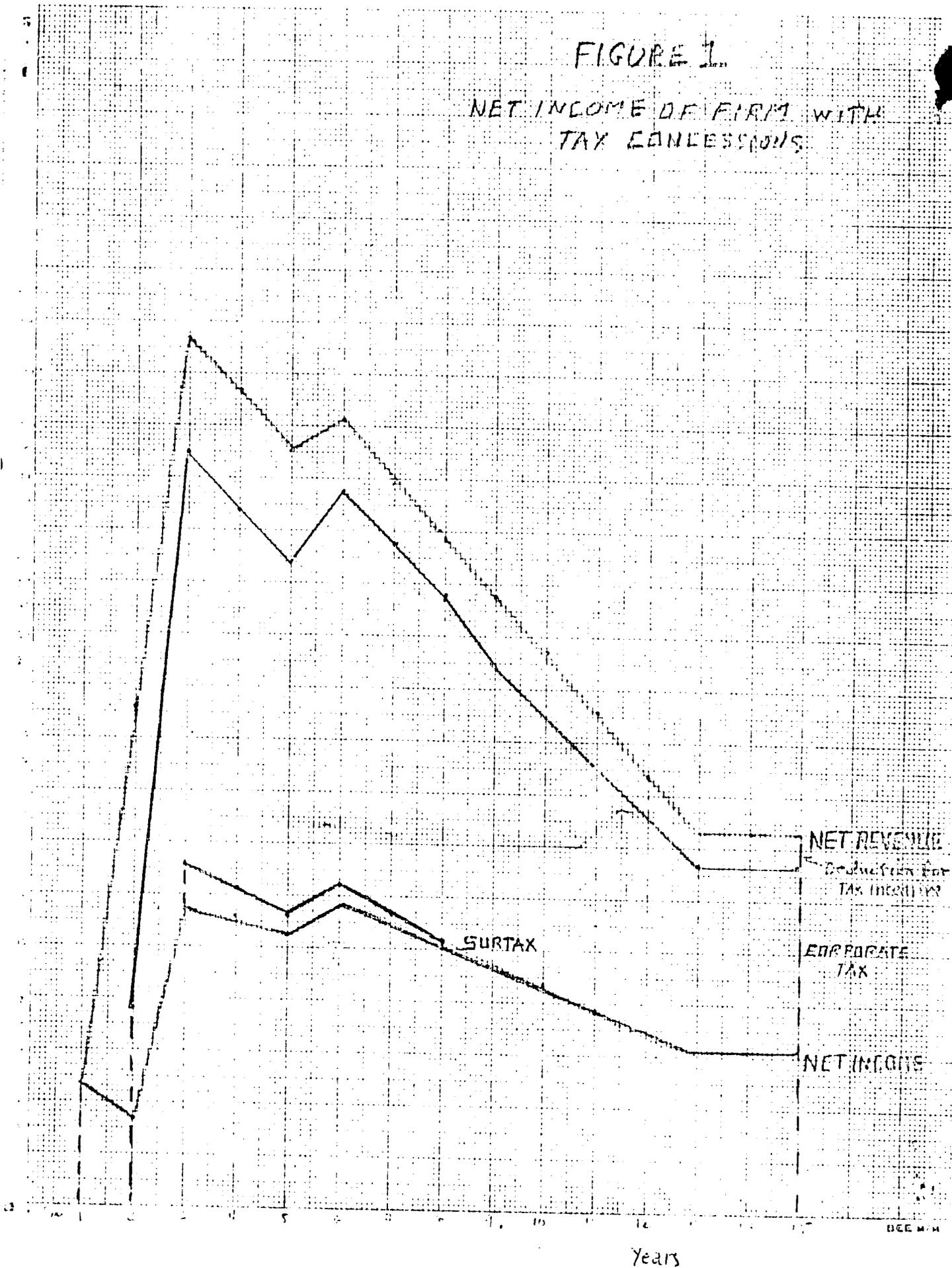
