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A Supply-Side Look at Tax Incentives: Definition, Design, and Selection Criteria of Efficient Tax Incentives

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Abstract

The paper looks at tax incentives from the supply-side point of view and analyzes whether selective tax incentives can be used by developing countries to achieve the objectives of economic efficiency and growth while maintaining equity. The paper shows that the role of tax incentives in reconciling equity and supply-side objectives is limited and that tax incentives should concentrate primarily on supply-side objectives.

With regard to economic efficiency, the paper distinguishes between the "pure" and the "impure" case for tax incentives. In the "pure" case, tax incentives are used to take advantage of positive externalities or to reduce negative externalities embedded in the economic system. Tax incentives for regional development, encouragement of risk-taking and savings, dampening of short-run output disturbances, and promotion of research and development are all justified on this basis. In the "impure" case, tax incentives are used to reduce the distortionary effects of other economic policies, such as trade, wage, or tax policy, whose reform is considered infeasible by policymakers. Even though it might be argued that the use of tax incentives in the latter case is "welfare improving," the paper argues that the removal of the source of the distortion itself is a preferred course of action and that tax incentives are no substitute for appropriate economic policies and efficient tax systems.

Tax incentives, therefore, have a limited role to play in tax policy, and for a variety of reasons. First, they imply the loss of government revenue. Second, efficient tax incentives are cumbersome to design--they are by nature selective and can often induce other distortions. Third, their effectiveness can seldom be guaranteed. In principle, they should be given to those economic agents who need them to perform the desired action. However, this is in practice a difficult task, and tax incentives often lead to unwarranted economic rents to the lucky beneficiaries. Finally, tax incentives can readily fall prey to special interest groups so that the original economic motivation of the policy is easily superseded by other less objective motives.

I. Introduction

Supply-side economics has stressed across-the-board reductions in marginal tax rates in order to achieve economic efficiency and to promote long-run growth. 1/ These same objectives have also been a major concern of economic policy in developing countries. However, economic policy in the tax field has to cope with the trade-off between conflicting goals, especially those of income redistribution and economic efficiency.

In practice, many developing countries have attempted to reconcile these conflicting goals. In order to achieve the equity objective, they have introduced relatively high and progressive marginal tax rates on income, similar to those used in industrial nations. They have tried to achieve economic efficiency, on the other hand, through the use of generous exemptions and tax incentives for selected sectors of the economy.

This strategy has also served as a workable compromise at the political level. Tax policy, in order to have popular support, must appear equitable to the average citizen. Because income is unequally distributed, public opinion requires that the tax system be used as a means of redistributing income through progressive taxation. Tax incentives are sometimes used for reducing the various distortions that result from such a tax structure.

This paper looks at tax incentives from the supply-side point of view and analyzes whether selective tax incentives can be used by developing countries to achieve the supply-side objectives of economic efficiency and growth while maintaining equity. The paper shows that the role of tax incentives in reconciling equity and efficiency is very limited. Even though tax incentives can be designed to produce economic efficiency gains, they should not be used as substitutes for an efficient tax system to satisfy supply-side objectives. Tax incentives have a limited role to play in tax policy. First, they involve loss of government revenue. Second, efficient tax incentives are cumbersome to design--they are by nature selective and can often induce other economic distortions. Third, their effectiveness can seldom be guaranteed. In principle, they should be given to those economic agents who need them to perform the desired action. However, this is a difficult task that often leads to unwarranted economic rents to the lucky beneficiaries. Finally, tax incentives can readily fall prey to special interest groups so that the original economic motivation of the policy is easily superseded by other less objective motives.

1/ See Gandhi (1985) for a detailed discussion of supply-side tax policy.

This paper will use the following definition of tax incentives. A tax incentive is defined as a reduction in either the tax rate, the tax base, or the tax liability, which is granted if a specified action is taken by the selected beneficiary. The beneficiary of the tax incentive is a taxpayer, who is selected on the basis of certain qualifications. Typical qualifications are the type of organization (incorporated or unincorporated, business or individual); the origin of the taxpayer (national or foreigner); the activity performed; and the age of the beneficiary (newcomer or established). The change in behavior sought through tax incentives may be, for instance, real (as distinct from financial) investment, production of goods for export, employment of labor, increase in the level of output, etc.

The tax incentive reduces the base, the rate, or the overall tax liability of a given tax. For instance, a tax incentive to investment can be granted through the corporate income tax in the form of a tax holiday, which is a reduction in the tax rate; in the form of accelerated depreciation or immediate write-off of investment expenditure, which is a tax base reduction; or in the form of an investment tax credit, which is a reduction of the tax bill. Each form of tax incentive is different in the way it affects economic efficiency and in the extent to which it induces the desired behavior. Efficiency will be understood throughout the paper in the Pareto sense--that is, an increase in economic efficiency is attained when an individual's well-being can be increased without having to reduce that of any other individual.

This paper will deal with tax incentives as they are applied in developing countries. The paper does not attempt to describe all tax incentives used by these countries. Rather, it singles out tax incentives for the promotion of investment, regional development, export promotion, and employment to illustrate the problems that most commonly plague tax incentives. 1/

Section II deals with the economic efficiency criteria for tax incentives. The paper distinguishes between the "pure" and the "impure" case for tax incentives. The "pure" case arises from the need to counteract externalities that break the equality between marginal social benefits and costs. The "impure" case, on the other hand, arises either from the practical impossibility of reaching an optimal tax structure or from the existence of one or more resource-distorting economic intervention schemes. In both cases the use of tax incentives can be economically efficient. However, it is argued below that it would be far superior to resort to tax reform or the removal of an economic intervention scheme, in order to eliminate the source of the distortions, than to provide tax incentives to compensate for such distortions.

1/ Tax incentives for the promotion of foreign investment are analyzed in a separate paper (Sanchez-Ugarte, forthcoming).

Section III broadly examines the design of tax incentives in an attempt to identify the limitations of tax incentive policy as a means of pursuing various and often competing objectives with access to scarce tax revenue.

Section IV analyzes the economic distortions induced by specific tax incentives and concludes that even though it is possible to design relatively more neutral tax incentives, this is a complicated task that limits considerably the applicability of tax incentive policy.

Section V considers the effectiveness of tax incentives. An effective tax incentive is defined as one that maximizes the probability that the desired behavior is attained. This section suggests that most tax incentive schemes are ineffective. Very often they are cluttered with design flaws that convert them into mere rent-generating transactions.

Finally, Section VI presents conclusions and policy recommendations, and comments on the "appropriateness" of adopting a policy of selective tax rate reductions via tax incentives--a widely prevalent policy in developing countries--as opposed to effecting general tax rate reductions while broadening the tax base, as recommended by supply-siders.

