REPORT ON TAX EXPENDITURES

Incorporating Department of Finance Guidelines for Tax Expenditure Evaluation

OCTOBER 2014

An Roinn Airgeadais
Department of Finance

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Preface >

This Report sets out Guidelines for best practice in ex ante and ex post evaluation of tax expenditures. It is intended that these Guidelines will be used by policy-makers in Ireland in the future when considering whether or not to introduce a new tax expenditure or in reviewing an existing measure.

This Report on Tax Expenditures seeks to explain the role and key economic features of tax expenditures in an Irish policy context. It describes the limited circumstances in which tax expenditures should be used as a policy tool, including the occasions where a tax expenditure might be preferable to direct exchequer funding, in order to achieve public policy goals.

The report is informed by international best practice and takes account of how tax expenditure evaluations are carried out in other countries. It also describes tax expenditure evaluation exercises undertaken in Ireland in recent years.

This Report and Guidelines for Tax Expenditures were prepared by the Fiscal Economics Team (Brendan O'Connor, Donal Lynch, and David Hegarty) in the Department of Finance in co-operation with the Tax Policy Division (Niall Casey and Gary Tobin). Queries in relation to the Guidelines should be directed to the Fiscal Economics Team.

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1. Introduction and Summary

The term 'tax expenditures' was first coined by Stanley Surrey (1973) to highlight the similarity such arrangements have with direct expenditure programmes, with spending conducted through the tax system rather than directly through government expenditure.

Definition of a Tax Expenditure

The definition of a tax expenditure in Irish legislation draws on an OECD definition and describes a tax expenditure as a transfer of public resources that is achieved by:

a) Reducing tax obligations with respect to a benchmark tax rather than by direct expenditure; or
b) Provisions of tax legislation that reduce or postpone revenue for a comparatively narrow population of taxpayers relative to the tax base.

The Benchmark Tax System

In order to identify a tax expenditure, a baseline is needed against which a tax reducing measure can be recognised as either part of the 'normal' tax structure or as a tax expenditure.[1] This baseline is referred to as the 'benchmark system' and is explicitly mentioned in the Irish legislation. There are two extremes which illustrate the trade-offs in the choice of the benchmark. At one end, the entirety of the current tax system could be used as the benchmark but this of course would imply that no tax expenditures would exist. At the other end of the spectrum, the use of a theoretical benchmark based on an ideal tax system could result in innumerable tax expenditures.

There is an acceptance in the literature that an internationally agreed benchmark is unattainable and that a benchmark can change over time depending on circumstances. This report focuses on the narrower question of how to evaluate a tax expenditure.

Policy Context for Tax Expenditures

The Government's Medium-Term Economic Strategy 2014-2020 ("the MTES"), *A Strategy for Growth*, set out a number of principles concerning tax expenditures. Consistent with the OECD 'broad base, low rate' approach to taxation, the MTES indicates a preference for tax increases to be achieved through base broadening rather than increasing the burden through higher rates. It indicated that tax expenditures could be used in limited circumstances of demonstrable market failure and where a tax-based incentive is more efficient than a direct expenditure intervention. The MTES also provided that tax expenditures should be time-bound, with those of higher costs subject to ex ante evaluation, and that tax expenditures should also be reviewed on a regular basis.

[1] Further literature which goes into more detail on benchmark definition and details the benchmarks used in different countries includes: OECD 2010a; OECD 2010b; Villela et al., 2010

Box 1: **Official Policy on Tax Expenditures**

The Government will: • Support economic growth by ensuring any tax increases be effected in the first instance by base broadening through the elimination or curtailment of overly-generous, poorly targeted or otherwise unaffordable tax reliefs. • Use the tax system in limited circumstances where there are demonstrable market failures and where a tax-based incentive is more efficient than a direct expenditure intervention. • Time-limit all tax expenditures and subject those with higher costs to ex ante evaluation. • Conduct a regular programme of tax relief reviews using public consultation as appropriate and publish the results.

Source: A Strategy for Growth, Medium-Term Economic Strategy 2014-2020

Purpose of the Guidelines

The two quotes below capture the challenges inherent in the evaluation of tax expenditures:

> "Tax expenditure programme evaluations are very hard to do". (US Legislative Analyst's Office, 2012)
>
> "Though evaluation of tax expenditures may be difficult, a more serious problem may be the failure to try". (OECD, 2010b)

Based on the policy approach set out in the MTES, and drawing on the recent series of tax expenditure evaluations undertaken by the Department of Finance, this report describes how the Department will approach the evaluation of tax expenditures, either before the introduction of a tax expenditure (ex ante evaluation), or in reviewing a tax expenditure that is already in existence (ex post evaluation). The objective is to promote high standards in tax expenditure evaluation and provide guidance and clarity to interested parties as to how the Department of Finance will approach the evaluation of new or existing tax expenditures.

A number of analyses were undertaken by the Department in preparing these guidelines. These included:

- A review of the economic literature on tax expenditures (see Annex 2);
- An analysis of international approaches to tax expenditure evaluation (see Annex 3);
- A review of tax expenditure evaluations in Ireland (Annex 1).

The key lessons from these analyses have informed the guidelines.

Overall Approach

The guidelines distinguish between two types of evaluations, namely those undertaken prior to the introduction of a new tax expenditure (ex ante evaluations) and those that relate to existing tax expenditures (ex post evaluations). The key questions to be addressed in each type of evaluation are summarised in the Table below and are described in detail in chapters 3 and 4 of this report.

Table 1: Key Evaluation Questions

Ex Ante Evaluations	Ex Post Evaluations
1. What **objective** does the tax expenditure aim to achieve?	1. Is the tax expenditure still **relevant**?
2. What **market failure** is being addressed?	2. How much did the tax expenditure **cost**?
3. Is a **tax expenditure the best approach** to address the market failure?	3. What was the **impact** of the tax expenditure?
4. What economic **impact** is the tax expenditure likely to have?	4. Was it **efficient**?
5. How much is it expected to **cost**?	

Given the range and diversity of tax expenditures, there is an inherent trade-off between the need for an individually appropriate evaluation and consistency across tax expenditure evaluations. As a result, the framework described in these guidelines may not cover all aspects of each evaluation and not all parts of the framework will apply to all tax expenditures.

The scope of evaluation should be proportionate to the size and objectives of the tax expenditure. Accordingly, these guidelines provide for a proportionate approach with a more detailed analysis required the higher the cost of the intervention.[2] The approach is summarised below.

Table 2: Levels of Evaluation

Estimated Annual Cost[3]	Level	Ex Ante	Ex Post	Time Limit/ Review
Between **€1m and €10m**	Level 1	Ex ante assessment and identification of criteria for ex post evaluation	Application of ex post criteria	Five years to review
Between **€10m and €50m**	Level 2	Detailed assessment – scenario based analysis or similar and statement of proposed methods and data requirements for full ex post cost-benefit analysis (CBA)	Full ex post CBA	Five years to trigger review Interim review after three years if annual costs exceed €25m
Greater than **€50m**	Level 3	Full ex ante CBA and statement of methods and data requirements for full ex post CBA Use of pilot scheme if possible	Full ex post CBA	Interim review after three years

[2] In this document, terms such as "tax expenditure," "scheme", "intervention" and "measure" are used interchangeably.

