

Distr.: General
5 October 2016

Original: English

**Committee of Experts on International
Cooperation in Tax Matters
Twelfth Session**

Geneva, 11-14 October 2016

Agenda item 3 (b) (vii)

Tax Incentives:

A presentation from the IMF

Tax Incentives - IMF Presentation

This item will consist of a presentation by a staff member of the International Monetary Fund (IMF) on incentives.

The following attachments are relevant to the above agenda item:

- (i) IMF: *Fiscal Monitor: Acting now, acting together*, which (as a large document) may be most easily accessed (in several languages) via the following hyperlink: <http://www.imf.org/external/pubs/ft/fm/2016/01/fmindex.htm>;
- (ii) IMF, OECD, UN, World Bank: Options for Low Income Countries' Effective and Efficient Use of Tax Incentives for Investment (Attachment 1); and
- (iii) Options for Low Income Countries' Effective and Efficient Use of Tax Incentives for Investment: A background paper to the report prepared for the G-20 Development Working Group by the IMF, OECD, UN and World Bank (Attachment 2).



October 2015

OPTIONS FOR LOW INCOME COUNTRIES' EFFECTIVE AND EFFICIENT USE OF TAX INCENTIVES FOR INVESTMENT

IMF staff regularly produces papers proposing new IMF policies, exploring options for reform, or reviewing existing IMF policies and operations. The following document(s) have been released and are included in this package:

A Report by Staff on "Options for Low Income Countries' Effective and Efficient Use of Tax Incentives for Investment;" an accompanying Background Document including tools for assessment.

Informal Session to Brief:

The attached report was prepared by IMF staff jointly with staff of the OECD Center for Tax Policy and Administration, the World Bank Group, and the United Nations (collectively, the "IOs"), at the request of the G20's Development Working Group (DWG). Countries often face pressures to attract investment by offering tax incentives, which then erode the countries' tax bases with little demonstrable benefit in terms of increased investment. The IOs were asked to use their shared expertise to assist low income countries in making better and more efficient use of tax incentives. Drawing on recent country experiences and an extensive range of academic and other studies, the IOs prepared a report aiming to take a fresh look at tax incentive policies in low income countries. A separate background document also attached here reviews practical tools and models to assess the costs and benefits of tax incentives, and to enhance transparency and support informed decision making. The report was presented to the IMF Executive Board in an informal session on October 22, 2015. Such informal sessions are used to brief Executive Directors on policy issues. No decisions are taken at these informal sessions. The views expressed in this paper are those of the IMF staff and do not necessarily represent the views of the IMF's Executive Board.

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**International Monetary Fund
Washington, D.C.**

Options for Low Income Countries' Effective and Efficient Use of Tax Incentives for Investment

A REPORT TO THE G-20 DEVELOPMENT
WORKING GROUP BY THE IMF,
OECD, UN AND WORLD BANK

Options for Low Income Countries’ Effective and Efficient Use of Tax Incentives for Investment

A REPORT TO THE G-20 DEVELOPMENT WORKING GROUP BY THE
IMF, OECD, UN AND WORLD BANK

This report was prepared at the request of the G20 Development Working Group by the staff of the International Monetary Fund, the Organisation for Economic Co-operation and Development, the United Nations and the World Bank. It has benefitted from consultation with other organisations working in the tax area, officials of developing countries, Civil Society Organisations, and business representatives. The report is prepared under the responsibility of the Secretariats and Staff of the four organisations. It reflects a broad consensus among these staff, but should not necessarily be regarded as the officially-endorsed views of those organisations or their member states. The report was presented as requested to the G20 DWG in September, 2015, and to the Executive Board of the IMF for information, in October, 2015.

OPTIONS FOR LOW INCOME COUNTRIES' EFFECTIVE AND EFFICIENT USE OF TAX INCENTIVES FOR INVESTMENT

EXECUTIVE SUMMARY

Experience shows that there is often ample room for more effective and efficient use of investment tax incentives in low-income countries. Tax incentives generally rank low in investment climate surveys in low-income countries, and there are many examples in which they are reported to be redundant—that is, investment would have been undertaken even without them. And their fiscal cost can be high, reducing opportunities for much-needed public spending on infrastructure, public services or social support, or requiring higher taxes on other activities.

Effective and efficient use of tax incentives requires that they be carefully designed. Many low-income countries use costly tax holidays and income tax exemptions to attract investment, while investment tax credits and accelerated depreciation yield more investment per dollar spent. Tax incentives targeted at sectors producing for domestic markets or extractive industries generally have little impact, while those geared toward export-oriented sectors and mobile capital appear to be relatively effective—but the former need to be tempered by considerations of WTO consistency and both can be instances of mutually damaging tax competition. Enabling conditions—good infrastructure, macroeconomic stability, rule of law, etc.—are important for effectiveness.

Good governance of incentives is critical for their effectiveness and efficiency. Transparency is necessary to facilitate accountability and reduce opportunities for rent seeking and corruption. Tax incentives should therefore be subject to legislative process, consolidated under the tax law, and their fiscal costs reviewed annually as part of a tax-expenditure review. The approval process of tax incentives may involve several stakeholders, but is ultimately best consolidated under the authority of the Minister of Finance and enforced and monitored by the tax administration. To the extent possible, the granting of tax incentives should be based on rules rather than discretion. Despite political obstacles, several countries have successfully reformed their tax incentive regimes.

The proliferation of incentives is largely a manifestation of international tax competition—which regional coordination can help mitigate, although this requires political commitment and an effective supranational enforcement mechanism—which is often lacking. Common reporting standards and data collection can be an important first step toward coordination and enhanced transparency.

More systematic evaluations are needed to facilitate informed decision making. In most low-income countries, the effectiveness and efficiency of tax incentives cannot be assessed due to lack of data and the absence of analytical tools and skills. The background document to this report offers guidance on how to develop the data and tools required for systematic analysis. Progress requires concerted action by several stakeholders to ensure evidence-based, transparent decision making.

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INTRODUCTION

This paper responds to a request of the G20 Development Working Group for an exploration of options for low-income countries' effective and efficient use of tax incentives for investment.¹ To that end, it develops principles for the design and governance of tax incentives and provides guidance on good practices in these areas. Since much of the pressure to offer incentives stems from an awareness of those offered by other countries, the paper also discusses options for international coordination to address the risk of mutually damaging spillovers from such tax competition. Finally, a separate background document develops practical tools and models that can help assess the costs and benefits of tax incentives, which is essential for informed decision making. The aim is thus to assist low-income countries (LICs)² in reviewing and reforming their tax incentives, so as to better align them with their developmental objectives.

Investment tax incentives should be viewed as part of broader (tax) policy design. A good revenue system adopts taxes that are simple, fair and efficient. Tax incentives risk compromising these principles to the extent that they complicate the tax system, create horizontal inequities, and distort production efficiency; and they may forgo revenue that could have been spent more productively or needs to be replaced in other and more damaging ways. At the same time, tax policy may be able to play a purposive role in improving on market outcomes that are inefficient or unfair. The economic rationale for tax incentives must thus be evaluated in terms of their ability to achieve clear goals in ways that are both effective and efficient, relative to alternative policies, both tax and non-tax, that could achieve the same objectives.

Tax incentives have been a focus of work by international organizations (IOs) for many years.³ This report draws on the ample experiences and insights that IOs have gained from interactions with countries. IOs and many other observers⁴ have often found tax incentives to be ineffective, inefficient and associated with abuse and corruption. As a result, they have frequently advised countries to remove them or to improve their design, transparency and administration. Yet, this advice has often had limited effect. The common reluctance to scale back incentives—perhaps even, as will be seen, a tendency for them to proliferate—may reflect vested interests, political inertia, and tax competition with other countries. It might also be that observers have underestimated the

¹ Other countries of course also make extensive use of tax incentives, and much of the analysis below is also relevant to them.

² Definitions of LICs differ, but usually refer to countries below a certain per capita GNP. The group may consist of between 30 and 60 countries, depending on the threshold. The analysis in this paper is relevant for a large group of developing countries and a broad definition may thus apply.

³ Studies by IOs include Lent (1967), UNCTAD (1996, 2000), Clark (2000), OECD (2001, 2006), Tanzi and Zee (2000), Zee, Stotsky and Ley (2002), Easson and Zolt (2004), Keen and Mansour (2010), Klemm (2010), James (2013; 2014) and Zolt (2014). Tax incentives are also frequently discussed and evaluated in technical assistance provided by IOs.

⁴ Some examples are Mintz (1990), Boadway and Shah (1992), Shah (1995), Bird (2000), Eason (2001; 2004), Bolnick (2004), Gugl and Zodrow (2006) and Bird and Zolt (2008).

benefits that incentives have generated. Drawing on recent insights from interactions with countries and an extensive range of academic and other studies, this paper aims to take a fresh look at incentive policies in LICs in order to develop practical advice for improvement, supported by simple tools for making progress.⁵

The analysis in this paper is necessarily selective. In particular, the focus is on:

- **Tax incentives**, as defined in the next section—thus ignoring non-tax incentives, such as grants, in-kind benefits or loan guarantees: such other measures can in principle mimic the effects of tax incentives, but are usually designed differently and subject to different governance procedures.
- **...for investment**—excluding tax incentives aimed at other objectives, such as supporting charitable giving or owner occupation or reducing pollution.⁶ The focus, moreover, is on incentives in the tax treatment of business income; governments may also seek to attract investment by special treatment in relation to Value Added Tax (VAT) or tariffs, for instance, but these are touched on only briefly—both for reasons of space and because income taxation and the associated policy concerns have been more prominent in the debate on tax incentives.
- **...that are implemented at the national level**—those implemented at the sub-national level raise other, broader fiscal federalism issues, which go beyond the scope of this paper.⁷

This paper relates to other global initiatives aimed at strengthening domestic revenue mobilization in LICs. For instance, there are several initiatives to strengthen tax design and improve capacity in tax administration in LICs to enhance their ability to mobilize domestic resources, including through extensive and long-standing technical assistance by the IMF, World Bank and others. Moreover, the G20/OECD work on base erosion and profit shifting (BEPS) aims to support the implementation of BEPS outcomes to LICs, as suited to their circumstances, by providing toolkits. During consultations with developing countries on BEPS, a common concern expressed by LICs was the extent to which tax incentives erode their tax bases. This concern reflects an important tension, which was also emphasized by the IOs in their joint report for the DWG in 2011: *“Striking the right balance between an attractive tax regime for domestic and foreign investment, by using tax incentives for example, and securing the necessary revenues for public spending, is a key policy dilemma.”* (IMF, OECD, UN and World Bank, 2011). The underlying report explores this dilemma in greater detail.

⁵ All case studies used in the paper aim to illustrate key problems, practices and achievements and are not intended to provide country-specific recommendations. The choice of our case material is inevitably selective and there could have been equally valid cases in other countries or periods. In selecting our examples, we used the following criteria: cases should i) be described in publicly available and easily accessible documentation; ii) obtain a broad regional coverage; iii) offer insight into either/both good and bad practices; (iv) preferably relate to experiences in LICs, although experience from other countries is used where this provides concrete and useful examples for LICs.

⁶ While tax incentives can be targeted to ‘green’ investment, this paper does not address this dimension specifically.

⁷ Note that interactions between national and sub-national tax incentives covering the same activities or assets risk producing unintended and potentially perverse results, such as negative tax burdens for certain industries.

EFFECTIVENESS AND EFFICIENCY

A. Prevalence

In this paper, by a ‘tax incentive’ is meant any special tax provisions granted to qualified investment projects or firms that provides favorable deviation from the general tax code.

They can take several forms, such as tax holidays (complete exemption from tax for a limited duration), preferential tax rates in certain regions, sectors or for certain asset types, or targeted allowances (tax deductions or tax credits) for certain investment expenditures.

Tax incentives have been used to pursue a variety of objectives. The primary motivation is usually to stimulate investment and—especially in LICs—attract foreign direct investment (FDI). FDI inflows, for instance, are believed to not only bring capital and (high-wage) jobs to a country, but can also spur competition and increase the efficiency of domestic markets more widely, thus contributing to a country’s overall economic development. Empirical growth regressions indeed generally find positive correlations between inward FDI and economic growth, although conclusions about causality remain contentious (see e.g. Adams, 2009, for a review of evidence on Africa). Tax incentive policies also often aim to promote specific economic sectors or types of activities as part of an industrial development strategy or to address regional development needs.

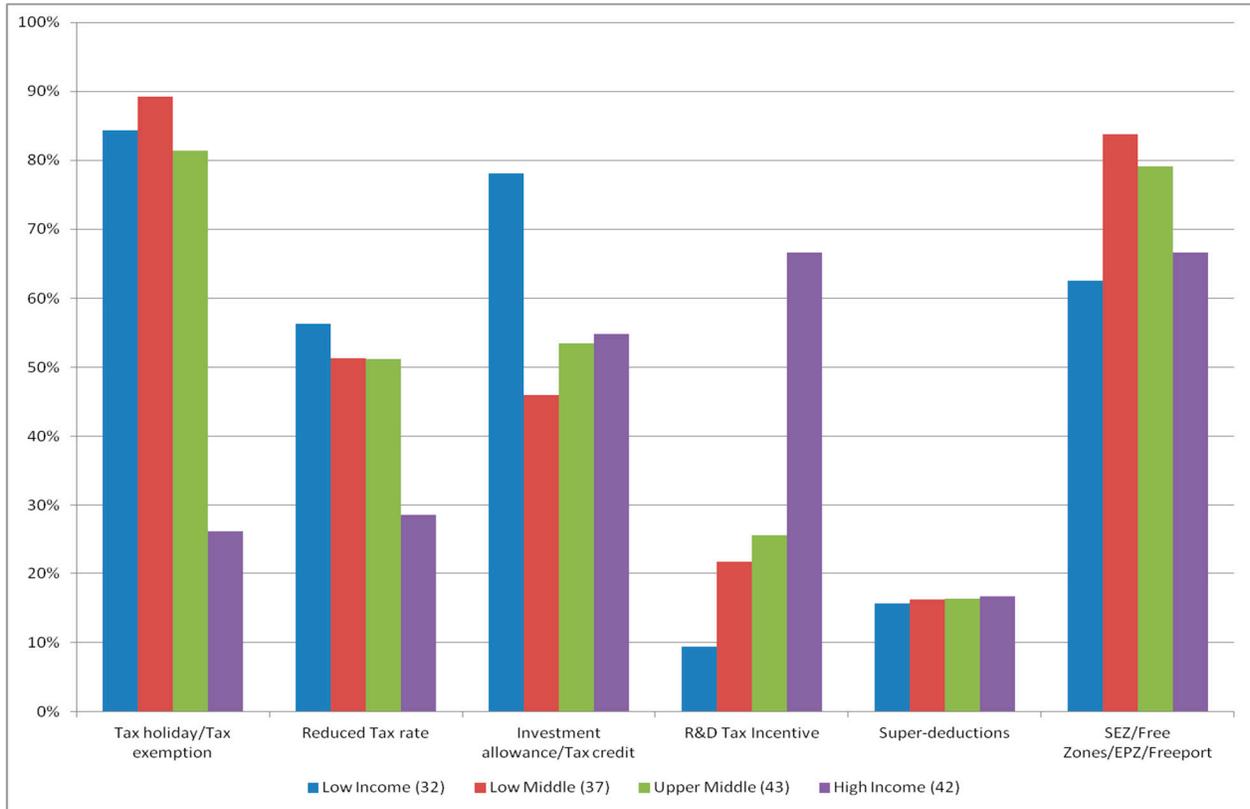
They are commonplace around the world (Figure 1). The use of tax incentives is widespread, and extends well beyond LICs. Countries differ with respect to the type of incentives used, with high-income countries relying more on investment tax credits and favorable tax treatment of research and development (R&D), low-income countries relatively more often offering tax holidays and reduced tax rates, and middle-income countries most often having preferential tax zones (in which income can be tax exempt and other favorable treatments may apply).

Over the last decades, tax incentives have become more widespread in LICs. For instance, in 1980, less than 40 percent of the LICs in sub-Saharan Africa offered tax holidays while free zones were non-existent. By 2005, more than 80 percent offered tax holidays and 50 percent had adopted free zones (Keen and Mansour, 2010). The number of countries in sub-Saharan Africa granting tax holidays and establishing free zones has grown further since (James, 2014). There is also evidence, however, that the average length of tax holidays has declined somewhat in various regions of the world (Abbas and Klemm, 2013). With the global declining trend in corporate income tax (CIT) rates, including in LICs, it might indeed be that the benefit for investors of receiving tax incentives has somewhat diminished.

Broadly, a tax incentive serves a useful social purpose if the social benefits it generates exceed the associated social costs. The background document to this report offers a simple conceptual framework that lends practical substance to this general principle by identifying the key

components that affect the social benefits and costs of tax incentives: these are set out in Box 1.⁸ The next subsections look in turn at the benefit side of the calculation—the ‘effectiveness’ of incentives in achieving their aims—and then the cost side—their ‘efficiency’.⁹

Figure 1. Prevalence of Income Tax Incentives around the World /1



/1 Figure shows the percent of countries in each of four income groups that have the indicated incentive. The sample size per income group is denoted between brackets.

Source: Calculations based on James (2014)

⁸ Sometimes the term ‘wasteful tax incentives’ is used. This concept is not always well-defined, however. This paper adopts the framework of cost-benefit analysis to identify whether tax incentives are desirable or not.

⁹ In principle, this should be assessed taking into account also other ways of achieving the aims of policy: the benefits associated with a regional tax incentive might be achieved at even lower social cost, for instance, by a regional spending program. The point is of considerable practical importance, but since the alternative instruments are highly context-specific, cannot be pursued in detail here.

Box 1. Elements of a Cost-Benefit Assessment of Tax Incentives

Investment tax incentives ultimately aim to contribute to a country's development and improved living conditions for its citizens. As elaborated on in the background document, the following elements are critical for the **social benefits**:

- *Size of the net investment effect*—the rise in investment should be corrected for redundancy effects (investments that would have occurred without the incentive) and displacement effects (the reduction in any other investments) to infer the net incremental increase in capital due to the incentive.
- *Net impact of higher investment on jobs and wages*. New jobs can yield significant social gains if they reduce unemployment. However, if new jobs displace existing jobs, the social benefits depend on the productivity (and wage) differential between the new and old jobs.
- *Productivity spillovers*. To the extent that new investment boosts productivity elsewhere in the domestic economy, such as in supplying or competing firms (often seen as a particular benefit from inward FDI), this magnifies social benefits by raising income levels more widely.

The **social costs** of tax incentives depend on the following factors:

- *Net public revenue losses*—public revenue falls if tax incentives are redundant or create leakage and abuse. But additional net investment and jobs can recover some of the revenue loss.
- *Administrative and compliance costs*, which can rise due to tax incentives, especially if they are complex or create opportunities for rent seeking and corruption.
- *Scarcity of public funds*. Often overlooked is that \$1 of tax revenue has a higher social value than \$1 of private income, because it is the greater value of the public expenditure it finances that justifies transferring resources from public to private sectors through distortionary taxes. To compare changes in private income and tax revenue, the latter thus need to be weighted by the 'marginal cost of public funds', which will be greater than unity (as discussed further below).
- *Distorted resource allocation*. Discrimination in favor of some and against other investment implies that taxes, rather than productivity differences, determine resource allocation. This distortion reduces average productivity and lowers income per capita.

B. ‘Effective use’

Effective use is taken here to mean that tax incentives realize their stated objective. This can be assessed irrespective of associated costs, which will be explored later. Raising investment or FDI is usually a necessary but not a sufficient condition for ‘effectiveness’, as the higher investment should be of the kind envisaged to yield the desired social benefits in broader welfare terms.

Empirical evidence finds that taxes matter for investment, although most likely less so in developing countries. Empirical studies on the relationship between effective tax burdens and FDI generally conclude that host country taxation significantly affects investment (De Mooij and Ederveen, 2008).¹⁰ Most of this evidence, however, refers to advanced economies. Recent studies report similar results for developing countries, although the effects tend to be somewhat smaller on average (James and Van Parys, 2009; Abbas and Klemm, 2013). One reason might be that many developing countries do not offer attractive general investment conditions for most multinational companies, due to for instance poor infrastructure, macroeconomic instability, unclear property rights, and weak governance or judicial systems. In these circumstances, tax incentives do not effectively counterbalance such poor conditions and are largely ineffective (Kinda, 2014). At the same time, however, tax incentives might be one of the few (albeit second-best) instruments for LICs to offset disadvantaged circumstances, address regional disparities and mitigate market failures, such as lack of financial access.