II. The Economic Rationality for Tax Incentives

A pure case or "first-best" for tax incentives (or subsidies) exists whenever external economies are present, that is, when, under a free market arrangement, the marginal social benefit of an activity exceeds the marginal social cost of undertaking that activity. The failure of the "invisible hand" to reach the maximization of social welfare calls for the Pigovian prescription of subsidizing such activities so that the marginal private cost equals the marginal social benefit. 1/ A Pigovian tax incentive removes a distortion from the economy and is therefore by nature welfare improving. As to how to finance the first-best subsidies, the solution lies in a nondistorting tax system for which the financing could come from either poll taxes, which do not distort, or Pigovian taxes, which remove negative externalities.

An impure case for tax incentives arises when economic policy in general or tax policy in particular is distortionary. 2/ For political, social, or administrative considerations, economic policymakers often implement a tax system that is nonneutral and adopt other economic

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1/ See Bator (1958) for the cases where free market failure is likely to arise.

2/ An optimal tax system would be devoid of tax incentives; by design the tax rates that apply are optimal in the sense that no other tax structure can increase economic welfare, given the government's budget constraint and the set of taxes that are considered feasible.

policies that lead to distortions. Ideally, the distortions should be removed by way of tax reform or reform in other economic policies, but this may not always be feasible.

However, through economic policy (e.g., tax incentives), it is possible to induce behavior that can be at the margin welfare improving. The literature on social cost-benefit analysis, aware of this possibility, has developed criteria and methods that assess whether undertaking an activity or project leads to improvement in social welfare by reducing unwanted distortions and negative externalities and/or by inducing positive externalities. 1/ In this author's opinion this methodology can also be put to use in the design of tax incentive (or subsidy) policy.

1. The pure case for tax incentives

In a free market situation economic agents do not always behave in a manner that leads to equality between private and social costs and benefits. Intervention is called for when the externalities cannot be internalized by private agents. 2/ In the case of a positive externality, the intervention would consist of a subsidy (or tax incentive) to the activity. Examples of tax incentives based on such an argument follow.

a. Regional distribution of economic activity

It can be argued that the promotion of regional development is justified on economic grounds, given that there are external economies of relocation to less developed regions and external diseconomies of concentration in already developed ones. Private agents acting on market signals will not take advantage of the external economies, resulting in an overconcentration of activities in certain areas. Tax incentives that reduce the cost of relocating to undeveloped regions, where positive externalities are generated, could increase welfare. (See also p. 16 below.)

The role of tax incentives in reaching this goal is complementary to the role of other instruments of regional economic policy, such as public investment, credit, and financial policy, etc., which are often partly responsible for the overconcentration in major metropolitan areas of developing countries.

1/ The literature is vast. See, for example, Layard (1972), Harberger (1974), Little and Mirrlees (1977), and Boadway (1979).

2/ See, however, Coase (1960) who shows that under certain conditions external effects can be internalized by contractual arrangements reached among the affected parties.

b. Risk-taking and savings

Arrow and Lind (1967) have shown that, owing to imperfections in the capital market, private agents do not often encounter the institutional setup that will encourage them to diversify risk to a "socially optimal" level. Under such conditions, a positive externality can be derived from inducing risk-taking by private agents. Thus, tax incentives to promote private investment in risky projects with substantial social benefits could lead to an improvement in economic well-being. However, it would be better to attain optimal diversification of risk by reducing imperfections in the capital markets.

Another argument, advanced by Sen (1967), is that the economies frequently tend to save below the level that is "socially optimal." Lack of consideration for the welfare of future generations leads to an overconsumption in the present, and, in turn, to the formation of a lower-than-optimal stock of capital for the future. This external effect calls for tax incentives to private savings.

c. Short-run output disturbances

Along the business cycle troughs, output and the level of employment are below the steady-state values. It can be argued that it is socially desirable to move the economy back to its steady-state equilibrium path. Economic policy, in general, can be used to attain such a goal. The new literature on the business cycle (Lucas (1981)) has stressed the relevance to economic behavior of economic agents' expectations about policy changes. Accordingly, an unexpected policy change will not affect economic behavior, and a policy change that is expected to be transitory will have very different effects from one that is seen to be permanent. 1/ The policy prescription emerging from this literature is that rules are better than discretion, first, because a rule will be incorporated into the behavior of economic agents, and, second, because the effect of a rule can be objectively predicted.

d. Research and development

Externalities are also present in basic research, which is pursued for the accumulation and advancement of general knowledge. It can be argued that since the benefits of basic research cannot be appropriated by the researcher, such research will be conducted at a suboptimal level. 2/

1/ Lucas (1981) compares the effects of alternative rules for granting tax incentives to investment; one is a tax incentive given permanently, the other a tax incentive given for a period of five years, disappearing afterwards. He shows that, under certain assumptions about the interest rate and the rate of depreciation, the effect of the transitory tax incentive is 4.5 times as large as that of the permanent incentive.

2/ See Johnson (1925) for a review of the issues regarding optimal allocation of resources in research and development.

Applied research, on the other hand, is generally more easily marketable since the patent system allows the inventor to receive most of the direct rewards of the invention. It is difficult, in practice, to make a clear-cut distinction between applied and basic research, and as a result the patent system does not cover all situations. A case could therefore be made for the promotion of basic research by the private sector through the use of tax incentives.

To sum up, the pure case for tax incentives exists whenever there are externalities in the economy and the decisions of the economic agents are less than socially optimal. However, as the examples above show, tax incentives can play only a complementary role to the many other conditions necessary for the activity to thrive, for example, infrastructure, a conducive environment, know-how, and entrepreneurial capacity.

2. The impure case for tax incentives

Governments often pursue economic policies that introduce distortions into the economic system, for example, in the areas of trade policy, tax policy, and wage policy.

The theory of the "second-best" attempts to minimize the welfare cost implied by government intervention. 1/ However, government policy very rarely follows second-best prescriptions. Therefore, it can be argued that a tax incentive, if properly designed, can increase economic well-being.

As will be shown below, tax incentives should not be the first choice of the policymaker; it will always be better to move to the "second-best" through appropriate reforms in economic policy. Examples of how tax incentives can reduce distortions in the areas of trade policy, tax policy, and wage policy follow.

a. Economic distortions related to international trade

Most countries protect domestic activities by restricting imports of selected commodities for a variety of reasons, including protection of infant industry, encouragement of self-sufficiency, and diversity in production. Johnson (1960) developed the "scientific tariff" approach, which allows trade policy to reach any desired "noneconomic" objective with the minimum of economic distortions. Most countries, however, do not follow the scientific tariff approach to determine the level and structure of trade restrictions. Hence, it is possible to reduce some of these distortions and increase economic well-being through the appropriate use of tax incentives, as the examples below illustrate.

1/ See Stern (1984) for a discussion of optimum taxation policy.