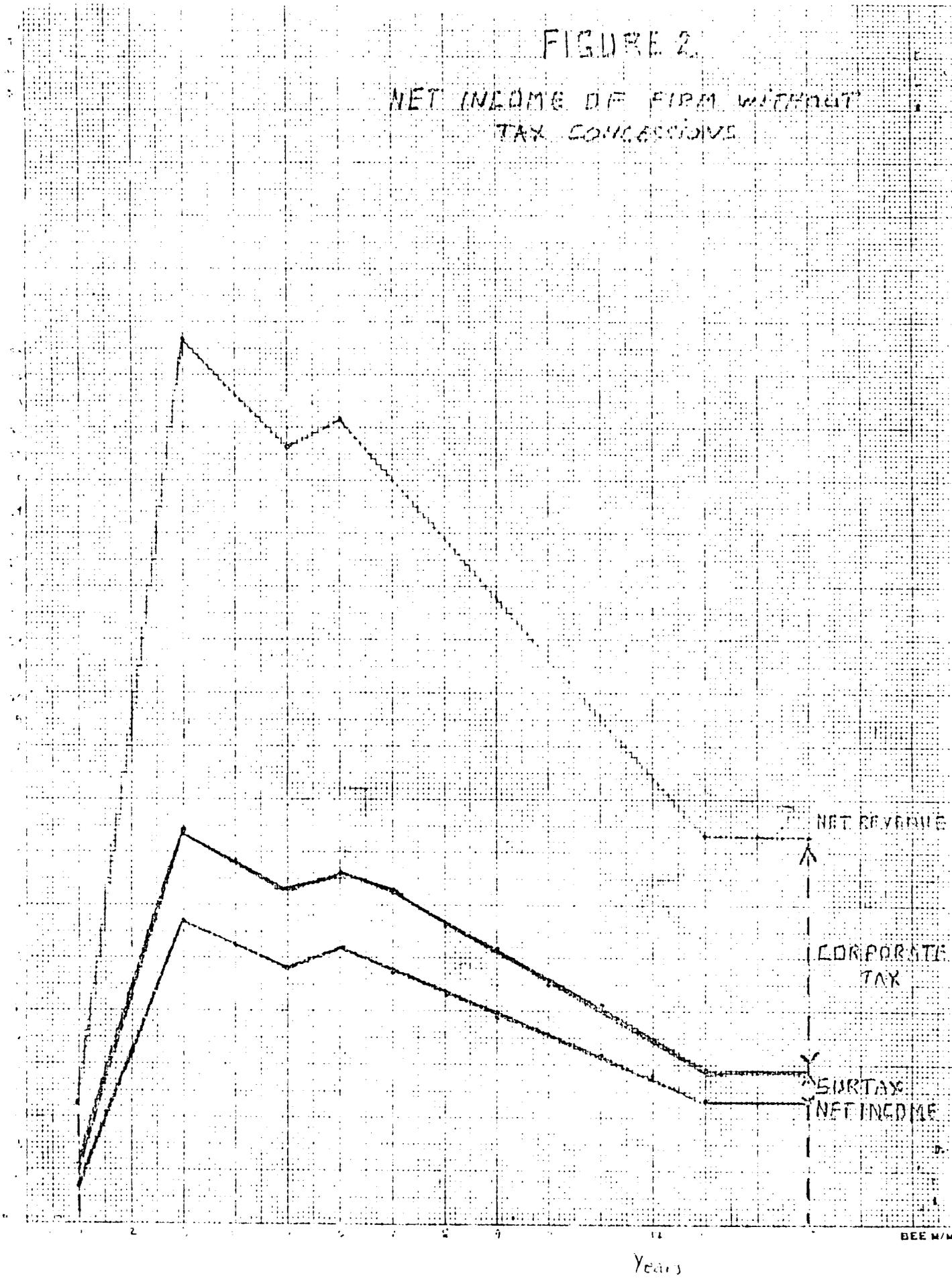