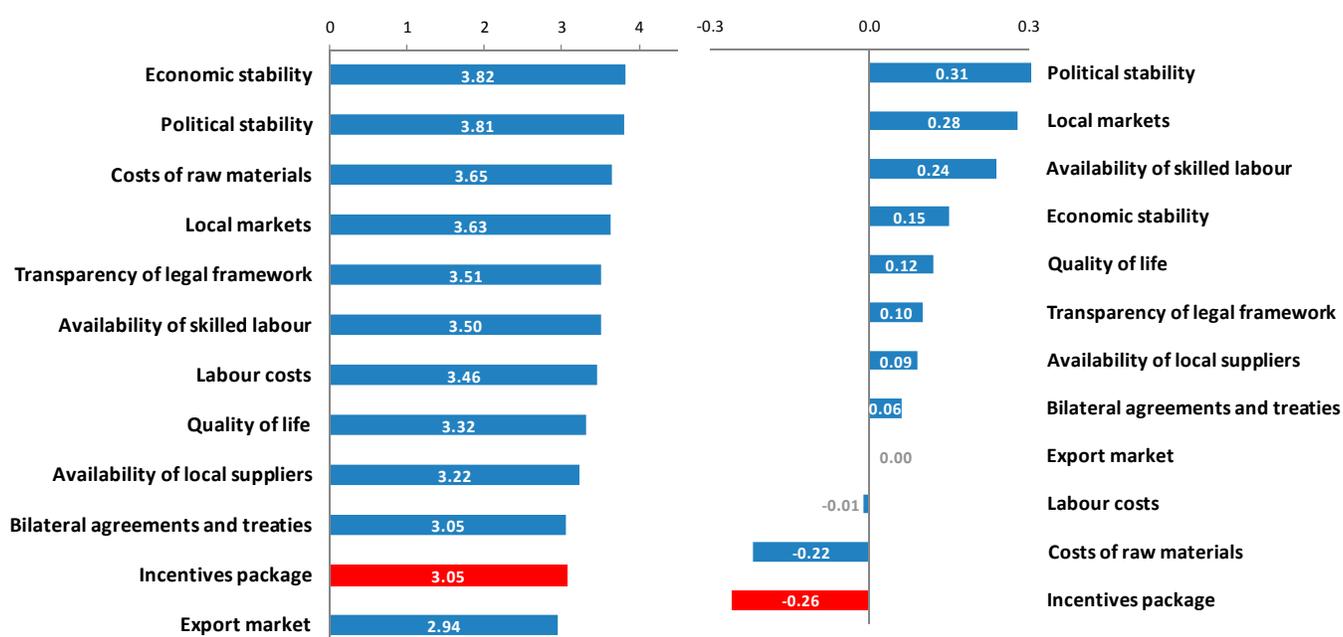
Investment surveys confirm that tax incentives usually do not top the list of investment factors in developing countries. In 2010, the United Nations Industrial Development Organization conducted a business survey of 7,000 companies in 19 sub-Saharan African countries active in agriculture, mining, manufacturing, utilities, construction, and services sectors. Investors were asked to rank the importance of twelve location factors and to assess how they might have changed, improved and worsened, in the last three years (Figure 2). The results suggest that tax incentives packages ranked 11th out of 12 in importance; and this importance fell over time. For comparison: transparency of the legal framework ranked 5th in investors’ concerns and grew in importance. Investors thus seem to care much more about deficient legislation and onerous regulations than about the availability of tax incentives (UNIDO, 2011).

Tax incentives are often found to be redundant in attracting investment in developing countries; that is, the same investments would have been undertaken even if no incentives had been provided. Table 1 shows redundancy ratios, based on investor surveys in various countries, measured by the percentage of investors who claim that they would have invested even without tax incentives. Redundancy levels thus obtained—subject to well-known caveats, such as a discrepancy between answers and actual behaviors under a counterfactual scenario—are high in most countries. For example, redundancy rates exceed 70 percent in 10 out of the 14 surveys listed in Table 1. In

¹⁰ FDI comprises different components, such as new plants and equipment, plant expansions, and mergers and acquisitions (M&A). The evidence is that new plant location choices are more responsive to tax than are incremental investment increases; and M&A tends to respond to taxation differently from greenfield investment.

Guinea, Rwanda, Tanzania and Uganda, more than 90 percent of the investments would, it seems, have been made even without the incentives.

Figure 2. Relative Importance of Tax Incentive Packages in Investor Location Survey 2010
(Left: Relative Rank; Right: Change in Rank since 2007)



Source: UNIDO (2011)

Table 1. Redundancy of Tax Incentives Based on Investor Surveys /1

Burundi (2011)	77	Rwanda (2011)	98
El Salvador (2013)	37	Serbia (2009)	71
Guinea (2012)	92	Tanzania (2011)	91
Jordan (2009)	70	Tunisia (2012)	58
Kenya (2012)	61	Uganda (2011)	93
Nicaragua (2009)	15 or 51 /2	Vietnam (2004)	85
Mozambique (2009)	78	Thailand (1999)	81

/1 Percent of affirmative answers to the question if an incentive was redundant;

/2 51 percent for non-exporting firms outside free zones.

Source: James (2014)

Effectiveness varies between countries and sectors. In some countries, tax incentives seem to have played an important role in attracting new investment and spurring economic growth. Famous examples include Korea and Singapore, where tax incentives—offered as part of a broader strategy to attract investment—seem to have encouraged rapid industrialization (Tanzi and Shome, 1992). However, in many instances tax incentives have resulted in little or no new investment, as indicated by the redundancy ratios in Table 1. Studies offer some insight into the factors determining effectiveness. For instance, FDI that is resource-seeking (to exploit the presence of natural resources), market-seeking (to penetrate a local market), or strategic asset-seeking (to exploit local know-how or technology) is generally found to be less responsive to tax than FDI that is efficiency-seeking (to exploit cost advantages in production for the world market).¹¹ Indeed, tax incentives tend to have the greatest salience where investment is oriented toward exporting firms (Grubert and Mutti, 2004).

China is often quoted as an example of effective (tax) incentive policies. During its transition period between the mid-1980s and mid-2000s, it experimented with a wide range of industrial policy instruments, including tax incentives for special economic zones, reduced tax rates for FDI, and tax holidays for strategic industries. FDI inflows accelerated during this period and the country became a top destination for many multinationals. In a panel of 29 regions between 1985 to 1995, Chen and Kwan (2000) find, for instance, that special economic zones systematically boosted FDI inflows.

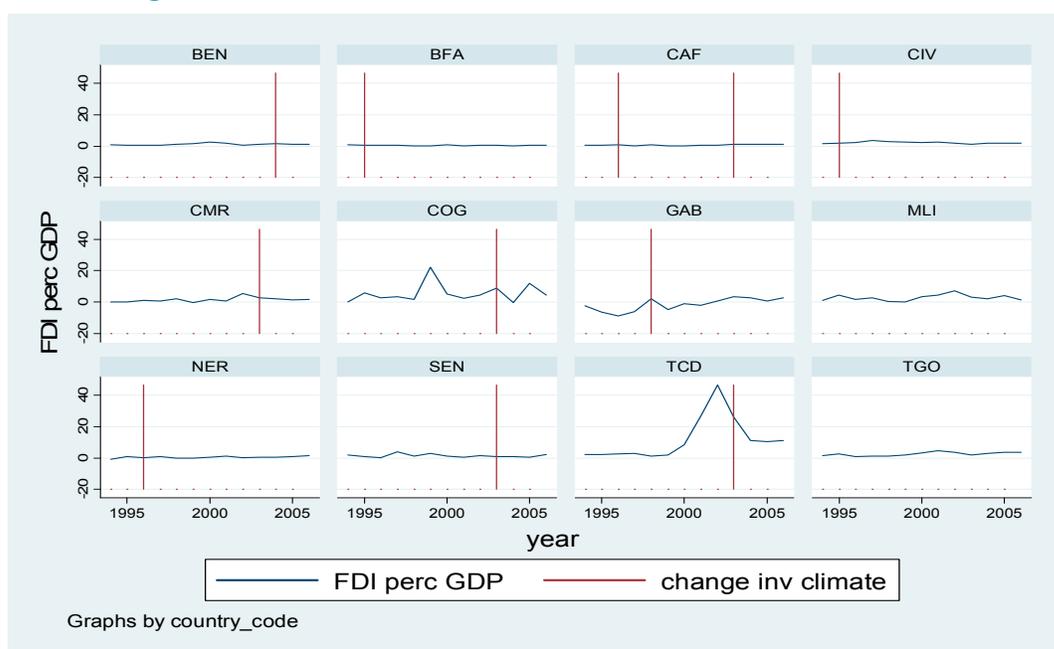
Examples of less effective tax incentives can be found in Africa. Figure 3 shows how FDI was influenced by changes in investment codes between 1994 and 2006 in countries of the CFA franc zone and the Economic Community of Central African States. The vertical lines in the figure denote the introduction of new investment codes, such as tax incentives and legal protections. Providing more generous tax incentives did not have any demonstrable effect on FDI (Van Parys and James, 2010).

The effectiveness of incentives in attracting investment also depends on the international tax rules in place. Multinationals taxed on a “territorial” basis in their home country are able to retain the benefits of host country tax incentives, since there is no offsetting home country tax on the foreign source income. Multinationals might be subject to home country tax on foreign source income due to controlled foreign corporation (CFC) rules¹² or tax upon repatriation under a ‘world-wide’ system—as used in e.g. the US, China and India. The tax incentive can then become ineffective, since the benefit will be taken away by increased tax payments in the multinational’s home country—although tax deferral until repatriation of income often effectively mitigates such an effect.¹³

¹¹ This classification of types of FDI is due to Dunning (1993).

¹² CFC rules vary, but are in essence provisions that bring immediately into tax *passive income*—the complement of active business income—arising abroad that has not paid at least some minimum amount of tax. For worldwide countries, CFC rules in principle provide some protection against tax avoidance through deferral; for territorial countries, they simply ensure that only active income is exempt in the residence country.

¹³ Moreover, some tax treaties provide for ‘tax sparing’, whereby the residence country of a corporation determines the foreign tax credit based on the taxes that would have been paid if the incentive had not existed.

Figure 3. Investment Incentives and FDI in Central and West Africa

Source: Van Parys and James (2010)

The ability of multinationals to avoid host-country taxes may blunt the impact of tax incentives—so measures to restrict that ability may make tax incentives more effective. A multinational that can readily avoid host-country taxes (by, for instance, using interest deductions to shift profits to a low tax jurisdiction) may see little additional benefit from tax incentives. By the same token, actions that make such avoidance more difficult, from the G20/OECD BEPS project for example, would make tax incentives more attractive for them.

Where tax incentives increase FDI, domestic investment may be displaced. Displacement reduces effectiveness in terms of the net impact of the incentive on the domestic capital stock. This happens, for instance, if FDI reflects a mere transfer of ownership, through mergers and acquisitions, or if domestic investment is 'round tripped' through a foreign entity to take advantage of the tax incentive. Displacement can also occur in labor markets, where jobs in new firms come at the expense of employment in other sectors of the economy.

Evidence for 40 Latin American, Caribbean and African countries between 1985 and 2004 suggests that changes in the length of tax holidays systematically increased FDI inflows. These FDI inflows did not, however, increase total investment, nor did they increase economic growth. This suggests full displacement of domestic by foreign capital (Klemm and Van Parys, 2012).

FDI inflows can yield various other social benefits, such as economic diversification gains, knowledge and technology spillovers, new management practices, reduced unemployment, and improved conditions in less-developed areas (Blomstrom and Kokko, 1998; OECD, 2002). FDI spillovers may impact other firms in the same sector ('horizontal' spillovers) and/or

supplying/purchasing firms ('vertical'). The available evidence—mainly for emerging economies, rather than LICs—indicates strong empirical support of vertical spillovers, but weaker support for horizontal spillovers (Box 2).

Box 2. Evidence on Productivity Spillovers from FDI

Empirical studies of **horizontal spillovers** look at the systematic variation of productivity growth in an industry and its intensity of FDI. Early studies for Morocco, Russia and Venezuela find no support for such productivity spillovers in manufacturing industries; instead, and counterintuitively, they all report negative correlations (Haddad and Harrison, 1993; Aitken and Harrison, 1999; Yudaeva et al., 2003). Gorodnichenko et al. (2007) find that horizontal spillover effects are generally insignificant in an analysis for 17 countries in Eastern Europe and Central Asia. In a meta-analysis of 32 empirical studies on technology spillovers from FDI, Woodster and Diebel (2006) conclude that intra-sectoral FDI spillovers are non-existent in developing countries.

Evidence for advanced economies is usually more supportive of horizontal spillovers. For instance, studies using data for the US and the UK typically report positive correlations between domestic plants' productivity and FDI intensity (Xu, 2000; Keller and Yeaple, 2003; Haskel et al., 2007). Here, spillovers also tend to be more prevalent in high-technology sectors and when own R&D is undertaken, reflecting a greater ability to understand and assimilate new technologies (Griffith et al., 2004). Lack of absorptive capacity may explain why horizontal spillovers are less prevalent in developing countries.

Studies on **vertical spillovers** usually explore backward effects of FDI to domestic suppliers, again by measuring productivity gains in the manufacturing sector. A study for Zambia, for instance, finds significant knowledge transfers from foreign to local firms (Bwalya, 2006). Similar positive spillover effects are found for Indonesia and Lithuania (Javorcik, 2004; Girma et al., 2007). For the 17 countries in Eastern Europe and Central Asia, Gorodnichenko et al. (2007) consistently report positive backward productivity spillovers. For strategic industries in China, Du et al. (2011) find support for backward and forward vertical FDI spillovers.

C. 'Efficient use'

Efficient use in this paper means that objectives are achieved at low social costs. Such costs include revenue losses for government and other social costs, for example due to less efficient resource allocation.

Redundancy matters for efficiency too, since it implies a loss of government revenue from projects that would have been undertaken also without tax incentives. Redundancy implies that the tax incentives are a mere cash transfer to the investor: a net social loss to the extent that the marginal cost of public funds exceeds unity (and an even greater loss in national terms if the investor is foreign). On the other hand, for projects that would not have been undertaken without the incentive, there is no direct revenue loss—so long as taxation of the incentivized activity is not entirely eliminated, there may in fact be a net revenue gain from those projects. To minimize the revenue cost of tax incentives, the goal would thus be to offer tax incentives only to those marginal investors who would not have invested otherwise.

Indirect revenue costs arise from taxpayers abusing the tax incentive regime.¹⁴ For example, if tax incentives are only available to foreign investors, local firms may use foreign entities to route their local investments in order to qualify. Similarly, if tax benefits are available to only new firms, taxpayers may reincorporate or set up new corporations to be treated as a new taxpayer under the tax incentive regime. Other leakages occur where taxpayers use tax incentives to reduce the tax liability from non-qualified activities, for instance, by shifting taxable income to a related firm that qualifies for a tax holiday or that resides in a tax-free economic zone (McLure, 1999; Eason, 2004). Preventing such losses requires proper anti-abuse rules and strong administrative capacity to enforce them.¹⁵

In 2000, the government of India removed incentives for exporters, except those located in export processing zones or qualified as export-oriented units. Investment behavior hardly changed due to this reform. Indeed, firms that lost their incentives maintained the same level of investment as before, despite higher tax rates, similar to the control group that kept their incentives. However, reported profits did respond aggressively to the loss of incentives. In particular, reported pre-tax profits dropped by half on average in firms that lost their incentives, despite little change in sales. In contrast, pre-tax profits in firms that kept their incentives showed an increase. Hence, companies seem to have diverted profits from affiliates facing higher taxes to those exempt from tax due to the incentives (James, 2007).

In 1987, Bolivia established a tax credit for exporters based on the growth of their export receipts over the previous year. This led to the emergence of what was called "tourist cows":

¹⁴ See also the top 10 of most frequent abuses listed in Zolt (2014).

¹⁵ Anti-abuse rules can be either specific provisions in the tax law to prevent certain behaviors that are deemed abusive, or general provisions under which behaviors can be classified as abusive based on a broad characterization in the law. High-quality legal drafting and a robust administration are necessary to ensure effective anti-abuse provisions.

farmers generated tax credits by moving their herds back and forth across the border in order to maintain or increase the growth of their “export” receipts. The scheme was eliminated in 1991 (Rodrik, 1993).

Additional resource costs arise for the government in administering tax incentives and for businesses in complying with the associated requirements. Of course, any tax comes along with such costs. However, they generally increase with the complexity of the assessment processes of tax incentives, and with the opportunities for rent seeking and corruption they might create (as discussed further in the next section). The additional administrative costs are a particular concern in LICs, where administrative capacity is often limited. Indeed, scarce resources might be diverted away from core aspects of a country’s tax administration, undermining other efforts to mobilize revenues.

In Papua New Guinea (PNG), the taxation review committee recently evaluated its tax incentive policies and concluded that one significant concern is the additional complexity they create, placing greater demands on already limited tax administration resources. In particular, PNG’s experience with the research and development incentive and the infrastructure tax credit have highlighted the challenges of implementing or effectively monitoring these incentives in the absence of sufficient administrative or technical capacity (PNG Tax Committee, 2014).

A first step to understanding the public revenue forgone as a consequence of tax incentives is to calculate the implied ‘tax expenditure’ (see background document). Investment tax incentives are only one form of tax expenditure, by which is meant a provision in the tax code that deviates from some benchmark tax system in a direction favorable to the taxpayer. A tax expenditure review quantifies the revenue forgone for each provision, including for investment tax incentives analyzed in this paper.¹⁶ Conceptual complexities arise when performing a tax-expenditure review, including in defining the relevant benchmark to which tax incentives are to be compared. Importantly, a tax expenditure review does not take into account either any effect of the incentive on investment or the leakage and abuse to which it can give rise to. The former may imply an overstatement of actual revenue cost, since elimination of the incentive might lead to a reduction in the tax base and hence to less additional revenue (if the rate would still be positive) than a ‘static’ calculation implies. The latter implies an understatement. As methodologies differ, international comparisons of tax expenditures are usually difficult.

Tax expenditure analyses are increasingly being used by developing countries, with strong encouragement by and support from the IOs (see e.g. IMF, OECD, UN and World Bank, 2011), including through technical assistance. The International Budget Partnership’s Open Budget Survey indicates that tax expenditure reporting is undertaken by the following middle and low-income countries: Argentina, Chile, Columbia, Dominican Republic, Guatemala, India, Jamaica, Jordan, Kenya, Lebanon, Malaysia, Morocco, Nepal, Pakistan, Peru, Philippines, Russia, Serbia South Africa,

¹⁶ For assessing the revenue forgone from investment tax incentives, corporate micro simulation models can play an important role, as the background document explains further.

Sri Lanka, Tanzania, Trinidad and Tobago. Some other countries carry out such analyses, but their score is low, indicating weak methodological frameworks.

In the Philippines, tax incentives are provided to a large number of firms producing for the domestic market. The cost of fiscal incentives granted by the Board of Investments (which is only one of the authorities that can do this) in 2004 was estimated to exceed 1 percent of GDP (Reside, 2006). The background document discusses recent progress in the Philippines, with the Tax Incentives Management and Transparency Act.

For purposes of policy evaluation, each dollar of public revenue forgone should be inflated by an indicator reflecting the scarcity of public funds: the ‘marginal cost of public funds’. Taxes generally reduce labor supply, saving and investment, thereby imposing an additional cost to society. The marginal cost of public funds (social cost of a dollar of tax revenue) in advanced economies is generally estimated around \$1.20 to \$1.30 due to these distortions. Estimates for developing countries are scarce, but constraints on the instruments for domestic revenue mobilization available to them likely mean that in LICs too, the marginal cost of public funds substantially exceeds unity. For instance, Auriol and Walters (2012) estimate it at an average of \$1.20 for a group of 38 African countries. Intuitively, spending a marginal dollar on tax incentives by the government to attract FDI competes directly with other uses of funds, such as tax rate cuts across the board or increases in expenditure on infrastructure or education. High returns to such public investments in LICs due to a scarcity of public funds raise the opportunity cost of tax incentives by (on these estimates) an extra 20 cents per dollar revenue forgone, and thus call for a 20 percent higher payoff to justify them.

Calculations of ‘dollar cost per job created’ are a popular metric for measuring the cost-effectiveness of tax incentives. Number of jobs can be measured either for all investors enjoying the incentive, or only for those that are ‘marginal’, in the sense that they would not have invested without the incentive. Dollar costs can either be based on total revenue forgone from the tax-expenditure review, or only those from the non-marginal investors. Clearly, calculations of this kind are simplistic and suffer from several pitfalls, implying they should be interpreted with caution. Still, however calculated, the dollar cost per job provides a quick ballpark figure that can inform policymakers on the relative cost-effectiveness of a particular incentive—which can also be compared with the costs of creating jobs by direct spending measures. Sometimes, the numbers calculated are striking.

A 2008 Investment climate advisory study found that the government of Yemen spent about \$6,000 per worker each year for 8,000 jobs that investment incentives helped create—more than six times the country’s per capita income. In Thailand, a 1999 study by the Foreign Investment Advisory Service found that investment incentives each year cost the government about 16 times the average annual wage of an industrial worker. In Tunisia, it was found that the cost of tax incentives for each job created was three and a half times the per-capita income. The government of India granted over US\$200,000 per job in incentives. Investments by General Motors in Hungary cost US\$ 300,000 per job created. (James, 2014; Kenneth, 2011)

Inefficiencies also arise from distorted resource allocations. By definition, tax incentives place non-incentivized investments at a competitive disadvantage. The risk is that, in seeking to pick winners, there will be inefficiently high investment in incentivized activities and inefficiently low investment in others. Incentivized firms may also be able to attract workers from non-incentivized firms by offering higher wages, just because they enjoy an artificial competitive advantage. Diversion of labor and capital to the incentivized firms in response to discriminatory tax treatment will distort the allocation of resources and can hurt economic growth.

The World Bank Group finds that a few politically connected firms have captured tax incentives in Egypt and Tunisia. This selective access caused a dual economy with large differences in profitability between insiders and outsiders, undermining a level playing field and reducing competition, significantly reducing job growth (Shiffbauer et al., 2015).

In principle, efficiency may require taxing activities that are more mobile across countries less heavily than those less mobile.... This is in line with the standard principle of efficient tax design that items with less tax-sensitive bases should be taxed more heavily—because the tax then has a lesser impact on real decisions. Such an outcome would effectively be one in which incentives are offered to the most mobile activities—which in practice has clearly been a major concern for many LICs and others. Differential tax rates across sectors may also serve as a pragmatic device for imposing higher burdens where rents (that is, profits in excess of the minimum required by investors) are more substantial.

...but this can bring its own difficulties, and be inferior to more cooperative outcomes.

Applying different rates to different sectors, for instance, creates opportunities for profit shifting between the two (as elaborated on above). And since tax bases are less mobile from a collective perspective (that of a trading bloc, for instance) than between individual countries, low tax rates set in pursuit of national objectives may forego opportunities for efficient taxation from a collective perspective. Where there is reason to suppose substantial rents are being earned, targeted taxes may be the better way to approach them rather than by differential rates—hence the distinct resource rent taxes often found in, and recommended for, resource-rich countries.