Restrictions on international trade through tariffs, quotas, and overvalued exchange rates reduce the supply of exports by reducing the relative price of exports charged by exporters. This, in turn, means that the social value of foreign exchange generated by any activity is higher than the market value. The literature on social accounting prices provides different methods by which the social opportunity cost of foreign exchange may be estimated. 1/ Once this value has been calculated, economic efficiency recommends that private agents follow social rather than private prices, which results from the appropriate combination of taxes and subsidies. If, for instance, exports were promoted through tax incentives, there could be an improvement in social welfare. It is important to take into account the reaction of trading partners to the export subsidy. The rules established by the General Agreement on Tariffs and Trade (GATT) allow developing countries to give subsidies temporarily to exports when such subsidies do not cause serious injury to other signatory countries and allow for the drawback of domestic indirect taxes incorporated on the value of exports (Goode (1984)).

Protection in developing countries usually results in very different rates of effective protection across industries (Balassa and others (1971)). Typically, import tariffs are highest for luxury consumption items and lower for intermediate goods and basic commodities, thereby resulting in higher effective protection for luxury consumption goods and lower protection for necessities, intermediate goods, and capital equipment. The use of tax incentives for the promotion of, for example, the capital goods industry could under certain circumstances be welfare improving. It can be shown that if the promoted activity brings a reallocation of resources that increases income measured at international prices, economic welfare will increase 2/--for example, where the promoted activity allows the substitution of imports at a social cost below the world price of imports. However, adopting a tariff structure that minimizes the efficiency cost of a given level of protection (scientific tariff) would be preferable to granting tax incentives.

1/ The two approaches most widely advocated are the weighted average approach (Harberger (1972) and Boadway (1979)) and the international price approach (Little and Mirrlees (1974)). Under the first approach, all exports and imports are valued at the social accounting price of foreign exchange, which is derived using a weighted average of import tariffs and export taxes. Under the second approach, all tradables are valued at the international price. The two approaches are not contradictory, and the choice of one should be made on practical grounds.

2/ See Sanchez-Ugarte (1983) Chapter IV, where this argument is developed further.

b. Economic distortions on the savings-investment decision introduced by the tax system

Savings-investment decisions caused by nonoptimal tax systems present inherent distortions. Three distortions in particular frequently occur.

A first distortion arises from the corporation and personal income taxes, which create a difference between the social opportunity cost of capital and the social rate of time preference, both of which would be equal in a perfect capital market and under conditions of no taxation (Marglin (1963); Feldstein (1964); Sen (1967); and Harberger (1976)). Since the return on savings is taxed by the personal income tax, usually at a progressive rate, taxation creates a wedge between the rate of time preference and the rate of return on savings. On the other hand, the classical corporate income tax creates a difference between the marginal product of capital (opportunity cost of capital) and the net rate of return on savings. 1/ This double distortion leads to less capital accumulation and less savings than would result in the absence of taxation.

A second distortion arises from the classical corporate income tax, which favors debt financing over equity financing and reinvestment of profits over distribution of earnings. 2/ This leads to a nonoptimal financing structure. Because equity financing is taxed more heavily, the debt-equity ratio of firms is probably too large. This distortion could also lead to the underdevelopment of certain financial markets like the stock market. The inducement to reinvest, implicit in the corporate income tax, probably favors large over small firms and old over new ones. Tax incentives can be used to reduce these distortions.

A third distortion arises from the persistence of inflation and its interaction with the income tax. This tax usually permits the deduction of nominal interest and the depreciation of assets at original cost, creating a disincentive for investment in shorter-lived assets and an incentive for the excessive use of debt financing (Auerbach (1979)). Here again, a case can be made in favor of using tax incentives to counteract, at least partially, some of these effects.

In all these instances, however, tax reform or correcting the cause of the distortions would be superior to tax incentives for offsetting the effects of the distortions. For example, transforming the income tax into a consumption tax, integrating the personal and corporate income taxes, or correcting income tax for inflation would result in the removal of the distortions referred to above.

1/ According to the new view of the corporate income tax, there is no such distortion in the cost of funds (see Stiglitz (1976) and Auerbach (1983)). The first distortion still persists, however.

2/ See Auerbach (1983) for a survey of the issues regarding the corporate income tax.

c. Distortions in the labor market

The market wage rate does not always fully reflect the social opportunity cost of employing labor. Two such cases are the rural-urban disequilibrium analyzed by Lewis (1954) and the distortions identified in the Harberger-Harris-Todaro two-sector model (Todaro (1969) and Harberger (1971)). In the first case the wage rate is determined by the average product of labor in the rural sector, while the marginal product of labor in this sector which equals the social opportunity cost of labor, approaches zero. In the second case, the urban minimum wage is above the rural wage leading to unemployment in the urban sector and to a social opportunity cost of labor that is intermediate between the two wage rates. In both cases, the difference between the private and social cost of labor indicates that as long as wage policy is not corrected, a subsidy or tax incentive to encourage the use of labor in the urban sector can be welfare improving.

The basic conclusion to be derived from these examples is that even though tax incentives can be justified in terms of economic efficiency, they are never the most appropriate policy to follow in order to achieve the desired objective. Basic policy reform or the use of some other policy preferable to a tax incentive is usually possible. Furthermore, the creation of too many tax incentives can in itself be distortionary in often unpredictable ways. For example, a subsidy to investment, even though it could reduce some distortions in the investment decision-making process, would in itself distort the labor-capital choice. 1/

III. General Considerations in the Design of Tax Incentives

The social cost-benefit approach to tax incentives, developed in the previous section, suggests that a tax incentive can improve welfare when given to an activity whose private cost exceeds its social cost or when the private benefit derived from the activity falls short of the social benefit. The application of the above criteria poses few problems if the country has already calculated the social accounting prices that could be used to determine the level of tax incentives. A major problem arises when many activities call for tax incentives, as might be the case in many developing countries. If all needed tax incentives were to be granted according to the efficiency criteria, the fiscal requirements could be very demanding. Since public policy in developing countries must encompass so many other objectives with very limited fiscal resources, objectives and instruments must be carefully selected. In this way, tax incentive policy advances social welfare to the maximum, with only a limited amount of tax revenue forgone.

1/ See discussion in Section IV below, in particular p. 15, where it is argued that the relative strength of distortions calls for favoring one or the other factor of production.

