Evaluation of the Effectiveness and Efficiency of Tax Benefits

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1 INTRODUCTION

1.1 Tax Incentives and Investment: A Brief Overview of the Empirical Evidence

The overriding stance currently in literature on the subject of tax incentives and investment is that the nontax factors are more important when it comes to assessing the amount and the quality of the investment than the tax benefits, particularly in the case of developing countries. The nontax factors usually cited are political stability, legal security, undistorted macroeconomic politics, quality of the workforce and the state of the infrastructure.

Is there any empirical evidence available about this? From the neoclassical focus, taxation influences the cost of capital and this is the main determinant on the level of investment. In accordance with this focus, reducing the cost of capital—for example, through tax benefits—would imply an increase in investment given its elasticity with regard to the cost of capital. So what empirical evidence is available with regard to the investment response to the variable capital cost? Or to put it another way, how elastic is the request for investment? The largest empirical evidence available refers to the flow of foreign direct investment (FDI) between developed countries. In this case, various econometric studies find that the tax parameters both of the original country and the receiving one are significant.[1] In particular, De Mooij and Ederven (2003), based on a meta-analysis of published results, find a mean semi-elasticity of the FDI at a company income tax rate of -3.3. That is to say, the response to a 1 percent increase in the tax rate would reduce the FDI by 3.3 percent, which is a significant effect. Although the spread of the results on those who have income from labor is high (the standard deviation/distortion of the semi-elasticity/ics is 9), most of the semielastics are between -5 and 0, with 80 percent of them being negative (Klemm, 2009).

This result for developed countries is not surprising when you take into account, as Bolnick (2004) points out, that these countries have become more homogenous in infrastructure, training the workforce, macroeconomic performance, and regulatory framework, so the differences in tax treatment take on a significance as an explicatory factor of investment flows. According to Toft (1996), the investment decision is taken in two stages: the first stage involves drawing up a short list of potential countries for investing in, at which point the tax aspect is hardly considered; at the second stage the different places are compared and if there are not many differences in the nontax factors, taxation may take on importance in the final decision.

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[1] For example, see Hines (1999), Wei (2000), OECD (2001), Zee et al (2002) and De Mooij y Ederven (2003).

So it is obvious that the conclusions of these studies are not directly applicable to the underdeveloped countries. On the contrary in the case of the latter, the available evidence that will come up as the document develops, suggests that the nontax factors are more important.[2] A long list of theoretical criticism of the role of tax benefits, some of which will be seen further on, can be added to this empirical evidence that their success in developing countries has been the exception rather than the rule.

1.2   The Role of Fiscal Incentives in Developing Countries

Despite this, the developing countries have not stopped using tax benefits with a view to increasing investment, particularly foreign direct investment (FDI).[3] There are basically two reasons for this apparent paradox:

a) Fiscal incentives are necessary to compensate for the extra expense foreign investors have to face doing business in developing countries, where there are significant shortcomings in the nontax factors as pointed out earlier.

b) In today's global economy, characterized by high capital mobility, a low effective tax rate has to be offered to attract foreign investment (and avoid the exodus of internal savings). The procedure for reducing taxation on capital which countries resort to so as to attract foreign investment is called tax competition. Although, for example, income from the exploitation of natural resources, linked to a geographic location, can be burdened without taking any notice of the tax policies of the other countries, the companies' own income, like patents, are on the other hand wholly subject to tax competition. Although the rate of return from the taxes may then be positive in country A, the investment could be found in country B if; after tax, that rate is higher in B because of a lower taxation on the capital (Klemm, 2009). At one extreme the theoretical literature on tax competition, which assumes a perfect mobility of capital for small open economies—the offer of capital is infinitely elastic—, recommends not taxing the incoming capital in these economies (Bucovetsky and Wilson, 1991). Eliminating the corporate income tax is the full application of this recommendation. But another way of getting into tax competition for mobile capital is by granting fiscal incentives.[4]

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[2] For example, see McMillan et al (1999), Batra et al (2002), McKinsey (2003) and World Economic Forum (2005).
[3] For example see Keen and Simone (2004) for Latin America and Keen and Mansour (2009) for the Sub-Saharan countries of Africa.

[4] Klemm (2009) analyzes other possible answers to tax competition.

If it is accepted that developing countries should grant fiscal incentives for investment to compensate for the extra cost incurred doing business there, the first thing that should be demanded of these incentives is, precisely, that they do not lead to more shortcomings in the business climate. In this respect:

a) If the fiscal loss that the tax benefits imply is such that, for example, it delays the financing of a modern infrastructure, it will be lowering the quality of (one of) the crucial nontax factors for the investor. In this sense, one of the options is to establish a ceiling to the amount of tax expenditure associated with fiscal incentives, which should be approved annually with the budget.[5]

b) Stability and simplicity in the tax system are features appreciated by investors and so the tax benefits should not conspire against them. If, for example, to cover the loss of revenue originating from fiscal incentives frequent changes are made to the tax legislation—even to the point of redefining the incentives themselves—it could be a retrogressive move when it comes to attracting investors.

c) By the same token, investors appreciate the simplicity of the tax system and its authorities and the administration of benefits granted should not result in annoying complexity to the investor. For example, if importing machinery and materials is exonerated, and that exoneration/exemption is carried out by demanding the payment beforehand of the tax of the import and it is refunded later (*drawback* type), this refund may not only cause significant financial expense for the benefiting companies but also, in the context of weak tax authorities, could be a source of excessive bureaucracy and/or corruption, which the investor would see as an obstacle.[6] This does not mean that the tax authorities should overlook the concession and pursuit of tax benefits. In any case, what is evident is an unavoidable administrative cost if the strategy of granting fiscal incentives is followed, a point that will be discussed in more detail later.

d) It is often argued that tax benefits do not imply any fiscal loss release abandonment, because without them the investment would not materialize. This argument supposes, in broad terms, that the relevant investment is viable

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[5] Malawi and Mozambique, for example, have followed this practice.
[6] This does not mean that multinational companies whose head offices are in countries with a low level of corruption do not understand the business climate in countries with poor institutional quality. On the contrary, according to Kaufmann (2004) the multinationals follow the rules (official or unofficial) of the business climate in the country they've gone to, not where the parent company is.

in country A, but that the rate of return of such an investment, risk and tax-adjusted, is higher in country B, and that if A grants tax benefits it may more than compensate that difference in the rates of return in such a way that the investment is finally made in A. Nevertheless, as pointed out by Medalla (2006), this argument does not allow for the fact that one of the reasons why the risk-adjusted rate of return is lower in A could be that its public finances are weak. This would be accentuated with the granting of tax incentives, which have a negative impact on revenue through a direct effect (which in this case would be nil), but also through at least four indirect effects, which will be described later.

e) In a context of strong capital investment—as is happening currently in the emerging countries—, the commitment to giving specific tax benefits plays a "procyclical" role and becomes an additional pressure to increasing the exchange rate.