GUIDANCE IN THE USE OF TAX INCENTIVES

As the analysis above makes clear, how tax incentives are designed and governed is critical to their effectiveness and efficiency. This section discusses principles and good practices in these areas, and elaborates on issues of reform of tax incentives.

A. Design

Tax incentive policies involve three core design issues:

- Choice of tax instrument to incentivize investment;
- Eligibility criteria used in the selection of qualified investments;

- Reporting and monitoring requirements during different stages of the tax incentive's life cycle, as well as sunset and recapture provisions.

Instrument choice

Incentives can cover a wide range of taxes, including corporate income tax (CIT), VAT, tariffs, property taxes, personal income taxes and social contributions. Incentives in each of these areas require distinct economic analysis. For instance, a reduction in tariffs for capital goods is usually on solid economic ground in that it eliminates production distortions that create large welfare costs. On the other hand, VAT exemptions on investment may be entirely redundant, since full operation of the tax means that VAT charged on inputs does not 'stick' with the purchaser, but is fully recovered as a credit against VAT charged on sales;¹⁷ but VAT exemptions can become beneficial for firms if VAT implementation is problematic, for instance, due to imperfect VAT refund procedures. Corporate income tax incentives are probably the most contentious and widely criticized by observers. Much of the focus below will consequently be on them.

Tax incentives that lower the cost of investment are often to be preferred over profit-based tax incentives:

- **Cost-based tax incentives** involve specific allowances linked to investment expenses, such as accelerated depreciation schemes and special tax deductions and credits. They are targeted at lowering the cost of capital and so make a greater number of investment projects more profitable at the margin—that is, may generate investments that would not otherwise have been made.
- **Profit-based tax incentives** generally reduce the tax rate applicable to taxable income; examples include tax holidays, preferential tax rates or income exemptions. One effect is thus to forego government revenue in order to make even more profitable investment projects that would be profitable, and hence undertaken, even without the incentive.

The difference between the two types of instruments is critical. For instance, profit-based incentives will be less effective in encouraging investment compared to incentives that reduce the capital cost if profitability is low. When profits are earned due to the presence of location-specific factors, such as natural resources, agglomerations, or local markets, profit-based incentives tend to be associated with high redundancy rates and are again ineffective in raising investment. But international considerations are important here. Profitable investments that are highly mobile across national borders—because, for instance, rents are associated with intangible assets, such as patents or trademarks, that are easy to move between jurisdictions—may be sensitive to both cost-based and profit-based tax incentives.

Tax holidays tend to favor readily mobile ('footloose') activities rather than long-term investment. By offering temporary tax relief for profitable firms, tax holidays benefit industries that

¹⁷ Indeed VAT exemption on investments (and intermediate purchases more generally) can be worse than redundant, because of its cascading effect through the production chain: see for instance Ebril et al. (2001).

start making profits soon in the holiday period. This introduces a bias towards short-term projects with low upfront investment costs, which may be those least likely to generate spillover effects on the wider economy (of the kinds described above). Such investment projects are known to “pack and go”, fleeing the host country as soon as the preferential treatment is removed. For industries with significant long-term capital needs, and for which spillover benefits may be greater, tax holidays could actually discourage investment: little otherwise taxable profit might be expected during the holiday period, and, to utilize depreciation allowances, a firm might be encouraged to postpone investment until after the holiday period in order to claim full deductions for its costs (see background document).

Eligibility criteria

Tax incentives need to be well-targeted and based on clear eligibility criteria. Targeting serves two related purposes: (i) identifying the types of investment that a government seeks to attract; and (ii) reducing the fiscal cost of incentives. The following criteria are commonly used—often in combination:

- **Special size.** Tax incentives are sometimes restricted to new investments (or investors) that exceed some stipulated value of assets or those that create at least some stipulated number of new jobs. This of course has significant appeal, for instance where investments can be transformational for a country or region or where financing and technical constraints hold up investment. Limiting incentives to large investments can also reduce administrative costs for government. However, discrimination in favor of large foreign investments can also lead to manipulation, abuse and distortion. For instance, size conditions are relatively easy to meet on paper, but extremely difficult to monitor and verify ex-post. If an investor increases the size of their planned investment or the number of new jobs simply to obtain a tax privilege, this implies an inefficient use of resources, so that marginal productivity increases can be very low or even negative. Discrimination can also distort competition and restrict the growth of smaller domestic enterprises that do not enjoy incentives, even when they are more productive.¹⁸
- **Special sectors.** Many countries grant preferential tax treatment to certain sectors of the economy, which policy makers consider as most desirable and which are most likely to be influenced by tax. Among the activities commonly preferred are tourism, “offshore” financial centers, film production and manufacturing activities, with the idea that they bring more socially valuable spillover effects. Incentives are also sometimes restricted to so-called “pioneer” industries, which can be defined in various ways, but are always viewed as of strategic value for

¹⁸ Many countries also offer special tax incentives for small and medium-sized (usually domestic) enterprises (perhaps to address their difficulties in raising external finance), for example through lower tax rates or special allowances. There is no clear evidence, however, that targeted tax relief for small firms is more cost-effective than general tax relief for businesses (IMF, 2012). On the contrary, special relief may hurt economic growth by creating a small-business trap, preventing small firms from growing larger to maintain their preferential tax treatment.

the national economy.¹⁹ There is always a question, however, whether serving special interests aligns with serving the general public interest. For instance, investments in other economic sectors are placed at a competitive disadvantage and may under develop, even though they are more productive.

- **Special regions/zones.** Tax incentives are sometimes targeted to special regions in the form of ‘zones’, for example to address geospatial inequality. Economic zones (EZs)—which exist under various names and definitions²⁰—have rapidly gained popularity over the last couple of decades. For instance, the International Labour Organization (ILO) estimated in 2007 that 3,500 EZs were operational in 130 countries, compared to only 176 in 46 countries 20 years earlier. Successful economic developments in Hong Kong SAR, Singapore, and Korea have often been attributed to EZs. In China, SEZs were used as test beds for the gradual liberalization of the economy and export-oriented industrialization. There is evidence that these Chinese SEZs, on average, boosted the growth rate of FDI by almost 7 percent per year (Wang, 2013) and regional economic growth by 12 percent per year (Alder et al., 2013). These successes in East Asia have inspired many other developing countries to adopt EZs of various kinds, including in sub-Saharan Africa and Asia. Experience on their effectiveness, however, is mixed at best. Zeng (2015) recently concluded, for example, that the experiences have been disappointing in most African countries, which he explains by poor institutions, weak governance and inadequate infrastructure (among others). In India too, there is evidence that the number of EZs per region has had no discernible impact on regional economic growth (Leong, 2013). In such circumstances there is evident risk of significant revenue loss through redundancy, and many observers also stress sizable risks from tax planning between the free-zone and affiliates outside the zone (similar to those shown in the India example above).

“Performance data are elusive because the effects of zones are hard to disentangle from other economic forces. But anecdotal evidence suggests that they fall into three broad categories: a few runaway successes, a larger number that come out marginally positive in cost-benefit assessments, and a long tail of failed zones that either never got going, were poorly run, or where investors gladly took tax breaks without producing substantial employment or export earnings” (The Economist, April 4th 2015).

¹⁹ Investment incentives are also frequently targeted at export-oriented production. However, such incentives may be contrary to WTO rules—although there is a LIC exemption provided under the WTO Subsidies and Countervailing Measures Agreement, under which 33 LIC WTO members (as well as 12 accession LICs) are granted special relief.

²⁰ Export processing zones (EPZs), for example, are enclaves where foreign companies engaged in the manufacturing of products for exports enjoy preferential (tax) treatment compared to the rest of the economy. Special economic zones (SEZs) offer locational flexibility and have a wider application than EPZs by granting such treatments also to domestic sectors. Several other zone types exist, each with particular features. Incentives in those EZs generally involve non-tax benefits, such as good infrastructure and cheap utilities, as well as reductions in customs duties, income taxes and other (local) taxes and fees.

A recent IDB study uses micro data to evaluate Export Free Zones in Costa Rica, El Salvador and Dominican Republic, including the specific role of tax holidays. It finds that (i) the Zones generally favor high profitability projects that would likely have gone ahead also without the incentives; (ii) projects are readjusted to keep incentives over time; and (iii) global tax avoidance is facilitated through the use of transfer prices vis-à-vis subsidiaries in the Zones (Artana, 2015).

Life-cycle stages

After approval, the tax administration should continue monitoring firms. This is an often neglected stage in many countries. Even when granted a tax holiday, taxpayers should still be required to file a tax return so that the authorities can assess the revenue cost of the incentive (as a central element of its tax expenditure review). Tax authorities should also periodically carry out audits to ensure that tax incentives are not abused. Conditions attached to incentives often require ongoing monitoring—for example, requirements that a given number of jobs be maintained, or that a certain percentage of production be exported (which may call for specialized tax forms for firms enjoying such incentives). Where non-compliance or abuse is detected, a penalty should be imposed and, ultimately, tax privileges denied.

Making tax incentives temporary rather than permanent can have some attraction. One major attraction of a temporary tax incentive is that its expiry provides for a natural point of evaluation, feeding into a periodic reconsideration of whether the incentive should be continued, reformed or repealed. Temporariness of a tax incentive can also be used as a counter-cyclical policy. Indeed, when foreseen to be phased out in the near future, the investment effects of an incentive tend to be bigger than of permanent incentives (US Department of Treasury, 2010). Sunset provisions should be built into the law. In the absence of such a provision, firms may seek to roll-over a tax holiday, either by negotiating a new holiday period or by incorporating a new firm that may qualify for it. Tax holidays then become de facto permanent tax exemptions—a practice that should be avoided.

B. Governance

Good governance requires that the government’s decision-making process, its policies and the administration be transparent and subject to scrutiny and evaluation, to ensure that authorities can be held accountable for their actions and remedial action taken when necessary. This limits the scope for corruption, strengthens the trust of investors in government, and enhances confidence of the public that the tax system is fair in design and implementation. Transparency is a necessary but not a sufficient condition for good governance (see Box 3). IOs have developed a variety of practical tools to assess the transparency and wider governance performance of countries with respect to tax incentives.²¹ The background document presents templates that can be used as assessment tools. In general, the key requirements for good governance are that:

²¹ See for instance the IMF Fiscal Transparency Code (2014), including pillar IV on resource revenue management; IMF Manual on Fiscal Transparency (2007); OECD Best Practices for Budget Transparency (2002). The background document presents recent templates developed by the OECD and the World Bank.

- The award and monitoring of incentives be guided by the rule of law, with clarity about eligibility criteria;
- Authority to grant national-level tax incentives (related to national taxes) rest solely with the Ministry of Finance; decisions drawing, as need be, on the views of stakeholders across government;
- There be effective and transparent administration and evaluation.

Box 3. Transparency

Transparency is fundamental to empowering all stakeholders—the legislature, businesses, civil society and the public at large—with information about tax incentive policies, so that they can hold government accountable for its decisions. Transparency also generates information required for evaluation. Transparency should be created along three dimensions:

- **Legal:** tax incentives should have a statutory basis in relevant tax laws.
- **Economic:** the rationale for tax incentives should be clearly spelled out to enable a public debate on the country's policy priorities. The costs and benefits of an incentive scheme should be assessed ex-ante and ex-post, based on clearly stated assumptions and methodologies, and the assessments published.
- **Administrative:** qualifying criteria should be clear, simple, specific and objective, so as to reduce the discretion afforded to officials that grant the incentives. The decision-making process should be open and a list of incentives granted should be published.

Because the revenue costs of tax incentives are usually not obvious, governments tend to face limited scrutiny when granting them, in contrast to the case of direct expenditures. Budgeting the amount of revenue forgone from tax incentives by the Ministry of Finance and revealing it to the public supports good governance, enables informed budget making and improves accountability.

Transparency in the benefits they receive should also be required from multinational corporations. This can strengthen corporate social responsibility as employees, customers and local communities can hold corporations accountable for their decisions, including their tax treatment.

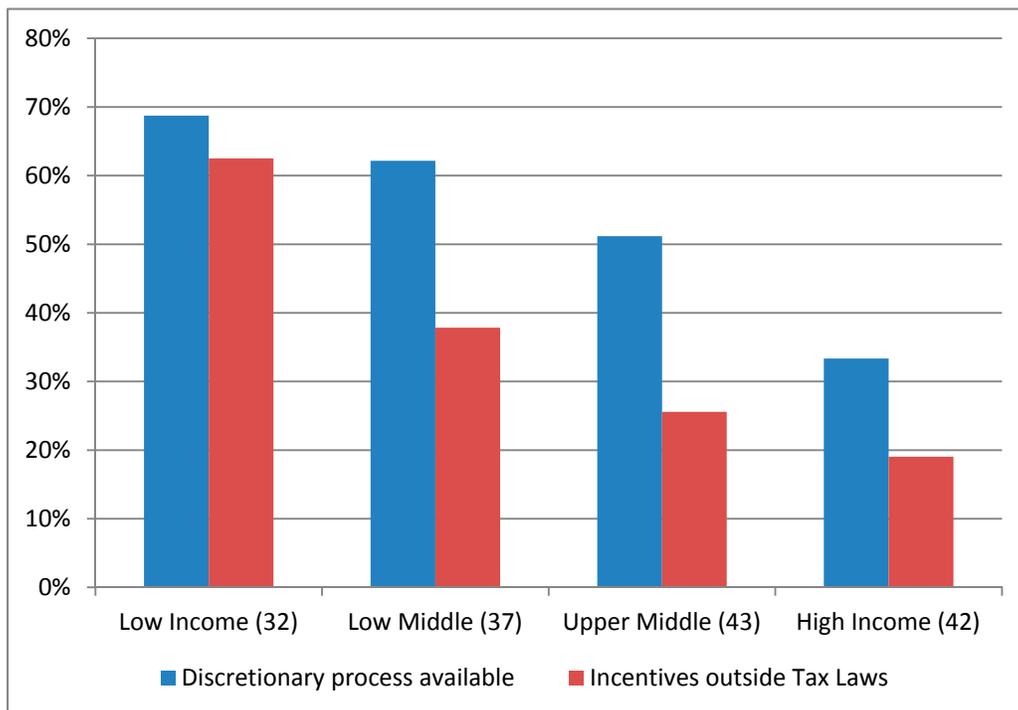
Rule of law

Tax incentives should be clearly prescribed in the law... This ensures that the legal basis governing the tax incentive has been approved by the legislature and has passed appropriate parliamentary and public scrutiny. If, on the other hand, tax incentives are negotiable and provided through decrees, agreements, regulations and the like, they escape oversight and can become prone to undue influence.

Tax incentives in Nigeria can be introduced through laws, budget speeches, government notices/directives, executed agreements, as well as Memoranda of Understanding between the government and businesses (Nlerum, 2011).

...and preferably consolidated in the tax law. The transparency and accessibility of tax incentives are compromised when embedded in multiple pieces of legislation applying, for instance, to different sectors. Tax incentives are for this reason best consolidated into the main body of the tax law. This reduces the likelihood of conflicting or overlapping provisions, which could create unintended distortions and uncertainty, as well as revenue losses. In practice, however, more than half of all LICs provide tax incentives outside the tax law (Figure 4).

Figure 4. Governance of tax incentives by income group/¹



¹ Percentage of countries in four income groups that have discretion/provide incentives outside the tax law. Discretion is defined as processes under which the taxpayer can negotiate special incentives, or where approval of a tax incentive can be granted outside of the tax/customs agency.

Source: Calculations based on James (2014)

In December 2012, special tax measures in as many as 17 laws and legislative acts were either abolished or consolidated into the General Tax Code in Senegal, significantly improving transparency of the tax system. The comprehensive tax reform, along with tighter administrative measures, streamlined the tax system and represented a significant rollback of tax incentives and exemptions. (Journal Officiel de la République du Sénégal, 2012)

Eligibility criteria for granting tax incentives should be clearly defined and readily verifiable to allow for a rules-based approach. The law (and its accompanying regulations) should specify the conditions that the taxpayer needs to satisfy in order to qualify for a tax incentive, with as little room as possible for subjective interpretation or negotiation. Granting incentives can then be largely automatic by verification of stipulated criteria. Yet, not all tax incentives can be granted automatically, for instance because the law cannot always prescribe eligibility under all possible circumstances. This often introduces some elements of discretion. The extent of discretion, however, should be kept to a minimum as it introduces the risk of rent-seeking behavior on the part of the investors and corrupt behavior on the part of the public officials—a major concern in many countries.²² Excessive discretion can also serve as a signal of poor governance and thus alarm new investors. Figure 4 shows that, troublingly, close to 70 percent of LICs allow for granting processes that are largely discretionary in nature.

There are several examples of considerable discretionary interpretation. For instance, the recently promulgated Foreign Investment Law of Myanmar loosely defines eligibility for tax exemptions over a “suitable period” for businesses that are “beneficial for the State.” (Myanmar Foreign Investment Law, 2012). The Gambia’s investment promotion authority confers a special status on investors, which are then awarded special investment certificates entitling them to benefit from incentive packages; the investment promotion authority states that, “Apart from these specific incentive packages, others can be negotiated with the Agency depending on the strategic nature of the investment.” (James, 2014). Tanzania’s ‘Strategic Investor Status’ allows companies investing over US\$ 20 million to negotiate individual tax breaks. These “special concessions to individual companies ... have never formally been made public” (Tax Justice Network, 2012). Haiti’s Investment Code covers virtually any economic activity and provides no selection criteria to be applied by the inter-ministerial committee in charge of granting discretionary incentives, which include both a 15-year CIT holiday and accelerated depreciation (Investment law of Haiti, 1989).

There is reason for optimism too, as increased public awareness and civil society activism have urged governments to bring some previously secret deals into daylight. In 2012, the government of Sierra Leone established an online database for mining contracts, to make information on natural resource extraction contracts publicly accessible. Similarly, dozens of

²² The World Bank defines corruption as *the abuse of public office for private gain*; rent seeking reflects the use of companies’ resources to obtain *economic benefit without wealth creation*. Both can hamper development, see e.g. Abed and Gupta (2002).

previously secret extractive industry contracts were placed online by the government of Guinea (Africa Progress Panel, 2013).

Authority to grant

It is critical that ministries and agencies involved in the granting of tax incentives coordinate their activities. Several government agencies are often involved in the foreign investment process, such as the Investment Promotion Agency, the Ministry of Economy and Ministries responsible for specific sectors, such as Agriculture, Tourism or Mining. These different players often bring specific expertise, which can be useful in the design of tax incentives or required in the evaluation of eligibility criteria. But they usually also have different objectives. For instance, investment promotion agencies often support tax incentives in order to attract investors, having little direct concern for the revenue consequences. The Ministry of Finance, in contrast, will emphasize that revenue needs to be raised to provide public goods, including key pillars of a business-enabling environment such as infrastructure. Where various Ministries do not properly coordinate and responsibilities are not centralized, incentives may overlap, be inconsistent, or even work at cross-purposes. Effective coordination is a daunting but critically important task.

The ultimate and sole authority to enact tax incentives at the national level should be with the Minister of Finance. Countries that have been successful in attracting investment have generally adopted a holistic approach that places tax policy in the context of a broader national development strategy. It is common practice to have an interdepartmental adjudication committee with combined expertise that makes recommendations to the Minister of Finance about tax incentives. The latter should take the final decision to enact tax incentives and be responsible for their implementation through, or working closely with, the tax administration. Indeed, the Minister of Finance is best able to weigh different priorities while also keeping an eye on the cost of incentives. Where authority is outside the Ministry of Finance, special interests can easily dominate the general public interest.

As many as 10 organizations/agencies have the authority to grant tax incentives and exemptions in Ghana, including the Parliament, Ministry of Finance & Economic Planning, Revenue Agencies, Minerals Commission, Environmental Protection Agency, Food and Drugs Board, Ghana Free Zones Board, Ghana Investment Promotion Council, and Ghana National Petroleum Company (Amegashie, 2011).

The Solomon Islands recently implemented a comprehensive statutory regime, prescribing the process of granting tax exemptions for import duties, excise, Goods and Services Tax (GST), income tax, sales tax and stamp duties. If a request is received for a tax exemption, a formal "Exemption Committee" provides advice to the Minister for Treasury and Finance. The Committee consists of representatives of the revenue administration, the Ministry of Development and Planning and the Ministry of Commerce. The law also prescribes clear and public criteria for the award of tax incentives and demands publication of both the application and the decision regarding the incentive. (Revenue and Customs Exemption Committee Solomon Islands, 2013).

Administration

The revenue administration should be in charge of the implementation and enforcement of tax incentive schemes, as it has the unique authority, expertise and experience necessary for the execution of the tax law of which incentives should be part. Where tax incentives are simple and unambiguous, they might be self-assessed by the taxpayer and subject to ordinary control and auditing procedures. Many incentive provisions, however, require some form of approval by the tax administration. When verifying facts, information or certification may be needed from other specialized government agencies or ministries. For the tax administration, documentation and publication of the decisions is a prerequisite to ensure transparency. This enables it to be held accountable by government and taxpayers. It also enables government (preferably the Ministry of Finance) and other organizations to evaluate the costs and benefits of tax incentives.