1. Selection of objectives

Before the policymaker selects objectives, he must decide how much tax revenue should be allocated to tax incentives. Tax incentive policy competes with expenditure policy for the use of available tax revenue, making essential a proper evaluation of the relative social returns of using resources in either one of the alternative policies. 1/

The main issue at stake is whether the public or the private sector can make better use of tax revenue. If all taxes are optimal, the issue has no economic relevance because by definition the change in a marginal tax rate or the reduction of public expenditure would move the economy away from the optimum. If taxes are distortionary, however, the issue becomes relevant. It is important to compare the social return of using revenue to finance public projects against that derived from returning the revenue to finance private projects. 2/

It can be argued that when the selection process is perfect--that is, only inframarginal projects are selected--a tax incentive to investment involves no tax revenue forgone (Mutén (1982) and Goode (1984)). The additional investment generated by the tax incentive would not have taken place in its absence; similarly, the taxes left unpaid would not have been paid in the absence of the tax incentive. This argument assumes a perfection in the selection process that cannot be achieved in practice--most selection processes will pick up supramarginal projects, leading to a loss of net tax revenue. Nor is the argument valid in a dynamic context. If the tax incentive remains operative for any length of time, it will eventually cover all investment projects. Since it is impossible to make an accurate assessment of the tax revenue forgone as a result of investment incentives, a practical solution is to treat all projects as exactly marginal and presume that all tax revenue forgone is a cost. 3/

It is hard to state precisely how much tax revenue a country should allocate to tax incentives, but obviously it cannot be much. As stressed earlier, tax incentives are not substitutes for an adequate and efficient tax system. If the tax system is so distorting as to require that a large fraction of the tax revenue be rebated in order to reduce these distortions, the question is, would it not be better to reform the tax system so that it produces the desired revenue with

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1/ See Mutén (1982) for a discussion of the problems of measuring the costs involved in tax incentives.

2/ Without distributional considerations, $1 of tax revenue transferred to the private domestic investor is worth $1. The relevant question therefore is whether or not the social return of the project exceeds the cost of the funds (both private and public) invested.

3/ This criterion is based on a project that is exactly marginal without any tax incentive.

fewer distortions? Similarly, if other distortions induced by misguided economic policy are so large as to require corrective tax incentives that give rise to substantial loss in tax revenue, then the question is again, would it not be better to reform the economic policy to minimize distortions? Furthermore, as Section V below illustrates, tax incentives can achieve only limited results and, therefore, only a small amount of tax revenue should be allocated to them.

Once it has been decided how much revenue should be allocated to tax incentive policy, objectives should be selected so as to obtain the maximum increase in economic welfare for a given amount of revenue.

Tax incentives are not equally effective in the pursuit of all objectives. For instance, evidence indicates that tax incentives are relatively ineffective in promoting employment. 1/ One reason for this is that the tax systems of developing countries usually encompass only the modern sector, which is not the major employer in the economy. Furthermore, the pursuit of a comprehensive tax incentive policy for the promotion of employment, assuming that it were effective, would imply the use of a large amount of tax revenue. For example, if a 10 percent subsidy for the use of labor by any sector were given when the share of labor income in gross domestic product (GDP) was 40 percent, the program would end up using 4 percent of GDP. Some might argue that because tax incentives should be granted only on additional employment, not as much tax revenue would be forgone. Unfortunately, there are few practical ways of granting tax incentives to incremental employment. But even if a practical way could be found, the amount of tax revenue involved in an effective program could still be very large. If unemployment were to be reduced from 10 percent to 5 percent through a 30 percent tax incentive on incremental employment, this would imply a loss of tax revenue of about 0.6 percent of GDP (assuming as above that the share of labor was 40 percent). Furthermore, the benefit of tax incentives to incremental employment may be offset partially, if not fully, by the existence of a social security or payroll tax on employers.

There are other policies more effective in promoting employment that do not involve forgoing such a large amount of tax revenue. For instance, a more flexible wage policy, more favorable terms of trade for the agricultural sector, and elimination of institutional barriers to employment are among the many ways of promoting employment more effectively.

1/ See Gandhi (1981) for a detailed evaluation of the effectiveness of tax incentives in the promotion of employment in developing countries.

In general, when the objective involved is very broad, tax incentive policy will not be as effective--the loss of revenue will be large relative to a given incentive effect. Accordingly, less benefit will accrue from applying a tax incentive scheme to promote a broad objective than from reshaping the distorting economic policies or reforming the tax system, thereby achieving the desired objective without the revenue loss. For instance, the more direct way to use the tax system to promote savings seems to be through an expenditure tax in lieu of the income tax. 1/ Such a tax change can be made without losing tax revenue by choosing the rate of taxation accordingly.

To sum up, tax incentive policy can be more effective in the pursuit of narrowly based objectives like the promotion of regional development, the promotion of selective exports, or the promotion of a specific sector. The reason is clear. A narrowly based tax incentive will have a larger inducement effect for a given amount of tax revenue forgone. Caution should be exercised, however, when narrowing down an objective not to create severe distortions. For instance, the selection of regions for promotion cannot be so narrow as to leave other adjacent regions out of competition. Alternatively, the selection of promoted sectors cannot be so narrow as to leave very close substitutes out of the incentive scheme.

2. Selection of instruments

The selection of specific tax incentives can be judged according to two main criteria: effectiveness and efficiency. A tax incentive is effective when it induces the desired behavior. Given that an ineffective tax incentive does not change economic behavior, it leads to windfall profits or economic rents. An efficient tax incentive is one that increases economic well-being. An inefficient tax incentive is one that changes economic behavior without actually increasing economic welfare, or worse, one that introduces distortions that lead to a decrease in welfare.

A third and very important consideration in the choice of tax incentives is ease of administration. This paper will not directly discuss this criterion unless it has some bearing on the other two. However, the proper choice of tax incentives should give adequate weight to their administration.

1/ There are ways in which the income tax or the corporate income tax can be converted into an expenditure-type tax (see, for example, Meade (1978)). Even a general sales tax covering intermediate and capital goods can be converted into a consumption tax, the one more widely applied practical way being through the value-added tax on consumption.

IV. On the Efficiency of Specific Tax Incentives

This section will discuss some of the distortions that specific tax incentives can induce. Even though, as will be shown, tax incentives can be designed so as to avoid such distortions, most tax incentives used in developing countries do not generally meet efficiency criteria.

1. Tax incentives to investment

Tax incentives to investment are the most prevalent form of tax incentive. They are relatively easy to apply in relation to different objectives such as regional development, economic stabilization, development of a specific sector, etc. The following paragraphs will examine the efficiency of various tax incentives to investment linked to specific taxes and in connection with various objectives.

Most tax incentives to investment are given through the corporate income tax (CIT). Among the many ways of granting tax incentives through the CIT are tax holidays, accelerated depreciation, immediate write-off of investment expenditure (expensing), and the investment tax credit. The issue of tax incentive neutrality, discussed in the public finance literature, has been brought up basically in connection with tax incentives affecting the CIT. 1/

There are three important ways in which the tax incentives related to the CIT can be nonneutral, or distortionary, in their effects: (a) with respect to the life of the asset; (b) with respect to the type of financing; and (c) with respect to the time path of the investment project. It has been shown elsewhere (Sanchez-Ugarte (1983)) that given a classical CIT, all tax incentives to investment are nonneutral with respect to the type of financing if they are given on total investment expenditure. The CIT is avoided when the investment is entirely debt financed. More generally, the CIT is avoided on that part of the investment that is debt financed. It follows that a tax incentive given on the total investment outlay will favor debt financing over equity financing even beyond the built-in bias of the classical CIT.