On the other hand, if it is agreed that fiscal incentives are an inevitable answer to tax competition for FDI, one should consider that when the country of origin of the FDI taxes with a criterion of world income—and does not give tax sparing treatment—the untaxed income in the country receiving the investment will go on to become part of the taxable base on which the income tax is paid in the country of residence. As such, there will not be any tax benefit for the investor. The fiscal incentive granted by the source country is not relevant in the investor's equation and will simply constitute a transfer to the treasury of the parent company's country. To put it another way, the developing countries would be receiving reverse foreign aid (Bolnick, 2004). However this observation should be rapidly qualified. On the one hand, some major capital exporters, like France and Spain, exonerate the income obtained by their companies abroad (territorial income). On the other, the companies that have mechanisms which allow them to defer the reduction in earnings to the parent company pool them in tax havens, and/or compensate the earnings obtained in the country that grants the tax benefit with the losses suffered in other jurisdictions.[7]

However it is also important to point out that, even when the countries providing the investment concede tax sparing treatment, there will be a transfer of resources from one treasury to another because the earnings sent to the parent company will be taxed by personal

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[7] The country of residence usually demands the tax when the earnings are distributed to the parent company, thereby generating a benefit for the "postponement". From there, the parent company often instructs the subsidiary not to distribute ("postpone") the earnings for periods of five or even 10 years. Some countries punish their companies for investing in jurisdictions with low or zero taxation and eliminate the benefit of postponement. This is not the case in the United States where an "anti-postponement" rule for its companies is only envisaged when it is about "passive" income (interest, dividends, bonuses).

income tax when finally distributed to the shareholders. This is one of the possible reasons which leads to the seeming paradox that exporting capital countries grant tax sparing treatment to their companies.

1.3   Do Tax Benefits Significantly Affect the Cost of Investment in Developing Countries?

From the neoclassical viewpoint, taxation influences the cost of capital (Bergstrom and Sodersten, 1981), and this is the determining factor in the level of investments. In keeping with this stance, reducing the cost of capital—through tax benefits for example—would imply an increase in the investment given the elasticity of it in relation to the cost of the capital. This section describes briefly this transmission mechanism and a few references of its efficiency in the majority of Latin American countries are presented.

In a world without taxes, a company which maximizes its profits will invest until equality is reached (condition of the first order for maximization of profits in a company)

$$P\ pmg = r + d \qquad [1]$$

where

P: price of the goods or service,

pmg: marginal productivity of the capital

r: real interest rate

d: economic depreciation

In this world without taxes, r + d is the cost of capital. The lower it is the more investments will occur.

If the profits of the company are taxed now with a tariff *t*, and supposing the project will be wholly self-financed with its own funds, a company that maximizes its profits will invest until it reaches equality

$$P\ pmg = r\ /\ (1\text{-}t) + d \qquad [2]$$

For example, if the rate of financial depreciation was 10 percent annually and the real rate of interest 5 percent, the cost of capital in the absence of taxes would be 15 percent and would increase to 17.7 percent if there was an income tax of 35 percent. This increase of 18 percent in the cost of capital would imply a reduction of the investment by 5.4 percent if the elasticity of the demand of investment with respect to the cost of capital was 0.3.

From this focus one gathers that the most effective tax benefits would be those which directly reduce the cost of investing (cost of capital)—investment allowance, investment tax

credits for investment/investment tax credits and accelerated depreciation—, which would end up higher than the tax holidays. This influence of taxation on investment decisions via the cost of capital needs some qualifying:

a) Firstly, as was mentioned already, there is evidence that a series of nontax factors are more relevant than taxation.

b) As Harberger (1982) says, for small open economies the net rate of return demanded by investors is fixed by the world market and any attempt to tax the capital will simply cause its withdrawal until the time when the rate before tax goes up enough to maintain the rate unchanged after tax. According to this analysis, small open economies have to give up charging the corporate income tax and any attempt at positive taxation will only play a negative part in attracting investment.

c) As mentioned previously, when the country from which the foreign direct investment (FDI) comes taxes with world income criteria—and does not grant tax sparing treatment—, the untaxed income in the country receiving the investment will go on to be part of the taxable base on which the income tax is charged in the country of residence.

d) Most legislation on corporate income tax in Latin America adjusts depreciation for inflation and allows total deduction of nominal interests paid. In this case, and following Artana (2005), the equation [2] on profit maximization would become

$$P\ pmg = r + d\ (1+p) - tp\ /\ (1-t) \qquad [3]$$

where p is the inflation rate.

With inflation and without taxes—therefore without adjusting for depreciation or interests for tax purposes—the cost of capital is $r + d\ (1+p)$. So the equation [3] shows that when there is inflation and the full deduction of nominal interests is allowed, the investment financed by going into debt is being subsidized, because not only is the real financing cost deducted but also part of the capital is paid by the effect of inflation. The subsidy is higher when, as in the equation [3], adjustment for the inflation of the depreciation is allowed.

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Table 1, taken from Artana (2005), shows the cost of capital for different combinations of inflation rates and financing with own wealth in the case where depreciation is adjusted for/by inflation but total deduction of nominal interests is allowed.

Table 1. The Cost of Capital in Different Scenarios

	Inflation Rate		
	0%	5%	10%
	1. Without income tax		
	20.0	20.5	21.0
% own finance	**2. With income tax = 30%**		
100%	24.3	24.8	25.3
75%	23.2	23.2	23.1
50%	22.1	21.6	21.0
25%	21.1	20.0	18.9
0%	20.0	18.4	16.7

Note: Supposing profitability = 10 percent real annual and depreciation = 10 percent.
Source: Artana (2005).

Just as Artana (2005*)* points out, it can be understood from Table 1 that it suits the companies that can use high percentages of debt to be subject to income tax since the cost of capital is below that of the scenario without taxes.[8] So the income tax becomes irrelevant and as a consequence, the tax holiday does not turn out to be an effective mechanism to encourage an increase in investment. This helps to understand how, for example in Ecuador, which allowed total deduction of the nominal interests, the dividends distributed are nearly 90 percent of the corporate income although there is a rate for reinvesting profits of 15 percent, ten points lower than the general rate of corporate income tax.

Total deduction of interests paid by companies, exemption of income tax from interests charged to individuals, and taxing a firm's earnings at the source, characteristics of the income tax patterns found in most Latin American countries, forge a bias in favor of investment projects financed by debt. That is to say, the cost of financing a projecting with own funding is higher than doing it by incurring debt. As Díaz de Sarralde et al. (2007) point out, this slant implies discrimination against small and medium sized enterprises, which have

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[8] This observation is valid in the margin, for new projects, but does not consider, for example, the presence of special income and administrative costs.

less access to credit, and, in another way, against companies with major falls in shares, which are less acceptable as a loan guarantee.