C. Reform

IOs have frequently advised countries to remove, or radically adjust, their tax incentives, as they have often been found to be ineffective or inefficient, or governance structures were ill-performing. Yet, reform of tax incentive regimes has proven difficult. This is because tax incentives are usually not only driven only or even mainly by well-articulated economic concerns—aimed at improving the wellbeing of citizens—but also by political motivations. For instance, politicians may find it attractive to introduce new tax incentives to reveal their proactive stance in addressing weak economic performance, or to favor particular regions. The fiscal costs of granting those incentives, moreover, are usually not transparent and only arise as forgone revenue in the future. Tax incentives also create vested interests among businesses and within government, making them difficult to repeal, even if they are ineffective. Indeed, economic elites are sometimes able to influence the governance and design of tax incentives and shape public opinion where it suits their objectives. When successful, they become powerful lobbyists who can capture the political process to resist change (Moe, 2005). Yet, successful reforms have been achieved:

In 2013, Jamaica undertook a major tax reform, eliminating many of its generous and discretionary tax incentives. The Minister of Justice said: “The Jamaican economy has not been well served by the existing regime of sector based incentives. The consensus is that such incentives may have been partly responsible for Jamaica’s lackluster record of growth by encouraging the misallocation of limited economic resources in our country.” (James, 2013)

In 2009, India’s Ministry of Finance released a draft Direct Taxes Code and a discussion paper on the bill, which recommended that India should move away from profit-based tax incentives in favor of expenditure-based tax incentives. A final bill was sent to Parliament in 2010, and passed to a Standing Committee on Finance (SCF), which released its report in March 2012. The SCF report concurred with the Ministry of Finance that profit-based incentives facilitate artificial tax planning, and that this form of incentive should no longer be granted (while existing tax holidays previously granted for firms in special economic zones would continue to be respected) (Standing Committee on Finance 2011-12).

Egypt passed a new income tax law in mid-2005 that provided for the phasing out of tax holidays while grandfathering current beneficiaries. Between 2005 and 2006, FDI into Egypt doubled. (Keen and Mansour, 2010)

In 2006, Mauritius normalized the taxation of its export processing zone companies with that in other sectors and removed all provisions relating to tax credits and tax holidays (except for a four-year income tax holiday for small business). At the same time, the corporate tax rate was gradually reduced from 25 to 15 percent in 2008. (Keen and Mansour, 2010)

In his latest budget speech, the Finance Minister of India proposed to reduce the corporate tax rate from 30 to 25 percent over the next 4 years, accompanied by rationalization and removal of various tax incentives and exemptions, which, he argues, have led to pressure groups, litigation and loss of revenue. The Minister expects base broadening and rate reduction to lead to higher levels of investment and growth and more jobs (Government of India, Ministry of Finance, February 28, 2015).

When reforming tax incentives, governments should seek a balance between tax stability for incumbents and equal treatment of entrants to the market. Sunset provisions are often provided when incentives are scaled back due to policy reform. For instance, in the case of repeal of a tax holiday, the expectation can be that existing privileges will continue for incumbent firms. Investment laws sometimes even contain stability clauses for investors against adverse legislative changes, as a sign of government's commitment. Such stability provisions, however, create an uneven playing field between old and new investors and can lead to significant distortions. Such situations should not last for too long. Government might therefore need to renegotiate existing incentive provisions or provide reasonable, time-bound incentives to new investors.

INTERNATIONAL COORDINATION

Tax incentives are often instances of tax competition, with the risk that ultimately all countries will lose from their use.²³ By attracting investment that would otherwise have gone elsewhere, tax incentives can have adverse cross-border spillover effects on the welfare of other countries. To the extent that the allocation of investment is driven by tax rather than commercial considerations, the result is an inefficient global allocation of capital, and a consequent collective loss of output. Moreover, tax incentives in one country might evoke strategic reactions that lead them to offer similar policies (IMF, 2014). This process of tax competition can cause a race to the bottom, with all countries ultimately ending up with lower tax revenue and with no discernible impact on the allocation of investment. ,

²³ Tax competition might not be bad per se. For instance, some see tax competition as welcome in counteracting a political bias towards excessive public expenditure. Such arguments are less pervasive in LICs, however, which generally face an urgent need for higher domestic revenues to finance projects for development.

Examining data for 40 countries in Latin America, the Caribbean and Africa, it appears that the length of a country's tax holidays responds positively to that of its neighbors (Klemm and Van Parys, 2012).

A race to the bottom is evident among special regimes in Africa, where effective tax rates have fallen to almost zero in industries where special regimes are in place (Abbas and Klemm, 2013).

Grenada announced in 2012 that, in order to encourage the resort group Sandals to invest in his country, the government agreed to waive the company's payment of corporate taxes for 25 years, place a cap on Sandals' property taxes for 25 years and waive all import duties for 25 years. The minister announced that the benefits to the economy were an injection of US\$100 million and the creation of 425 jobs. This reflects the aggressive nature of tax competition in the hotel industry in the Caribbean (James, 2013).

Tax coordination offers opportunities to address spillovers—but also involves the risk of inducing other harmful responses. In principle, a coordinated response can prevent mutually harmful outcomes induced by uncoordinated tax design, for instance by agreeing to a ban on the use of certain tax incentives. Most forms of international coordination, however, are only of limited scope and scale. This raises two fundamental issues that require careful consideration when assessing the impact of tax coordination:

- **Coordination with respect to some tax incentives can intensify tax competition in other provisions.** Suppose for instance that countries agreed not to offer special treatment to mobile activities (which, as discussed above, they might wish to do) but could otherwise compete on the general rate of tax they apply. The outcome could then be worse for all than if differential treatment were allowed, since they will then compete more aggressively on the rules covering all industries, including those with immobile capital (see e.g. Keen, 2002). Against this, of course, must be weighed the disadvantages of differential treatment across sectors discussed above.
- **Coordination among a subset of countries can intensify tax competition with outsiders—with the latter the major beneficiaries.** Coordination is best achieved among the countries that most directly compete for mobile capital. If too limited in regional scope, the tax base of the participating countries can become more vulnerable to pressures from outside jurisdictions with lower taxes: they are in effect setting themselves up for increased competition from non-participants, who may consequently be the major beneficiaries. The scope of coordination agreements should thus be sufficiently broad in terms of country coverage,²⁴ the difficulty being that of overcoming the incentive to benefit by staying outside the agreement.

International tax coordination can take different forms. For instance, countries can agree on a non-binding code of conduct not to use certain tax incentives, such as tax holidays—as for instance has been done with the Code of Conduct for business taxation in the European Union. Something

²⁴ Or other relevant characteristics. Similar arguments apply, for instance, to cooperation between producers of some natural resource, whatever their geographical location.

more binding would be a common legislative framework, akin to the state-aid rules in the European Union. Yet, tax coordination has proven difficult in practice in many regional groupings. Negotiating and implementing an agreement is a substantial effort, and will require an effective supranational monitoring framework and powerful institutions to enforce it—something that is lacking in many regions. More realistic in these circumstances might be to start with a more modest form of cooperation. For instance, countries could agree on a common framework for reporting tax incentives and information exchange to encourage mutual learning. This could also enhance transparency and governance practices, and enable ex-post assessment of tax incentives.

The Southern African Development Community (SADC) aims to reduce and ultimately to eliminate tax competition that damages the region's revenue mobilization efforts. The SADC Protocol on Finance and Investment provides for co-operation and coordination on tax incentives in the region. The "Guidelines for the application and treatment of tax incentives in the SADC region" seeks endeavors by the Member States to avoid harmful tax competition or introducing tax legislation that prejudices another Member State's economic policies or activities (SADC, 2012).

The members of the East African Community (EAC) have recently made progress towards coordination of their tax incentive regime through the use of a 'Code of Conduct', though this is yet to be adopted. This aims to formalize an existing arrangement under which each year the EAC finance ministers meet before their budget speeches are made and discuss their budget proposals. This provides the opportunity for Finance Ministers to dissuade other members if they propose any new tax incentive that puts other countries at a disadvantage (Tax Justice Network, 2012).

In the West African Economic and Monetary Union (WEAMU), considerable efforts have been made to set-up a structure to tackle the problem of tax competition by issuing directives that limit the applicable tax rates that countries can use. The coordination framework has led to some convergence of countries' tax systems, and in turn to positive revenue effects in WAEMU member states. However, there are large gaps between de jure and de facto coordination, as WAEMU has failed to provide its regional institutions with the necessary resources to undertake effective surveillance, which has led to ineffective enforcement and undermined the credibility of coordination. In fact, the framework allows for unfettered tax competition as long as this is done outside the countries' main tax laws. This has made their tax systems opaque, increased complexity and contributed to a culture of tax negotiation (Mansour and Rota-Graziosi, 2013).

In Central America, coordination of tax incentives has some history. Between 1962 and 1984, four countries (Costa Rica, El Salvador, Guatemala and Nicaragua) were parties to a convention on tax incentives, which mandated uniform tax incentives and prohibited the introduction of new ones. In 2012, the Committee of Ministers of Finance of Central America, Panama, and the Dominican Republic (COSEFIN) discussed the adoption of a "Declaration of Good Practices" for investment tax incentives, which was preceded by a wide-ranging exercise to quantify the cost of existing tax incentives to make a stronger case for their removal. Discussions on a mandatory code of good practices remain ongoing (Cebotari et al., 2013).

International tax rules adopted by advanced and emerging economies may affect the intensity of tax competition among LICs. The benefits of tax incentives to investors are larger, for instance, if parent companies reside in countries with territorial taxation and/or weak CFC regimes, since (as discussed above), because the exemption of qualified foreign-earned income in the residence country preserves the benefit of tax advantages in the host country. Advanced and emerging countries with worldwide taxation, however, sometimes offer tax sparing clauses, as discussed in footnote 14. This too increases the potential effectiveness of tax incentives. This in itself, however, is likely to intensify tax competition among LICs to attract FDI. Ultimately, territoriality and tax sparing may therefore not make LICs collectively better off.

Tax incentives as part of bilateral or multi-party investment agreements vary widely in form and there is no standard template for them. There are often exceptions providing that tax matters are *not* covered by such agreements. This might refer to tax matters generally, those confined to double tax treaties (not extending to indirect taxes such as VAT), or those related to specific investment treaty obligations, such as the "most favored nation" provision. Where a tax incentive is provided, it is important to consider whether the relevant investment treaties might unintentionally be automatically accorded to other taxpayers, not originally intended to benefit from the tax incentive (such as under a most favored nation clause). Moreover, protections under the investment treaty (such as stabilization clauses) may make it hard to withdraw the tax incentive when it no longer serves the original purpose, or may require compensation not otherwise payable. Also important is which dispute settlement procedure would apply if tax issues fall under the investment treaty (usually there is a binding arbitration clause), and what should be done to prepare for such a possibility. These issues are best considered in collaboration with those responsible for negotiating the investment treaties.

CONCLUSIONS

This paper finds that many LICs have considerable scope to improve the effectiveness and efficiency of their investment tax incentives. The paper has set out options for improvement in design and governance, at both national and international levels. At the national level, there is generally scope to improve the design of tax incentives (for example by placing greater emphasis on cost-based incentives rather than profit-based ones; and by targeting tax incentives better), strengthen their governance (for instance through more transparency, better tax laws and a stronger role of the Minister of Finance) and by undertaking more systematic evaluations. At the international level, countries may gain by coordinating their tax incentive policies regionally, so as to mitigate the negative spillovers from tax competition.

Making progress requires concerted action from many stakeholders. National reform and international coordination of investment tax incentives have often proven difficult to achieve for a variety of reasons. Making better progress requires that political decisions about tax incentives be based on proper analysis of their effectiveness and efficiency, which requires transparency along with systematic information gathering and evaluation. Stakeholders need to accept their various responsibilities if progress is to be made:

- **Governments in LICs** bear the prime responsibility for the design and governance of tax incentives. It is critical that they can be held accountable by parliament, businesses, donors, relevant regional and international bodies, and the public at large. This requires transparency, as well as a properly functioning legal system. Also important is that governments be equipped with the necessary skills, tools and data to undertake evaluations, to enable informed decision making. Publishing an annual tax expenditure review as part of the budgetary process is an important step in this direction.
- **Society at large**, including civil society organizations (CSOs) and media, play a vital role in scrutinizing government decisions, detecting malfunctioning practices, and mobilizing voice. They can, for instance, draw attention to and publicize the revenue foregone from tax incentives that is reducing the resources available for development.
- **Corporations, including foreign-owned multinationals** that enjoy tax incentives bear corporate social responsibility, including towards (local) communities, governments, employees, consumers and other stakeholders. This means, for instance, that they should comply not only with the letter but also the spirit of the tax law. Going further, the business sector might develop and subscribe to a code of conduct under which incentive packages that fail to meet certain minimum transparency standards are not accepted or sought.
- **Supranational regional bodies** have delegated responsibility from national governments to enforce commitments agreed upon in the cooperation. Their powers will be as strong as the members want them to be. Supranational bodies can support transparency by developing common standards for reporting, data collection and evaluation of tax incentives.
- **Governments in donor countries**, including those in the G20, have a responsibility in: (i) the design of their own corporate tax policies, to avoid harmful spillovers onto LICs (for example, through treaty abuse; (ii) the provision of donor aid, which itself in many cases enjoys the benefits of tax incentives offered by LICs (a practice for which the rationale is increasingly unclear, and which is being revisited by several donors);²⁵ (iii) imposing conditionality regarding tax incentives when providing donor aid, such as meeting minimum transparency standards.
- **International organizations**, such as those co-authoring this document, need to build on their established experience to support their LIC members in building more efficient and effective tax system. This includes support in developing their capacity to employ tools to better analyze tax incentives (such as micro simulation models and effective tax rate models), and evaluations that help inform the debate (such as tax expenditure reviews, governance assessment and more comprehensive cost-benefit assessments)—as discussed in detail in the background document.

²⁵ See e.g. International Tax Dialogue (2006).

Realizing improvements in effectiveness and efficiency in the use of tax incentives is important for LICs to achieve better development outcomes. Higher investment can then be reconciled with more abundant domestic revenue mobilization, much-needed for public spending programs and established as a development priority in the Addis Ababa Action Agenda.²⁶

²⁶ Draft Resolution by the General Assembly endorsing the Addis Ababa Action Agenda A/69/L.82.

Appendix I. Consultations

This paper draws on the extensive technical assistance provided by the IMF and World Bank on tax incentive issues in developing LICs over many years, and their continuing dialogue with them on tax matters. In preparing this paper, the IOs also held several discussions during public consultation meetings with representatives from developing countries, civil society organizations, businesses and academics. Events were organized during March and April 2015 in Paris, Washington DC and New York. In response to an online invitation for comments on a draft version of the paper during July and August 2015, several submissions were received. A short review of key issues raised is listed below.

Developing country officials showed great interest in deepening their analysis of tax incentives with the tools described in the paper, including for the analysis of tax holidays and economic zones. Most officials noted that their countries have not carried out any in-depth analysis of the costs and benefits of tax incentives, yet are frequently confronted with pressures from businesses to grant them. For the fear of losing investments, generous tax incentives are then offered with ample tax receipts foregone. In some regions in Africa, countries are coordinating efforts to assess the revenue costs of tax incentives—sometimes showing very large numbers. However, methodologies are not harmonized, which hampers comparison between studies.

Civil society expressed the view that tax incentives are often ineffective and inefficient. They also emphasized the importance of ‘spillover effects’ of tax policies in one country on other countries and therefore the need for international cooperation. They argue that developing countries are particularly vulnerable to tax incentives, reducing the domestic resources for their own development. Organizations also noted the inherent difficulties of performing a proper cost-benefit assessment, yet urged the IOs to support such exercises in LICs so as to improve information in the decision-making process. Finally, the importance of transparency—from both governments and businesses—was emphasized. It was argued that G20 countries need to work together with LICs to develop a global coordinated approach, with developing countries having an equal say at the negotiation table.

Business argued that tax incentives can be effective instruments to stimulate investment, but only when used as part of a well-conceived and well-implemented strategy. Thus, tax incentives require clear pre-established objectives, should be based in the law and efficiently managed. They emphasized that it is essential for investment that the tax regime be predictable, efficient and stable. Business also argued that tax incentives cannot compensate for an otherwise poor tax structure or for an unfavorable investment climate, such as significant administrative barriers, limitations to competition, no independent legal system, or failing property rights protection. Finally, they find that countries should be able to set their own tax policies and allocate their own tax incentives, since there is no one-size-fits all. Regional coordination is not considered to be helpful.

Independent contributors offered important information and ideas. One contribution offered insight into tax incentives in ten ASEAN countries. It shows that, while 10 countries grant tax holidays, 6 of them also allow for their renewal upon expiration. Contributors also warned against

the outcomes from investor surveys, which may give a biased view regarding the actual behavior of investors. An important point raised was the lack of relevant data and the need for more systematic data gathering by tax administrations. This will require them to monitor firms, even if they have been granted tax exemptions. Also emphasized was the need to explore the effectiveness of tax incentives under the unique circumstances of every country. Others noted that tax incentives are not only prevalent in LICs, but are widespread in advanced countries. Several contributors emphasized the importance of tax expenditure budgeting for enhancing transparency.

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This is a background paper to a report prepared at the request of the G20 Development Working Group by the staffs of the International Monetary Fund, the Organisation for Economic Co-operation and Development, the United Nations and the World Bank. It has benefitted from consultation with other organisations working in the tax area, officials of developing countries, Civil Society Organisations, and business representatives. The report is prepared under the responsibility of the Secretariats and Staff of the four organisations. It reflects a broad consensus among these staff, but should not necessarily be regarded as the officially-endorsed views of those organisations or their member states. The report was presented as requested to the G20 DWG in September, 2015, and to the Executive Board of the IMF for information, in October, 2015.

October 15, 2015

OPTIONS FOR LOW INCOME COUNTRIES' EFFECTIVE AND EFFICIENT USE OF TAX INCENTIVES FOR INVESTMENT—TOOLS FOR THE ASSESSMENT OF TAX INCENTIVES

This background document describes five different tools that can be used for the assessment of tax incentives by governments in LICs.

The first tool (an application of cost-benefit analysis) provides an overarching framework for assessment. Evaluations of the various costs and benefits of tax incentives are vital for informed decision making, but are rarely undertaken, partly because it can be a difficult exercise that is demanding in terms of data needs. The simple template presented here aims to provide a practicable framework to guide evaluations, steer data gathering, and structure public discussions on the effectiveness and efficiency of tax incentives.

The next three tools (tax expenditure assessment, corporate micro simulation models, and effective tax rate models) can be used as part of a comprehensive cost-benefit analysis, to shed light on particular aspects. For instance, tax expenditure analysis is essential to understanding the costs of tax incentives in terms of revenue foregone. Corporate micro simulation models are the most accurate and generally preferred instrument to perform such a tax expenditure review. Yet, their value goes beyond this and they are commonly used for wider tax policy analysis, including forecasting and distributional analysis. Effective tax rate models shed light on the implications of tax parameters—including targeted tax incentives—on investment returns and help understand the implications of reform for expected investment outcomes.

Finally, the document presents two tools for assessing the transparency and governance of tax incentives in LICs. These discuss principles in transparency and governance of tax incentives, and allow for benchmarking existing LIC practices against better alternatives.

Note that the tools discussed in this background document might well be complemented by other, more sophisticated analyses. For instance, general equilibrium models, systematic analysis of micro or macro data, and ex-post evaluations may be critical for a full understanding of all costs and benefits of tax incentives. Such analyses might indeed be considered, but are typically beyond reach in the short run in most LICs due to capacity constraints and data limitations. Priority might therefore be given to developing the tools discussed in this document.

Note also that this document offers only a brief introduction to the various tools, without providing a complete handbook on each of them. Further references are provided for additional reading.

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COST BENEFIT ANALYSIS

This section develops a template for cost benefit analysis of tax incentives, aimed to structure discussion about their effectiveness and efficiency and to offer a guide to the collection of necessary data. The framework emphasizes both direct and indirect effects of tax incentives – the latter are often overlooked in policy debates. The model captures several relevant components of a comprehensive welfare assessment, but, it is hoped, in a fairly simple way. In particular, the following simplifications are made (which could be expanded upon in a more complex model).

- *Static approach*— the model here uses a static (long-term) approach that cannot analyze timing issues. As costs and benefits of tax incentives often materialize in the future, these timing aspects could be modeled in a dynamic setting, with appropriate discounting.
- *Limited fiscal framework*—the model includes only taxes on FDI, often the main focus of tax incentive policies. Yet, there might be complex (and country-specific) interactions with other taxes, with indirect revenue effects, as well as indirect effects on public expenditures.
- *Reduced form*—equations here capture some of the most relevant feedback effects as identified in the literature. A more elaborate structural framework of microeconomic behavior and market structure might be adopted to derive a fully-fledged general equilibrium model that links micro behaviors with macroeconomic outcomes.

A. A Simple Model

Assume that welfare (W) of citizens in a developing country depends on private consumption (C) and public consumption—simply represented by tax revenues (R) that finance public goods. For simplicity, we assume utility is additive:

$$W = C + V(R) \quad (1)$$

where $V(\cdot)$ captures the valuation of public goods relative to private goods, with $V' > 0$. Private consumption is constrained by income, which comes from two sources: domestic production (Y^D) and earnings of domestic residents working in a multinational corporation (MNC), where w^M is the wage rate and L^M employment in the MNC:

$$C = Y^D + w^M L^M \quad (2)$$

Domestic production is denoted by the function

$$Y^D = f(L^D, K^D, K^M), \quad (3)$$

which depends on domestic labor (L^D) and domestic capital (K^D). Moreover, FDI of the MNC enters the domestic production function in (3), reflected by K^M . The latter is not a direct input into

domestic production, but may affect it indirectly in two ways. First, there may be a technology or knowledge spillover from FDI upon the domestic sector. In case of such positive spillovers, we have $f_{K^M} > 0$ so that domestic output expands due to FDI. Second, FDI may displace domestic capital. In that case, we have $\partial K^D / \partial K^M < 0$ and FDI reduces domestic production (and domestic savers can then generate returns elsewhere, at a rate r).

Labor supply (L^S) is assumed fixed. In equilibrium, it equals the sum of labor demand by domestic firms, labor demand by MNCs, and unemployment:

$$L^S = L^M + L^D + u \quad (4)$$

An increase in L^M due to FDI inflows will reduce either unemployment or employment in the domestic sector (and thus domestic production). If the wage in the MNC sector is higher than in the domestic sector, all workers will have an incentive to move to the MNC sector. Jobs in that sector (L^M), however, are rationed. Even with full displacement of domestic labor, an increase in L^M can raise total income due to higher wages earned by employees in the MNC.