FIGURE 2.

NET INCOME OF FIRM WITHOUT TAX CONCESSIONS

VALUE
millions
of
dollars



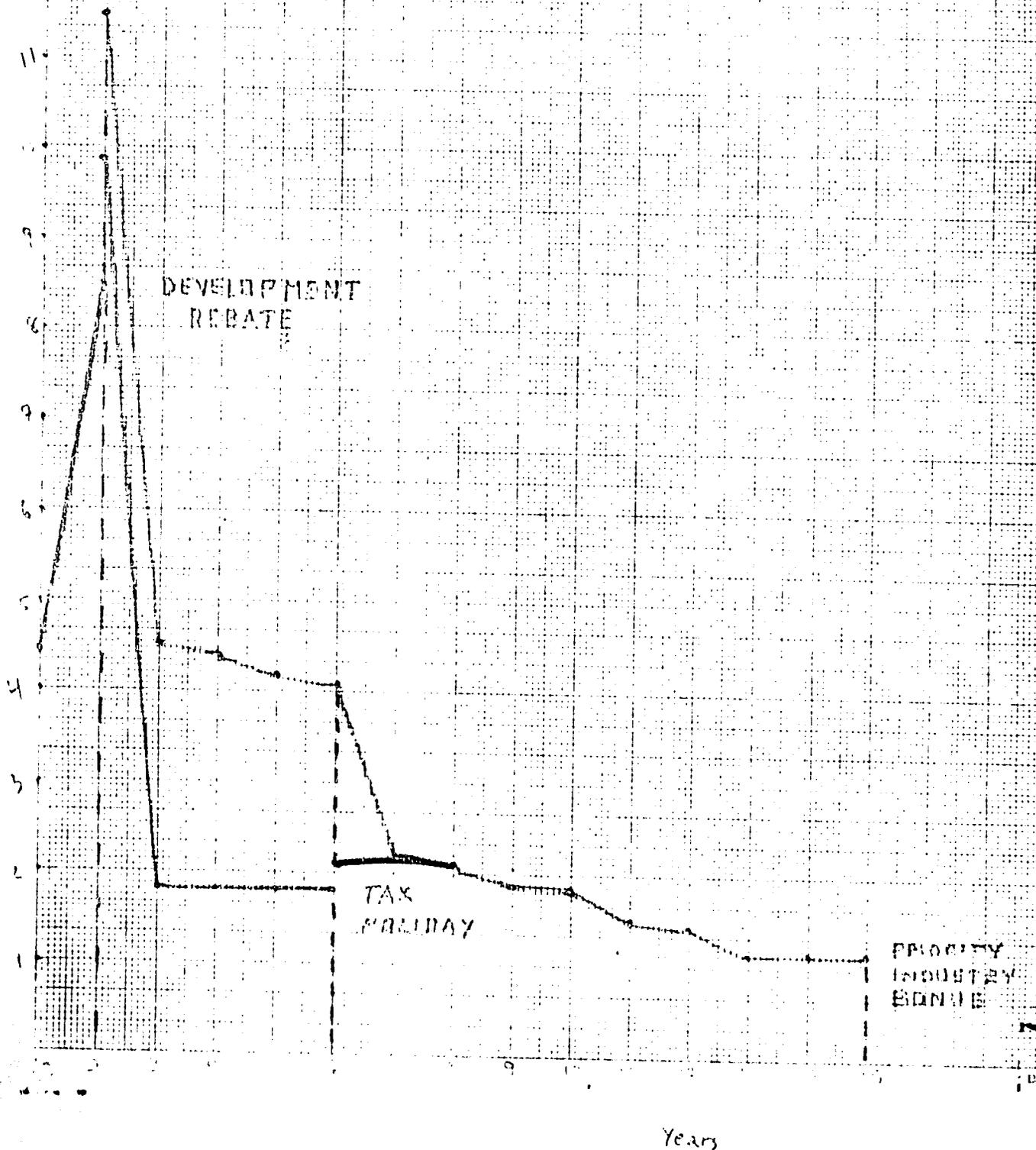
BEE W/M

FIGURE 3

TOTAL AND INCREMENTAL
VALUE OF THREE
TAX CONGESTIONS

(based on experience of representative
factory firm)

VALUE
millions
of
dollars



year when all are operative. Thereafter, incentive income falls off rapidly until the seventh year, then slowly declines as the firms' income subsides.

The tax saving effect of the incentives is most drastically revealed in their effect upon the surtax. With incentives this tax is paid for only six years. In their absence this tax will be levied every year of operation.

The plow-back incentives of the tax concessions is made evident by the difference between net incomes between concessional and non-concessional tax arrangements - being only \$21,000,000 while the extra value to the firm is more than double this figure. This factor makes evident that a strong incentive exists to re-invest into the firm.

What is not clear is the real incentive value of the 36% extra income or 10% extra return to investment which accrues from these concessions to encourage new investment. It is to this issue, the factors which influence and condition new investment, that I shall now direct my attention.

6. FACTORS WHICH AFFECT THE EFFECTIVENESS OF THE TAX INCENTIVE

If it is to become and remain effective, a tax concession scheme must be administratively easy to handle from the point of view of both taxpayer and taxee. That India's over-all tax system is cumbersome, and by that token difficult to manage is part of the common wisdom. However, this charge is much less true in the specific instance of the tax concessions as the following points make clear.

To be effective an exemption must be certain in that a firm knows it will receive the benefit in return for a specific action. Such is the case in India subject to the possibility that over any planning period the rates are very likely to change (and sometime the structure of the incentive too, as witness the case of the incentive to priority industries). All incentives carry with them this element of uncertainty. Moreover, rumours are always current to the effect that an exemption will be raised, lowered or dropped. This has been especially true for the development rebate which is presently rumoured to be terminated after 1970. Such factors work to weaken the incentive value of the concession.

To be effective an exemption or concession should be costless to obtain. In the case of all these incentives they are automatic by simply making the proper deductions on the income tax form. This procedure eliminates the subjectivity and cost involved in having a tax officer review each claim separately as is the case in export rebates, which can substantially dampen the incentive value of the concession.^{29/}

A tax incentive system should be easy to administer, it should be non-arbitrary and not open to abuse. These **three** incentives are easy to administer in that **they** ^{are} automatic, and the basic guidelines are clear. Being automatic there is not much scope for abuse (in the sense that the scope for subjective decisions by top officers is limited) except that the incentive does exist for a parent company to proliferate to obtain

^{29/} Rebates (not covered above) are, however, a different matter. Whenever obtaining an exemption involves getting money back from the government, the action can be costly and time consuming. An export rebate, for example, can take from 2-24 months and require several visits to Delhi by the firm's higher management to push the matter through. This is neither prompt nor costless. Some firms may let smaller claims go unclaimed as being not worth the effort to get.

incentives from the new starts of owned subsidiaries. But in the agro-input sector this practice seems rather rare.