And there's more:

a) This pattern generates an opportunity for arbitration, usually known as *back to back.* To be more precise: XX, a person who owns company YY invests in Bank ZZ for 366 days and at the same time negotiates a loan for his company. As a person, XX does not pay personal income tax on the interest earned while as a company (YY) he deducts the interest paid to Bank ZZ.

b) Limitless deductions of interests paid by companies and the lack of quantities withheld for interest payments to foreign financial institutions encourages deeper debt with related parts (weak capitalization or under-capitalization), in such a way as to disguise earnings from interest and transfer them to companies in the same group located in administrative areas less pressurized fiscally. To sum up, the total deduction of nominal interests plus other features usually found in the income tax structure in Latin America not only means that the tax holiday is hardly effective as an incentive for investment, but also that in addition perverse incentives (fiscal planning) are brought in which conspire against collecting income tax.

c) Finally, established firms operating with a profit can absorb the usual losses of the early years of new project. Therefore they have in themselves an incentive to invest and pay a lower income tax, so a tax benefit in said tax is less effective in this case.

2 EVALUATING TAX BENEFITS

2.1 Theoretic Evaluation of Benefits and Costs

According to Tokman et al. (2006), once a tax benefit is granted, evaluators should pay attention to its effectiveness, efficiency, and relative efficiency. The effectiveness measures the variation of the variable or variables that are the objectives (for example, increase of the investment and external issues associated with it) directly attributable to the tax benefit, that is to say, once the effects of other variables have been isolated. So effectiveness is associated with the benefits of the incentive. Efficiency compares the benefits with the costs of the incentive. A tax benefit will be cost-efficient if the benefits it yields are greater than its costs. Finally, and ideally, the relative efficiency of the tax benefit should be analyzed, which means to say checking that other policy instruments are not more cost-efficient. In this

section, the benefits and costs which ought to be considered in a theoretic evaluation of tax benefits are set out, independently of the restrictions which emerge later in an empirical evaluation.

2.1.1 Benefits

Measuring the effectiveness of a tax benefit implies measuring its benefits. The direct benefit of a fiscal incentive for investment is to achieve an increase of investment by reducing the cost of the capital. Additional benefits, such as an increase in employment and greater economic growth, could be obtained from this direct benefit, via the investment's multiples. A few comments about this include:

a) The first and main problem of this assessment is that it should determine if the new investment would have been made or not if there was no tax benefit, which is no small issue.[9] For the present, it does not seem relevant that a country grants fiscal incentives to activities where there are comparative advantages, but several Latin American countries do so. Nevertheless, these incentives could be justified if one considers their role is to compensate the additional costs involved doing business in underdeveloped countries, which lowers the rate of projects' financial return.

One approach could be made through a social cost-benefit analysis of the fiscal incentives. This analysis, even if only partially balanced, takes into account the existence of external factors and distortions. For example, the social price ("shadow price") of work may be less than the minimum wage in a situation of high unemployment.[10] Bolnick (2004) sets out a two-tiered table in which the possible combinations of financial internal rate of return (IRR) (private) and economic IRR (social) are presented (see Table 2).

Table 2. Outcomes of Economic and Financial IRR Combinations

		Economic IRR	
		High	**Low**
Financial IRR	**High**	*Cell 1* ○ Socially good project ○ Fiscal incentive irrelevant	*Cell 2* ○ Socially bad project ○ Fiscal incentive irrelevant
	Low	*Cell 3* ○ Socially good project ○ Effective fiscal incentive	*Cell 4* ○ Socially bad project ○ Effective fiscal incentive

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[9] Even more complicated, if that is possible, is knowing how the investment would have reacted if faced with different tax benefit schemes, or alternative instruments.

[10] For a review of the literature on social evaluation of projects, see Little and Mirrlees (1974), Harberger (1976) and Jenkins and Harberger (1999).

Projects with a high financial (IRR) (cells 1 and 2) are not candidates for receiving fiscal incentives because they would go ahead anyway, even without the incentives, so the tax benefits are irrelevant. Nor would projects with a low financial IRR and low economic IRR (cell 4) be candidates for receiving benefits, seeing as they would have very little or no benefit for the economy (even being capable of showing negative externalities). So only the projects with low financial IRR and high economic IRR (cell 3) would qualify for receiving fiscal incentives. Although this reasoning helps to qualify/grade the justification of tax benefits, the social cost-benefit evaluation of investment projects is difficult in developing countries, some of which do not even calculate shadow prices.

It should also be pointed out that, furthermore, this reasoning demands there is a selection of projects (those of cell 3) and a discretional concession—not automatic—of the tax benefits. In reality this is the only way of assuring, in theory, that the benefits will go to investments which would not be made otherwise and which have a high social return. Furthermore, in practice it is necessary that a highly competent and incorruptible bureaucracy handles the process of selection and granting, a condition which is far from being guaranteed in underdeveloped countries. On the contrary, automatic concession tends to be recommended for these countries as a way of not opening opportunities for corruption and avoiding the difficulties of selecting the winners.

b) The investment that leads to higher economic growth is high quality productive investment, which all the fiscal incentives do not necessarily assure.

c) It should not only be required that the tax benefit would not be redundant—the investment would be made anyway—but also, a check should be made that there is indeed an increase in the aggregate investment, that is to say, that the investment being instigated does not displace investments already set up (crowding out).

Second, what are often mentioned as benefits of tax incentives are the positive externalities associated with new investment such as, for example, investments in research and development, technology transfer to other sectors of the economy, and an improvement

in quality in the workforce. Furthermore, if the investment would not have been made if there were no tax benefits, it could have a positive effect on the revenue, because the direct impact on it (tax expenditure) would be zero and, through indirect positive effects on employment and the level of activity of other firms, it could generate additional tax resources. Once again, the problem here is the difficulty in measuring these potential positive externalities. In fact:

a) The externalities can only be evaluated using general equilibrium models. The estimation of these models is complex enough in developed countries, so they are, at least for the moment, too ambitious a goal for evaluating tax benefits in developing countries. The negative upshot is that if these potential externalities cannot be measured, they will be difficult to defend.

b) When the multiple effects of investments favored with tax benefits are calculated, using input-output matrices, it is noticeable that they do not necessarily fall in the sectors with greater multiple effects.

c) Within these positive externalities those that are usually mentioned—above all in political circles—are employment (salaries paid by the favored investors), local purchasing, interests paid in local currency, and foreign exchange generated (exports). As Artana (2007) clearly points out, the salaries and local purchases are, on the contrary, project costs, because they use real resources. Claiming that they are benefits is the same as supposing that in the short term there would not be a demand for them, which is not true when the projects being evaluated receive tax benefits for several years (at least 10). It is also the same as supposing that the social price of the work and the raw materials is zero. Creating jobs will produce a social benefit if the social salary is higher than the market salary, which is reasonable in a context of high unemployment. But to suppose the social salary is zero is the equivalent of saying that there are people unemployed willing to work free.[11]

2.1.2 Costs

Measuring a tax benefit's efficiency involves comparing its benefits with its costs. Once the benefits are established, the costs (direct and indirect) usually associated with tax incentives are analyzed.