1/ A useful criterion in the selection of efficient tax incentives is that of neutrality. According to Harberger (1980), a tax incentive to investment is neutral if it induces neither new covered investment with low rates of social yield nor other covered investments with higher rates of social yield. Neutrality is desirable for two reasons: first, it is useful to be able to predict at what level an activity is being subsidized. A nonneutral tax incentive does not permit us to know this because the level of the incentive depends on factors outside the control of economic policy. Second, by maintaining neutrality one can avoid unpredictable distortionary effects. The purpose of tax incentives is to favor certain activities relative to others, but it is important to know to what extent one activity is being favored. This cannot be left to unpredictable factors (see Sandmo (1974), Swan (1976), Boadway (1978), Auerbach (1982), and Ruane (1982)).

The solution is to grant the incentive only for the self-financed part of the investment.

Immediate write-off (expensing) of part of the asset is a neutral tax incentive with respect to the life of the asset. The investment tax credit favors short-lived projects, and accelerated depreciation will have a bias depending on how the acceleration procedure works. 1/ The investment tax credit is a distortionary tax incentive; it can be shown that it reduces the cost of gross investment (whereas expensing acts on net investment) and may therefore lead to the selection of very short-lived projects with negative social returns (Sanchez-Ugarte (1983)).

A third type of tax incentive nonneutrality involves the time path of revenues along the life of the investment. The so-called "tax holidays" tend to favor short-run projects producing revenues at the beginning of the life of the project over long-run, slow-maturing, projects. In this sense, tax holidays are nonneutral.

Neutrality, as was mentioned earlier, is an important criterion for the design of tax incentives. Nonneutral tax incentives can lead to unwanted results of unpredictable magnitude. For instance, the investment tax credit can lead to the selection of projects with negative social returns, while the tax holiday can favor very short-lived investments. Even if the tax incentive does not produce such undesirable effects, a nonneutral tax incentive implies a higher loss of revenue for a given incentive effect. For example, the difference between the cost of expensing and that of the investment tax credit for a given effect on net investment is the tax incentive given to replacement investment because the former is a subsidy on net investment while the latter is a subsidy on gross investment. 2/ Most tax incentives

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1/ In Sanchez-Ugarte (1983), a procedure is devised for making accelerated depreciation neutral with respect to the life of the asset.

2/ This point is developed in Sanchez-Ugarte (1983), Chapter I. To give an idea of what is involved in the argument, assume that the net present value of an investment project (NPV) is given by

$$NPV = Y-T-I \qquad (1)$$

where Y is the present value of gross revenue, T is the present value of taxes, and I gross investment.

Under the investment tax credit at rate c, the present value of taxes is $T = (Y-dI)t-cI$, where d is the present value of depreciation allowance and t the corporate tax rate. Subtracting depreciation to obtain net income and net investment in (1),

$$NPV = (Y-dI)(1-t) + cI-I(1-d).$$

discriminate against working capital, inventories, and human capital because they are usually given to fixed capital formation. This bias can be eliminated by granting the tax incentive over the whole investment outlay, but it is difficult to measure forms of investment different from fixed capital formation.

In addition, tax incentives to investment reduce the cost of using physical capital relative to other factors of production, labor in particular. This distortion has been noted by several public finance experts and has been pointed out as one of the many distortions that exist in developing countries in the labor employment decision. Two things should be mentioned in this respect. First, even though, as was mentioned before, the labor market distortions prevalent in developing countries call for subsidies for the use of labor, other distortions call for subsidies for the use of capital. Hence, the factor of production that should be favored by public policy will depend on the relative strength of the various distortions present in the economy. 1/ It cannot be asserted prima facie that a subsidy for the use of labor is preferable to a subsidy for investment; furthermore, the adequate selection of tax incentives will vary by industry and by region so that tax incentives are best designed on a case-by-case basis.

Second, even though from the static point of view a tax incentive to investment tends to reduce the use of labor, the same result does not necessarily apply in a dynamic context. Capital deepening in the economy will tend to increase the productivity of labor in the steady state, and could increase the relative share of labor in total output, depending on the elasticity of substitution in production. 2/

2/ (continued from p. 14). With expensing at rate α, the present value of taxes becomes $T = (Y-\alpha I-(1-\alpha)dI)t$. In order to obtain net income we subtract depreciation from the present value of gross revenue

$$NPV = (Y-dI)(1-t) - \alpha(I-dI)t - I(1-d).$$

Net investment is equal to I-dI if $\alpha t = c$. It is clear that the cost of the investment tax credit is larger than that of expensing at equivalent rates. The ITC costs cI, and expensing of part of the investment costs only $\alpha(I-dI)t$. It is also clear the the ITC is given on gross investment (I) whereas expensing acts on net investment $[I(1-d)]$. If replacement investment is 10 percent of the total stock of capital and 50 percent of capital income is reinvested every year, then a tax credit will cost (in the steady state) twice as much as expensing for a given incentive effect (see Appendix I).

1/ For instance, it has been shown (see Sanchez-Ugarte (1983)) that under certain assumptions when the structure of industrial output is distorted by international trade restrictions, tax incentives favoring the use of capital should be granted to new industries. This can still be a valid conclusion even when labor markets are distorted.

2/ This argument rests on the dynamic incidence of taxation, which is different from the static case. See Boskin (1978) for an application.

Tax incentives have been proposed and used as an alternative to adjusting the tax system for inflation. It has been argued that an investment tax credit or accelerated depreciation can give approximately the same result as correction of the income tax for inflation, with fewer complications (Keith (1966); Aaron (1976); and Feldstein (1981)). This argument is valid for small rates of inflation (say, below 15 percent). However, when inflation rates exceed this range, the distortionary effects of inflation become larger, and the counteracting effects of tax incentives are then less effective (Sanchez-Ugarte (1983)). For instance, if accelerated depreciation is used to avoid the distortionary effects of tax depreciation at historic costs, at a high enough inflation rate and on a relatively short-lived asset, there is no rate of depreciation fast enough to avoid the effects of inflation. Instant depreciation is more than fast enough, whereas depreciation in two years is not fast enough. On the other hand, with high rates of inflation, the expected rate of depreciation becomes less predictable. Tax incentives have to be announced in advance, which gives a large margin for error favoring either investors or the government. Correcting the income tax for inflation, rather than using tax incentives, results in less distortion and is less costly.