To be effective a tax incentive scheme should be accompanied by a group of complementary programs and not be vitiated by conflicting programs and policies. In this latter regard Indian practice leaves something to be desired.

7. THE TAX CONCESSION AS AN INCENTIVE TO INVEST

The management of agro-input firms do not weigh tax incentives very heavily in making their decision to invest in a new activity, if at all. This is at face value surprising given the amount of extra income that is possible from them. Several reasons can be advanced to explain this lack of relative importance.

The incentive structure is not presently designed to make the agro-input sector specifically an especially rewarding theater for investment. One of the central features of the tax incentives scheme in India is that it is very broad - being available to a wide number of firms and industries. Any new firm is entitled to the tax holiday and the development rebate. Any firm falling one of 59 groups is eligible for the priority industry tax concession. The depreciation allowance is equally unselective. In such circumstances the tax incentive scheme cannot be expected to channel investments in any meaningful fashion. In a sense almost every new firm,

^{30/} The reason advanced for this breadth is that planners fifteen years^{ago} wished to divert investment from traditional commercial activities into the productive sector. Recognizing that many factors governed investments in specific industries, they chose to make all modern industries more appealing than the traditional, letting other guidelines direct investment more specifically.

or expanding firm in any industry is eligible for some tax concessions or rebates and in such a context the investing firm is not provided with very clear fiscal guidelines as to the direction in which it ought to invest.^{31/}

Although all firms welcome tax reductions and the resulting extra income (and they believe the present incentives are, taken as a whole, generous) they do not view the tax concessions as a special incentive to invest. The reason is that the present incentives do not offset the critical disincentives they face, and for this reason tax incentives are largely irrelevant to investors or so misplaced as to ^{be of} little real incentive value.

The crucial problems a firm in India must cope with (businessmen believe) are: finding, reaching and developing their market; putting together their basic capital investment, and being able to obtain the needed inputs to produce their produce. In the main firm's face institutional restraints which produce structural diseconomies to them. Tax concessions, even generous ones, are not designed to function as incentives of sufficient potency to offset these constraints.

In not one case among the firms interviewed was the tax incentive sufficiently critical that its absence would have precluded an investment.

The incentives do provide the firm with some extra income over a period of time, but this increment is not available when a firm most needs

^{31/} There is a certain predestination involved with investments in this sector. Virtually all the firms and owners are specialists in some area of agro-input production. Most typically, among the Indian owned smaller firms, the manager is a U.S. trained agricultural or mechanical engineer with a special interest in going-it alone and who has been able to obtain entry capital. The larger firms are specialists - fertilizer or pesticide - with a technology to sell who find India a good market. Persons with no such background of technical specialization do not seem to invest in the sector.

money - either at the time when investment capital is being assembled or during the early productive years when most agro-input firms earn quite low net incomes. Further, the extra income does not solve or lessen the serious problems involved with either getting steady, predictable streams of inputs or in reaching and developing their markets. In sum, Indian tax incentives do not appear to help the producer where and when he needs help most and therefore what incentive effect they might otherwise have is largely lost.

However, the tax concessions do provide incentive to reinvest in a firm. They are designed, as we have seen, to force and encourage the firms to plow-back profits into the business. The Ministry of Finance feels that presently agro-input firms are reinvesting, typically, a much as half of their profits. How much importance quantitatively speaking, tax incentives have led in reaching this level of investment is impossible to say. The GOI feels it has been important and that, on this account, they should be continued. Conversely, it is believed that the disincentives to withdrawing profits from firms have so influenced company behavior that the company dividend tax has been dropped. There is evidence that equity holders are beginning to learn the value of investment for a long-term flow of income as opposed to growth-in growth-out activities.

Agro-input firms have been expanding steadily since 1954, and rapidly since 1965. Tax concessions have been available over this entire period. Two questions may be raised in this context:

1. If tax incentives have little effect on investment what accounts for the investment obviously flowing into the sector.
2. If tax incentives are of peripheral value in stimulating new investment why are they continued?

Agro-input firms have received two important non-fiscal incentives to invest - both of which guaranteed a sellers market to them. First, once production begins in a line in India, further imports of that product if not entirely banned are sharply curtailed. Second, by issuing only a few licenses in any given sector new entry was curbed if not blocked to non-holders of the licenses.

In addition through its input-use promotion programs government steadily developed a growing farmer market. Thus any firm which was fortunate enough to gain a license, was also extended protection from inputs, which gave the firm a real opportunity to earn a steady and even growing stream of income.