[3] Methods for cost estimates are discussed in chapter 6 of this report.

Consistent with the principle in the MTES that all tax expenditures should be time limited, the guidelines provide for ex post reviews after five years. However, there are factors that could trigger an interim review within this time period including, for instance, a change in government policy, expansion of the number and size of (tax or non-tax) supports in a sector or significant deviation between ex ante cost estimates and scheme outturn costs.

2. Overarching Principles and Concepts

The approach set out in these guidelines draws on a number of economic principles grounded in the theory of optimal taxation and in economic evaluation practice.

Economic Principles

Two key economic principles govern the evaluation of tax expenditures:

- Neutrality; and,
- Market Failure

Neutrality

The concept of neutrality comes from the theory of optimal taxation and is one of the key principles of an optimal tax system as set out for example by the Mirrlees Review (see Annex 2). A neutral tax system is one that does not adversely influence taxpayer behaviour such that decisions by economic agents are based on preferences before tax considerations are taken into account. By definition tax expenditures depart from neutrality. The primary justification for departing from neutrality is the existence of a market failure.

Market failure

Market failure refers to a situation where an imperfection in the market mechanism prevents the achievement of economic efficiency (HM Treasury, 2011). It is often represented in situations where supply and demand do not balance at a price that would apply in a well-functioning market. Market failures can occur in the presence of positive or negative externalities, monopoly presence, information asymmetries, or the existence of public goods.

For example it is well known that businesses will tend to under-invest in research and development (R&D) relative to an optimal societal level. On this basis, state intervention to incentivise additional R&D expenditure can be justified. Similarly many jurisdictions use tax expenditures to capture positive externalities associated with environmental protection.

In the absence of a market failure, interventions will lead to inefficiency and deadweight. For this reason, and given the costs of tax expenditures, evaluations should carefully seek to identify the market failure in question.

Key Evaluation Concepts

It is important that evaluations endeavour, where possible, to take account of the following effects:

- Deadweight (or additionality);

- Displacement; and,
- Opportunity costs.

Deadweight and additionality

Deadweight is an economic concept that attempts to capture the amount of activity that would have taken place anyway in the absence of the incentive or scheme. The overall benefits associated with a scheme should be adjusted downwards if some, or all, of the observed activity would have occurred in the absence of the support. This ensures that only the benefits that are truly 'additional' to the economy are taken into account. The higher the level of deadweight, the less the net benefits of the scheme. In an extreme case of one hundred percent deadweight, none of the apparent benefits are in fact additional; conversely zero percent deadweight suggests that all of the benefits are additional. In many instances, partial deadweight effects may be observed where the activity would have taken place but on a smaller scale or at a later stage.

In estimating a deadweight parameter a number of methods can be used including surveys, econometric techniques and studies involving control and treatment groups. The drawback with interview studies is that beneficiaries generally have no particular incentive to truthfully reveal what they would have done if their project had not received support or had received a lower level of assistance. Econometric studies are more sophisticated but require a lot of data. Control and treatment group studies are probably the most convincing. These studies look at differences over time in the behaviour or performance of beneficiaries (individuals or companies) compared with similar groups of non-beneficiaries.

In the absence of compelling economic data for precise deadweight estimates, ranges for deadweight values derived from evaluations of similar interventions may be used.

Displacement

Displacement refers to a situation where some of the benefits associated with the scheme occur at the expense of non-beneficiaries. For example, beneficiary firms operating in a particular market could gain market share at the expense of competing firms or a scheme targeted at one group (e.g., the long-term unemployed) could negatively impact on other groups (e.g., the short- term unemployed). Where displacement occurs the net benefits attributed to the scheme must also be adjusted downwards.

Opportunity costs

A fundamental principle of economics is that all resources (capital, labour, public funds) have an opportunity cost reflecting their value in an alternative use. These costs must be taken into account in evaluation. In particular, for tax expenditure evaluations two types of opportunity costs should be considered:

- The opportunity cost of labour; and,
- The opportunity (or marginal) cost of public funds.

Opportunity cost of labour

When considering the employment benefits of a scheme (e.g. wages, jobs, tax revenues etc.) the opportunity cost will be the value that the labour used would have earned in the market absent the scheme. The higher this opportunity cost, the lower is the net employment benefit of the intervention.

Despite the fact that an intervention scheme may create employment, unemployment will not necessarily reduce one-for-one for each job created. Some jobs will be filled by workers moving from other jobs rather than from unemployment, and thus the opportunity cost will be quite high. Or perhaps labour will flow into the economy from inward migration, in which case the opportunity cost will be somewhat lower. In sectors with very tight labour markets where an un-utilised pool of unemployed labour does not exist (e.g.,in high skilled sectors) the opportunity costs will be very high and the net benefits will be correspondingly lower.

To account for the opportunity cost, the market wages of labour are reduced in an evaluation by a shadow wage which reflects the opportunity cost of labour. Parameter values for the shadow price of labour are available from the Department of Public Expenditure and Reform in the Public Spending Code[4].

Opportunity cost of public funds

It is understood that when a tax expenditure is introduced, one group benefits, but the rest of society must pay additional taxes to compensate the exchequer from the loss of revenue from the scheme. Taxation gives rise to economic distortions by altering the incentives facing economic agents, leading to changes in their behaviour (for example, reduced labour market participation) and reduced economic activity.

The actual costs associated with a scheme must be adjusted upwards to account for the cost to society of the tax imposed to finance the scheme. Similarly revenues derived from a scheme can be grossed up as these revenues offset some of the tax burden on other groups.

To account for the opportunity cost of public funds, the actual cost of a scheme is adjusted using a shadow price parameter. This ensures that every €1 of additional public outlay has to generate more than €1 benefit to be deemed worthwhile. Parameter values are available from the Department of Public Expenditure and Reform in the Public Spending Code.

[4] http://publicspendingcode.per.gov.ie

3. Ex Ante Evaluation

An ex ante evaluation is one that takes place before the introduction of a tax expenditure. As such, ex ante evaluations particularly address issues related to the rationale for the intervention and its planning and design.

Informed by a review of international tax expenditure frameworks (see Annex 3) **five key questions** should be addressed in an ex ante evaluation of a proposed tax expenditure. These are:

1. What **objective** does the tax expenditure aim to achieve?
2. What **market failure** is being addressed?
3. Is a **tax expenditure the best approach** to address the market failure?
4. What economic **impact** is the tax expenditure likely to have?
5. How much is it expected to **cost**?

1. What **objective** does the tax expenditure aim to achieve?

For all types of schemes, from very small ones to highly costly schemes, it is crucial that the objective for the scheme's existence is clear. Without a clear objective (or objectives), a scheme cannot be properly evaluated.

An ex ante evaluation provides an opportunity to define and interrogate the objective which should be consistent with Government policy. If the tax expenditure is approved, the benefits of this exercise will be realised in ongoing monitoring of the scheme and at the later ex post evaluation stage.