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[11] The argument, once quite common, that the exports from the project (foreign exchange generated) are a social benefit is rarely heard these days. Basically because, as mentioned, in a context of high capital income in the emerging countries, additional foreign exchange supposes a problem of increasing the real exchange rate and loss of competitiveness. In this sense, the commitment—at times difficult to cancel—to granting certain tax benefits plays a "procyclical" role and becomes an additional pressure on increasing exchange rates.

Loss of revenue – Estimating the loss of revenue associated with tax incentives is important. First, there is a direct impact that should be measured as the difference between what the benefiting companies would pay in the tax system and what they actually do pay as a result of the given tax benefits. This estimate is correct if the investment would have been made even without the fiscal incentives—in other words, if the benefit is irrelevant. Nevertheless, all or part of the investment could not have been made if there were no incentives. If this were the case and the estimate of tax expenditure is done without considering how companies react to the incentive, the tax expenditure will be overestimated. The lesser the irrelevance of the incentive, the greater the overestimation of the related tax expenditure. But on the other hand, the tax expenditure will be underestimated if the indirect effects on the revenue are not taken into account. In the view of Bolnick (2004) and Medalla (2006) the following indirect effects can be quoted:

a) The proposed investment can have positive externalities, which will create new jobs and new companies whose income will be taxed. This is the only positive indirect effect.

b) The proposed investment can lower the market share of companies already established (crowding out) and, as a result, reduce the revenue coming from these firms. Take note that the only way these indirect effects (i and ii) can be accurately estimated is with general equilibrium models.

c) Tax incentives can lead to opportunities for evasion, avoidance, rent seeking, and even corruption in the tax authority.

d) The administration of tax benefits can take up the time of much of the qualified staff, which means that the tax authority, with limited resources in developing countries, will be neglecting their control over the general tax system.

Administration costs – The more staff that are qualified and who have to be involved in the planning and control of tax benefits, the less resources there will be in the tax authorities of developing countries to manage the general tax system, which will weaken tax collection (Zee et al., 2002). One solution could be not to inspect the benefiting firms on the basis that they are exempt anyway, so no revenue is expected from them. However, this does not seem a valid solution considering, as will be seen in the next section, tax benefits open up opportunities for evasion and avoidance, which if not controlled adequately, could lead to further losses in revenue, in addition to those of the tax cost.

Opportunities for avoidance and evasion – The tax administrations of developing countries tend to be far behind in the kind of fiscal planning the major contributors practice, which among other things, leads to high levels of evasion. Faced with this degree of evasion, the idea has spread in Latin America that above all it is necessary to concentrate efforts on better collection of the existing taxes and only after that, start to think about redesigning the tax system and/or creating new taxes. This idea is very closely connected to the phrase popularized by Milka Casanegra, employee at the International Monetary Fund (IMF) at the time: "In Latin America tax administration is tax policy." What she meant was that beyond the design of the tax system (tax policy), the final result depends in the end on the degree of enforcement which each tax administration manages to achieve. The aptness of the sentence is undeniable. Nevertheless, in Latin America **tax policy is tax administration**, in that the poor design of the tax system conspires against the task facing the tax administration to effectively charge the taxes. In the specific case of tax benefits, if they have a bad technical design, it will open up opportunities for avoidance and/or evasion through means of aggressive fiscal planning, and the gap between the tax administration and the major contributors will have widened. Experience suggests there are plenty of opportunities which companies find in fiscal incentives for reducing the tax burden. Some examples, reviewed briefly now, will be taken up later herein.[12]

a) When temporary exemption is given from income tax (tax holidays) to new investments, it is common for established companies to close down and reopen as "new" companies so as to be able to receive the benefit.

b) The coexistence of a general income tax system with a special system—with a lower rate (even zero at times), as in the case of tax holidays or free trade zones—is a given opportunity to manipulate transactions between related companies in the way of transferring benefits from those taxed by the general system to those within the special system. There are various well known ways of doing this: transfer prices; financial transactions (the taxed firm, which can deduct interests paid, goes into debt artificially with the related exempt firm, which does not pay income tax on the interest earned); payments for patents and royalties. For example, usually sales made by local suppliers to a free trade zone are treated as exports and, as such, have the right to a refund for the VAT paid on supply purchases connected to these sales. In Uruguay, the average annual VAT refund for this reason was about 0.3 percent of the GDP

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[12] Along with tax benefits, there are numerous examples of how a badly drawn up tax policy conspires against tax administration management. For example, exemption from interests received by individuals opens up opportunities for arbitration for companies (which deduct said interests from their income tax) through back to back loans.

in the period 1999–2003, half the refund received by traditional exporters, a significantly high level considering they are nonindustrial free trade zones.[13] It is very likely that a three-way money transfer scheme was used to reduce export prices, under-invoicing from the country to the free trade zone, and allowing some of the income to stay there, where it is exempt.[14]

Distortions in the allocation of resources – Tax incentives have a deliberate objective to introduce a distortion in the allocation of resources—that is how they work—, but this distortion will be defended arguing that it is more than compensated by the positive externalities (infant industry), if it attracts investments which would otherwise not be made (tax competition) or if it is the way to compensate investors for the adverse business climate of the country. However, from the point of view of economic efficiency, it should also be considered as a cost of tax benefits the technical distortions that a bad design can introduce. For example:

a) Short-term investments may be favored. For example, temporary exemptions from income tax (tax holidays), which are an incentive for "easy open-easy close" investments, lead to this.

b) Tax benefits which operate reducing capital cost directly—deductions for investment, tax credits for investment, accelerated depreciation—favor intensive capital investments, something which would not be understood in a country with high unemployment.

In Honduras, for example, with a view to stimulating the financing of tourist projects, tax payers of other economic activities are allowed to deduct up to 15 percent of their net taxable income for investments made in new tourist projects. Bearing in mind that the activity is fiscally promoted, it is to be expected that it has relatively easy access to external funding, so the incentive becomes irrelevant and distorts finding earnings in other activities.

2.2   Indicators Effectiveness and Efficiency in Tax Expenditure

Effective taxation rates – The nominal rate of company income tax allows a direct and intuitive comparison between the tax burdens of different countries. However, this comparison only tells us part of the story because nothing is said about the taxable base, the other factor which determines the effective tax burden. This is particularly relevant in Latin America, where corporate income tax could be defined as a dichotomy since, despite there being a relatively high nominal rate (28 percent average in 2006), the effective rate is

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[13] Strictly speaking, VAT plus wholesaler COFIS-VAT (Social Security contribution), which was abolished by the 2007 tax reforms.
[14] At that time Uruguay did not even have transfer price legislation.

significantly less, precisely because of the manifold tax benefits granted. At the same time, the effective rates are those that consider not only the legal rate (nominal) of corporate income tax (statutory corporate tax rate), but also the provisions of the legislation that determine the taxable base of the tax, in such a way that they reflect the tax burden effectively supported. The difference between the effective rates before and after tax benefits would then be an indicator—albeit indirect—of their effectiveness. The main problem of this indicator is that it tells us nothing about the final impact of the tax benefit in the variable objective—for example, the investment—, which is the reason why it was granted. If the nontaxation factors are not suitable, it is probable that even a significant drop in the effective rate will not be stimulus enough to invest. Or at the other extreme, despite a high effective rate it is probable that investments with extraordinary incomes are made, like the exploitation of natural resources. Put in another way, this indicator does not directly measure the variation of the variable objective—the investment—but rather the variation of the instrument—the effective rate of taxation—, which it is supposed will affect the variable objective, reducing the cost of capital.