Multinationals are assumed to be wholly-owned by residents abroad (in advanced countries). The after-tax profits earned by the MNC in the developing country (Π^M) will thus flow back to the foreign owner, and equal:

$$\Pi^M = (1 - T)[F(K^M, L^M) - wL^M - (1 + t)rK^M] \quad (5)$$

where T and t denote taxes by the developing country on, respectively, economic profit and the normal capital return (r)—capturing two components of an ordinary corporate income tax. $F(\cdot)$ is a production function of the MNC, combining FDI with domestic labor, and is assumed to have standard properties. The components of multinational income that accrue to the host country are wages earned by host-country employees and tax revenue.

If FDI is a continuous variable and MNCs are unconstrained, the optimal amount of FDI is given by

$$F_{K^M} = (1 + t)r, \quad (6)$$

and is guided by the cost of capital, which depends on t , but is independent of T —see below for further discussion.

Welfare from public goods depends on total government revenue

$$R = T[F(K^M, L^M) - wL^M - (1 + t)rK^M] + trK^M, \quad (7)$$

which comes from taxes on economic profit and the normal return of the MNC.

B. Taxation and Foreign Investment

Business tax incentives aim to attract FDI. In the framework above, this effect is captured by:

$$\Delta K^M = \frac{\partial K^M}{\partial T} \Delta T + \frac{\partial K^M}{\partial t} \Delta t \quad (8)$$

where $\Delta T < 0$ represent *profit-related tax incentives* (such as reduced corporate tax rates, tax exemptions, or tax holidays) and $\Delta t < 0$ represent *cost-related tax incentives* (such as investment tax credits or accelerated depreciation, which are targeted to reductions in the cost of capital). In a neoclassical setting, equation (5) suggests that only Δt will affect FDI and $\partial K^M / \partial T = 0$. However, in a more general setting where e.g. FDI is lumpy and its choice reflects a discrete location decision, the tax on profit ΔT can matter as well ($\partial K^M / \partial T < 0$). We will consider both effects.

Empirical insight into the two components of equation (8) may come from different sources:

- Studies looking directly at the impact of tax incentives on FDI. Some studies perform regressions to measure this effect; others use survey evidence to infer this.
- Using a two-step approach, first using studies that look at the impact of tax incentives on effective tax rates (see later Section) and second using studies that explore the impact of effective tax rates on FDI. Here, one needs to distinguish between marginal effective tax rates (METRs), which measure effects on incremental investment (cf. the second term in (8)) and average effective tax rates (AETRs), which measure effects on discrete investment (cf. the first term in (8)).

Estimated structural models can be used for the second step: they quantify the systematic impacts of taxes on investment, based on investment theories that describe how tax incentives influence firm behavior. Structural models can be estimated using (micro) data to test their validity and to infer the average magnitude of tax effects on investment. Many empirical studies, however, take a reduced-form approach to infer this effect, using ETRs as explanatory variables. In countries where data restrictions make it impossible to derive appropriate estimates, officials may rely on the best-available knowledge from other—preferably similar—countries.

C. Welfare Assessment

Equation (1) suggests that social welfare is the sum of welfare derived from private consumption and public consumption, respectively, both of which can be affected by tax incentives. We discuss the changes in private and public welfare in turn, thereby distinguishing direct and indirect effects.

Private component of welfare

Combining (2) and (3), we derive the change in private consumption as a result of the inflow of FDI:

$$\Delta C = \left[(w^M + f_{L^D} \frac{dL^D}{dL^M}) \frac{dL^M}{dK^M} + (f_{K^D} - r) \frac{dK^D}{dK^M} + f_{K^M} \right] \Delta K^M \quad (9)$$

where r is the opportunity cost of domestic saving. The private welfare gain depends on four factors. The first term measures the direct effect; the other three terms measure indirect effects.

Direct effects

- *Jobs and wages* (first term). Some studies take the number of jobs created by an FDI project to measure the benefits of a tax incentive. Equation (9) suggests that the wage paid to these workers is important as well.

Indirect effects

- *Displacement of labor* (second term). The jobs created due to the FDI inflow may be occupied by people who were previously unemployed. However, to the extent that these workers previously worked in the domestic sector, domestic production declines by $f_{L^D}(dL^D/dL^M)$. Equation (9) shows that the net benefits to the developing country is still positive if the wage paid by the MNC is higher than the production loss in the domestic sector.
- *Displacement of capital* (third term). FDI may (partly) displace domestic capital, e.g. when the FDI involves a takeover or when there is round tripping. Empirical estimates and general equilibrium analysis can shed light on such displacement effects. If there is full displacement, the net effect on the total capital stock will be zero.
- *Productivity spillovers* (fourth term). FDI can bring new technologies and skills to a developing country, with positive effects on the productivity of workers and capital in the domestic sector. Empirical studies (such as those summarized in the main document) can reveal the importance of such spillovers.

Public component of welfare

Using (1) and (7), the change in public welfare can be written as

$$\Delta V = V'(R) \left[\frac{\Pi^M}{1-T} \Delta T + rK^M \Delta t + \frac{T}{1-T} \Delta \Pi^M + tr \Delta K^M \right] \quad (10)$$

where the change in profits ($\Delta \Pi^M$) can be inferred from (5). The change in public welfare depends on direct and indirect effects, and should be corrected for the social value of public funds:

- *Direct revenue loss* (first two terms between brackets). General tax relief is costly for governments as it reduces revenue from the existing base. Targeted tax incentives generally aim to mitigate such losses by only granting relief to new FDI. Some of these new FDI projects, however, might have been undertaken even without the incentive, which then leads to revenue foregone.
- *Indirect revenue effects* (last two terms between brackets). To the extent that tax incentives attract new FDI, they can expand tax bases. As long as the tax rate remains positive, this base broadening will recover some of the direct revenue loss from the incentive. However, tax incentives may also create new leakages (for example through domestic profit shifting to the incentivized firms), so that tax bases are eroded—so the sign of $\Delta\Pi^M$ is ambiguous.
- *Scarcity of public funds* (term V'). Public funds may be scarcer than private income, as taxes necessary to generate public revenue are distortionary. Alternatively—and perhaps especially relevant for developing countries—there can be administrative constraints to domestic revenue mobilization that make public revenue particularly scarce. With a marginal cost of public funds larger than one ($V' > 1$), a dollar of public revenue is more valuable than a dollar of private income, which should be accounted for in assessing the welfare implications of changes in government revenue.

Evaluation studies on tax incentives sometimes compare the jobs created by (incremental) investment with the revenue foregone from (non-incremental) investment—the so-called dollar-cost-per-job calculations. This essentially takes account of only the direct effects listed above. Indirect effects, however, can be critical, yet are often more difficult to quantify. Indirect effects can be inferred from general equilibrium models, which capture linkages and feedback effects through other markets. This could account for displacement effects, spillover benefits and distortions in resource allocation due to discriminatory treatment. Quantifying these aspects generally requires calibration of critical parameters, based on available econometric analysis—which is not always readily available in LICs. General equilibrium models would also enable one to infer the macroeconomic and overall welfare implications of tax incentives. If one is unable to quantify these indirect effects, it might still be helpful to analyze the direct effects as a starting point.

TAX EXPENDITURE ASSESSMENT

This section discusses how to undertake a tax expenditure assessment, discussed and advocated in the main body of the paper. Tax expenditures (TEs) usually refer to provisions in the tax code (or in Ministerial decrees with the force of law) in deviation of some benchmark tax system and to the benefit of the taxpayer. A TE review quantifies the revenue forgone for each provision thus identified. The core objective of a TE review is to improve transparency and support policy evaluation, thus contributing to better informed decision making and better governance. Indeed, TEs and their revenue costs are inherently less visible than direct public expenditures, with the consequence that they often undergo less scrutiny and evaluation. This makes them prone to lobbying and pressures from special interest groups, leading to inefficient policy design and

corruption risks. By supporting transparency and evaluation, TE reporting enables greater control over the use of public funds. TE assessments should be carried out by the Ministry of Finance and reported as part of the budget process, for example being appended to budget documents or released as a separate document.

TEs are not necessarily bad policy. Indeed, offering provisions through the tax code may sometimes have distinct advantages over direct spending measures, for instance because the tax administration can exploit economies of scale by utilizing information it already collects for tax purposes. The purpose of a TE assessment is thus not necessarily to reduce TEs, but rather to enable a proper assessment and allow for a comparison with alternative (spending) measures to achieve certain policy objectives.

A. Measuring Tax Expenditures

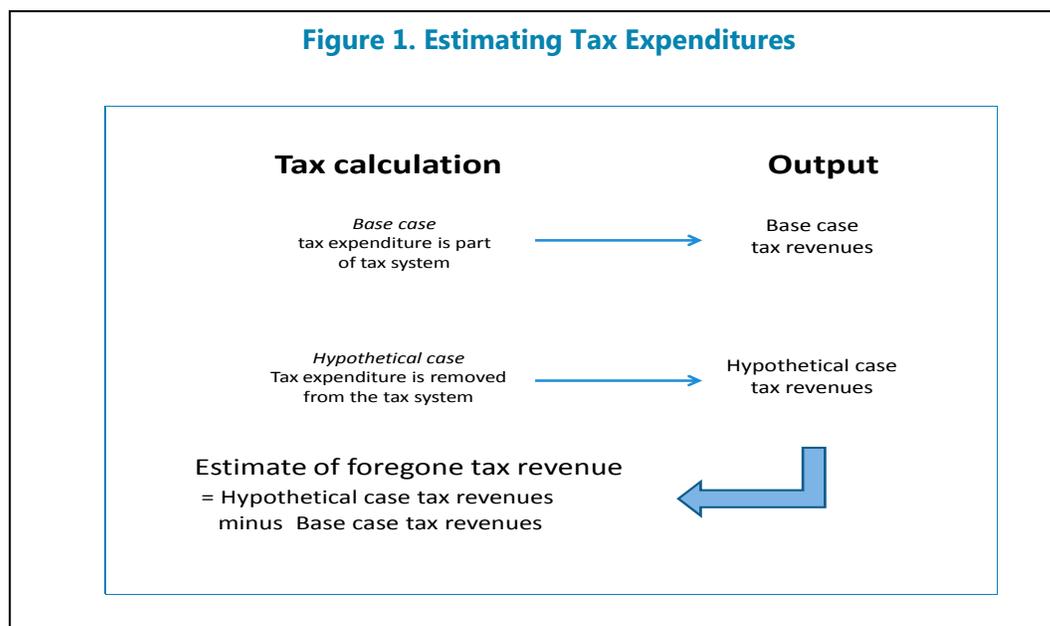
A TE report generally includes the following elements:

- **A list of tax expenditures**, with a clear description (e.g., full/partial profit exemption, tax allowance, tax credit), duration, and identification of the law/decrees that provides for its legal basis. Each TE should come along with a stated policy objective. In some countries, there are hundreds of TEs, often scattered throughout the chapters/articles of an Act and across different Acts.
- For each tax expenditure in the list, **an estimate of total tax revenue foregone**. The report should provide an indication of the model and data used in the quantification (e.g. micro-simulation model, data from tax returns).
- **Supplementary material**, such as an analysis of the distributional impact of the tax relief across taxpayers (e.g. corporations, by size, or sector). Moreover, tax expenditures can be presented alongside direct expenditures classified by type/ category of expenditure to indicate total expenditures (direct plus tax expenditure).

When quantifying the revenue forgone from tax expenditures (as in step 2 above), analysts need to make two calculations. The first is a simulation of tax revenues under the scenario that the given TE is in place, along the lines of the actual tax code (or Decrees) of which it is part. This revenue is called the 'base case'. The second is a simulation of tax revenues under a scenario where the TE is removed from the code, along the lines of a specified 'benchmark' tax system. This revenue is called the 'hypothetical case'. The difference measures the revenue foregone from the tax expenditure (see Figure 1).

The specification of the relevant benchmark tax system to which tax incentives are to be compared is often a contentious issue. For some taxes (such as personal income taxes), there is no internationally agreed benchmark. Indeed, diverse benchmark systems are observed in TE analyses, with countries typically adhering closely to their existing tax system. As these often differ from each other, international comparisons of TEs are usually problematic (see for example OECD, 1996). For

other taxes (such as VAT and CIT), the benchmark system is usually defined more uniformly across countries. Still, several choices need to be made with respect to details.



When a benchmark tax system is specified, tax expenditures can be estimated by using alternative methods:¹

- *The revenue foregone method.* This is a calculation of the static revenue loss incurred by government due to a TE. It does not take into consideration changes in behavior of taxpayers due to the removal of the TE. For example, a tax credit that reduces tax liability by \$100, given current behavior, would involve a TE of \$100. This is the easiest and most popular method of calculating TEs as it uses simple accounting principles, usually based on tax returns (or documents provided to customs). This method is likely to be the most attractive for LICs to pursue.
- *The revenue gain method.* This method calculates the revenue gain from removing a TE, taking into account behavioral changes by taxpayers. For example, if an investment tax credit is removed, this might result in lower investment and, therefore, a narrowing of the CIT base. The computation of the TE would take this behavioral effect into account. In the example above, if removing the tax credit would cause a loss in revenue of \$10 due to a reduction in investment, the TE associated with the tax credit would be \$90 instead of \$100. This method better accounts for the purpose of certain incentives, but can be more contentious given the inevitable

¹ A third method, not discussed here, is the so-called outlay equivalent method, under which a TE is calculated as the direct spending equivalent that would result in the same benefit for the taxpayer as the TE. It may differ from the revenue foregone method if direct spending is itself taxable. For example, the equivalent to a \$100 tax deduction if the tax rate were 50 percent would be a taxable transfer of \$200. The outlay equivalent method is less popular than the revenue foregone method because the outcome is often viewed as less intuitive.

uncertainty on the extent of behavioral responses. It is also much more complex and therefore unlikely to be attractive for LICs.

In calculating TEs, a model is needed to simulate tax revenue under the two different policy scenarios—that is, with and without the tax incentive. Different models based on different data can be used for this purpose. For personal income tax and corporate income tax, good practice in this regard is to use micro simulation models (MSMs) for, respectively, households and firms. They are usually based on administrative tax return data, sometimes complemented with survey data on certain characteristics. The next section elaborates in more detail on corporate MSMs.

A possible estimation error can arise when different tax expenditures are calculated separately and then added up. For example, when a tax rate for certain businesses is reduced while, at the same time, tax depreciation for certain assets is made more generous, the total revenue foregone measured by adding up two tax expenditure estimates (under ceteris paribus assumptions) erroneously ignores the interaction between those two measures. Such cross-effects can lead to an underestimation of the revenue effect (Box 1).

Box 1. Estimation Error in Adding-up Tax Expenditures

Consider a CIT system with a reduced tax rate and reduced tax base for targeted (qualifying) investment. Let (T) denote the basic CIT rate, and (t) denote the reduced CIT rate (with $t < T$). Let (B) denote the CIT base measured without tax incentives, and (b) denote the base with incentives (e.g. accelerated depreciation).

In principle, the ‘true’ total tax expenditure from the two incentives would be measured as the difference between CIT revenues where the basic CIT rate and CIT base without incentives apply, and CIT revenues where the reduced CIT rate and base apply:

$$TE^* = T \cdot B - t \cdot b \quad (1a)$$

This measure may be expressed alternatively as follows:

$$TE^* = (B - b)T + (T - t)b = (B - b)t + (T - t)B \quad (1b)$$

If tax expenditures are calculated separately for each incentive and then added up, the total tax expenditure estimate is measured as:

$$\hat{TE} = (B - b)t + (T - t)b \quad (2)$$

Comparing (1b) and (2), we see that the sum of two tax expenditures understates the true CIT revenue loss:

$$\hat{TE} = TE^* - (T - t)(B - b) \quad (3)$$

Also important to note is that TE estimates obtained from the revenue-foregone method using aggregate data (e.g. National Accounts or input-output tables) may not reflect the expected true revenue effect of the removal of tax concessions. Indeed, the revenue calculations not only ignore behavioral effects, but might also ignore tax non-compliance. In reality, however, there can be a significant tax compliance gap: a gap, that is, between the expected revenue from a tax under full compliance and the true revenue. In principle, one could infer the expected true revenue effect from the removal of tax concessions by applying an estimated compliance gap to both scenarios (on the assumption that the incentive itself does not affect the extent of non-compliance). When relying on taxpayer-level data from tax returns or macroeconomic data, effects of less than full compliance are reflected in the base case and hypothetical case estimates.

B. Country Examples

A growing number of countries now prepare TE reports on a regular basis, including several developing countries. In some cases, TE reporting is supported by regional coordination initiatives. For example, the Inter American Center of Tax Administrations (CIAT) has been active for a number of years in organizing workshops and events to encourage Latin American countries to report their TEs. The countries thus share modeling and data gathering experiences and use similar methods in performing their TE estimates (CIAT, 2011). Table 1 shows TEs in selected countries in this region, both by type of tax and by type of tax expenditure.

Table 1. Tax Expenditures in Select Countries in Latin America, 2012

	Tax expenditure, by tax					Tax expenditure, by type		
	VAT	CIT	PIT	Total		Exemptions, reduced rates regimes	Deductions and credits	Deferrals, reimbursements , other
				CIT and PIT	Others			
	<i>(percentage of GDP)</i>					<i>(percentage of total revenue foregone)</i>		
Argentina	1.19	0.08	0.52	0.61	0.8	64.8	0.2	35.0
Brazil 1/	1.12	0.86	0.73	1.59	0.6	81.5	18.5	0.0
Chile (2008)	0.88	0.86	2.73	3.58	-	13.7	18.3	68.0
Colombia (2010)	1.68	1.24	0.32	1.56	-	23.2	25.0	51.8
Costa Rica	3.54	0.8	1.02	1.82	0.26	98.4	1.3	0.3
Ecuador	2.09	2.31	0.46	2.77	-	77.8	14.4	7.8
El Salvador (2010)	1.97	na	na	1.42	-	87.9	12.1	0.0
Guatemala (2008)	1.96	na	na	5.90	0.54	40.7	59.3	0.0
Honduras	3.63	1.08	0.27	1.35	1.48	80.7	-	19.3
Mexico 2/	1.51	0.92	0.83	1.75	0.56	41.0	23.7	35.2
Panama	2.27	-	-	-	-	100.0	-	-
Paraguay (2010)	1.48	0.23	0.2	0.43		99.2	0.8	0.0
Peru	1.3	0.21	0.15	0.37	0.24	79.8	3.4	16.8
Dominican Republ	3.23	0.42	0.1	0.52	1.37	70.9	2.3	26.8
Uruguay	2.95	1.66	0.63	2.29	1.16	83.8	15.6	0.6

Source: *Tax Expenditures in Latin America 2008-2012*, CIAT Working Paper No. 2-2014.

na=not reported; - (dash) = not measured

Footnotes: 1/ = Federal tax expenditures only. 2/ = Excludes tax expenditure for IEPS oil.

An example of a country that has recently released its first TE report is the Philippines. The Ministry of Finance provided its analysis in 2011 to help guide policy regarding tax incentives. In the CIT, the Philippines employ income tax holidays, special (reduced) tax rates on business income, additional deductions for labor costs, tax credits for certain raw materials used in exported products, and VAT and duty exemptions for imported capital equipment. Data availability currently limits TE reporting to tax revenues foregone from income tax holidays and reduced tax rates. Table 2 shows detailed TE reporting by type of business activity. For 2011, the total TEs from the two categories add up to an estimated foregone tax revenue of 4.5 per cent of 2011 government revenues (ignoring cross-effects).² This has induced the government in the Philippines to push for the enactment of a Tax Incentives Management and Transparency Act. Its aim is to provide resources to establish a TE measurement and analysis unit and a Fiscal Incentives Rationalization reform bill to coordinate the use of tax incentives.

² The Department of Finance explains (Tax Expenditure Account of the Philippines, Fiscal Year 2011) that its 2011 tax expenditure estimates cover 1,318 firms (submitting electronic returns), reflecting roughly 29 per cent of all registered investors.