2. What **market failure** is being addressed?

While the objective of the scheme may be grounded in Government policy, (e.g., to increase R&D in the economy or to assist the SME sector), the key rationale for Government intervention in a market, whether by way of a tax expenditure, direct expenditure or a regulation, should be the existence of a market failure.[5] In other words the proposed intervention is necessary owing to a market failure that prevents the realisation of the desired objective. The ex ante evaluation must identify the nature of the market failure in question and explain why government intervention is necessary.

[5] See Chapter 2 and Annex 2 of this report for a discussion of market failure.

3. Is a **tax expenditure the best approach** to address the market failure?

While the existence of a market failure can create a strong justification for State intervention, it does not imply that a tax expenditure is the most efficient form of intervention. The market failure could possibly also be remedied by other means including by direct expenditures or by regulation. An evaluation must consider whether a tax expenditure is the most appropriate intervention. The table below sets out in general terms the benefits and limitations of tax expenditures and direct expenditures.

Table 3: Benefits and Limitations of Tax Expenditures and Direct Subsidies

	Tax Expenditures	**Direct Subsidies**
Accessibility for beneficiaries	Simple, due to their automatic nature. Can facilitate a greater range of taxpayer choice.	More complex, requiring selection/targeting.
Administrative costs	Low for exemption (can use existing tax data), but can be high for the tax system as a whole due to increased complexity.	Medium level, due to necessity of a selection and allocation system.
Possible abuses	Reduced risk of fraud as already tax compliant though still room for evasion, avoidance & for rent seeking.	Room for arbitrariness and capture of the allocating body.
Flexibility	Works with permanent laws, thereby generating stability but also inertia.	Works with budgets, evaluations and regular reallocations.
Transparency and accountability	Their automatic nature is not conducive to control mechanisms or accountability.	Must be approved by legislature as with all governmental expenditures.
Expenditure control	Expenditure usually determined ex post, uncertain & unlimited, which can cause fiscal imbalances. Difficult to calculate.	Spending usually programmed and controlled and limited by budget laws.
Effectiveness	Make use of market allocative knowledge. Additionality/ Incrementality in the targeted action cannot be guaranteed. May finance activity which would have occurred in absence of tax expenditure. (Deadweight)	Risk of displacement of private sector and difficulties in ensuring additionality/ incrementality.
Equity	Regressive by nature. Only those who pay taxes qualify, and those with greatest income benefit the most	Discretionality can provide more equitable access, enhancing targeting on beneficiaries.

Based on Villela, et al., (2010)

In addition, it is crucial that existing policy interventions in the policy area of concern are taken account of in the evaluation. It needs to be established whether the proposed incentive adds to the existing suite of policy interventions as distinct from causing duplication.

4. What economic **impact** is the tax expenditure likely to have?

Even if it can be demonstrated that a proposed tax expenditure can be justified by reference to a market failure (question 2 above) and that a tax expenditure is a superior form of intervention to other options (question 3), questions need to be asked about whether the design of the scheme is such that it is likely to meet its objectives.

For this reason, it is important that some consideration is given to how the tax expenditure in question is expected to have an impact. This involves examining the purported links between the tax expenditure and its objectives (see question 1 above). It requires tracing out the envisaged links or causal connections between the granting of the tax reduction in question and the socio-economic objective of the scheme (often referred to as an assessment of the "intervention logic" of the scheme). The question of the likely incidence of the tax expenditure (i.e., where will the economic benefit of the reduction in taxation actually fall?) is an important element in this analysis. This should include consideration as to whether the benefit of the tax expenditure will be capitalised into higher prices in the market.

This analysis can draw on the results of evaluations of similar tax expenditures or other programmes in Ireland or in other jurisdictions.

Consideration should also be given at the ex ante stage to how the economic impact will be assessed at the ex post stage so that arrangements for the collection of the necessary data can be put in place from an early stage. Methods used in other evaluations may be useful in identifying the type of data required.

5. How much is it **expected to cost**?

Ex ante evaluations should endeavour to estimate the cost of the scheme, either using scenario-based approaches or inferences and assumptions. The assumptions underpinning the cost estimates should be made clear and "what-if" type sensitivity analysis performed around key assumptions. The most practical approach to estimating costs is likely to be the revenue foregone method (discussed in Chapter 6). Whilst hard data may not be available at the ex ante stage it is essential that arrangements are put in place to collate the necessary data for ongoing scheme monitoring and ex post evaluation. Where a cost-benefit analysis is required, the opportunity cost of public funds should be incorporated into the calculus.

4. Ex Post Evaluation

An ex post evaluation is conducted after the scheme has been in operation for a number of years. Ex post evaluation is primarily concerned with questions around the continuing relevance of the scheme and its impact. Of course a key linkage between the ex post and ex ante evaluations is that the more effort that went into the ex ante evaluation in terms of identifying methods for the ex post evaluation and setting up the necessary data collection processes, the easier it will be to undertake the ex post evaluation.

Again informed by a review of international tax expenditure frameworks (see Annex 3), **four key questions** should be addressed in ex post evaluations. These are:

1. Is the tax expenditure still **relevant**?
2. How much did the tax expenditure **cost**?
3. What was the **impact** of the tax expenditure?
4. Was it **efficient**?

1. Is the tax expenditure still **relevant?**

The ex post evaluation provides an opportunity to assess whether the initial objective(s) for the scheme remain valid given changes in the economy, the relevant market or sector, and government policy priorities since its introduction.

In the assessment, account should be taken of other policy interventions (e.g. direct expenditures and regulations) that may have been introduced since the inception of the scheme as these may call into question the need for the scheme. Similarly changes in the external environment of the scheme should also be taken into account in assessing relevance.

2. How much did the tax expenditure **cost**?

Clearly, the actual outturn costs must be established at the ex post evaluation stage.

Three methods exist for determining the cost (see Chapter 6):

- The revenue foregone method;
- The final revenue loss method; and,
- The outlay equivalence method.

For practical reasons the revenue foregone method is likely to be the most applicable method. However, where feasible, the other methods can be used. Where possible, the evaluation should account for any differences between ex ante cost estimates and the ex post outturn. The issue of possible “tail” or legacy costs of expired or expiring tax expenditures should also be considered.

Where a CBA is undertaken, efforts should be made to estimate the full economic cost of the scheme by incorporating the opportunity cost of public funds.

3. What was the **impact** of the tax expenditure?

The question of impact is about establishing whether a tax expenditure has been successful in changing behaviour, improving performance or increasing economic activity over what would otherwise have been the case. In other words, what difference has the tax expenditure made? By way of example, if the R&D tax credit had a very high take-up rate amongst R&D active companies it could be described as an effective scheme. But for it to have an economic impact, it would need to have resulted in previously non-R&D active companies engaging in R&D and for R&D active companies to have increased levels of R&D investment.