Given two tax benefits, the presumption is that the one that implies a greater drop in the effective taxation rate will be the one that leads to a greater rise in investment, but there is no direct measurement of the change in investment. So, this indicator could be useful for helping to decide (ex ante) which incentives to grant but does not measure directly how effective the benefits already granted have been (ex post). Second, calculation of the effective tax rates depends, among other factors, on the structure of financing and of the composition of the investments' assets and the parameters of the tax system, which makes it more difficult to interpret. Third, as developed in Box 1, it has to be decided if it is right to consider the marginal effective rate or the average effective rate. Fourth, which taxes should be considered in the calculation of the effective rates? Exclusively corporate income tax or should it also include personal income tax, or even other taxes? Supposing there is free movement of capital and companies can access financing in international markets and furthermore, that the country has no influence on the international interest rate, personal taxes will not affect companies' investment decisions. In this context, it would be enough to consider the taxing of companies to calculate the effective rates and with these estimates, analyze the distortions in locating the investments between sectors and assets. On the other hand, if intertemporal distortions are analyzed in locating the investments, personal taxes should also be taken into account.[15] Finally, in Box 1 some particular problems of calculating effective rates are indicated.

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[15] Fullerton (1983)

Box 1. Marginal Rate or Average Rate?

The traditional, neoclassical view on the influence of taxation on investment decisions claims that taxation affects the cost of capital and that this is the main determining factor on the degree of investment. The cost of capital is defined as the rate of return before the taxes necessary to obtain a financial income after taxes equal to zero. This view is centered on marginal investment projects, that is to say those whose profitability after tax is zero. A company that maximizes its profit will invest additional units of capital until it gets to the point where the last unit reports zero profit. Seen in another way, a company will take on projects where the rate of return before tax will be higher than the cost of capital until, for the last project, the rate of return before tax will equal the costs. In accordance with this positioning, the higher the charges of the tax system, the higher the capital cost will be and so a lower level of investment is to be expected. This idea is encapsulated in the definition of the effective marginal tax rate (EMTR):

$$EMTR = \frac{\tilde{p} - s}{\tilde{p}}$$

where s is the rate of return after taxes which the investor will obtain in an alternative investment and $\tilde{p}$ is the rate of return before taxes necessary to ensure the investor the required profitability after taxes (s). The higher the charges of the tax system, the higher the cost of capital will be and, by definition, the higher the effective marginal rate will be. Nevertheless, the impact of taxation on the cost of capital is not meaningful when it comes to the decision about where to invest. Let's take the case of a company who had to decide on the location of a project of infra-marginal investment (the financial income after tax is positive) between two alternative locations (mutually exclusive projects; production costs are such that the project will be undertaken in one but not both locations). In the presence of taxes, the decision to locate the investment in country A or country B will depend on comparing the return after taxes in country A (R^A) with the return after taxes in country B (R^B). The impact of taxation on this decision can be measured by using an effective average tax rate (EATR), defined as:

$$EATR = \frac{R^* - R}{R^*}$$

where R^* is the income from the investment before taxes and R is the income from the investment after taxes. The effective average tax rate measures the percentage of financial income which goes towards taxes. The higher the EATR of a particular location, the less likely it is the project will be based there.

To sum up, the decision to invest can be seen as a two-stage process:

i) At the first stage, the company makes a decision about where to invest between two (or more) mutually exclusive locations. This decision is based on considering the effective average tax rate.

ii) Once the location is agreed upon, in the second stage a decision is made about the size of investment. This second decision is based on information gathered from the effective marginal tax rate.

Box 1. Marginal Rate or Average Rate? (continued)

Methodologies for calculating effective rates – There are two large groups of methodologies for calculating effective tax rates: i) those based on hypothetical data—hypothetical investment and hypothetical company, and ii) those based on real data—microdata and macrodata. The methodologies based on hypothetical data are forward-looking in the sense that, from a specific moment in time *t*, when the (hypothetical) investment is made, they analyze its evolution over a period of simulation. As a result, they manage to separate both the variables of the investment project and the tax legislation. Among the work done on the subject of hypothetical investment that of King and Fullerton (1983) is notable, and more recently, that of Devereux and Griffith (1998), whose methodology can be regarded as a revised, expanded version of King and Fullerton's work.

For its own part, the most representative example of the methodology of the hypothetical company is the *European Tax Analyser Model,* developed by the University of Manheim and the *Centre for European Economic Research* in Manheim (1999), which is a program that calculates the effective tax burden based on a model company. On the other hand the impact of taxation is analyzed exclusively on infra-marginal investment projects. Therefore this model only calculates effective average tax rates, which measure the effective tax burden supported by projects with profits higher than the cost of the capital before tax

One of the key criticisms of these methodologies is that in them the rate of return of the hypothetical investment project is given and although different rates of return for the different assets are considered—factories, machinery, intangibles, financial assets, inventories, etcetera—these rates are supposed the same for all economic sectors. If on the basis of the microdata of the legal corporate income tax returns it is determined that the rates of return of the different assets depend on the economic sectors—food industry, tobacco industry, building, etcetera—or on the specific characteristics of the companies—market share, staff qualifications, degree of debt, etcetera—we would be finding empirical support in the cases where they are not given or uniform.

The second group of methodologies for estimating effective rates uses real data instead of hypothetical data, as in the methodologies analyzed so far. So, unlike these, they are defined as backward-looking approximations since the real data relevant for the calculation of the effective rates—collection and profits—seen today in a company or an economy, are the result of investments that have been made in the past and also of the evolution of the tax legislation. As a result, unlike the methodologies based on hypothetical data, it is not possible to identify the movements of a particular investment. On the contrary the real profits capture the history of all the investments that have been made. In the same way, it is not possible to identify the effects of the current tax system. For example the current tax contribution of a company may be reduced by a tax incentive that is no longer granted, but continues to be ensured for the companies which made the investment at the time it was in force.

Again, something that comes out clearly from the previous paragraph is that with this methodology, unlike those based on hypothetical data, effective average rates are calculated but not effective marginal rates. As mentioned, calculating effective tax rates with real data can be based on microdata (official company tax returns) or macrodata (National Accounts).

Source: Roca (2005).