Consequent to the advent of the farm revolution beginning in 1965 the rural market for these inputs has risen far faster than had hitherto been anticipated. The existing producers had no expectation of filling the new demand alone and with this realization all vested interest in retaining the statutory sellers market could disappear. Licensing has been dropped and new investment, albeit insufficient, is flowing into the sector.

The pesticide industry is a case in point. Capacity in this industry rose from zero in 1954 to a bit less than 10,000 tons in 1960 during which

period an assured market was offered by government purchases of growing quantities of materials. Since that time, still with an assured market, licensed capacity doubled by 1962 and redoubled by 1966 when 40,000 tons were licensed. Now the subsidy has been withdrawn, but need for the material is still greatly in excess of licensed capacity.

Much the same pattern exists in the power equipment sectors of the industry. The only striking exception is in energized pump-sets which industry has always been allowed a free hand in marketing and pricing.^{32/} Here growth has followed a more constant upward trend since the mid-fifties.

It is important to recall at this point, that in not a single agro-input industry has licensed capacity equalled planned capacity or actual production equalled licensed capacity. In 1968 it is estimated, for example, that something over 11,000 tractors will be manufactured, while the licensed capacity is 30,000. For power-tillers, the production in 1968 will be a bit less than 2,000 while licensed capacity is currently 26,000. By the end of the Fourth Plan (1974) India hopes to produce 35,000 tractors annually and 10,000 power-tillers.

Manufacturers explain these shortfalls as due to (1) shortage of raw materials and components (many imported); (2) shortage of capital to expand physical plants; (3) weakness in the market structure (lack of dealers and servicing support). If private investment is not forthcoming

^{32/} However, the industry has been benefitted by continuing public support of minor irrigation development wherein loans and subsidies have been extended to farmers so they could refinance energized pumping equipment.

the government will be under great pressure to supplement the shortfall with public sector production.

The shortage of raw materials and components if imported is a bottleneck that can only be eased by direct public action.^{33/} The poor development of the marketing mechanism stems in part from lack of experience in marketing on the part of businessmen and in part due to the propensity of government (until quite recently) to try to solve India's rural marketing problems by building up the cooperatives. This experiment has not proved a great success and marketing opportunities are now being opened to private enterprise.

8. CONCLUSION

The above analysis of the investment-decision among the agro-input industries suggests that the present array of tax incentives have had little effect on stimulating new investment into the sector but do have an impact on the decision to re-invest.

Although the tax incentive schemes offer to the new investor, a real increment in excess of normal income expectations, sufficient disincentives having to do with markets, assuredness of input supply, and obtaining the basic investment act strongly to offset this incentive. However, once in production tax concessions and other incentives (especially the existence of a seller market) encourage businessmen to plow-back generously into their firms.

^{33/}The growth of the fertilizer industry, a special case in that private entry into the production of nitrogenous materials was discouraged until 1965, only begins a sharp upward curve in business starts after that year. Even so government obviously did not believe tax incentives could have of themselves much affect and has employed as their most incentive patent tool, following the recommendations of the Sivaraman Report, the opening of the market, the freeing of prices, and allowing Indian private and foreign private capital to move into the field.

This pattern would suggest that, under these conditions, much of the future growth in agro-input production must come from firms already in business and will be limited by their ability to earn and acquire some investment from the capital market. It is open to question whether the hopes of 1974 can be entirely met from this type of growth alone. If it cannot, new entries must be encouraged. If new investment is to be attracted (into new firms) the real disincentives will have to be coped with. These are:

1. The difficulty in obtaining initial investment.
2. The difficulty (until recently) for agro-input firms to market and price freely to otheir customers.
3. The difficulty with obtaining and sustaining a reliable flow -- of inputs to the producer (especially if these involve importation).
4. The difficulty in planning which derive from the propensity to change tax rates, tax structures, and input development programs on the part of government (States and Center).

This list suggests the areas where new incentives need be developed.

With regards to tax incentives specifically this study suggests the following thoughts on tax policy:

1. High taxes of themselves do not appear to be a great disincentive to invest so long as firms are given the opportunity to earn a growing reliable stream of income. Such an opportunity will follow more from institutional changes in the marketing mechanism

a reduction of input shortages, and more consistent public policies - in the view of businessmen. These conditions are developing in India but not rapidly enough to attract sufficient investment to meet growing needs for production.

2. Tax concessions can influence reinvestment decisions by providing a disincentive against the distribution of dividends and by providing higher long-term income possibilities from increased present reinvestment.
3. Substantial reductions in import tariffs, especially on capital equipment not available in India, and on needed spare parts appears to be a very important potential tax incentive that is cost reducing for both initial and on-going operations.
4. Indian managers seem to need fewer tax constraints now to guide reinvestment. Tax rules specifically aimed to this end are probably dated and could be disregarded.
5. In so far as encouraging new investment is concerned no conceivable tax incentive would appear to have much impact - given the present disincentives.
6. Given the above there seems to be no reason, on economic grounds, for retaining a tax concession scheme into the 1970's. Business-men no longer need the constraints they formerly provided, but will be much in need of opportunity incentives as opposed to straight-forward tax concessions.