Identifying the impact of a scheme can be difficult as the counterfactual (i.e., the situation that would have prevailed in the absence of the scheme) is unknown. While beneficiaries can be asked through surveys whether their behaviour or activity changed as a result of the tax expenditure, this information cannot always be relied upon. Other methodological approaches, such as the use of control groups or randomised control trials, can be used to assess impact. However, these methods are demanding in terms of data requirements and resources and are unlikely to be feasible in the case of most tax expenditure evaluations.

Nevertheless, it is important that some analysis is undertaken to enable a judgement to be made of the likely impact of the scheme. Aspects such as the level of take-up or participation rates in the scheme can be examined; where a scheme has little or no uptake it is clear that it has not had an impact. (Strictly speaking take-up or participation rates are measures of *effectiveness* and can be viewed as a necessary - though not sufficient - condition for the scheme to have an impact.) If a scheme is aimed at incentivising particular behaviour by a certain group (e.g. the SME sector), it is important to know the size of the target group and the percentage of this group that participated in the scheme. On the other hand, very high levels of take-up might point to the existence of deadweight effects. An analysis of the incidence of the tax expenditure will also be helpful in impact assessment.

4. Was it **efficient**?

The efficiency question relates to the overall value for money of the scheme. While a scheme may have been successful in terms of its objectives, this has to be set against the costs of the scheme. For example, it may be possible to calculate the unit cost for programme outputs such as cost per job created, and compare these with unit cost estimates for other interventions, including those funded through public expenditure. In the more costly schemes a full cost benefit analysis will be required to test whether the scheme was efficient.

More broadly, in addressing efficiency, account should be taken of other tax or direct expenditure schemes in the same policy space and how these interact. Alternatives to the existing scheme, in terms of direct expenditure and regulation, that could achieve the objective but in a more efficient manner should also be considered and analysed.

5. Proportionate Approach to Evaluation

While the questions set out for ex ante and ex post evaluation must always be addressed, the required approach to evaluation set out in these Guidelines is a proportionate one based on the principle that the resources allocated to evaluation should be proportionate to the size of a scheme. The scope of the evaluation and the depth of analysis expected increases in line with the estimated cost in the case of an ex ante evaluation, or the out-turn cost in the case of an ex post evaluation.

Proportionate Approach

These Guidelines set out three levels of analysis based on the overall estimated annual cost of the scheme. The guidelines exclude schemes that cost less than €1 million per annum; these schemes can be covered in policy reviews or other exercises. However if an evaluation is required, the Level 1 approach for schemes costing between €1 million and €10 million can be used.

Level 1 – Schemes costing between **€1 million and €10 million**

These tax expenditures require a less in-depth form of evaluation relative to more costly schemes.

- These evaluations will primarily be qualitative but should still cover the key evaluation questions for ex ante and ex post evaluation outlined herein.
- At an ex ante stage the evaluator should set out criteria against which the impact and efficiency of the scheme will be evaluated at the ex post stage. This may involve collection of data by the Revenue Commissioners on the scheme and the characteristics of the participants and beneficiaries though this is only a requirement for Level 2 and 3 evaluations.
- In terms of techniques, a full CBA is not required for Level 1 evaluations.

Level 2 - Schemes costing **between €10 million and €50 million**

A greater level of complexity will be required for schemes with an ex ante or ex post annual cost in the range between €10 million and €50 million. The key evaluation questions should be addressed for ex ante and ex post evaluations.

At the **ex ante stage,** a full CBA is not required.

- Instead the evaluation should use an approach such as a 'scenario-based analysis' or similar to identify the range of net benefits and costs that might arise for a range of possible values for deadweight and opportunity costs. By way of example, the tables below show, firstly, the range of values that might be used for deadweight in a scenario-based analysis, and secondly, the outcome of an analysis by the Department of Finance on the net benefits of the Film Relief tax expenditure with a range of values for deadweight and the opportunity cost of labour. A scenario-based analysis should use the full range of values from zero to one hundred percent.

Table 4: Scenario-Based Approach to Deadweight

Level	Description	Deadweight
None	All of the benefits are additional	0%
Low	Most of the benefits are additional and would not have occurred in the absence of the tax expenditure	25%
Medium (partial)	Some of the benefits would have occurred anyway (or would have occurred but at a later stage, i.e., >3 years)	50%
High	Most or all of the benefits would have occurred anyway (or within a short- to medium-term timeframe, i.e., <3 years)	75% - 100%

Table 5: Sensitivity Analysis of Department of Finance CBA results

	Opportunity Cost of Labour						
	100%	**80%**	60%	50%	40%	30%	20%
Deadweight	**Range of Net Benefits**						
10%	-€38.2m	-€21.1m	-€4.2m	€4.1m	€12.3m	€20.5m	€28.6m
20%	-€41.8m	-€26.5m	-€11.6m	-€4.2m	€3.2m	€10.4m	€17.6m
35%	-€47.1m	**-€34.7m**	-€22.5m	-€16.5m	-€10.6m	-€4.7m	€1.2m
40%	-€48.9m	-€37.4m	-€26.2m	-€20.7m	-€15.2m	-€9.7m	-€4.3m
50%	-€52.4m	-€42.9m	-€33.5m	-€28.9m	-€24.3m	-€19.8m	-€15.3m
60%	-€56.0m	-€48.4m	-€40.9m	-€37.2m	-€33.5m	-€29.9m	-€26.3m
70%	-€59.5m	-€53.8m	-€48.2m	-€45.4m	-€42.7m	-€39.9m	-€37.2m

Source: Department of Finance Review of Film Relief (2012)

- The ex ante evaluation should identify the methods to be used to conduct an ex post evaluation and identify the data that will be required so that it can be collected from the outset.

At the **ex post stage** a full CBA will be required.

- The ex post CBA should fully incorporate the economic concepts described in these guidelines, namely deadweight and displacement, and opportunity costs (of public funds and labour).
- Whilst deadweight values will have to be estimated, or alternatively based on assumptions, parameter values for opportunity costs are available from the Department of Public Expenditure and Reform.

The expected timeline for an ex post evaluation of a Level 2 scheme is five years. However an interim review after three years should take place if the outturn costs of the scheme place the scheme into the Level 3 evaluation range (i.e. if outturn costs exceed €50m).

Level 3 - Schemes costing **more than €50 million**

These are the most costly tax expenditures and will require the most in-depth level of evaluation.

- A full CBA should be undertaken for both ex ante and ex post reviews.
- Where possible a pilot scheme should be used to test the effectiveness and efficiency at an early stage.
- As with Level 2 evaluations, the methods for ex post evaluations should be identified at the ex ante stage such that data can be collected from the outset.
- An interim review of the effectiveness and efficiency of the scheme should be conducted after three years. The interim review does not require a full CBA, although a CBA approach may be used depending on resources and data availability.

Summary

The overall approach is summarised in the Table below.