Econometric analyses – Generally, econometric analyses estimate the impact of tax variables, particularly of tax benefits (independent variables), in direct foreign investment

and/or on the gross fixed capital formation (independent variables). Put in another way, they calculate the answer (elasticity) of the demand for investment to tax variables. This elasticity is, as such, another indicator of the effectiveness of tax benefits. For underdeveloped countries, unlike what happens in the developed ones, there are very few econometric studies of this kind, very likely due to the difficulties for building up panel data. One of the most recent studies available, carried out by Klemm and Van Parys (2009) on a panel of over 40 countries in Latin America and the Caribbean and Africa for the period 1985–2004, finds that reductions in the nominal income tax rate and lengthy tax holidays are effective in attracting foreign direct investment but not in increasing fixed capital formation nor growth rates. It is not simple relating this measurement (econometric) of tax benefit effectiveness with the costs, so it is not very useful for obtaining a measure of the cost-efficiency of tax benefits.

Company surveys – For the underdeveloped countries there is evidence coming from company opinion polls that gives an approximate idea of the effectiveness of tax benefits.[16] For example McMillan et al. (1999) carried out a poll among some of the North American companies that invest in underdeveloped countries in labor-intensive production of electronic gadgets. The authors discovered that only 10 percent of them include the tax system among their five main worries when it came to invest. The main concerns turned out to be infrastructure, political stability, training of the workforce and proximity between clients and suppliers. Again, Enterprise Surveys are surveys undertaken by the World Bank on entrepreneurs from 122 countries so as to determine what the main obstacles are for doing business in their view. Table 3, drawn up using the results of these surveys, shows that the tax rates are not once mentioned as the main obstacle for doing business and in only four of the 15 countries are they regarded as one of the top three concerns of the entrepreneurs (Colombia, Mexico, Panama, and Uruguay). Anticompetitive or irregular practices, corruption, difficulties accessing finance, and political instability are the most quoted reasons among the three main obstacles for doing business. It should be pointed out that surveys among entrepreneurs are often discredited for the subjectivity in their answers. Nevertheless, as Roca and Sebastián (2006) state, these surveys reflect their perceptions that in reality are what their decisions are based upon (Keynes' animal spirits).[17]

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[16] See for example, McMillan et al. (1999), Batra et al. (2002), McKinsey (2003) and the World Economic Forum (2005).

[17] Lack of a representative sample or badly handled data (qualitative not quantitative) are also common criticisms, but they refer to bad practices, not to opinion polls as a tool. The criticisms that are valid, generally speaking, are that the interviewees may understand the questions differently, or for example, the perceptions that a Swedish businessman has about corruption, may not be comparable to the perception an Ecuadorian businessman has (See Roca and Sebastián, 2006).

Table 3. Main Obstacles for Doing Business

Country	Main obstacles for doing business				
	1st	2nd	3rd	Tax rate	Tax administration
Argentina	Political instability, 16.5%	Access to finance (availability and cost), 15.7%	Labor laws, 15.4%	Top 4, 14.5%	Top 8, 4.0%
Bolivia	Political instability, 30.3%	Anti-competitive or irregular practices, 28.1%	Corruption, 8%	Top 6, 3.6%	Top 7, 3.5%
Chile	Anti-competitive or irregular practices, 18.5%	Electricity, 15.3%	Crime, robbery, and chaos, 14.3%	Top 8, 4.5%	Top 12, 1.4%
Colombia	Anti-competitive or irregular practices, 34.6%	Crime, robbery, and chaos, 12.9%	Tax rates, 12.5%	Top 3	Top 9, 2.7%
Ecuador	Political instability, 28.4%	Corruption, 18.3%	Access to finance (availability and cost), 14.2%	Top 12, 2.2%	Top 11, 2.3%
El Salvador	Crime, robbery, and chaos, 31.3%	Anti-competitive or irregular practices, 15.3%	Corruption, 13.3%	Top 6, 5.9%	Top 13, 0.8%
Guatemala	Anti-competitive or irregular practices, 21.0%	Crime, robbery, and chaos, 20.0%	Political instability, 10.1%	Top 7, 6.6%	Top 12, 2.1%
Honduras	Access to finance (availability and cost), 19.2%	Corruption, 19.2%	Crime, robbery, and chaos, 15.6%	Top 10, 3.9%	Top 6, 7.1%
Mexico	Anti-competitive or irregular practices, 19.0%	Corruption, 17.9%	Tax rates, 10.6%	Top 3	Top 7, 7.5%
Nicaragua	Political instability, 26%	Access to finance (availability and cost), 17.3%	Electricity, 16.6%	Top 10, 1.4%	Top 11, 1.3%
Panama	Electricity, 30.6%	Tax rates, 14.6%	Corruption, 10.8%	Top 2	Top 10, 2.8%
Paraguay	Anti-competitive or irregular practices, 25.8%	Access to finance (availability and cost), 21.0%	Corruption, 14.9%	Top 13, 1.3%	Top 12, 1.6%
Peru	Anti-competitive or irregular practices, 22.1%	Tax administration, 17.9%	Political instability, 17.0%	Top 5, 7.7%	Top 2
Uruguay	Anti-competitive or irregular practices, 32.4%	Tax rates 20.5%	Access to finance (availability and cost), 12.0%	Top 2	Top 8, 2.8%
Venezuela	Poorly educated workforce, 29.2%	Crime, robbery, and chaos, 27.9%	Corruption, 10%	Top 13, 1.2%	Top 7, 4.1%

Source: Authors' elaboration based on Enterprise Surveys, World Bank (2010).

Cost-efficiency – Bolnick (2004) proposed estimating a cost-efficiency ratio of tax incentives. The ratio numerator is the percentage variation of the marginal effective tax rate (METR) and the denominator is the present value of the variation of revenue (VPR). That is to say

$$ICE = \frac{\left(METR_A - METR_D\right)\big/METR_A}{\left(VPR_A - VPR_D\right)\big/VPR_A} \quad ,$$

where A and B are before and after tax incentives respectively. If the ratio is greater than one, the incentive effect (reduction of METR) is proportionally higher than the revenue effect (reduction of present value of revenue) and the tax incentive would therefore be cost-efficient.

Bolnick (2004) estimates this index for different tax incentives. Those with a better cost-effective relationship turn out to be tax credits for investment, for which the ICE (cost-efficiency index) varies between 1.43 and 1.81 depending on the nature of the investment project being considered. At the other end of the scale, the tax incentives with the worst cost-efficiency relationship are the exemptions from income tax for 10 years, (tax holiday), and a reduction of the general income tax rate from 35 percent to 15 percent. For most tax incentives, the ICE fluctuates between 0.95 and 1.05, making it evident that the incentive effect (reduction of the METR) and the revenue effect (reduction of present value of revenue) more or less compensate each other. Both the calculation and the interpretation of this index present several problems.

    a) The variation of the METR says nothing about the final impact of the tax incentive on the investment, which is the reason why it was granted.

    b) The METR depends, among other things, on the structure of financing and the composition of assets in the investment and the parameters of the tax system, which makes it more difficult to interpret.

    c) Estimating the variation in revenue associated with a tax incentive is no simple thing, not even when the distortions and externalities (social cost) are not taken into account. The effects—direct and indirect—which also ought to be considered have already been mentioned.