2. Tax incentives to regional development

Consider a tax incentive scheme for the promotion of industry in a less-developed region. The tax incentive scheme should remove the negative externalities and induce positive ones (see p. 4 above). One positive externality might result from an increasing urban concentration in the developing region, which reduces the cost of public services and provides for certain economies of scale. If concentration in a particular region is a desired objective, this can be achieved through a tax incentive to investment on plant and equipment.

Another positive externality can be derived from the employment of labor that accompanies the new investment. However, prospective investors in the region take into consideration not only the direct cost of using labor, which in nominal terms can be cheaper in the backward areas, but also its productivity. The lack of skill of the local labor force is likely to pose a major obstacle for the new investment project. This problem can be reduced by simultaneously granting tax incentives for the training of the labor force in that region in the form of, for example, additional income tax deductions. Similarly, where transportation costs can also be a major problem in such areas, a tax incentive for the purchase of transportation equipment can be granted simultaneously.

Notice, however, that many developing countries promote regional development through tax incentives to investment in physical capital (Modi (1981)). As shown above, this is not always the best way to induce the desired externality.

3. Tax incentives and international trade

a. Tax incentives to imports

Reductions of and exemptions from import tariffs are a common form of tax incentive in developing countries. Tax incentives are frequently given to encourage the importation of both raw material and capital equipment, and in both cases they appear to be distortionary. The reduction of import taxes on inputs increases the effective rate of protection granted to domestic production by the import tariff structure. 1/ This distortionary effect is further enhanced by the effect of import tariff reductions on capital equipment. Appendix II shows how import tariff reductions on capital goods lead to effective rates of protection higher than the nominal protection and higher than the traditional measure of protection, which only incorporates the effect of tariffs on intermediate goods. 2/

This form of incentive, which is widely used in developing countries, should be a matter of concern. First of all, selective tax reductions are often granted to individual firms, and not to all the firms in the industry. This distorts the structure of effective protection in unpredictable ways. Second, a high level of effective protection gives rise to great inefficiency in the use of domestic resources. Third, the reductions in, or exemptions from, tariffs on the importation of capital equipment and raw materials leave the domestic industries that produce these commodities unprotected and increase the level of protection of industries that produce consumption goods.

1/ See Sanchez-Ugarte (1983), Chapter II. This effect results from the fact that domestic value added has a higher cost than would result under a uniform tariff. For instance, if a tariff of 30 percent is imposed on a product, and 50 percent of the product produced domestically is imported without tariffs, the effective protection on that product is 60 percent.

The domestic producers can sell the product in question at 30 percent above the international price and they can import the 50 percent of the components free of tariffs. This means that the 30 percent tariff is really protecting 50 percent of the product (the rest is imported), so the effective protection on this 50 percent is as high as 60 percent. See Corden (1971) where the concept of effective protection is thoroughly analyzed.

2/ The formula for effective protection that incorporates the effect of imported capital equipment is $E = \frac{tx - tm + v(tm - \eta t_k)}{v(1-\eta)}$, where tx is the tariff on final output, tm the tariff on intermediate inputs, t_k the tariff on capital equipment, v the ratio of domestic value added to gross output, and η the ratio of investment to value added. (See Sanchez-Ugarte (1983) for the derivation.)

Exports using imported raw materials, which are taxed, frequently receive duty drawbacks to reduce the cost disadvantage imposed on them by the levy of the tariff. Such duty drawbacks, however, do not extend to taxed imports of capital goods, whose cost disadvantage to exports can only be relieved by allowing duty-free importation of capital goods by export industries.

Throughout the developing countries the production of capital equipment tends to have rates of protection well below those granted to other industries. Hence, a case can be made, on efficiency grounds, for tax incentives to favor the use of domestic capital goods vis-à-vis imported ones. This implies that if tax incentives are given to investment, a higher rate should be granted to investment in domestically produced capital goods.

b. Tax incentives to exports

In discussing tax incentives for the promotion of exports, we need to separate two issues. One is the problem of border tax adjustments, which implies that under the destination principle of taxation, indirect taxes apply where the good is consumed. This means that imports are taxed and exports are exempt. In order to avoid double taxation, an individual country should stick to the destination principle as long as everybody else follows the same principle. This kind of tax rebate is not in any sense a subsidy to exports, but rather is a way of harmonizing indirect tax systems across international borders. 1/

On the other hand, tax incentives are frequently given to exports in developing countries to compensate for other distortions in the foreign trade sector like protection and overvalued exchange rates. Protection changes the domestic terms of trade in favor of the production of goods that substitute for imports. This reduces the attractiveness of producing export and nontradable goods. On the other hand, protection increases the domestic price of importables relative to exportables and of nontradables. This reduces the demand for imports. Since, in the long run, the external balance of the country has to be in equilibrium, a policy that reduces imports will also reduce exports. Moreover, the protected sector is rarely able to become an exporter because it is being isolated from foreign competition. Tax incentives are frequently used to reduce the size of these two effects. It is worth noting, however, that if all exports are subsidized to eliminate the negative effects of protection, the relative price advantage of producing import substitutes will be eliminated. This is one reason why export promotion policy is very often selective by sector. Contriving to have a protected industry that also has the capacity to export is a difficult exercise.

1/ The GATT rules allow such rebates, and the EEC requires that the indirect taxes of its member countries be applied according to the destination principle.

Few countries have been successful in promoting exports, while still protecting the industrial sector. 1/ An additional element is that many importing countries abide by the GATT rules for international trade and often establish countervailing duties and/or quantitative restrictions on those exports subsidized in the home country. In this case, the subsidy to exports becomes a transfer to the foreign country's treasury.

Export subsidies are often used by developing countries to compensate for the trade effects of an overvalued exchange rate. Such a policy is seldom effective as it is difficult to compensate through the government budget for the distortions resulting from inadequate exchange rate policy that tend to grow over time. Moreover, export subsidies can often lead to further efficiency losses by delaying an exchange rate adjustment.

4. Other tax incentives

Tax incentives are also given through domestic indirect taxes, and are often distortionary. The incentive given to new firms in any industry will distort competition within the industry and can have a high cost in terms of tax revenue forgone. Furthermore, given that the design of indirect taxes very often takes into account distributional considerations, lower tax rates apply to goods considered as necessities or consumed by low-income groups, whereas higher rates apply to goods that are considered as luxuries or consumed by higher-income groups. Tax incentives in relation to indirect taxes have the effect of reversing the distributional bias inherent in the tax structure. On the other hand, a tax incentive given through an indirect tax will, if effective, lead to an increase in production. Hence, it does not favor a specific factor of production like a tax incentive to investment or a tax incentive to the use of labor.

Another form of tax incentive which has become popular in some countries (e.g., Colombia and Mexico) is the so-called tax savings certificate (TSC). This is a document issued by the government, in connection with a tax incentive scheme, which can be used for payment of various taxes. The main advantage of this document is that the amount of tax revenue transferred to the private agent is known with certainty in nominal terms. This is not generally the case with most tax incentives, the value of which depends on the future tax liability.