Table 6: Levels of Evaluation

Estimated Annual Cost	Level	Ex Ante	Ex Post	Time Limit/ Review
Between **€1m and €10m**	Level 1	Ex ante assessment and identification of criteria for ex post evaluation	Application of ex post criteria	Five years to review
Between **€10m and €50m**	Level 2	Detailed assessment – scenario-based analysis or similar and statement of proposed methods and data requirements for full ex post CBA	Full ex post CBA	Five years to trigger review Interim review after three years if annual costs exceed €25m
Greater than **€50m**	Level 3	Full ex ante CBA and statement of methods and data requirements for full ex post CBA Pilot scheme if possible	Full ex post CBA	Interim review after three years

6. Technical Issues

Cost Benefit Analysis

Cost benefit analysis (CBA) is an economic approach that endeavours to bring together all the economic costs and benefits of an intervention after adjusting for deadweight, displacement and opportunity costs. It enables quantification of the net economic benefit (or cost) of an intervention. Various metrics can be used including net present value, benefit to cost ratio and internal rate of return.

In undertaking cost benefit analysis (CBA) for the evaluation of the more expensive tax expenditures, reference should be made to the official guidelines on CBA as set down by the Department of Public Expenditure and Reform (DPER). The frameworks described in this paper in relation to CBA have their origin in the DPER guidelines for the evaluation of capital and current expenditure contained in the Public Spending Code. Parties may consult with either the Fiscal Economics Unit of the Department of Finance or the Central Expenditure Evaluation Unit of DPER in undertaking a CBA as part of a tax expenditure evaluation.

It is expected that in the absence of other compelling economic evidence the parameter values from the DPER will be used in evaluation exercises when quantifying the economic costs and benefits of a scheme.

Cost estimation

The economics literature (OECD, 2010b) cites three ways to calculate the costs associated with tax expenditures;

- The **revenue forgone** is the monetary amount that the expenditure is recorded as costing. Estimates of the revenue forgone, also known as the initial revenue loss method are based on the assumption of unchanged behaviour and unchanged revenues from other taxes. Hence, this kind of static calculation is theoretically inadequate as it ignores the behavioural aspects of a tax incentive and ignores any possible interaction with other tax expenditures. As a result, estimates of revenue forgone may not represent accurate estimates of the revenue that would be raised if the tax measure was removed and individual tax expenditures cannot be summed to an aggregate total.
- The **final revenue loss (gain) method** would take into account the change in behaviour and the effects on revenues from other taxes as a consequence of the introduction (discontinuation) of a tax expenditure and hence should accurately reflect the amount of revenue that would be raised if a tax expenditure is removed.[6]
- The **outlay equivalence method** aims to estimate the tax expenditure in terms of the cost of a direct expenditure which would achieve the same purpose. It is the necessary pre-tax direct

[6] For an example of the Final Revenue Loss Method, see Barrios et al., (2014).

expenditure that would be required to achieve the same after-tax effect on taxpayers' incomes as the tax expenditure achieves.[7]

For practical reasons the revenue forgone method is likely to be used in the majority of evaluations. Where possible, evaluations may also use either of the other two methods. In a cost benefit analysis framework an additional adjustment should be made to account for the opportunity cost of public funds.

Data Collection

The availability of data determines the types of evaluations possible both in terms of whether qualitative or quantitative and, within the latter, whether the focus is on effectiveness (outputs) or efficiency (outcomes). The German experience (see Annex 3) is that effectiveness tests dominates efficiency reviews due to lack of data (Thöne, 2012) and similar issues arose in previous Department of Finance (2006) reviews. The Department of Finance (Hynes & O'Connor, 2014) encountered a number of data obstacles in attempting to evaluate the R&D tax credit.

While there will be a lot of variance in the nature of data required depending on the nature of the evaluation, the Minnesota Department of Revenue (2011) identify broad categories of information in addition to the budgetary impact. These are:

a) The number and nature of those who pay reduced tax as a result of the tax expenditure – and potentially data on the distribution of benefits by age, household type, or geographic location;
b) Behavioural change resulting from the tax expenditure; and,
c) Any unintended results - e.g. are taxes reduced for a broader group than intended?

When collecting data, it is unrealistic to expect that it will be possible to pinpoint the indirect or secondary impacts of alternative tax expenditures on economic performance (Washington JLARC, 2013). More realistically, despite best efforts, there will always be an information deficit. The lack of detailed information can potentially be ameliorated by the use of more general indicators.

If there is insufficient data for evaluation, what data would fulfil the requirements of a future evaluation? Even in cases where there is sufficient information to complete an analysis thought should be given to what data would be desirable to have to improve the quality of future evaluations. Consideration should be given as to how an appropriate data collection mechanism can be implemented to ensure this will be available.

There is a trade-off between the volume of data collected and the compliance and administration burden for the users and operators of tax expenditures. While additional information is almost always welcome in an evaluation, this needs to be weighed against the cost of generating it.

[7] According to the OECD, Sweden uses the Outlay Equivalence Method in costing its tax expenditures. See OECD, 2010b.

Annex 1: Tax Expenditure Evaluation in Ireland

Recent Irish Tax Expenditure Evaluation

Tax expenditure evaluation is not new in an Irish context. Most notably the Commission on Taxation, which reported in 2009, was tasked among other issues with reviewing all tax expenditures in order to assess their economic and social benefits (Commission on Taxation, 2009). Each identified tax expenditure was assessed using a consistent evaluation framework resulting in a recommendation for the maintenance, removal or modification of the tax expenditure. The framework used by the Commission is a good example of the typical issues included in a tax expenditure evaluation.

In the early 1980s, the previous Commission on Taxation directly examined the role of tax incentives in direct taxation (1984a) and addressed a number of tax reliefs, deductions and exemptions in their other reports (1982, 1984b, 1985). This was as part of the Commission's broad scope to examine and make recommendations regarding the taxation system generally.

Budget 2006 included a Review of Tax Schemes in three volumes. The first two volumes consisted of consultant reports on Property-Based (Indecon, 2005) and Area-Based (Goodbody, 2005) tax incentive schemes while the third volume comprised a review of seven different tax reliefs and two other tax schemes (Department of Finance, 2005).

In accordance with Section 1 of the Finance Act 2010 (Department of Finance, 2010), a report was produced considering eighteen tax expenditures. More recently a number of particular tax schemes have been examined in Department of Finance work including legacy property reliefs (Department of Finance, 2011a), the Employment and Investment Incentive (Department of Finance, 2011b), the film tax relief (Hynes & O'Connor, 2012) and the R&D Tax Credit (Department of Finance, 2013; Hynes & O'Connor, 2014; Levey & Ross, 2013) and on behalf of the Department consultants examined the Living City Initiative (Indecon, 2013). A comprehensive review of agricultural related tax expenditures has also been undertaken in 2014. A summary of each of the most recent tax expenditure evaluations is set out below.

Economic Impact Assessment of Potential Changes to Legacy Property Reliefs

The Economic Impact Assessment of Potential Changes to Legacy Property Reliefs (Department of Finance, 2011b) was commissioned to allow the Department to analyse the legacy costs to the State and to look at possible impacts on individuals and on various sectors of the economy. The assessment also included a public consultation which received over 700 submissions and analysis of these submissions. The assessment looked at the effects of changes in property reliefs for individual investors, economic sectors, financial institutions, and the State.