Generosity of incentives – Bolnick (2004) quotes an indicator drawn up by UNCTAD (2003) to compare the weight of taxation in different countries. This fiscal cost index is calculated as the quotient between the present value of taxes paid during the period of investment and the present value of projected cash-flow of the investing company before tax. The latter is nothing more than the value of the company. The indicator measures, therefore, how much the State takes of the potential return from the investment, through the tax system.

Artana (2007) adapts this indicator to measure the "generosity" of fiscal incentives given to investment. In fact he makes the calculation

$$G = \frac{CF_{CON} - CF_{SIN}}{CF_{SIN}},$$

where CF_{CON} and CF_{SIN} are the cash flow of an investing company after (with) and before (without) the tax incentives, respectively. The numerator is, therefore, the present value of the received tax incentives.

This indicator, just like the previous one, does not explain anything about the final impact of the tax incentive on the investment, which is the reason it was granted. Furthermore by basing itself on the cash flow of a theoretical company, it only takes into account the direct effect of a lower taxation on the benefiting company, but cannot consider the indirect effects on revenue. In addition it is not really an indicator of efficiency as it does not relate the benefits and costs of tax incentives. However, if a comparison between countries is made, it can be regarded as an indicator of relative efficiency. In fact, using this indicator Artana (2007) shows that the fiscal incentives given to investment in the Dominican Republic are very generous. For example, tax incentives granted to tourism (Law 158-01) represent 84 percent of the company value while those given by Chile as part of the program Plan Chile Invierte (*Chile Invests Plan*) only represent 2 percent of company value.

State contribution – Artana (2005) also suggests an indicator to quantify the relative State contribution when it gives a tax incentive, which could also be useful for measuring relative efficiency in a country comparison. This indicator is defined as

$$AE = \frac{CF_{CON} - CF_{SIN}}{I},$$

where CF_{CON} and CF_{SIN} are an investing company's cash-flow after (con) and before (sin) the tax incentives, respectively, and I is the total initial investment.

The indicator measures then, what the State contribution is as a percentage of the investment. As Artana (2005) clearly explains, the State here looks like a "foolish partner" that contributes a percentage of the investment but has no share in the profits.

Indicators of effectiveness and cost-efficiency with real data – The effectiveness and efficiency of a particular tax incentive can be estimated using real data on a micro level, more specifically based on income tax returns which companies present to the tax administration. These estimates tend to be scarce as, given the tax secrecy in force in most Latin American countries only the tax administration has access to that data.

Unlike the estimates of effectiveness and efficiency seen so far, based on hypothetical data, those based on real data encounter difficulties in isolating the impact of a particular tax incentive on the investment. In fact, a change in the investment could be influenced by the history of all the investments made. In the same way, the effects of the actual tax system can not be identified. For example, the tax paid by a company could be reduced by a tax incentive which is no longer given, but is still applicable for companies which made the investment when it was valid. Finally, the real data reflects the economy's ups and downs and, as such, its estimate varies according to the phase of the economy's cycle. For example, taking an inventory is different in a recessive phase from what it would be in an expansive phase and that will affect taxation.

Jorratt (2009) estimates the effectiveness and efficiency of some tax incentives in Ecuador based on companies' sworn income tax returns.[18] First, based on the amount of tax incentive used (for example, deduction for net increase in jobs), its impact is determined in the objective variable (jobs created). Second, the question is how much of this variation in the objective variable would have happened even without a tax incentive. To do so, a comparison is made between companies who used the benefit with a "control" group, made up of companies who have not been able to use it. Jorratt (2009) chooses companies making a loss for his control group, as even if they can apply the tax incentive they will not benefit from lower taxes, at least in the first year (in the following tax years they will be able to deduct "losses from previous tax years"). Comparing the increase of salary payments (as proxy in the contracts) in companies who used the incentive with those of the control group,

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[18] The tax incentives analyzed are the deduction for net increase in jobs, reduced rate for reinvestment of profits and the deferment for accelerated depreciation.

it is possible to estimate the percentage of change in the objective variable that would have happened if there were no incentive.

Finally, to estimate the efficiency of a tax incentive, its effectiveness—calculated in the way just described—is related to the estimate of the tax expenditure, also calculated from the sworn income tax returns.

Fiscal efficiency – Finally, it is possible to compare (a) the increase in revenue which comes from the increase in GDP caused by investment growth which is attributable to tax incentives (what would be an indirect estimate of its effectiveness) with (b) the tax expenditure. This ratio could be considered, therefore, an indicator of "fiscal efficiency" since it is about comparing the direct negative effect on revenue (tax expenditure) with the indirect positive effect on it (by the impact on the GDP of the investment increase brought about by tax incentives). This indicator is also based on real data. The numerator (increase in revenue) based on macrodata and the denominator (tax expenditure) based on microdata.

Porto (2010) starts from the amount of investment projects presented in Uruguay in 2008 in the framework of the country's new incentives for investment regime.[19] Secondly, and based on a simulation model, he estimates the indirect impact on the GDP of the proposed investment. (The direct impact is not considered since it is exempt from tax payments.) Supposing a product-elasticity of revenue equal to one, the impact on fiscal income from this indirect increase of the GDP is estimated. Finally, it is compared with the incentive's tax expenditure. According to his analysis, in little over three and a half years the State recovered the fiscal sacrifice it had made to encourage new investments.

3   A REVIEW OF TRADITIONAL TAX INCENTIVES[20]

In this section the most notable characteristics of tax incentives frequently granted in Latin America are revised. Special attention is paid to their effectiveness, administration costs, and distortions in allocating resources.

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[19] The main incentive is exemption of up to 100 percent of the amount of the investment from corporate income tax over a period of 3 to 25 years from the time the company has positive fiscal net income.
[20] This section is based on Artana (2005), Bolnick (2004), Keen and Mansour (2009), Klemm (2009), and Medalla (2006).

3.1   Tax Holidays

Definition of the incentive

- Temporary exemption from taxes, particularly corporate income tax, to specific companies or investments.

Administrative problems

- Tax holidays generate opportunities for evasion and/or avoidance. By manipulating prices of transactions between related companies, it is possible to transfer properties from taxed companies to related companies that are exempt (internal price transfer). In the same way, financial arrangements can be made between related companies. For example, the taxed company, which can deduct interests, goes into false debt with the related exempt company, which does not pay income tax on the interest earned.

- There is usually little transparency because the beneficiaries are not obliged to present a legal tax return or they do it incorrectly, taking advantage of the fact the tax administration has little incentive to control this. As a result, one cannot rely on a rigorous evaluation of implicit tax expenditure.