Table 2. Tax Expenditure by Type of Activity, Philippines, 2011

Activity	Number Of Firms	Special Rate	Income Tax Holiday	Total Tax Expenditures
Manufacturing	125	4,691,319,535	8,809,582,762	13,500,902,297
Manufacture of Semi-Conductor Devices	39	2,112,493,372	10,774,248,015	12,886,741,386
Business Processing Outsourcing	23	3,105,925,504	3,785,154,373	6,891,079,877
Generation, Collection and Distribution Of Electricity	14	974,437,378	5,882,612,972	6,857,050,350
Metallic Mining	12	131,277,092	2,092,900,292	2,224,177,384
Non-Metallic Mining (Coal Mining)	1	-	2,020,790,902	2,020,790,902
Hotels	6	-	1,890,902,880	1,890,902,880
Collection, Purification, Distribution of Water	4	52,563,291	1,590,511,854	1,643,075,145
Database and Other Computer Related Activities	7	147,349,668	954,173,706	1,101,523,374
Air Transport	2	-	892,071,822	892,071,822
Buying, Selling, Renting, Leasing, Operation of Dwellings	16	44,960,495	746,257,626	791,218,121
Real Estate Buying, Developing, Subdividing, Selling	22	86,779,506	589,403,119	676,182,625
Building Components Installation Contractors	12	319,699,378	339,764,577	659,463,955
Telecommunications	8	49,535,755	481,200,071	530,735,826
Wholesale and Retail Trade	10	124,800,720	137,638,146	262,438,865
Other Business Activities	5	78,725,442	180,726,700	259,452,142
Radio and Television Activities	1	-	153,210,804	153,210,804
Design, Detailing, Fabrication and Pre-Assembly Works of Heavy Steel	1	9,225,591	136,076,888	145,302,479
Recreational and Sporting Activities	2	117,211,910	-	117,211,910
General Public Service Activities	1	115,270,249	-	115,270,249
Generation of Industrial Gases	1	32,125,369	25,325,698	57,451,067
Private Medical, Dental and Other Health Activities	1	-	19,234,414	19,234,414
Electrical and Mechanical Work At Site	1	-	14,802,518	14,802,518
Inland Water Transport	1	-	6,835,217	6,835,217
Electroplating or Painting of Electronic Parts, Building Decorations, Fashion Accessories, Jewelleries, Interior Decorations and Light Engineering Fixtures with Zinc, Gold, Nickel, Aluminum, Zinc	1	4,563,403	-	4,563,403
Non-Life Insurance	1	1,831,126	-	1,831,126
Restaurants, Cafes and Fastfood Center	1	1,162,326	-	1,162,326
Cargo Handling	1	-	-	-
Developer	1	-	-	-
Financial Holding Company Activities	2	-	-	-
Life Insurance	1	-	-	-
Ocean Fishing, Commercial	1	-	-	-
Other Real Estate Activities with Owned or Leased Property	1	-	-	-
Other Supporting Land Transport Activities	2	-	-	-
Sea and Coastal Water Transport	2	-	-	-
Total large corporations	329	12,201,257,110	41,523,425,354	53,724,682,463
Total non-large corporations		3,543,299,134	4,062,877,896	7,606,177,031

1. Figures report income tax expenditures.

Source: Tax Expenditure Account of the Philippines, Fiscal Year 2011, Department of Finance, Philippines

<http://www.dof.gov.ph/?p=9417>

C. Corporate Income Tax Incentives

The benchmark of the corporate income tax (CIT) may be defined in different ways. One approach is to specify a normative benchmark, reflecting a system that is generally perceived to be desirable. However, even specialists usually differ as to the optimal design of the CIT. Given the many contentious issues regarding a normative benchmark, in practice most countries take their existing system applying to ‘most companies’ as the benchmark CIT system. This means that profit under the benchmark is taxed at the standard CIT rate. The benchmark corporate tax base thus typically includes allowances for depreciation and interest, but no deduction for the cost of equity and no other special provisions for particular sectors or firms.

The (annual) corporate TE on providing a tax holiday may be calculated *ex post* as the aggregate amount of CIT revenue foregone by not taxing, at the basic CIT rate, the amount of corporate profit sheltered by the tax holiday. To obtain such information, qualifying firms need to file a corporate tax return and report exempt amounts of profits. TE estimates of CIT foregone each year over a holiday period may suffice to bring about transparency and information for evaluation. A more comprehensive analysis would also analyze the profile of hypothetical CIT payments over time, taking into account transitional rules governing ‘pools’ (balances) of tax depreciation and business losses, and ‘stability clauses’.

Accelerated depreciation might be another form of TE, but one that raises both conceptual and measurement issues.³ To circumvent them, standard practice in TE estimation is to take the generally applied existing depreciation rules used in the CIT system as the benchmark. Accelerated depreciation is then taken to be the application of rates (and possibly methods) that provide for faster write-offs for certain asset classes targeted at certain sectors or taxpayers. The corporate TE from providing accelerated depreciation may then be calculated as the aggregate amount of CIT revenue foregone in a given year by accelerated as opposed to regular (or normal) depreciation. Reporting may also include estimates of the difference in the present value of tax depreciation claims under the two scenarios (requiring more complex analytics).

CORPORATE MICRO SIMULATION MODELS

This section elaborates on the development and use of a micro-simulation model (MSM) of corporate income taxes (CIT). The models (essentially corporate tax calculators) can be developed in a straightforward manner and used in common spreadsheets, such as Excel. For many countries, the main hurdle has been allocating scarce resources to building datasets (based on tax returns) as an input to the models. Where resources are limited, steps can be taken (as analyzed below) to limit the resource requirement (e.g. by focusing on large taxpayers). Experience shows that the payoff can be great.

³ Conceptual issues relate to the appropriate benchmark regarding depreciation, such as economic depreciation or current tax rules. Measurement difficulties arise if economic depreciation is chosen as a benchmark in light of considerable uncertainty.

A CIT MSM is essentially a firm-level CIT calculator, with flexibility in the adjustment of tax policy parameters and economic variables. An important feature is that it can analyze the revenue and distributional impacts of detailed tax policy changes, such as preferential CIT rates, alternative tax depreciation rates and methods (with separate calculations for different categories of depreciable assets), tax allowances and credits and other specific tax incentives.

A CIT-MSM may be used by Ministries of Finance for policy simulations, and for revenue forecasting purposes. CIT-MSMs contribute to transparency and can improve the quality of information that is needed for policy preparation. Especially relevant for the underlying paper, is that a CIT MSM is the preferred instrument to estimate the revenue foregone from corporate TEs. Indeed, models relying on aggregate data, such as from the National Accounts data, yield less reliable revenue estimates and can usually not be used to explore detailed tax policy changes. Moreover, unlike tools based on aggregate data, CIT MSMs can yield insight in how CIT reform affects the distribution of tax liabilities across firms (by, for example, industry, firm size and location). This may be helpful in addressing political-economy concerns associated with CIT reform, such as with the removal or scaling back of tax incentives.

When deciding to develop an in-house CIT MSM, one should of course consider the benefits as well as costs of developing and maintaining such as model, most notably staff costs. Moreover, one has to identify constraints regarding the availability (and confidentiality) of data or possibly political resistance to the use of such data. Problems may arise also when modeling a proposed but currently non-existing tax instrument, such as a tax credit for regional development, for which one requires information on existing levels of investment in targeted region(s) which may not be available. In such cases, other sources of information (such as survey data) would need to be found and incorporated into the dataset to be able to analyze the tax measure. Before developing a CIT MSM, moreover, it is important to identify the most relevant applications, guided by the demand for tax policy analysis in the Ministry of Finance and Revenue Administration.

A. Developing a Model

A CIT MSM uses a structured programming language or software (such as Excel) to calculate CIT payments at the firm level. The models requires (exogenous) input information and produces (endogenous) output.

- The *input data* to a MSM calculation include receipts, expenses and balance sheet items from individual corporate tax returns. These values are exogenous to the model and are held fixed when calculating CIT under alternative tax policies. The other important category of exogenous input variables are tax policy parameters, such as statutory CIT tax rates (basic CIT rate and possibly other rates), tax depreciation rates (of which there may be many), and investment tax credits. The base-case values are obtained from the current tax law. These parameters can be varied when simulating the revenue implications of tax reform or when calculating the magnitude of TEs (hypothetical cases).

- The *output* of the CIT MSM is a number of endogenous variables, which are ‘modeled’ and calculated by the MSM. Examples include claims for depreciation allowances, which change when the tax depreciation rate changes, investment tax credit claims, which change with investment tax credit rates change, taxable income, and final CIT liability. The output variables, based on sample data, can be weighted and aggregated to give economy-wide estimates of CIT revenue under current law. They can also be calculated under alternative hypothetical laws, for example in the estimation of corporate TEs. Estimates can also be presented for various aggregates (by industry, firm-size, or other dimensions).

Some tax allowances can be endogenous in the model, for instance, if they depend on firm-specific characteristics or outcomes. For example, some CIT systems provide a deduction as a non-linear function of income based on some qualifying indicator (e.g. small firms under a certain turnover, income, or asset level). Rather than treating the deduction in the model as fixed, it needs to be modeled as a function $D=\theta(q)$, where q measures income based on a qualifying indicator as reported in the tax return and θ is a function of q that determines the deductible amount. The policy function θ can be changed in the MSM, reflecting tax policy. The model yields an estimate of the deduction, D , and CIT revenue.

Some variables have a dynamic character and need to be traced over time. For example, depreciable capital costs are written off gradually over time. CIT systems typically require that accounts be kept of balances (stocks) of undepreciated capital to determine tax depreciation claims that can be made in the current year and those that are carried forward to future years. This is illustrated in Figure 2—beginning of year balances (‘pools’) are increased by Additions (current investment) and reduced by Deductions (current year claims). Similarly, balances (pools) are used to track unused business losses and investment tax credits.

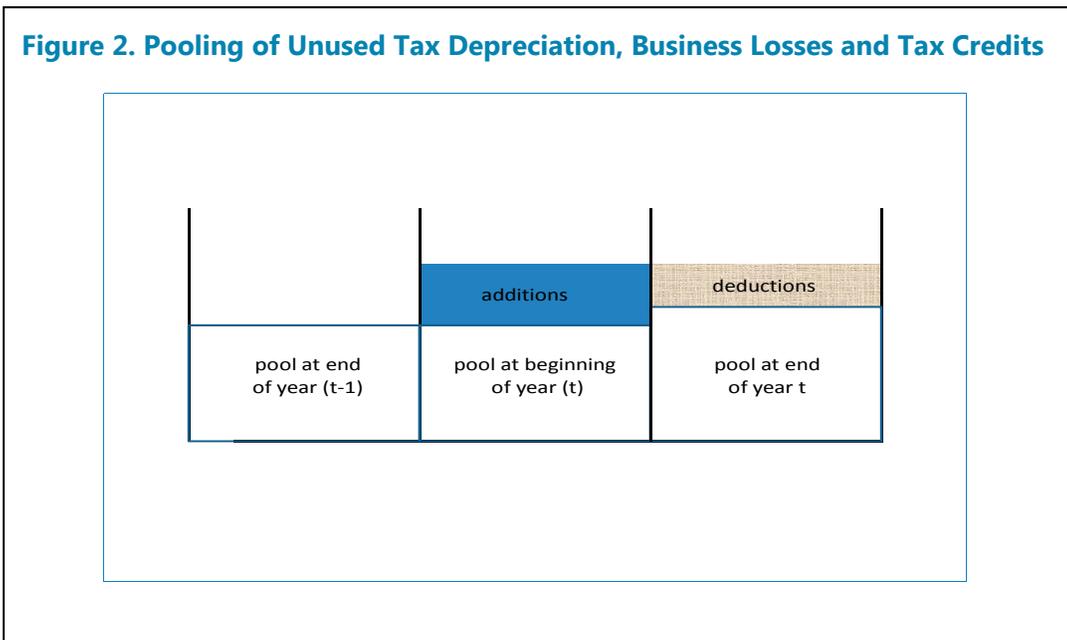


Table 3. Illustration of Creation of Excel-based CIT MSM

1		D	E	F	
2		Tax return	Base Case	Hypothetical	Code used to create
3		data		Case	Base Case (column E)
3	Tax Parameters				
4	Corporate income tax rate		40.0%	40.0%	
5	Tax depreciation allowance rate		30.0%	30.0%	
6	Investment tax credit (ITC) rate		5.0%	0.0%	
7	Income Statement (millions \$)				
8	Total revenues	1,600.0	1,600.0	1,600.0	+\$D8
9	Cost of sales, interest expense	1,000.0	1,000.0	1,000.0	+\$D9
10	Book depreciation	100.0	100.0	100.0	+\$D10
11	Total expenses	1,100.0	1,100.0	1,100.0	+\$D11
12	Net income before tax	500.0	500.0	500.0	+\$D12
13	Income tax - book purposes	93.0	93.0	93.0	+\$D13
14	Net income financial after tax	407.0	407.0	407.0	+\$D14
15	Income Tax Payable (millions \$)				
16	Reconciliation Statement				
17	Net income financial after tax	407.0	407.0	407.0	+\$D17
18	+ Book depreciation	100.0	100.0	100.0	+\$D18
19	+ Income tax - book purposes	93.0	93.0	93.0	+\$D19
20	- Tax depreciation allowance claim	117.9	117.9	117.9	=MIN(E5*E32,E17+E18+E19)
21	Net income for tax purposes	482.1	482.1	482.1	+E17+E18+E19-E20
22	- Prior year losses claimed	200.0	200.0	200.0	=MIN(E36,E21)
23	Taxable income	282.1	282.1	282.1	=E21-E22
24	Income Tax Payable				
25	Income tax	112.8	112.8	112.8	=E4*E23
26	Investment tax credit claimed	27.2	27.2	20.0	=MIN(E46,E25)
27	Income tax payable	85.7	85.7	92.8	=E25-E26
28	Tax depreciation, loss carryforward, ITC				
29	Tax depreciation				
30	Opening balance UCC	250.0	250.0	250.0	=\$D30
31	Investment - current year	143.0	143.0	143.0	=\$D31
32	UCC available	393.0	393.0	393.0	=\$D32
33	tax depreciation claim	117.9	117.9	117.9	=E20
34	Closing balance UCC	275.1	275.1	275.1	=E32-E33
35	Business Loss carryforward				
36	Opening balance (unused losses)	200.0	200.0	200.0	=\$D36
37	Prior-year loss claim	200.0	200.0	200.0	=E22
38	Closing balance (unused losses)	0.0	0.0	0.0	=E36-E37
39	Investment Tax Credit (ITC)				
40	Opening balance unused ITC	20.0	20.0	20.0	=\$D40
41	Investment - current year	143.0	143.0	143.0	=\$D41
42	ITC earned - current year	7.2	7.2	0.0	=E6*E41
43	Unused ITC available for carryback	27.2	27.2	20.0	=E40+E42
44	ITC carryback	0.0	0.0	0.0	=\$D44
45	Unused ITC available for current year	27.2	27.2	20.0	=E43-E44
46	Investment tax credit claim - current year	27.2	27.2	20.0	=E26
47	Closing balance unused ITC	0.0	0.0	0.0	=E45-E46

Table 3 gives an illustrative example of how a CIT MSM works, showing tax parameters in rows 4-6, exogenous tax return data in column D and a mix of exogenous data (copied from column D) and endogenous 'base case' variables calculated by the spreadsheet model in column E. In the example, columns D and E are equivalent since they both reflect the actual tax system. Column F shows 'hypothetical case' values, where the investment tax credit rate is set to zero (elimination of the credit). Current year investment expenditure (143 currency units) no longer generates credits, but credits (20 units) carried over from prior years reduce CIT. The example reflects the importance of taking into account opening balances of undepreciated capital costs (UCC), business losses and tax credits.

An important step in the development of a CIT MSM is the validation of the model. In particular, a comparison should be made between the estimated base case aggregate CIT revenue as simulated by the MSM and the actual aggregate CIT revenue reported in the government accounts. At this point, a process begins to check for errors and to adjust the sample size until differences between estimated and actual aggregate CIT revenue are small enough by some metric.

B. Data Issues

A critical step in the development of a CIT MSM is the creation of a dataset, based on corporate-level tax returns, which serves as input to the model.⁴ Ideally, one would copy data from tax returns for the entire population of corporations. This might be feasible in countries with complete electronic filing of tax returns. If this is impossible or deemed too resource intensive (for example because it is necessary to manually transcribe data and take information from paper corporate tax returns into an electronic database), an alternative is to construct a representative sample. The results based on the sample can then be weighted to replicate economy-wide results for the entire population of corporations. Where a sample is used, CIT data transcription generally involves the creation of two files: a 'population file' and a 'sample file':

- The population file includes limited data entries for all corporations. It is used as a basis for establishing the sample file and to cross-check estimated aggregate CIT revenues from the MSM. The population file may be adjusted compared to the raw data, e.g. by the removal of inactive corporations, corporations with limited activity (e.g. less than two months in the fiscal year), and very small corporations identified using an asset and income threshold test.
- The sample file is drawn from the population file by first identifying firm-level characteristics ('dimensions') to create sub-groups (strata) of firms with common characteristics. For example, the population file may be stratified (grouped) using the following dimensions: 25 industry sectors; 4 asset sizes; 10 locations; 2 ownership types (resident, non-resident); 2 types of tax status (taxable, tax-exempt). These dimensions would create 4000 (25x4x10x2x2) sub-groups. Each sub-group is relatively homogeneous. Independent sampling of each sub-group provides a better representation of the population than random sampling from non-stratified population

⁴ Corporate tax return data are also frequently used by tax administrations to calculate various ratios, which are inputs to their risk-based auditing practices. The same data can thus be used also to build a MSM.

data. The stratified population file is used to create the sample file, which has the same number of sub-groups as the stratified population file. Given the significant contribution of large corporations to total CIT, it is important to include all large corporations in the sample file. For each remaining sub-group in the population file, a random sample of firms is drawn and assigned to the corresponding sub-group in the sample file.

Table 4 provides a simplified example of the creation of a sample file from a population file. In the example, firms are stratified into two dimensions: industry (A, B, C) and size (Large, Medium, Small). This gives a total of 9 sub-groups. The total population consists of 40,100 corporations, 100 of which are large. All large corporations are automatically assigned to the sample, given their importance in determining total CIT revenues. From the remaining 40,000 tax returns, a random selection is made, with a target of including 5 per cent of the returns in the sample. In the example, this results in 2000 corporations being included in the sample (in addition to the 100 large corporations automatically included).

Table 4. Simplified Example of a Sample File Created from a Population File

	Population			Sample			Weights		
	P= 40,100			S= 2,100					
Industry	L	M	S	L	M	S	L	M	S
A	50	5,550	10,400	50	278	520	1.00	20.40	19.89
B	40	1,060	19,900	40	53	995	1.00	19.63	19.98
C	10	390	2,700	10	20	135	1.00	18.57	20.45
Total	100	7,000	33,000	100	350	1,650			

The last three columns of Table 4 show weights to be applied to MSM firm-level results for firms in each of the sub-groups in the sample when constructing estimates for the full population. Large firms all have a weight of one, as they are all included in the sample. For each of the other (6) sub-groups, the weight is determined by dividing the total number of firms in that sub-group in the population by the total number of firms in that sub-group in the sample. Weighting firm-level results from any exercise with the MSM will yield aggregate (economy-wide) estimates.

The representativeness of the sample needs to be validated through the comparison of simulated aggregate outcomes with actual aggregate data. For instance, Table 5 compares actual data on total assets, total taxable income, and total CIT revenue with the simulated MSM calculation for these variables, using a weighted sample. The ratio between the two in the last column is between 99 and 102 percent, which suggests a reasonable approximation by the MSM of the true aggregated data. If the differences are large, the sample size must be increased (e.g. revising upward the target percentage (5 per cent in the example above)), and possibly new dimensions added, to improve the accuracy of the sample.

Table 5. Diagnostic of the representativeness of the sample

Population			Weighted Sample			Weighted Sample/ Population		
assets	taxable income	CIT liability	assets	taxable income	CIT liability	assets	taxable income	CIT liability
190,000,000	7,000,000	2,000,000	193,800,000	6,930,000	1,980,000	102%	99%	99%

Differences in values between the population and weighted sample may be reduced by increasing the sample size and/or increasing (or revising) the number of dimensions used to group corporations. In general, a good stratification of taxpayer characteristics (one that results in largely homogeneous firms in each strata) allows for a smaller sample size. The degree of homogeneity of firms within each stratum may be tested by calculating the coefficient of variation for selected variables (e.g. assets, taxable income, CIT liability) for firms within each stratum and ensuring that the values are not greater than roughly 5 per cent.

EFFECTIVE TAX RATE MODELS

This section derives effective tax rates (ETRs) and elaborates on their use. These have been routinely used in technical assistance work by the IMF and World Bank for many years, and have proved instructive in better understanding the nature and magnitude of the incentives that various corporate tax provisions and concessions create for business investment decisions.

ETRs are summary tax burden indicators aimed at measuring what firms effectively pay on their investment returns. They account for not only statutory CIT rates, but also key features of the tax base, which are important for the distortionary impact of taxation on investment.

There exist various types of ETRs.⁵ This section focuses on so-called ‘forward looking’ ETRs, which are derived from algebraic formulae that assess the net present value of a representative investment project.⁶ The formulae are transparent and flexible, allowing users to separately identify various factors influencing net investment returns, including statutory tax rates, depreciation allowances, interest deductibility and tax incentives. Two types of forward-looking ETRs are discussed:⁷

- **Marginal effective tax rates** (METRs) measure the extent to which taxation causes the pre-tax hurdle rate of return on investment to deviate from its normal (minimum) after-corporate tax rate of return, which shareholders could obtain elsewhere. METRs reflect the “tax wedge” on

⁵ See OECD (1991, 2001, 2003), Nicodeme (2001), Sorensen (2004) and Clark and Klemm (2015) for reviews.

⁶ Alternatively, backward looking effective tax burden measures are calculated at the firm or aggregate level as actual tax payments in prior years, divided by adjusted book profits. They have appeal in that they measure the true tax burden, accounting for tax base measures, tax incentives, enforcement, and income shifting. These aspects, however, cannot separately be identified. Moreover, backward looking effective tax rates cannot measure distortions on future investment.

⁷ Seminal work on METR analysis includes Jorgenson (1963), King and Fullerton (1984), Boadway and Bruce (1984). Devereux and Griffith (2003) introduced AETR analysis.

investments that just break even. They are routinely used to assess how taxes distort the level of investment (scale decisions).

- **Average effective tax rates** (AETRs) are usually calculated as the present-discounted value of CIT payment on returns on investment, divided by the present discounted value of the (before-tax) income from the investment. They measure the tax burden on profitable investment projects, i.e. those earning an above-normal rate of return (due, for instance, to patents, market power, or location rents). AETRs are used to assess tax effects on discrete investment choices, and in particular MNC decisions of whether and where to locate FDI (location decisions).