The Report recommended that reliefs to small investors should not be restricted and suggested that this could be achieved by not introducing any restriction to Section 23 reliefs. In terms of professionally advised investors, the report noted that the State was already restricting the ability of this group to fully utilise tax reliefs through the high earners restriction. The report recommended the possibility of modifying the high earners restriction to restrict the possible use of property reliefs in a given year. A further possibility identified was to bring in a levy for income that is being sheltered by property reliefs in excess of a threshold.

Ex Ante Economic Analysis of the Employment and Investment Incentive (EII)

In 2011 the Department of Finance (2011b) carried out an Ex Ante Economic Analysis of the Employment and Investment Incentive. This included analysis of its predecessor the Business Expansion Scheme (BES). The review outlined the proposed changes to the BES and the potential amounts raised and costs to the exchequer under three different scenarios.

The review indicated that, if the EII was twice as successful as the BES it could support the creation of 2,400 new jobs. In addition with the removal of the qualifying trades' restriction more companies could access the BES and this could lead to further job creation and retention and consequent exchequer gains as a result of an increase in income tax revenue and reductions in social welfare payments. The review also found that access to capital through the scheme would assist companies with long term investment and also reduce their reliance on loans thereby reducing business costs. Further the review found that increasing the company limit would allow the retention of larger scale projects and businesses in Ireland. The report concluded by noting that statistics for BES are more readily available than for other tax expenditures and therefore should costs increase above what is expected it would be possible to make changes to the scheme quickly in order to reduce risk to the exchequer.

Film Relief Review

The first review of Section 481 the Film Tax credit was carried out by Indecon in 2007 on behalf of the Department of Finance. Inter alia, the review recommended that film tax incentives continue for another 3 to 5 years but that they should be reviewed again in advance of the expiry deadline, that there should be no change to the incentives for television production, that consideration should be given to enhancement of the film production incentives and that a grants scheme should be provided by the Irish Film Board as an alternative to the tax credit.

The 2011 review of the film tax credit consisted of four parts: an economic impact assessment report, a public consultation, a review of audio-visual incentives in other states and a survey of domestic and international production companies. The BDO international review found that the Irish tax credit was an outlier in that the relief was provided as a relief against income tax to investors. The Department used a cost benefit analysis to appraise the credit and found that there was a net welfare associated with the scheme.

Therefore in line with international practice and the analysis in the review it was recommended that Ireland move to a producer led scheme. The review suggested that this change would enhance the efficiency of the scheme and reduce the cost to the exchequer while at the same time providing a similar level of benefit to the film producers. In the interests of fairness it would also remove high income earners from the scheme.

R&D Tax Credit Review

This review (Department of Finance, 2013; Hynes & O'Connor, 2014; Levey & Ross, 2013) consisted of a literature review of the reasons for government support for R&D and the economic rationale for R&D, an economic data analysis of the credit, the results of a public consultation, a summary of the survey results, and a chapter on international comparisons of R&D tax credits.

The R&D review concluded that the credit plays an important role in enabling Ireland to meet its Europe 2020 target of R&D expenditure of 2.5% of GDP and is an important factor in the decision of firms to invest in R&D. The international comparison showed that the Irish regime performs well when compared to similar regimes in other countries and that it is an important pillar of Ireland's attractiveness for foreign direct investment. The positive findings from the review suggested that major changes to the design of the credit were not required. However the review did make a number of recommendations to improve its operation.

The recommendations included phasing out the base year threshold when conditions allow, relaxing the outsourcing limits, aligning the various direct and indirect government supports for R&D, monitoring and keep under review the exchequer cost, and reviewing and amending the key employee provision where appropriate.

Ex Ante Evaluation of the Living City Initiative

The Living City Initiative is a targeted pilot tax incentive designed to encourage people back into the centre of Irish cities and thereby encourage the regeneration of the retail part of these central business districts. The initiative is to work by giving a tax incentive for work to improve residential and retail buildings. This tax incentive is aimed towards owner occupiers as opposed to property developers.

The evaluation, carried out by Indecon (2013) had four key conclusions:

1. There are significant economic benefits from the proposed initiative which outweigh the economic costs involved
2. Unlike property incentives in the past both the focus and timing of this incentive is aligned with the requirements of the Irish economy.
3. There are likely to be some modest exchequer costs required to achieve the identified benefits
4. The Scheme is likely to require EU approval under state aids but is similar to schemes approved in other countries.

Review of Income Tax Expenditures which Support Business (2014)

As part of the 2014 Action Plan for Jobs (DJEI, 2014), the Department of Finance, jointly with the Revenue Commissioners, has recently completed reviews of several business several related tax schemes. These are the Special Assignee Relief Programme (SARP), the Foreign Earnings Deduction (FED), the Employment Investment Incentive (EII) and the Seed Capital Scheme (SCS).

Agri-Taxation Review

The objective of the Agri-taxation Review is to identify what works and what doesn't, and redirect the existing level of tax expenditure towards activities of maximum benefit to this sector of the economy.'[8] The review focuses on the following general themes:

- A public consultation
- A review of the tax supports available to the primary agricultural sector in Ireland.
- An analysis of the benefits available to the sector and the wider economy versus the Exchequer costs, i.e. value for money to the economy.
- Recommendations, where necessary, for changes that could be made to enhance or maximise the value for money to the tax payer, taking EU State Aid considerations into account.
- Suggestions for improvements that can be made to better achieve existing stated policy goals, with particular reference to Food Harvest 2020 and the Programme for Government, the key policy areas being:
    - Encouraging and attracting young farmers and new entrants to farming.
    - Land mobility – transfers via the market, whether by sale or long-term leasing
    - Succession – earlier lifetime transfers within families (and non-family transfers also where no apparent successor available)
    - Alternative farming models - collaborative farming such as farm partnerships, share farming, contract rearing or cow leasing; also farm business structure, i.e. sole trader or incorporation
    - Environmental sustainability
    - Smart Farming - encouraging innovation, improving skill levels and maximising the adoption of best practice.
- A survey of accountants and tax professionals dealing with the primary agriculture sector.
- Benchmarking Irish agri-taxation policy measures against 3 other EU countries, such as, but not exclusively, the UK, France and the Netherlands.

Methodologies Applied in Irish Tax Expenditure Evaluation

The evaluations listed above mainly comprise ex post evaluations, but include a number of ex ante evaluations of the proposed introduction or changes to tax expenditures (Department of Finance, 2011a; Indecon, 2013). It is also evident from the above that tax expenditure evaluation falls under more general tax system evaluation. The various Commissions on Taxation examined tax expenditures as part of broader consideration of medium-term tax policy.

The balance between qualitative and quantitative reviews weighs towards the former. The methodologies applied by the various studies can be typified in their approaches broadly as: principles based (Commission on Taxation, 1984a, 2009), cost-benefit analysis focused (Indecon, 2005, 2013; Goodbody, 2005; Department of Finance, 2005, 2010) and economic impact assessments (Department of Finance, 2011a; Hynes & O'Connor, 2012) These also reflect the size of the respective tax expenditures with the largest items receiving the most detailed consideration (an economic impact assessment).