Distortions in allocating resources

- The fiscal relief of tax holidays tends to be significant and so companies do not find it credible that it will be maintained over the long term, which encourages "easy open-easy close" investments. Moreover, it attracts companies that can react very quickly to the canceling of a benefit by moving to other countries (footloose firms), and that tend to leave behind very few positive marks on the economy. The story of the *maquilas* in Central America is a clear example of this.

- As the benefit is temporary, it encourages short-term investments.

- It leads to income deviation (rent seeking behavior) as investors whose tax holidays finish will try to renew them by way of maintaining competition with those still within the incentive scheme.

- It tends to be said that companies appreciate tax holidays because they allow them not to have to get involved with corrupt and/or inefficient tax administrations. If this were the case, tax holidays would be pointing out the existence of a corrupt and/or inefficient administration and the decision to not directly face up to the problem this represents.

3.2 Reduced Rate on Corporate Income Tax

Definition of the incentive

- Reduction of corporate income tax for specific sectors, activities, or companies.

Administrative problems

- The fact that different rates exist opens up opportunities for fiscal planning, transferring earnings from companies taxed by the general rates to related companies taxed at the reduced rate (internal price transfers).

- Different rates (below the general rates) in corporate income tax can lead to international tax problems as the cooperation agreements tend to reject them.

- If the benefiting sectors with a reduced rate are not easily and objectively chosen, this could lead to problems of lack of transparency and discretion in granting them. Anyone who knows Latin America's tax administrations from within will know that there are many examples of this (such as, to mention just one example, including a multinational fast-food chain among benefiting companies as part of a scheme for promoting tourism).

Distortions in allocating resources

- The allocation of resources can be slanted towards sectors favored with the reduced income tax rate, even if the rate of return before taxes is lower. (The "neutrality in exporting capital between sectors" of the economy would be violated.) This would reduce the total productivity of the economy.

- When they are granted for specific periods of time, it presents similar problems to tax holidays; in other words it encourages short-term investments, investments of low sunken costs ("easy to open-easy to close"), and rent seeking behavior (renewal of the benefit after the set period it was given for). However, it does not slant investments towards capital assets as do investment allowances and investment tax credits.

3.3 Investment Allowance

Definition of the incentive

- Deduction of the taxable base of corporate income tax of a fraction of the investment. The value of the benefit is, therefore, the product of the deduction by the tax rate. The

excess of the deduction on the tax to be paid can be lost, used in the following tax periods (carry forward), or be reimbursed, depending on the legislation.

Advantages
- They are conceded directly on the new investment which is precisely the objective of the incentive.
- Simple to implement (automatic) and transparent.
- The total or partial expensing of the investment puts a ceiling on the rate received by the private investor and so eliminates the possibility of major distortions in allocating resources which are more typical of, for example, investment tax credits.

Effectiveness
- Given a 100 percent deduction for investment (full expensing), the METR will be zero in the case of a new investment financed with own capital and negative in the case of financing with debt if the interests paid are deductible.
- However if the deduction is not reimbursable or carry forward is not allowed because of an excessive deduction, the incentive will not be very effective in the case of new companies which would have fiscal losses anyway in the first few years.

Administrative problems
- Although relatively simple to administer, investment allowance opens up opportunities for abuse through false purchasing and re-purchasing of assets or purchasing assets for companies not receiving the benefit through related companies which are receiving it (in the case of an incentive not being general).
- In addition, very generous investment allowances or tax credits may put the benefiting companies into loss situations in the long term, which will make them attractive for companies with significant profits, as they could buy them to reduce their tax debt (see OECD, 2001b)

Distortions in the allocation of resources
- They encourage investments in capital assets with little potential, as replacing them allows the chance to benefit from the incentive once again.
- Relative premium to investment in physical capital compared with investment in human and financial capital.

- Usually an investment allowance is not reimbursable and therefore creates a distortion between established companies and new ones, since only the former will have earnings against which they can use the allowance.

3.4 Investment Tax Credit

Definition of the incentive

- Deduction of a fraction of the investment of the tax debt of corporate income tax. The excess of the deduction on the tax to be paid can be lost, used in the following tax periods (carry forward) or be reimbursed, depending on the legislation.
- If the corporate income tax has a unique rate (t), as in the great majority of Latin American countries, the investment tax credit (TC) is equivalent to the investment (deduction) allowance (IA), so: TC=IA x t. As a result, the observations made in the previous section about the investment allowance are generally valid for investment tax credit.
- Nevertheless, unlike the investment allowance, the investment tax credit does not place a limit below the rate received by the investor.

3.5 Accelerated Depreciation

Definition of the incentive

- The incentive consists of giving a chronogram of faster depreciation for certain investments or sectors. Put in another way, the rate of tax depreciation is higher than that of economic depreciation, estimating which is no easy task. The nature of the incentive is simply financial because in nominal terms the income tax payable is the same but its net present value is lower.

4 THE FUTURE OF TAX INCENTIVES

First, the tax incentives granted in Latin America and the Caribbean tends to imply, in most cases, "acquired rights" for the beneficiaries. So, even if their concession may have been irrational and/or their purposes discredited, it should be carefully analyzed, from a legal point of view, how to turn around and /or redefine the given benefits. It is not advisable to give an image of not respecting property rights or anti-corporation.

Second, a first sign—strong and effective—with regard to tax incentives is to tax the distribution of dividends produced by the companies exempt from income tax. The message is clear: if the capital stays within the virtuous investment-reinvestment circle, the exemption is justified; if it is otherwise, when it leaves the circle it should be taxed.

Third, and as a midterm issue, the State should think what role it wants to give to tax incentives in development, particularly when it comes to attracting foreign direct investment. For example, it is probable that, in the face of the enforced elimination of income tax exemption in the Free Trade Zones, the whole of Central America should find a mutual solution.

And finally, in this document it is considered that to favor investment in a small, open economy the key elements are (a) legal security of property rights; (b) tax stability—as few tax policy changes as possible and the least discrimination possible in its application; and (c) a low effective tax rate that is uniform and internationally competitive. If, despite all this, it is considered that the tax incentives should play an active role in attracting foreign direct investment, compensating for the extra costs of doing business in the country, it is thought that said incentives should be granted while respecting the following guidelines:

a) The incentives should be temporary and decreasing.

b) The "generosity" of the given incentives, defined as a percentage of the value of the company they represent, should be reasonable and not, as happens in various Latin American countries, representing over 50 percent of the value of the company.

c) The incentives can be given on direct tax (income) but not include indirect (duties, transfer taxes and excises, except when refunded to the exporters).

d) It is essential to have a methodology for estimating the tax expenditure which shows the incentives granted and, to contribute transparency to it, include such an estimate in the annual budget.

e) It is advisable to undertake a study of the socioeconomic impact of the activities which have benefited (macro-control) and also implement a microeconomic control; that is, the benefiting companies should send in all their information to the tax administrations, as if they were being taxed.

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