Given the real, pressing and growing need for private investment in the agro-input sector, a searching re-examination of incentives and disincentives is in order.

9. APPENDIX

A. OTHER FISCAL INCENTIVES AFFECTING INVESTMENT

For sake of completeness, and to provide an additional frame of reference concerning the incentive environment in which tax concession of fuction, it seems worthwhile to add and comment upon the array/complementary fiscal incentives which offset agro-industry investment directly and indirectly. These will be merely touched upon to provide background; details being necessarily brushed aside.

a. Import tariff relief

A number of inputs to agro-input industries are allowed into India duty-free or at greatly reduced rates and the GOI expects a firm to push the consequent saving forward to the farmer consumer to reduce the final price of the input. The reduction does, however, reduce the cost of purchasing supplies which is a tangible benefit to the manufacturers. The pattern of these reductions is varied, as the following examples indicate:

- i) All chemical raw materials needed to compound pesticides may be imported duty-free (since April 1968);
- ii) Manufactured pesticides are allowed in at 10% (rather than the normal 50%) duty;
- iii) Capital equipment needed to produce fertilizer and pesticides is permitted to enter with a 24% duty (down from a normal 44%). Similarly some components which must be imported can be obtained at concessional rates.

The problem of obtaining imported raw materials, components and spare parts and the level of duty levied in these is viewed by agro-input firms as one of the most important 'disincentives' to widening this scope of activity.^{34/} For example, one can import a finished engine more easily (in the sense that foreign exchange is easier to obtain) than the spare parts and components of it.^{35/} Fuel for tractors, power-tillers and pump-sets is quite costly, in part due to very high import tariffs (and domestic service charges^{36/}).

--- Input tariffs measurably increase the cost of entry for any firm which needs imported capital equipment (but for this reason provide additional security to existing producers). In the case of a fertilizer plant such tariffs may raise the initial investment outlay by as much as 10%. If prices to farmers are fixed (as they are in capital intensive tractor production, and often have been for other agro-inputs) these charges cannot be pushed forward and must be absorbed by the firm.

^{34/} There is a 40-50% duty charge on replacement parts. A related problem, and associated with foreign exchange control, is that of obtaining a predictable and continuing rate of imported inputs. In fact these come in lumps, causing many firms to operate at far lower than full capacity due to shortages of needed components or raw materials. Further, it is often difficult to persuade the foreign exchange control office of the need for certain inputs, which may be required in small quantities but are nonetheless vital. Special steel for cutting edges on implements is an example.

^{35/} This statement represents the opinion of several firms which have had experience doing both, but equally reflects the higher import tariff on components compared with a finished product.

^{36/} It is estimated that on a tractor operated holding in Punjab, fuel charges account for 1/5-1/6 the total cost of production. There have been efforts by the GOI to find a way to allow farmers fuel at concessional rates, but the problem of abuse seems to be both substantial and difficult to control. '

b. Subsidies to farmers to promote input use

Perhaps the most long-standing important incentive to producers derives from the GOI and State Governments efforts to introduce and popularize new or improved manufactured inputs amongst farmers. ^{37/} Such programs are incentives in the sense they are market-widening. Three fiscal incentives have been employed in this regard:

- i) Subsidized prices of inputs to farmers.
- ii) Controlled prices on inputs.
- iii) Subsidized loans to farmers to buy inputs.

Since the first Five Year Plan the government has sold agro-inputs to farmers at a lower than market price, absorbing the difference itself. These subsidies (whose cost has been equally shared between the Center and the States) have varied over the years but the policy has remained upto the present time. A sample of these subsidies includes: oil engines (50%); pesticides (upto 50%); phosphatic fertilizers (25%); improved seeds (25%); installation of pump-sets (25%); bullock-drawn implements (50%); sprayers (varied by state up to 50%).

Prices have been controlled as well to the consumers benefit. Tractors and fertilizer prices have both been set by the Center (now terminated in the case of fertilizer). The GOI keeps a close watch on all prices charged, using as its guideline a range of 'fair' rates of return to the

^{37/} It is understood that these market promoting incentives are temporary, but the actual period of need is uncertain so surprises can occur when the decision to suspend a program is announced.

producer. A good example of this policy is the case of tractors. The government allows producers to charge from Rs.18,000 to 21,000 for a 35 h.p. machine, depending upon cost of production. However, the black market price for these is twice the permitted rate. Charging what the market will bear is not viewed as an ethical business practice especially where farmers are concerned.