A. Workhorse Model

We derive ETRs from a simple workhorse model of investment, which can easily be extended in various directions to capture other aspects of taxation. Suppose there is an investment project in period 0 of size I_0 , which is purchased at price Q_0 . After period 0, the capital stock (K_t) depreciates every year (t) at a declining balance rate δ_t . At the same time, the capital stock is increased by new investments every year, I_t , which are purchased at price Q_t . The physical capital stock thus accumulates according to $K_t = (1 - \delta_t)K_{t-1} + I_t$. The net present value of the cash flow associated with the investment is given by:

$$NPV = -Q_0 I_0 (1 - uA) + \sum_{t=1}^{\infty} \frac{P_t F(K_t) (1 - u) - (1 - uA) Q_t I_t}{((1 + r)(1 + \pi))^t} \quad (11)$$

where $F(\cdot)$ is a production function with properties $F_K > 0$, $F_{KK} < 0$, P_t is the price of output, π is the general rate of inflation and r is the minimum (normal) real rate of return required by shareholders (which they could obtain on alternative investments, such as government bonds). The gross returns to the investment are taxed at the statutory CIT rate u . For now, we assume that financing costs are not tax deductible—reflecting equity-financed investment in most countries. Moreover, we abstract from personal income tax (PIT) on investment returns or withholding taxes. Tax depreciation allowances (which are assumed not to be indexed for inflation) are deductible at a declining balance rate α_t , which may differ from economic depreciation, δ , where the tax depreciation rate is constant. The NPV of tax depreciation allowances in terms of the cost of investment is denoted by A and given by:

$$A = \sum_{s=1}^{\infty} \frac{\alpha(1 - \alpha)^{s-1}}{((1 + r)(1 + \pi))^{s-1}} = \alpha \frac{(1 + r)(1 + \pi)}{r(1 + \pi) + \pi + \alpha} \quad (12)$$

Parameter A generally lies between 0 and 1, since depreciation for tax purposes is not immediate (in which case we would have $A = 1$). Multiplying A by the tax rate u gives the value of tax depreciation allowances in terms of tax savings. According to (11), uA effectively reduces the price of investment.

In the remainder, for simplicity, we assume that replacement investment in each period t is just enough to maintain the capital stock at its initial level, i.e. $I_t = \delta_t K_{t-1}$ so that we can drop time indices for $K_t = K_0 = K$. Also, we assume that P and Q increase annually at the general rate of

inflation, π . We normalize prices $P_0 = Q_0 = 1$ so that we express investment and output in real value terms. Using the geometric sequence, we can rewrite (11) as

$$NPV = \frac{F(K)(1-u) - (r+\delta)(1-uA)K}{r} = \frac{(p+\delta)(1-u) - (r+\delta)(1-uA)}{r}K \quad (13)$$

where $p = F(K)/K - \delta$ is the average pre-tax rate of return on the investment project, net of economic depreciation. In the absence of taxation ($u = 0$), the NPV of the stream of investments is proportional to the rate of economic profit (i.e. the rate of return in excess of the normal rate of return), measured by $p - r$.

The profit-maximizing level of investment is at the point where an additional unit of physical capital yields no further increase in the NPV:

$$\frac{\partial NPV}{\partial K} = F_K(1-u) - (r+\delta)(1-uA) = 0 \quad (14)$$

Equation (14) can be rewritten in terms of the so-called 'hurdle' rate of return, defined as the real gross (i.e. before-tax) rate of return net of depreciation (RG).⁸

$$RG = F_K - \delta = (r+\delta)\frac{(1-uA)}{(1-u)} - \delta \quad (15)$$

In the absence of tax, the hurdle rate equals the normal rate of return, r , i.e. where incremental investment yields no economic profit. Taxation may affect the hurdle rate in (15), but not necessarily so. For instance, if $A = 1$ (i.e. if tax depreciation allowances are 100 percent of investment cost), taxation is neutral with respect to investment. However, if $A < 1$ (the usual case in most countries), the hurdle rate of return exceeds the normal rate of return, implying that taxation is predicted to reduce the optimal level of investment.

The marginal effective tax rate (METR) is generally derived from the hurdle rate as follows:

$$METR = \frac{RG - r}{RG} \quad (16)$$

The METR thus measures the difference ('tax wedge') between the hurdle rate and the after-tax required rate of return r , as a percentage of the hurdle rate. Combining (15) and (16), the METR can be rewritten as:

⁸ The so-called 'cost of capital' is closely related to this hurdle rate and is generally defined as the before-tax return on investment for the project to yield an after-tax rate of return that equals the interest rate plus the rate of economic depreciation.

$$METR = \frac{u(1 - A)(r + \delta)}{r(1 - uA) + u\delta(1 - A)} \quad (17)$$

The METR will be positive as long as $A < 1$ and $u > 0$. In that case, the CIT causes the hurdle rate of return to rise. Fewer investment projects will then be profitable and investment will decline.

The average effective tax rate (AETR) does not use the optimality condition for investment above, but rather divides the net present value of total CIT payments of any (profitable) project by the net present value of (pre-tax) profit for that project:

$$AETR = \frac{(p + \delta)u - Au(r + \delta)}{p} = \frac{(p - r)u + (r + \delta)(1 - A)u}{p} \quad (18)$$

The numerator of the second expression in (18) contains two terms. The first term measures the CIT on economic profit per unit of investment. The second term measures CIT, net of tax depreciation allowances, on the minimum required normal return, per unit of investment. For projects that earn a high rate of economic profit, the first term carries a large weight and is important for the AETR. For projects that generate a low economic profit, the first term is of minor importance and the second term becomes more important. This second term is similar to the METR in (17).

Expressions (17) and (18) can be used to numerically compute METR and AETR values, by making assumptions about the rate of inflation, the real interest rate, the rate of economic depreciation, and by substituting from the tax code the statutory CIT rate and the rate of tax depreciation. For the AETR, the additional parameter needed is the assumed profitability of the investment. Illustrative applications are shown in Box 2.

Such calculations can be made for investments that differ with respect to their (economic and tax) depreciation rates. Moreover, the METR and AETR in (17) and (18) can be easily modified to allow for the tax deductibility of financing costs—relevant if investment is financed by debt—the inclusion of PIT on investment returns, or withholding tax rates on FDI. One can also extend the effective tax rate calculations to allow for cross-border income shifting or various types of investment tax incentives, as we will show below for the analysis of tax holidays.⁹

⁹ Klemm (2010) extends the AETR framework to include tax incentives, such as tax holidays and time-varying tax rates. Clark (2010) introduces multinational tax planning strategies, reflecting the fact that standard ETRs may not be particularly informative about tax incentive effects on investments by MNCs engaging in aggressive tax planning.

Box 2. Illustration of ETR Analysis

The following table shows calculations of marginal and average effective tax rates under alternative tax regimes. In the basic ETR model, there are two tax parameters – the statutory CIT rate (u), and the tax depreciation rate (α). In the base case (current tax regime), these rates are 21 and 8 per cent. Base Case A considers projects with a pre-tax rate of return of 15 per cent. Base Case B considers projects generating a higher pre tax rate of return (25 per cent). Other non-tax parameters are held constant.

Parameters	Symbol	Base Case A	Regime 1	Regime 2	Regime 3	Base Case B	Regime 3
statutory CIT rate	u	0.21	0.20	0.21	0.20	0.21	0.20
tax depreciation rate	α	0.08	0.10	1.00	0.06	0.08	0.06
economic depreciation rate	δ	0.08	0.08	0.08	0.08	0.08	0.08
real discount rate	r	0.03	0.03	0.03	0.03	0.03	0.03
real pre-tax rate of return	p	0.15	0.15	0.15	0.15	0.25	0.25
inflation rate	π	0.02	0.02	0.02	0.02	0.02	0.02
Calculated values							
PV of tax depreciation	$A = \alpha(1+r)(1+\pi)/(r(1+\pi)+\pi+\alpha)$	0.644	0.698	1.000	0.570	0.644	0.570
marginal effective tax rate	$METR = u(1-A)(r+\delta)/(r(1-uA)+u\delta(1-A))$	0.258	0.217	0.000	0.283	0.258	0.283
average effective tax rate	$AETR = ((p-r)u+(r+\delta)(1-A)u)/p$	0.223	0.204	0.168	0.223	0.218	0.214

In Regime 1, the CIT rate is lowered to 20 per cent, and tax depreciation is accelerated to a 10 per cent rate. Both reforms encourage investment, as reflected in lower METR and AETR values. The METR decreases from roughly 26 to 22 per cent; the AETR decreases from 22 to 20 per cent.

In Regime 2, the CIT rate is unchanged at 21 per cent, but expensing of capital costs is introduced. The METR is zero implying no tax distortion to scale (marginal investment) decisions. The AETR is also reduced, implying reduced impediments to locating investment in the country.

In Regime 3, the CIT rate is lowered to 20 per cent (as in Regime 1), but tax depreciation is reduced to 6 per cent. The net effect is a higher METR, implying reduced investment. The AETR is unchanged, compared to Base Case A. The latter result is sensitive to the rate of pre-tax profit.

Base Case B considers projects earning a pre-tax rate of return of 25 per cent (versus 15 per cent in Base Case A). Introducing Regime 3 lowers the AETR, compared to Base Case B. While less generous tax depreciation puts upward pressure on the AETR, this is more than offset by the reduced rate CIT on the more significant economic profit (compared to Base Case A).

B. Use in Policy Analysis

ETRs are an important tool for policy analysis in many countries, including developing countries. For instance, by varying tax parameters—including tax incentives—ETRs shed light on how complex tax reforms are expected to influence investment. This includes also the variable impact of taxation on investment in different asset types or by alternative sources of finance. ETRs can be used to infer trends over time or to provide international comparisons of tax systems. ETRs are routinely used in technical assistance by the IMF and World Bank to explore the impact of policy reforms on investment incentives.

ETRs are often used as indicators of “international competitiveness” of tax systems. For example, Table 6 shows, besides statutory CIT rates, average METRs and AETRs in G20 countries in 2012, as computed by the Oxford University Centre for Business Taxation (Bilicka and Devereux, 2012).¹⁰ The average METRs and AETRs are computed as weighted averages for different types of assets and different sources of finance. In particular, the calculations assume that one quarter of investment is in the form of plant and machinery, another quarter in buildings, around 10 percent in intangible assets, and 40 percent is in inventories. Moreover, 35 percent of investment is assumed to be financed by debt, while the remainder is financed by equity. From Table 6, we observe that statutory CIT rates range from 20 percent in Russia and Saudi Arabia to almost 41 percent in Japan. The range of AETRs is similarly large, between 16.7 and 36 percent. The METRs range from –10 percent in Italy to 27 percent in Argentina and Japan.¹¹

A recent study by Chen and Mintz (2013) computes METRs for as many as 90 countries across the globe—again as a weighted average of METRs for different sectors and sources of finance. Their calculations, shown in Figure 3, indicate large cross-country differences in tax distortions at the margin of new investment. Figure 4 shows how effective tax rates can shed light on the impact of tax incentives for investment. For 15 countries in the Asia-Pacific region, it compares the AETR in the absence of tax incentives with that under alternative incentive policies, showing that investments in high-technology sectors or in specific geographic areas result in the lowest effective tax burdens.

ETR analysis is routinely used by academics, policy think-tanks, IOs and governments (notably Ministries of Finance) to analyze the impact on investment of tax policy, including reform of tax incentive policies. A main attraction is the limited informational requirement, as the values of the parameters entering ETR formulae are determined by tax policy. In other words, the input to ETR models is found in tax laws and tax regulations. For Ministries of Finance in developing countries wishing to implement ETR models in their tool-kit, some technical assistance may be required to adapt the general ETR formulae to capture country-specific tax policies.

¹⁰ The European Commission publishes ETRs every year as part of its annual publication “Taxation Trends in the European Union”.

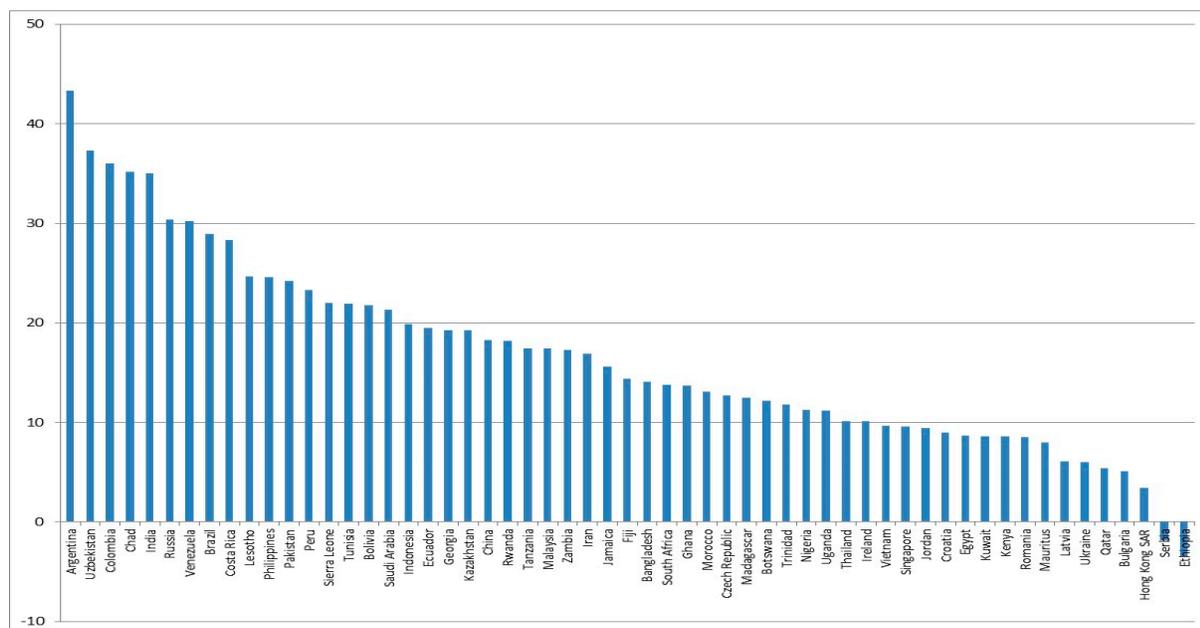
¹¹ Several countries have changed their rates since 2012. E.g. Japan reduced its statutory rate stepwise to a current level of 33 percent.

Table 6. Statutory and Effective Tax Rates for G20 Countries, 2012

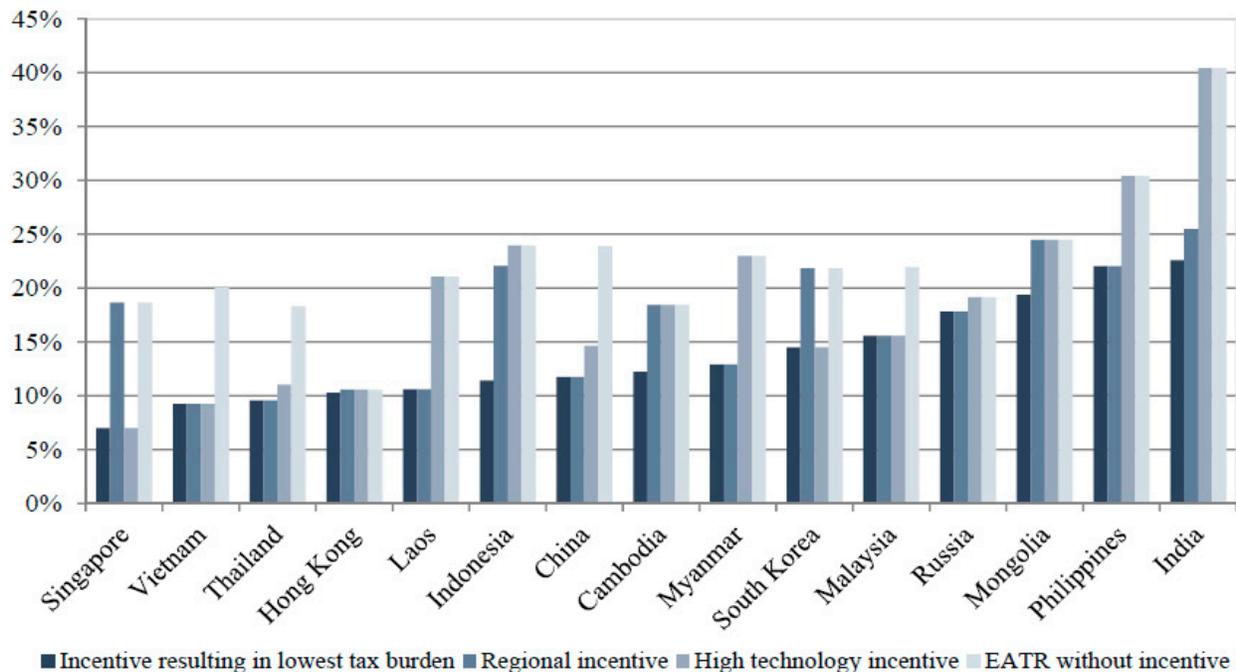
	Statutory Rate	AETR	METR
Russia	20.0	16.7	7.9
Saudi Arabia	20.0	18.1	13.4
Turkey	20.0	16.9	8.7
South Korea	22.0	18.0	7.2
China	25.0	22.4	16.2
Indonesia	25.0	23.0	18.5
United Kingdom	26.0	24.8	22.3
Canada	28.0	24.4	15.8
Australia	30.0	26.6	19.1
Mexico	30.0	26.1	17.1
Italy	30.3	23.0	-10.0
Germany	30.9	27.0	18.2
India	32.4	28.8	21.1
Brazil	34.0	30.7	23.9
South Africa	34.6	29.8	19.3
France	35.0	29.8	17.9
Argentina	35.0	32.3	27.0
United States	40.5	34.9	23.2
Japan	40.8	36.0	27.0

Source: Bilicka and Devereux (2012)

Figure 3. Average METRs on Capital Investment in 56 non-OECD Countries, 2013



Source: Chen and Mintz (2013)

Figure 4. AETRs in Asia-Pacific Under Alternative Incentives


Source: Wiedemann and Finke (2015)

C. Tax Holidays

As Figure 4 makes clear, ETR analysis can be extended to include tax incentives, such as those discussed in the main body of the paper. To illustrate this, we extend ETR expressions above to include tax holidays for a limited duration. In that case, the NPV of the cash flow associated with the investment at $t = 0$ is:

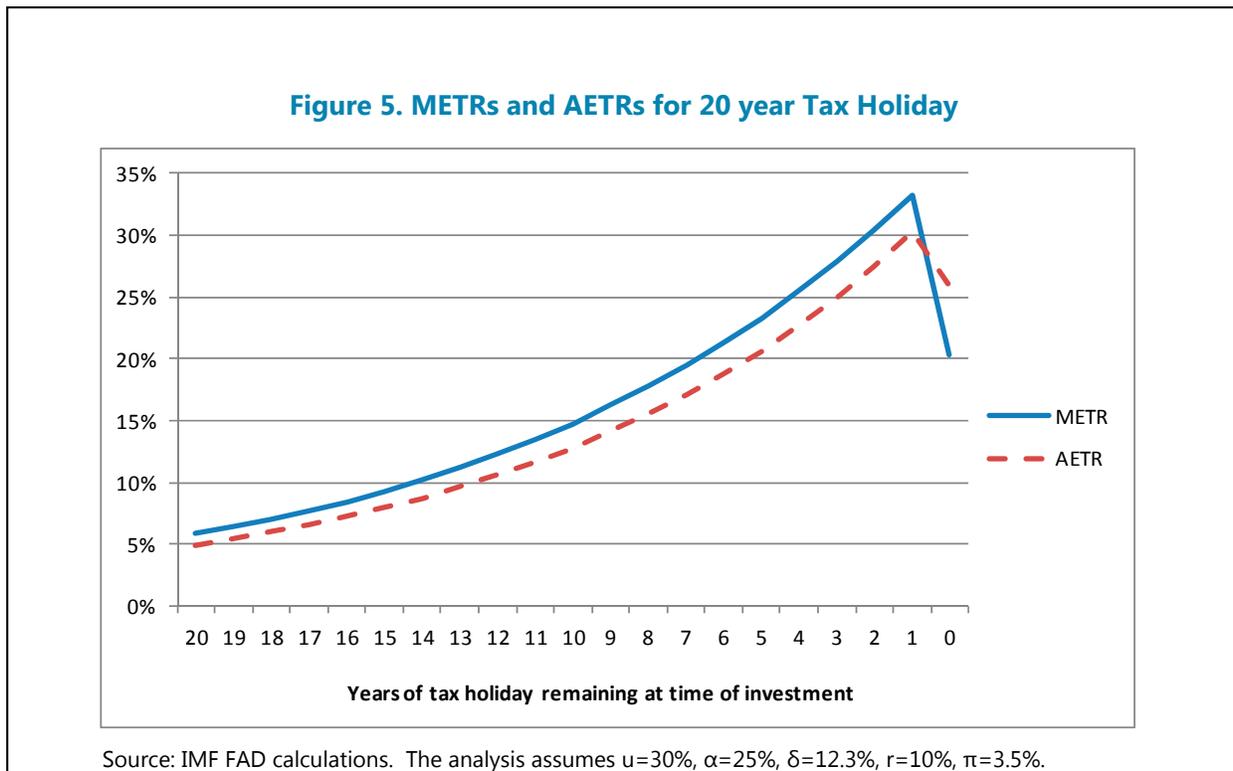
$$NPV = -K + \sum_{t=1}^H \frac{F(K) - \delta K}{(1+r)^t} + \sum_{t=H+1}^{\infty} \frac{F(K)(1-u) - (1-uA)\delta K}{(1+r)^t} \quad (19)$$

where $H > 0$ is the length of the tax holiday period. From this, the METR and AETR can be derived along the lines above. Yet, they will now depend on H , reflecting the remaining number of holiday years:

$$METR = \frac{ud^H(r + (1-A)\delta)}{r + ud^H\delta(1-A)} \quad (20)$$

$$AETR = \frac{d^H u(p + (1-A)\delta)}{p} \quad (21)$$

where $d^H = 1/(1+r)^H$ for $H > 1$. This time-variant indicator effectively determines the relevant tax rate applying to investment in each year of the holiday period. Figure 5 shows METRs and AETRs assuming a 20 year tax holiday, expressed in each of the 20 years of its remaining duration. In the first year, with 20 years of holiday remaining, the METR and AETR are small but positive, close to 5 percent, reflecting future tax on the investment returns accruing after the 20-year holiday period. Over time, the ETRs gradually increase since an increasing fraction of the future returns to the investment will become subject to tax as the remaining holiday period gets shorter. After expiry of the tax holiday, the standard ETRs apply with no incentive. In that year, the METR and AETR are 20 and 26 per cent, respectively. Interestingly, the METR and AETR exceed this level in the years just before expiry: this holds for the METR for investments after the first 14 years of the holiday and the AETR after 18 years. Hence, the tax holiday discourages the firm to invest during these years, relative to the case with the normal tax regime. The reason is that, for investments in these years just before expiration of the holiday, the firm is unable to claim depreciation allowances. This increases in the CIT burden, an effect that more than offsets the CIT exemption for profits in these years.¹²



¹² This finding was first reported by Mintz (1990). Klemm (2010) shows how the relative attractiveness of tax holidays, compared to investment allowances and reduced tax rates changes over time and depends on expected profitability.