The TSC also has an advantage over other tax incentives linked to a specific tax in that it is more liquid and can be applied to the payment of any tax. Tax incentive recipients often have other taxes to which the certificate can be applied. The liquidity of the certificate can be increased by allowing it to be traded.

1/ An exception is Korea which has been able to increase nontraditional exports by a judicious use of fiscal and financial incentives. The key to success in the tax incentive policy has been efficiency and expediency in granting the incentives. See Rhee and others (1984).

The basic advantage of the TSC is also its main disadvantage--it allows the government to grant tax incentives in amounts that can be highly disproportionate to the taxes generated by the activity in question. Moreover, it may not provide immediate liquidity to the taxpayer if the taxpayer can neither fully use it himself nor trade it for its full value.

5. Conclusions

Two general conclusions can be derived from the above examples as to the efficiency of tax incentives to exports. First, tax incentives tend to induce diverse and often unpredictable distortions in the economy, a factor often overlooked in their design. Second, the best way of achieving a net positive externality (or reducing a negative one) through tax incentives is by selecting instruments that act as directly on the externality as possible. Thus, if the positive externality derives from net investment, the tax incentive should be granted on net investment; if the positive externality arises from use of labor, the incentive should act to encourage the use of this factor of production. A tax incentive is, in general, linked to a specific tax base. The policymaker should select the tax base that is most closely related to the positive external effect that he wishes to induce.

V. On the Effectiveness of Tax Incentives

Most economists and lay persons alike have doubts about the overall effectiveness of tax incentives. The empirical literature has been inconclusive on the effectiveness of tax incentive policy. 1/ Among the reasons why tax incentives tend to be ineffective, some of which were alluded to earlier, the following need to be stressed: too broad a spectrum of objectives pursued with limited resources; excessive selectivity in the granting process; unpredictability in the granting of the incentives; too much political influence of vested interests in the design of policy; an inadequate relationship between the objective and the instrument; and countereffective general equilibrium (or indirect) effects. For tax incentives to be effective, therefore, certain criteria must be fulfilled, and these are highlighted below.

1. Limit the objectives

The first problem stems from the authorities' wanting to pursue too many objectives with limited resources. Most developing countries tend to use tax incentives for a variety of objectives, resulting in a very diffuse impact on any one of the objectives.

1/ See, for instance, Taylor (1957); Heller and Kauffman (1963); Hirschman (1967); Tanzi (1969); Joel (1970); Goodman (1972); Mahar (1976); Moore and Rhodes (1976); Porter (1976); and Sanchez-Ugarte (1983).

The typical tax incentive scheme in a developing country contains, as the backbone of the policy, an industrial promotion program that is aimed at the development of the manufacturing industry (Sanchez-Ugarte (1983) and Modi (1985)). Such a scheme typically involves benefits for certain sectors and regions of the country, which are granted through several specific tax incentives relating to the corporate income tax, import tariffs, and other taxes. It is also common to find tax incentives for the promotion of exports, which are usually granted to nontraditional exports. Many countries also grant incentives to mineral and oil exploration and development; the tourist sector also receives tax incentives, and it is not uncommon to find additional tax incentives given to agriculture, livestock raising, forestry, and fishing.

In addition to tax incentives by sector, the specific tax legislation frequently contains reductions and exemptions directed toward promoting economic development. For instance, income taxes may contain accelerated depreciation or investment tax credits to promote investment; there might be incentives to induce private savings in the financial sector or the stock exchange. Other taxes may also contain built-in tax incentives. Finally, many countries also grant tax incentives or tax rate reductions in special cases, at the discretion of the tax administration authorities. Tax incentives in developing countries would be more effective and less costly if two or three narrow objectives were chosen.

2. Reduce the discretion

Tax incentives are effective if they induce the desired economic behavior. Developing countries typically use a long and complicated process of application and selection in order to ensure that the recipient of the tax incentive really needs it. The excessive red tape tends to nullify the desired result, because in order to apply for the incentive the firm has to have both the resources for covering the costs involved in the application process and the interest in doing so. A firm that is exactly on the margin between undertaking the activity and doing something else will not apply because it has very little to gain from doing so and much to lose. 1/ On the other hand, a firm that will obtain rents in pursuing the activity will be willing to go through the selection process. Such a firm runs no risk and may in fact increase its profits on an activity that it would have undertaken even without the tax incentive. Excessive selectivity and administrative discretion defeat their own purpose, as they decrease the probability of selecting those candidates who are in greatest need of the incentive.

The arguments above suggest that the granting of tax incentives should be an automatic process and that selectivity should be exercised with great care.

1/ See Sanchez-Ugarte (1983) where this argument is developed and tested in relation to Mexico.

3. Ensure predictability

A third reason for the ineffectiveness of tax incentives is their unpredictability. Most countries fine-tune their tax incentive policy to respond to the ever-changing economic conditions. However, these changes tend to make the policy ineffective because as long as tax incentives are not incorporated into individuals' economic calculations, they do not lead to changes in economic behavior but rather to windfall gains to the lucky recipients.

It follows that, while tax incentives do not have to be permanent, they must be predictable, so that they can be incorporated into the decision-making process of the economic agents.

4. Minimize political influences

Tax incentives are commonly sought by vested interest groups. Governments are likely to yield to such political pressures, first, because the cost of tax incentives is borne by all taxpayers--and is therefore more easily absorbed--whereas the benefits are specific. Second, tax incentives are commonly granted at the discretion of the administrative branch of the government, so that they are not subject to the political decision-making process involved in other tax legislation. Quite often they are given by ministries other than the Ministry of Finance and against the will of the latter. Finally, it can be argued that tax incentives are an expeditious and simple instrument of effecting transfers to specific groups, and have apparent redeeming social value as vehicles of economic development. They ease the transfer of resources since an actual disbursement is not involved nor are they controlled by the normal budgetary process. The result is that tax incentives are often aimed at the pursuit of political rather than economic objectives.

Economists have become increasingly aware that some fiscal measures give rise to economic rents and induce rent-seeking behavior on the part of economic agents, thereby leading to economic inefficiency. The literature touching upon this issue has concentrated on the rent-seeking behavior with respect to import tariffs and other trade restrictions (Krueger (1974) and Brock and Magee (1978)). Much of the analysis dealing with the rent-inducing effects of tariffs can be extended to tax incentives, which constitute one of the prime examples of rent-inducing fiscal measures. Even though there will always be political pressure to use tax incentives to effect transfers, the recommendations given above to limit the scope of tax incentive policy, to reduce discretionary criteria for granting incentives, and to ensure predictability will help reduce rent-seeking behavior.