To promote the use of new inputs the government has directly (through ^{38/}taccavi loans) and indirectly (by supporting cooperative loans) under-written credit to farmers at concessional rates. This surely had an effect in providing and speeding the acceptance of new inputs. Nearly 90% of fertilizer sales for example, have been on credit. Government is now taking strong measures to increase the supply of distribution credit to the rural sector. The Reserve Bank of India (RBI) is using both a carrot and stick to push commercial banks into rural credit. The carrot is to alter the liquidity ratios required between RBI and commercial banks for loans extended to firms dealing in rural activities (as well as to support these loans with a concessional interest rate between RBI and the commercial banks).

A stick confronts the commercial banks by the implicit threat of "social control" in the event they do not play a more active role in financing rural development activities.

Credit is becoming available to support inventory flow from producers to find consumer through the Agricultural Refinance Corporation (supported

^{38/} Taccavi loans are credit extended to farmers through the Block Development Offices which are jointly under-written by the GOI and state government. This program has been gradually terminated.

by the RBI^{39/}).

c. Public Supported Seeding Program

The seeding program is a direct support program to agro-input producers. Government allows fertilizers and pesticides to be used to promote a new type of the compound to enter India duty-free. In the case of pesticides, the government will let a private firm (for up to five years) demonstrate a new compound to see whether it is acceptable under Indian conditions. Expenditures incurred in this seeding program by a firm are tax deductible. Once the decision is made to producer, and the compound becomes available from an Indian source, all further imports of the material are banned.

d. Benefits to Small Business

A number of agro-inputs firms, fall under the classification of small (or medium) size business^{40/}. The GOI has taken steps to encourage such activities. There are a schedule of activities reserved to small scale business (manual operated sprayers and dusters among them). Small businesses are entitled to special consideration for steel and other raw materials and some foreign exchange preference. They are also eligible for loans at a concessional rate (7% instead of 10%).

e. State level incentives

A final program, and trend, deserves to be noted. Most states offer inducements for firms to locate within their territories. Usually there are promises of land, power and other infrastructural support at concessional rates. Lately a new trend has become evident, namely a move towards autarch on the part of some states.

^{39/} Similarly accounts receivable to the producers can be rediscounted by the Industrial Development Bank of India.

^{40/} Bullock-drawn implements, power-tillers, sprayers, some engines are of this scale of activity.

The State Government is the largest buyer of agro-inputs in any given State. To promote local development a few States have taken to buying these inputs only from producers located within their areas. Further, they are offering to pay above market prices for these goods as an extra incentive. Sprayers and small gasoline engines have been affected so far by this practice, which if it becomes widespread will act against the larger national manufacturers to the benefit of smaller and more costly producers.

f. Summary

It is clear that India has made a considerable effort in developing the climate in which investment decisions are made through the use of fiscal incentives. Most of these appear to be marketing promoting and thus only indirectly investment inducing. Nonetheless input tariff concessions, seeding program concessions and tax concessions are present in the Indian scheme as direct incentives.

T A B L E - 2

INCOME AND TAX STRUCTURE OF FERTILIZER FIRM
 (Undiscounted & Discounted)
 (based on representative figures)
 ('000 of dollars)

	(Year) 1	2	3	4	5	6	7	8	9
GROSS REVENUE	39,925	59,890	79,850	75,775	72,195	72,020	68,945	65,965	63,080
Raw Materials	12,450	18,230	24,010	24,010	24,010	24,010	24,010	24,010	24,010
Other Costs	8,650	10,600	12,500	12,400	12,400	12,300	12,300	12,300	12,300
Depreciation	11,400	9,100	7,300	5,800	4,700	3,700	3,100	2,600	2,200
Interest	2,950	2,825	2,565	2,310	2,055	1,795	1,540	1,285	1,025
TOTAL COSTS	35,450	40,755	46,375	44,520	43,165	41,805	40,950	40,195	39,535
NET REVENUE	4,475	19,135	33,475	31,255	29,030	30,215	27,995	25,770	23,545
Tax Holiday Credit	-	1,413	1,797	1,797	1,797	-	-	-	-
Development Rebate	4,475	8,525	-	-	-	-	-	-	-
Priority Credit	-	1,531	2,678	2,500	2,322	2,417	2,240	2,062	1,873
Taxable Earnings	-	7,666	29,000	26,958	24,911	27,798	25,755	23,708	21,672
Corporate Tax	-	4,216	15,950	14,827	13,701	15,289	14,165	13,039	11,920
Sur-Tax	-	-	1,520	943	620	857	530	207	-
Net Earnings	4,475	3,450	11,530	11,188	10,590	11,652	11,060	10,462	9,752
Net Earnings with Tax Credits	4,475	14,919	16,005	15,485	14,709	14,069	13,300	12,524	11,625
Discounted present value at 12%*	3,996	11,893	11,392	9,841	8,346	7,128	6,016	5,058	4,192

*12% is the standard discounting figure used by the Planning Commission

T A B L E - 2 (contd.)