DIAGNOSTIC ASSESSMENT OF GOVERNANCE

This section discusses two templates that can be used to assess transparency and governance practices in relation to tax incentives in LICs.

A. Ten Principles to Promote Better Management and Administration

The OECD's Task Force on Tax and Development has pressed for a more effective global transparency framework for tax incentives for investment—the purpose of which is to promote transparency in decision-making processes, increase the information available on costs and benefits, limit discretion and increase accountability. This led to the development of a set of principles to promote the management and administration of tax incentives for investment in a transparent and consistent manner (OECD, 2013).

1. Make public a statement of all tax incentives for investment and their objectives within a governing framework.

Tax incentives should only be granted in accordance with a comprehensive policy, which lays down principles and policy objectives for the introduction or continuation of a tax incentive. Governments should provide a justification for tax incentives (e.g. regional/territorial development, employment creation) with the expected costs and intended benefits. This should be communicated publicly through a regularly updated statement. Such a statement provides the basis for the assessment of the performance of tax incentives, any overlap and duplication and allows for governments to be held accountable for the tax incentives they have granted.

2. Provide tax incentives for investment through tax laws only.

Tax incentives for investment are currently provided through tax laws (e.g., income tax law), but in many cases are also provided by laws governing investment, Special Economic Zones, etc. and in other cases, through decrees, agreements and regulations. As a result their true extent may be hidden. All tax incentives provided, along with their eligibility criteria, should be consolidated and publicised in the main body of tax law. Bringing tax incentives into the tax laws (or mirrored in the tax laws) increases transparency and may empower the tax administration to administer them. Those tax incentives that are used should be as simple as possible to both apply for and administer.

3. Consolidate all tax incentives for investment under the authority of one government body, where possible.

All tax incentives should be placed under the authority of one government body, ideally the Ministry of Finance. Currently, the granting and administration of tax incentives may be the responsibility of finance, trade, investment or other ministries, increasing the risk of corruption and rent seeking. Consolidating them under a single body increases transparency, helps to avoid unintended overlap and inconsistencies in incentive policies, limits discretionary power and enables policy makers to address problems that may arise with the governance of tax incentives. In countries where the

granting and administration of tax incentives is decentralised and/or carried out by both the central and sub-national governments, to the extent possible, various levels of government should coordinate to maximize the efficiency and transparency of their efforts.

4. Ensure tax incentives for investment are ratified through the law making body or parliament.

Tax incentives provided through executive decrees or agreements when not scrutinized by the law making body do not provide sufficient transparency in their granting and operation. Parliamentary oversight, or its equivalent, is fundamental to transparency and accountability in the governance of tax incentives. This ensures incentives are subject to scrutiny on their intended purpose and their costs as well as benefits to the country.

5. Administer tax incentives for investment in a transparent manner.

Once provisions have been enacted in the relevant tax laws and regulations, tax incentives may be claimed by a taxpayer by meeting the necessary conditions as prescribed, without negotiating with any granting authority, except as provided for under the relevant tax laws. A minimum necessary condition to be met by taxpayers in the case of a tax incentive should be the requirement to file a tax return in the case of VAT and Income Tax, and in the case of other taxes a statement detailing the duty or other exemptions availed in the prescribed period. In addition to enhancing transparency, such taxpayer information contributes to data for determining the efficiency and equity of tax incentives. Tax authorities should also periodically carry out audits of cases where tax incentives have been claimed to ensure that they are not misused.

6. Calculate the amount of revenue forgone attributable to tax incentives for investment and publicly release a statement of tax expenditures.

The amount of revenue loss attributable to tax incentives should be reported regularly, ideally as part of an annual Tax Expenditures Report (covering all main tax incentives). While cash expenditure budgets are usually scrutinised on a yearly basis, the revenue cost of tax incentives is hidden when estimates of revenues forgone are not calculated and reported. Embedding estimates of revenues forgone by tax incentives in the yearly budget process provides policy makers with the required inputs on a timely basis to inform policy decisions. It also supports medium term fiscal planning as what seems like a small amount of foregone revenue in good fiscal times may become quite high during periods of fiscal strain. The calculation of revenue forgone should recognise that the benefits of some investments, mineral extraction, for example, may take many years to realise so losses should be assessed over the life of the business concerned.

7. Carry out periodic review of the continuance of existing tax incentives by assessing the extent to which they meet the stated objectives.

Once granted tax incentives usually remain in laws unless revoked or introduced with a 'sunset clause'. Hence there is a need to assess performance on a regular basis. Performance reviews may be conducted once every few years and would include the costs as well as the benefits of the tax

incentive and if it has met its intended goals. The results of such periodic reviews would inform decision-making around the continuation or removal of individual tax incentives. The review criteria and results should be reported publicly. To the extent possible, behavioural responses, both good (e.g., additional incremental investment) and bad (e.g., aggressive tax planning) should be tracked and communicated.

8. Highlight the largest beneficiaries of tax incentives for investment by specific tax provision in a regular statement of tax expenditures, where possible.

It may be possible that a few investors, or sectors, benefit from most tax expenditures. The tax expenditure statement should have sufficient detail to enable policy makers to identify which sectors benefit from specific tax provisions and, where this is compatible with the requirement of laws and regulations governing taxpayer confidentiality, authorities may wish to consider detailing the major beneficiaries and the amount by which they benefit from tax incentives. Making such information public can enhance the legitimacy of governments and their revenue authorities in the eyes of citizens which in turn can enhance compliance more broadly.

9. Collect data systematically to underpin the statement of tax expenditures for investment and to monitor the overall effects and effectiveness of individual tax incentives.

Analysis of tax incentives is data intensive – required for public statements, budgeting, periodic reviews, tracking of behavioural responses by business, etc. There is a need for the periodic collection of taxpayer data and on-going analysis of these data by revenue authorities. This may require introducing mechanisms to do so in some countries.

10. Enhance regional cooperation to avoid harmful tax competition.

In many cases tax incentives are provided in response to what neighbouring countries and competitors are offering or perceived to be offering. Hence the issue of tax incentives cannot be tackled in isolation. Governments can work together on a regional basis to increase cooperation in the area of tax to avoid a race to the bottom when they provide competing tax incentives. Efforts to enhance regional cooperation should also cover the use of non-tax instruments e.g., cash subsidies and loan guarantees, which also provide incentives for investment.

B. Benchmarking Investment Incentives

The World Bank Group has developed a template to assess tax incentives for investment in countries around the world, in four dimensions: i) the rule of law; ii) transparency; iii) efficient administration; iv) incentive reviews. This subsection discusses the most recent version of the template, which is dynamic in the sense that it is continuously being updated on-line.

Rule of law

The issues here are that i) fiscal incentives should be provided through tax laws only; and ii) ratification of fiscal incentives policies should be through a law-making body / parliament.

Questions	Score and Methodology	Data Source
<p>Are all available tax incentives given out through tax laws only, which consolidate and publicize in their main body the list of incentives offered together with eligibility criteria?</p> <ol style="list-style-type: none"> 1. Is there a legal basis for granting fiscal incentives? 2. Are tax incentives provided through individual MoUs? 3. Are tax incentives provided based on decisions of an investment board or another intra-ministerial body? 4. Are tax incentives provided or mirrored in the Tax Code/Customs Code and nowhere else? 5. Were all tax/customs laws/bylaws/statutes/agreements/decrees providing or mirroring fiscal incentives scrutinized by a law-making body, such as parliament? 6. Are tax incentives provided in a single non-tax law/bylaw/statute/agreement/decrees without mirroring in tax/customs laws? 7. Were all non-tax laws/bylaws/statutes/agreements/decrees providing tax incentives scrutinized by a law-making body, such as parliament? 	<p>1. The score will be defined based on the <u>existent legal framework</u> underlying granting of fiscal incentives (including customs duties exemptions).</p> <p><u>The best score:</u> all tax incentives are provided in the Tax and/or Customs Code (Tax and Customs Codes are under a single authority – Ministry of Finance) and nowhere else.</p> <p><u>The worst score:</u> all tax incentives are provided ad hoc, based on decisions of certain individuals.</p> <p>2. The questionnaire is divided into three sections, which determine a <u>score range</u>, where a country would fall depending on three scenarios:</p> <ul style="list-style-type: none"> - Fiscal incentives are provided in tax and/or customs laws only – highest score range; - Fiscal incentives are provided in non-tax/non-customs laws – middle score range; - There is no legal basis for granting fiscal incentives – lowest score range. <p>Further, negative answers to questions in each of the sections add to higher score within the pre-determined range.</p> <p>3. The <u>score will be adjusted</u> based on the share of fiscal incentives granted through: (i) tax/customs laws; (ii) non-tax/non-customs laws; (iii) without legal basis. Intuitively, the more fiscal incentives are granted without legal basis, the lower the score.</p>	<p><u>Survey of a few public sector representatives</u> in charge of tax investment incentives (specifically, Revenue and Customs Authorities) <u>and local law firms</u> complemented by desk research to cross-check and verify information.</p> <p><u>Desk research:</u> Review of national legal instruments that have been mentioned in the survey.</p>

Transparency

Issues here include the public availability of laws and regulations related to investment incentives, publication of a list of incentives, public statement of principles and policy objectives underpinning incentives regime and disclosure of the largest beneficiaries of investment incentives.

Questions	Score and Methodology	Data Source
<p>Are the laws and regulations pertaining to investment incentives published in a source that is available to all?</p> <ol style="list-style-type: none"> Are legal instruments available online? Are legal instruments available in publicly available published sources, such as an official gazette? Are legal instruments available in hard copy upon request through a Government agency? Are legal instruments available at no cost? Are legal instruments available in English, if this is not the native language? 	<ol style="list-style-type: none"> The score will be defined based on the <u>quantity of negative answers</u> to the questionnaire Each question will be answered for <u>two categories of legal instruments</u>: <ul style="list-style-type: none"> Laws, legislative bills; Regulations, decrees, bylaws, administrative instructions, decisions, and other measures of general application. Within each category, a <u>partial credit</u> will be assigned, depending on the degree of compliance with the principle. For example, if only a certain portion of legal instruments is publicly available, a partial score proportionate to the share of available instruments will be given. 	<p><u>Survey of a few public sector representatives</u> in charge of investment incentives complemented by desk research to cross-check and verify information.</p> <p><u>Desk research</u>: Review of public legal databases and publications to perform a factual check of sources that have been mentioned in the survey.</p>
<p>Are all available investment incentives published in an accessible, publicly available format?</p> <ol style="list-style-type: none"> Does the Law mandate that the Government maintains and publishes an inventory of investment incentives that lists the types of incentives that are available to investors? Is the list of incentives available in published sources available to all (e.g. official gazette)? Is the list of incentives published online? Does the list include eligibility criteria? Does the list include documentation and procedures required to claim incentives? Does the list include value of the incentives? Does the list include awarding body or agency? Does the list include contact information for any questions or follow-up relating to the application and awarding process? 	<ol style="list-style-type: none"> The score will be defined based on the <u>quantity of negative answers</u> to the questionnaire (each negative answer adds a segment to the circle). Within each category, a <u>partial credit</u> will be assigned, depending on the degree of compliance with the principle. For example, if only a certain portion of incentives is publicly available, a partial score proportionate to the share of listed incentives will be given. 	<p><u>Survey of a few public sector representatives</u> in charge of investment incentives complemented by desk research to cross-check and verify information.</p> <p><u>Desk research</u>: Review of national legal instruments and factual check of publications that have been mentioned in the survey.</p>
<p>Are principles and policy objectives for changes in the incentives regime publicly stated and subject to public consultations?</p> <ol style="list-style-type: none"> Is there an investment attraction strategy or another document, which outlines policy objectives and strategy behind incentives in place? 	<ol style="list-style-type: none"> The score will be defined based on the <u>quantity of negative answers</u> to the questionnaire (each negative answer adds a segment to the circle). Within each category, a <u>partial credit</u> will be assigned, depending on the regularity of implementation of best practices (if applicable). For example, if the changes in 	<p><u>Survey of a few public sector representatives</u> in charge of investment incentives complemented by desk research to cross-check and verify information.</p>

<ol style="list-style-type: none"> 2. Is the process for reform/change of the incentives regime outlined in the Law? 3. When changes to the incentives regime are introduced, are the proposed changes formally communicated to the public before such changes are adopted? 4. Are these changes communicated to the public through media channels that are available to all (e.g. online, local broadcasting station, official gazette)? 5. Are there opportunities for interested parties to voice their concerns or offer comments on the proposed changes before they are formally adopted? 	<p>incentives regime are communicated to the public only sometimes, and not all the times, the score will be adjusted downwards.</p>	<p><u>Desk research:</u> Review of national legal instruments and factual check of media publications that have been mentioned in the survey.</p>
<p>Are largest beneficiaries of incentives publicly reported?</p> <ol style="list-style-type: none"> 1. Is the information on the companies – largest beneficiaries of incentives reported? 2. Is the information on the sums of received incentives by each beneficiary reported? 3. Is the reported information disaggregated by individual sector? 4. Is the reported information disaggregated by specific incentive? 5. Is the information communicated publicly through available to all channels, such as online, local broadcasting station, official gazette? 6. Is the information reported regularly? Does the Government possess information on concessions granted outside of the general incentive regime? 7. Is information on concessions granted outside of the general incentive regime available to the general public? 	<ol style="list-style-type: none"> 1. The score will be defined based on the <u>quantity of negative answers</u> to the questionnaire (each negative answer adds a segment to the circle). 2. Within each category, a <u>partial credit</u> will be assigned, depending on: <ul style="list-style-type: none"> - Regularity of the implementation of best practices (if applicable). For example, if the information is reported less often than annually, the score will be adjusted downwards. - Share of incentives covered by the reported information. For example, if the information on largest beneficiaries is reported with respect to only a certain portion of available incentives, the score will be adjusted downwards proportionate to the share of incentives covered. 	<p><u>Survey of a few public sector representatives</u> in charge of investment incentives complemented by desk research to cross-check and verify information.</p> <p><u>Desk research:</u> Factual check of media publications that have been mentioned in the survey.</p>

Efficient administration

Issues under this heading include the transparent and non-discretionary administration of investment incentives, consolidation of all tax incentives under a single government authority, coordination mechanisms among authorities responsible for investment incentives, and risk-based audits of incentives beneficiaries.

Questions	Score and Methodology	Data Source
<p>Are revenue authorities (tax and customs authorities) the main Government agencies in charge of all tax incentives?</p> <ol style="list-style-type: none"> Are revenue agencies (tax and customs authorities), which are both under the Ministry of Finance, the only administrators of tax incentives? Are tax incentives administered by a single non-revenue authority (such as an IPA or a line ministry)? If tax incentives are administered through non-revenue authorities, do revenue authorities have control and overview over the fiscal incentives given out? If tax incentives are administered through non-revenue authorities, is there some coordination/information exchange with the revenue authority in place? 	<ol style="list-style-type: none"> The score will be defined based on the <u>quantity of negative answers</u> to the questionnaire (each negative answer adds a segment to the circle). Within each category, a <u>partial credit</u> will be assigned, depending on the share of incentives administered by revenue agencies (tax and customs authorities). For example, if only a certain portion of fiscal incentives is administered by revenue authorities, a partial score proportionate to the share of the incentives under revenue authorities will be given. 	<p><u>Survey of a few public sector representatives</u> in charge of tax investment incentives <u>and local law firms</u> complemented by desk research to cross-check and verify information.</p> <p><u>Desk research:</u> Review of national legal instruments that have been mentioned in the survey.</p>
<p>Is there a coordination mechanism for authorities to avoid unintended overlap and inconsistencies in the incentives regulations and to address problems associated with the governance of incentives?</p> <ol style="list-style-type: none"> Is there an inter-agency coordination mechanism among the authorities in charge of investment incentives? Is there a formal inter-agency coordination mechanism among the authorities in charge of investment incentives? Do authorities in charge of investment incentives exchange information on the type, amount, and beneficiaries of incentives granted? Are there standard reporting requirements established on the type, amount, and beneficiaries of incentives granted? Are authorities in charge of investment incentives on sub-national and central levels well-coordinated? [If applicable] 	<ol style="list-style-type: none"> The score will be defined based on the <u>quantity of negative answers</u> to the questionnaire (each negative answer adds a segment to the circle). Within each category, a <u>partial credit</u> will be assigned, depending on the regularity of implementation of best practices (if applicable). For example, if the authorities in charge of investment incentives meet less often than once a year under the coordination mechanism, the score will be adjusted downwards. 	<p><u>Survey of a few public sector representatives</u> in charge of non-tax incentives <u>and local law firms</u> complemented by desk research to cross-check and verify information.</p> <p><u>Desk research:</u> Review of national legal instruments, internal guidelines of the agencies involved in the administration of non-fiscal incentives that have been mentioned in the survey.</p>
<p>Are incentives granted automatically based on clearly articulated eligibility criteria prescribed in a law without individual negotiations with authorities?</p> <ol style="list-style-type: none"> Are all tax incentives granted automatically through self-declaration by the taxpayer without the need for a signature, decision, certificate from any government officials? Are applications for incentives reviewed based on clear pre-defined published criteria? 	<ol style="list-style-type: none"> The score will be defined based on the <u>quantity of negative answers</u> to the questionnaire (each negative answer adds a segment to the circle). A <u>partial credit</u> will be assigned to question 1 proportionally to the share of tax incentives granted automatically. 	<p><u>Survey of a few public sector representatives</u> in charge of tax incentives <u>and local law firms</u> complemented by desk research to cross-check and verify information.</p> <p><u>Desk research:</u> Review of national legal instruments, internal guidelines of the agencies involved in the administration of fiscal</p>

<ol style="list-style-type: none"> 2. Are there timelines for each step of the approval identified and service standards published? 3. Is it required that a negative decision communicated in writing to the investor? 4. Is it required that a negative decision motivated (meaning that the implementing body has to provide justification for the negative decision)? 5. Is a negative decision subject to appeal before a higher administrative authority or the courts of the country? 6. Is the fact of granting of an incentive published and made available to the general public? 		<p>incentives that have been mentioned in the survey.</p>
<p>Are investors receiving an incentive required to file a tax return (in case of VAT or income tax exemptions), or a statement detailing a duty or other exemptions availed in the prescribed period (in case of other exemptions)?</p> <ol style="list-style-type: none"> 1. Are investors receiving a tax incentive required to file a tax return/statement? 2. Is the information submitted sufficient for the revenue administration to carry out a cost-benefit analysis? 	<ol style="list-style-type: none"> 1. The score will be defined based on the <u>quantity of negative answers</u> to the questionnaire (each negative answer adds a segment to the circle). 2. The <u>score will be adjusted</u> based on the share of incentives beneficiaries that file a tax return/statement in practice [if such information is available]. 	<p><u>Survey of a few public sector representatives</u> in charge of tax incentives and a few private sector representatives complemented by desk research to cross-check and verify information.</p> <p><u>Desk research:</u> Review of databases/reports that have been mentioned in the survey.</p>

Incentives reviews

Issues include statements and publication of costs of tax expenditures, reviews of continuance of existing investment incentives based on cost-benefit analysis and systematic collection of data to underpin effectiveness assessment.

Questions	Score and Methodology	Data Source
<p>Is the amount of revenue loss attributable to tax incentives regularly calculated and publicly reported?</p> <ol style="list-style-type: none"> 1. Has there been an exhaustive calculation of tax expenditures associated with tax incentives (including customs exemptions)? 2. Are calculations carried out regularly? 3. Are the results of calculations made publicly available? 4. Is there a legal requirement that tax expenditures are calculated and published regularly? 	<ol style="list-style-type: none"> 1. The score will be defined based on the <u>quantity of negative answers</u> to the questionnaire (each negative answer adds a segment to the circle). 2. The <u>score will be adjusted</u> based on the regularity of tax expenditure calculations. If the calculations are carried out less often than annually, the score will be adjusted downwards. 	<p><u>Survey of a few public sector representatives</u> in charge of investment incentives complemented by desk research to cross-check and verify information.</p> <p><u>Desk research:</u> Review of internal guidelines and other sources that have been mentioned in the survey.</p>
<p>Is the performance of each type of incentives assessed on a regular basis, including the costs, benefits, and the effectiveness of attaining the intended policy objectives?</p>	<p>The score will be defined based on the <u>quantity of negative answers</u> to the questionnaire (each negative</p>	<p><u>Survey of a few public sector representatives</u> in charge of investment incentives complemented</p>

<ol style="list-style-type: none"> 1. Is cost-benefit analysis performed for each type of investment incentives ex post by analyzing a sample of beneficiaries (after an incentive has been granted automatically)? 2. Are behavioral responses to incentives by investors taken into consideration (e.g. through motivation surveys)? 3. Are the reviews carried out regularly (at the same frequency)? 4. Are criteria and results of the reviews made publicly available? 5. Are sunset clauses introduced in laws granting investment incentives? 	<p>answer adds a segment to the circle).</p>	<p>by desk research to cross-check and verify information.</p> <p><u>Desk research:</u> Review of national legal instruments, internal guidelines, and other sources that have been mentioned in the survey.</p>
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