5. Ensure direct relationship between the instrument and the objective

Tax incentives are not always chosen so that they act specifically on the objective they pursue. Most tax incentives are granted for investment since these types of incentives are less difficult to apply. It is hoped that at the same time as they increase investment, they will also reach other complementary objectives, like regional development, exports, employment of labor, import substitution, and so on. As pointed out earlier, this lack of focus can create other distortions with often unpredictable results.

The choice of instruments should therefore closely match the objective pursued.

6. General equilibrium effects

The design of tax incentives should take into account the general equilibrium effects that can easily nullify the desired incentive effect. For instance, Fernandez (1980) has shown that under certain assumptions, tax incentives for regional development tend to be capitalized on the value of land. This capitalization effect, aside from its effect on income distribution might lessen the inducement to invest in the region. Tanzi (1969), citing the case of Ecuador, shows that tax incentives to investment had a successful allocative role, redirecting investments to the manufacturing sector, without actually increasing the rate of investment for the economy as a whole.

A similar phenomenon can affect tax incentives to selective exports--certain types of exports may be substituted in production for other exports thereby increasing the level of one export while reducing that of another. This phenomenon lessens the overall impact of tax incentives on total exports.

General equilibrium effects can reduce the effectiveness of tax incentives to the use of labor. In most developing countries the tax system basically covers the modern, urban, relatively capital-intensive sector of the economy. Granting a subsidy to the use of labor by the capital-intensive industry has two effects. On the one hand, it reduces the cost of labor by the modern sector, thereby increasing the demand for labor. On the other hand, it expands the sector that is relatively capital-intensive, leading to the contraction of the sector that is labor-intensive and thus reducing the demand for labor. It is not certain which of the two effects will dominate.

The proper design of tax incentives should therefore attempt to take into account the general equilibrium effects of the specific measures taken in order to guarantee the effectiveness of tax incentive policy.

VI. Conclusions

It has been argued throughout this paper, that even though the granting of tax incentives under certain circumstances might be economically rational, this policy presents severe limitations and drawbacks.

Tax incentives, even when designed to promote economic efficiency, are not necessarily the most appropriate method. Quite often, there is a more direct and effective alternative policy. The attempt by some developing countries to use a vast array of liberal tax incentives to counteract the negative effects of high marginal tax rates of narrow-based taxes and/or wrong economic policies on wage rates, interest rates, exchange rates, etc., is likely to be implausible and even counterproductive.

We have seen that tax incentives often have more deleterious side effects than the distortions caused by tax and other economic policies they attempt to eliminate. Furthermore, as has been shown, it is no simple task to design effective tax incentives to produce the desired result. If the tax system is so distorting as to require more than just "fine-tuning," the suggested course of action would be to reform the tax system itself so that a second-best situation is attained. The recent optimal taxation literature has shown that it is theoretically possible to design a tax system, taking into account both economic efficiency and income distribution, even though such a system would consist of only a few feasible taxes. Tax incentives are no substitute for an efficient tax system. All tax reform efforts should, therefore, be directed at achieving the latter. Reducing the marginal tax rates while expanding the tax base, as recommended by supply-siders, would be an important component of such a strategy.

However, tax incentives exist worldwide and, even though many of them have little justification in a first- or second-best world, they are here to stay. It is, therefore, necessary to consider how to design tax incentives that are both economically efficient and effective. Efficiency can be ensured by granting tax incentives in accordance with the net social benefit generated by the promoted activity. The methodology developed for social cost-benefit analysis can be applied to the design of tax incentives in order to reach this result.

The selection of specific tax incentives is a very important matter. Some incentives severely erode the neutrality of the tax upon which they act, in ways that are not only economically undesirable but also unpredictable.

The choice of objectives to which incentives can be applied is also important as not all objectives are attainable through tax incentive policy. Care should be taken not to select too many or too broad objectives--goals can never be reached if too little tax revenue is allocated to any one of these objectives. Tax incentive policy will be more effective if it is restricted to a few, well-defined, and very specific objectives. The first three that come to mind, though not the only ones, are regional development, selective industries (or sectors), and export promotion. More broadly based objectives--for example, the promotion of employment, the increase in the overall level of capital accumulation, or the promotion of savings--are less effective targets for tax incentives. This is not to imply that such objectives should not be pursued, but rather that there are other more effective ways of attaining them. For instance, tax reform can be a way of eliminating some of the distortions inherent in some tax systems with respect to capital accumulation, savings, or the financial structure of the economy. Similarly, other economic policy instruments, such as wage policy, are more effective in the promotion of employment than are tax incentives.

The point that needs to be stressed is that tax incentives are only marginally effective while these economy-wide objectives need more than marginal changes. The fact that the amount of revenue allocated to tax incentives has to be small (if it is not to damage the tax system intrinsically) validates this conclusion.

Tax incentives should not be granted on a discretionary basis. It is one thing to design tax incentives with very specific objectives in mind and another to be so selective in granting them that they cannot be incorporated in the decision-making process. Automaticity and objectivity in the granting of tax incentives are essential to the success of tax incentive policy. This in turn means that tax incentives must be meticulously designed to match the instrument with the objective as closely as possible. It follows that tax incentive policy should, as far as possible, be independent of political considerations. One way to attain this is to shift the function of selecting tax incentives away from the administrative branch of the government and into the regular tax legislation process.

Comparison of Expensing and Investment Tax Credit

	Present Value of					
	Revenue	Taxes	Depre-ciation	Invest-ment	Net present value	Cost of Incen-tive
Without incentive	120	50 1/	20	80	-10	--
With 40 percent expensing	120	34 2/	20	80	6	16
With 20 percent tax credit	120	38 3/	20	80	2	12

Source: Author's calculation.

1/ 50 = (120-20) 0.5.
2/ 34 = (120-20) 0.5 - 0.2 (80).
3/ 38 = [120-0.4(80)-0.6(20)].

Three-Year Project: Effect of Protection and Tariff Exemption on the Importation of Capital

	Present Value of Economic Cash Flow	Effective Rates of Protection (In percent)
Without protection	$-100 + \frac{72.22}{1.1} + \frac{66.7}{1.22} + \frac{61.1}{1.331} = 66.67$	--
$t_x = 30\%$	$-100 + \frac{115.55}{1.1} + \frac{106.72}{1.21} + \frac{97.76}{1.331} = 166.66$	149.98
$t_x = 30\%$, $t_m = 30\%$	$-100 + \frac{93.89}{1.1} + \frac{86.71}{1.21} + \frac{79.43}{1.331} = 116.69$	75.10
$t_x = 30\%$, $t_m = 30\%$, $t_k = 30\%$	$-130 + \frac{93.89}{1.1} + \frac{86.71}{1.21} + \frac{79.43}{1.331} = 86.77$	30.00

t_x = import duty on final product;
t_m = import duty on intermediate goods; and
t_k = import duty on capital equipment.

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