[8] Statement of the Minister For Finance, Budget 2014

The type and extent of the evaluation process is linked to the cost and scale of the tax expenditure. A new tax expenditure with a large estimated cost would be subject to an extensive evaluation whereas smaller scale tax expenditures would be subject, in the interests of time, cost and efficiency, to much more limited evaluation processes.

The evolution of tax expenditure assessment in Ireland has seen developments in the evaluation methodologies used. At the same time a number of consistent threads run through the completed evaluations. As can be seen in the below table the main themes running through previous evaluations include:

- consideration of the **efficiency/effectiveness** of the tax expenditure, this is the core purpose of evaluation and as would be expected, features in all of the aforementioned reviews;
- consideration of the **equity and distribution** of the benefits and costs of the tax expenditure;
- the **international context** in terms the competition from other jurisdictions;
- and an examination of alternative **methods** of delivering the desired objectives such as through direct expenditure.

In the table no distinction is made between examinations of multiple small tax expenditures in a broad but relatively shallow evaluation covering many criteria e.g. Section 1 of the Finance Act 2010, and those evaluations which are much deeper but relatively narrow, such as the film relief review.

Themes in Irish Tax Expenditure Evaluations

Criteria	First Commission on Taxation	Commission on Taxation 2009	Indecon Property Reliefs Review	Goodbody	Section 1 of the Finance Act 2010	Film Relief	R&D Tax Credit	Indecon Living Cities	Legacy Property Reliefs
Rationale	✓	✓	✓	✓	✓	✓	✓	✓	✓
Efficiency (CBA)/ Effectiveness	✓	✓	✓	✓	✓	✓	✓	✓	✓
Equity/ Distribution	✓	✓	✓	✓		✓			✓
Simplicity	✓	✓							
International Competitiveness	✓	✓		✓	✓	✓	✓		
Stability		✓							✓
Comparison of Alternatives	✓	✓	✓	✓	✓	✓			✓

Annex 2: Economic Role and Characteristics of Tax Expenditures

This section outlines some of the economic issues which pertain to tax expenditures. Firstly tax expenditures are located within broader tax policy and then the role of and rationale for tax expenditures, as correcting market failure, is discussed. This is followed by an overview of some features of tax expenditures including their impact on the fiscal position, problems with aggregating their cost estimates, their potential to be pro-cyclical, the political economy of tax expenditures and the issue of fiscal illusion, and the potential role for evaluating multiple tax expenditures together rather than each in isolation.

Optimal Tax Policy

Tax expenditures make up a small part of the broader tax policy system. It is important to recognise this broader environment and not to consider tax expenditures in isolation. This principle of using a **whole system approach** is emphasised by the British Mirrlees Review (2011) and implicit in Australia's Future Tax System Report (Australian Treasury, 2010) and the Commission on Taxation's Report (2009). Viewing tax policy as a whole and ensuring a coordinated approach in considering different taxes, rather than examining each component solely at an individual level, can contribute substantially to the achievement of overall goals.

A number of further principles are associated with good tax policy – and hence also apply to tax expenditures – by far the most prominent of which are **efficiency** and **equity**. These are the subject matter of optimal tax theory which examines how efficiency and equity can be achieved in the tax system and in particular attempts to answer the question of how to trade one off against the other.

The principle of efficiency means that the tax system should raise revenue with as little interference as possible with the efficient allocation of resources in the economy. This is synonymous with minimising the deadweight burden of taxation which arises due to the inability to apply uniform lump-sum taxation. Taxes drive a wedge between the demand price and the supply price. This wedge imposes costs on and distorts decisions of consumers and other economic agents. A well-designed tax system aims to minimise these deadweight costs. (Stiglitz, 1988)

Two distinct concepts of equity are horizontal equity and vertical equity. Horizontal equity implies that the tax system should afford similar treatment to similar people while vertical equity indicates that those with a greater ability to pay should pay more tax than those with less capacity.

The Mirrlees Review (2011) identifies three additional instrumental guidelines or rules of thumb which aid in tax system design. These are the principles of **neutrality, simplicity** and **stability**. A neutral tax system is one that does not adversely influence taxpayer behaviour so that decisions on a course of action are based on preferences before tax considerations are taken into account. The instances where the high hurdle for departing from neutrality is overcome are likely to be limited. Simplicity in a tax system will help to keep administration and compliance costs to a minimum and contribute towards transparency, promoting political accountability towards citizens by indicating more clearly where the incidence of taxation falls. Stability reflects the fact that efficiency is also a dynamic concept which benefits from certainty with regard to when and how a tax is to be paid and how this amount is determined.

Other general principles include **flexibility** and **internal consistency**. The former enables the tax system to be responsive to changed economic circumstances, especially in fulfilling the stabilisation function of macroeconomic policy (Stiglitz, 1988). Internal consistency implies that individual tax measures should not have conflicting primary objectives. However, given the reality of divergent government policies, this may only be possible to a certain extent and individual measures may well be conflicting in terms of their secondary effects.

Each of these principles represent important underpinnings of a well-designed tax policy system, which has a much greater capacity to expedite achievement of societal goals than can be promoted through individual tax expenditures. This was recognised by the previous Commission on Taxation (1984a) who stated that "the level and pattern of economic activity is affected much more by the general economic policy of the government than by any set of specific measures labelled incentives." Therefore both Commissions took the view that the focus of economic policy should be on creating a climate that is conducive to broad based economic growth rather than on tax expenditures.

Role of and Rationale for Tax Expenditures – Correcting Market Failure

Notwithstanding the above considerations, tax expenditures can fulfil a number of functions. As with other government interventions the theoretical grounding for the use of tax expenditures is the correction of market failure. That is where the market, left to its own devices, does not maximise the welfare of society.[9] In this respect, a tax expenditure (among other instruments) can potentially play a role in mitigating the cause or effect of the market failure. Classic cases of market failure can occur in the cases of externalities, public goods, market power or imperfect information.

An externality is the cost or benefit deriving from an activity which does not accrue to the party carrying out the activity. Because not all the benefits of a positive externality (or the costs of a negative externality) are internalised by the consumer/supplier of the activity, there may be under-provision of the activity relative to the level that would pertain if these benefits were internalised (over-provision in the case of negative externalities). For instance, as firms pursuing R&D activity do not fully capture all the benefits arising, they might only undertake R&D to the extent that benefits accrue to the firm rather than the level of activity which would occur if all the externalities were internalised (Hynes & O'Connor, 2014).

Market outcomes which society might consider undesirable because they conflict with wider social objectives raise equity and redistribution concerns. These could be conceived as a market failure if, in calculating the welfare of society, higher weights were attributed to some individuals (for instance, the less wealthy) than to others. (Hahn et al., 2005). In practice some tax expenditures have been rationalised on the basis of supporting disadvantaged groups or areas in Ireland. Vilella et al. (2010)

[9] In economic terms, a market failure occurs when an economy has an equilibrium that is not Pareto efficient. Under a Pareto inefficient allocation, there exist feasible reallocations that can raise the welfare of one economic agent without reducing the welfare of another economic agent. (Black et al., 2009)

discuss the use of tax expenditures to improve progressivity within the tax system while Avram (2014) notes the capacity of tax credits and tax allowances to reach large portions of the population.