10	11	12	13	14	15	Totals with Tax Incentive	Totals with No Tax Incentive
60,205	57,525	54,740	52,165	51,965	51,865	926,110	926,110
24,010	24,010	24,010	24,010	24,010	24,010	342,810	342,810
12,300	12,300	12,300	12,300	12,300	12,300	179,550	179,550
1,800	1,600	1,300	1,200	1,000	900	57,700	57,700
770	515	255	-	-	-	19,890	19,890
38,880	38,425	37,865	37,510	37,310	37,210	599,950	599,950
21,325	19,100	16,875	14,655	14,655	14,655	326,160	326,160
-	-	-	-	-	-	6,804	-
-	-	-	-	-	-	13,000	-
1,706	1,528	1,350	1,172	1,172	1,172	25,723	-
19,619	17,572	15,525	13,483	13,483	13,483	280,633	326,160
10,790	9,665	8,539	7,416	7,416	7,415	154,348	179,387
-	-	-	-	-	-	4,677	36,693
8,829	7,907	6,986	6,067	6,067	6,068	121,608	-
10,535	9,435	8,336	7,239	7,239	7,239	167,135	110,080
3,392	2,712	2,140	1,659	1,481	1,323	80,569	51,302

Percentage in-crease over no tax incentive 36.3%

T A B L E - 3

AFTER-TAX RETURN ON EQUITY CAPITAL
(Without Tax Holiday Credit & Development Rebate)
(Thousand Dollars)

	0	1	2	3	4	5	6	7	8
<u>CASH OUTFLOW</u>									
Equity Investment	5,800	14,400	-	-	-	-	-	-	-
<u>CASH INFLOW</u>									
Depreciation	-	-	-	11,400	9,100	7,301	5,800	4,700	3,700
Net Earnings	-	-	-	1,510	6,458	11,298	10,549	9,797	10,198
TOTAL	-	-	-	12,910	15,558	18,599	16,349	14,497	13,898
Less Debt Repay- ment (Principal)	-	-	-	2,048	4,096	4,096	4,096	4,096	4,096
NET INFLOW (OUTFLOW)	(5,800)	(14,400)	-	10,862	11,462	14,503	12,253	10,401	9,802
Discounted at 35%	(5,800)	(10,670)	-	4,410	3,450	3,234	2,022	1,259	892
Discounted at 36%	(5,800)	(10,584)	-	4,323	3,347	3,318	1,936	1,207	833

T A B L E - 3 (Contd.)

9	10	11	12	13	14	15	16	17	Total
-	-	-	-	-	-	-	-	-	20,200
3,100	2,600	2,200	1,800	1,600	1,300	1,200	1,000	900	57,700
9,448	8,697	7,946	7,199	6,446	5,696	4,946	4,946	4,946	110,080
12,548	11,297	10,146	8,999	8,046	6,996	6,146	5,946	5,846	167,780
4,096	4,096	4,096	4,096	4,096	4,092	-	-	-	47,100
8,452	7,201	6,050	4,903	3,950	2,904	6,146	5,946	5,846	120,680
566	360	224	132	79	44	68	47	35	+ 352
532	231	106	122	71	40	61	41	29	- 287

47-

T A B L E - 4

AFTER-TAX RETURN ON EQUITY CAPITAL
 (With Incentives)
 (Thousand Dollars)

	0	1	2	3	4	5	6	7	8
<u>CASH OUTFLOW</u>									
Equity Investment	5,800	14,400	-	-	-	-	-	-	-
<u>CASH INFLOW</u>									
Depreciation	-	-	-	11,400	9,100	7,301	5,800	4,700	3,700
Net Earnings	-	-	-	4,475	14,919	16,005	15,485	14,709	14,069
TOTAL	-	-	-	15,875	24,019	23,306	21,285	19,409	17,769
Less Debt Repay- ment (Principal)	-	-	-	2,048	4,096	4,096	4,096	4,096	4,096
NET INFLOW(OUTFLOW)	(5,800)	(14,400)	-	13,827	19,923	19,210	17,189	15,313	13,673
Discounted at 47%	(5,800)	(9,792)	-	4,356	4,264	2,805	1,701	1,026	629
Discounted at 48%	(5,800)	9,734	-	4,259	4,144	2,709	1,633	980	588

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T A B L E - 4 (Contd.)

9	10	11	12	13	14	15	16	17	Total
-	-	-	-	-	-	-	-	-	20,200
3,100	2,600	2,200	1,800	1,600	1,300	1,200	1,000	900	57,700
13,300	12,524	11,625	10,535	9,435	8,336	7,239	7,239	7,239	167,135
16,400	15,124	13,825	12,335	11,035	9,636	8,439	8,239	8,139	224,835
4,096	4,096	4,096	4,096	4,096	4,092	-	-	-	47,100
12,304	11,028	9,729	8,239	6,939	5,544	8,439	8,239	8,139	180,735
381	232	136	82	48	27	25	16	8	+ 144
357	220	126	74	41	22	25	16	8	- 332

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