Other arguments and justifications sometimes advanced for tax expenditures include promoting the effectiveness and efficiency of taxes[10] and attracting mobile investment. The former captures provisions for administrative and compliance purposes or to address the disincentive effect of income tax. Increasingly mobile international investment has led to inter-jurisdictional competition to provide tax incentives which aim to influence firm location decisions (Büttner, 2014). Capital mobility is greater with respect to a small open economy and in order to maintain competitiveness, countries remain cognisant of international developments focused on attracting such mobile investment (Commission on Taxation, 2009).

The reports of both Commissions on Taxation (1984a, 2009) set a high bar for where tax expenditures can play a role, as does the Mirrlees Review (2011) where strong and clear justification is required for departures from neutrality.

Economic Issues

Impact on the Fiscal Position

As a correlative to direct spending, tax expenditures can affect exchequer revenues and hence the fiscal position. As a result, attention often turns to tax expenditures when the fiscal situation disimproves. For example, recent years have seen the abolition of numerous tax reliefs in Ireland.

The reduction of tax expenditures serves to broaden the tax base. This is an alternative to raising tax rates. Higher tax rates increase the deadweight cost of taxation through reductions in the returns to labour and investment, which disincentivises work (in favour of leisure) and saving (in favour of present consumption). By contrast, base broadening does not affect incentives at the margin (Polsky, 2011).

Pro-cyclicality

Tax expenditures operate at the margin. A simple tax incentive has the effect of making previously unprofitable activity viable. During a period of strong economic growth, when activity would already be at a relatively high level, it would be expected that the volume of activity falling within the margin and enabled by the tax incentive would be larger than during a downturn. As a result tax expenditures, can have a pro-cyclical effect on economic activity providing a much stronger incentive effect during a period of strong economic growth. In addition, when incomes are higher, firms and individuals have more tax against which to make use of tax expenditures. Reducing reliance on tax expenditures that are sensitive to the business cycle is a recommendation of Listokin (2012) in order to support the economic stabilisation function of government.

[10] It is debateable as to whether these should be considered tax expenditures or not. As indicated earlier the Commission on Taxation (2009) considered “minor reliefs and measures to facilitate tax administration” to be part of the benchmark.

On the revenue side, tax expenditures can also be pro-cyclical, as when economic activity is at its peak, ancillary taxes can be boosted. On the other hand, the narrowing effect of tax expenditures on the tax base can mean that the stabilisation of tax revenues can be challenging which is problematic during a downturn.

Aggregation Problem

The most practical approach to calculating the cost of a tax expenditure is the revenue forgone method[11]. However, when using this method, it may not be correct to sum the calculated cost of individual tax expenditures together. The total arrived at through this process would not take account of the interactions between individual tax expenditures. For instance the removal of multiple tax expenditures can push taxpayers into higher tax bands whereas overlapping tax expenditures can mean removal of one tax expenditure leads to its substitution with another (OECD, 2010b).

Fiscal Illusion / Political Economy

Fiscal illusion is the idea that taxpayers systematically misperceive the tax burden when government revenues are unobserved or only partially observed. Resulting from the information deficit, democratic decisions on fiscal issues may be distorted (Black et al., 2009).

Because they can be misconstrued as ‘tax cuts’ rather than ‘spending increases,’ taxpayers may fail to perceive the full cost of tax expenditures. Resulting from this “fiscal illusion,” government is bigger or less efficient that it would be with fully informed voters and the allocation of public goods is distorted in favour of tax expenditures. (Burman, 2013)

Furthermore tax expenditures are open to capture by lobby groups. The combination of economic rents with a lack of transparency can render tax expenditures persistent beyond their useful life. Together with “fiscal illusion” this can easily result in a bias towards tax expenditures.

Evaluation of Aggregate Effects of Tax Expenditures

The benefits of a system approach were mentioned in the principles of good tax policy. The system approach should also apply at a level capturing many or all tax expenditures. It appears appropriate therefore to occasionally step back and take a view of the bigger picture with regard to the full range of tax expenditures and their interaction with the tax system as a whole. Thus in addition to individual level tax expenditure evaluation, it can be appropriate to also consider the range of tax expenditures under a particular tax or type of tax, the range of tax expenditures (and other interventions) in a policy area, those affecting a given industry (such as the 2014 Review of Agricultural Tax Expenditures for example), those applicable in a specific geographic region and the full suite of all tax expenditures nationally (Mayburov and Leontyeva, 2014).

[11] The revenue forgone is the monetary amount that it the recorded as costing. The method estimates the cost of a tax expenditure based on the assumption of unchanged behaviour and unchanged revenues from other taxes.

Taking an alternative approach it may be appropriate to examine all of the users of tax expenditures. If certain taxpayers switch readily between different tax expenditures, it may indicate the tax avoidance effect of schemes in general.

When a large number of tax expenditures are in place, the effects of individual tax expenditures are compounded. This can result in the tax system being subject to greater administrative and compliance costs, further distortions to the neutrality of the system, greater complication and can have implications for the fairness of the tax system.

Annex 3: International Approaches to Tax Expenditure Evaluation

Tax expenditure evaluation is not routine across OECD countries and systematic evaluation of tax expenditures is identified as deficient in many countries (ANOA, 2013; Määttä, 2012; OECD 2010a; Villela et al., 2010) Most of the evaluations undertaken are ex post, are carried out on select provisions and are undertaken by external institutions (OECD, 2010a).

Tax Expenditure Evaluation in an International Context

The OECD (2010b) highlight Canada, the Netherlands and Germany for their evaluations of tax expenditures. The evaluation frameworks used in these countries are presented below along with other international work in tax expenditure evaluation from the USA and international organisations such as the OECD.

Firstly, not many countries set out an evaluation framework. Canada, noted for evaluation practice, does not publish an evaluation framework for tax expenditures. Australia developed a template document for the evaluation of tax expenditures but this does not always appear to be used (ANOA, 2013).

For countries that have produced evaluation frameworks, there is variation in the application of the frameworks. For instance, in Britain, “the exchequer departments do not have a framework to evaluate tax reliefs systematically” (NAO, 2014), while the Office of Tax Simplification did assemble a set of review criteria in its review of tax reliefs (OTS, 2011). Similarly in the USA different federal bodies and different states have developed various models for tax expenditure evaluation (GAO, 2012; Minnesota, 2011; Staff of JCT, 2008; Washington JLARC, 2013).

That said, substantial similarities in the approaches taken internationally can be observed. As with the Irish evaluations there are elements of a principles-based approach in most of the international evaluations.

German Evaluation Framework

As it sets out an extensive framework, developed in conjunction with a number of research institutes the German evaluation framework merits some elaboration and is set out in full here. It takes the form of a five step approach (Thöne, 2012).

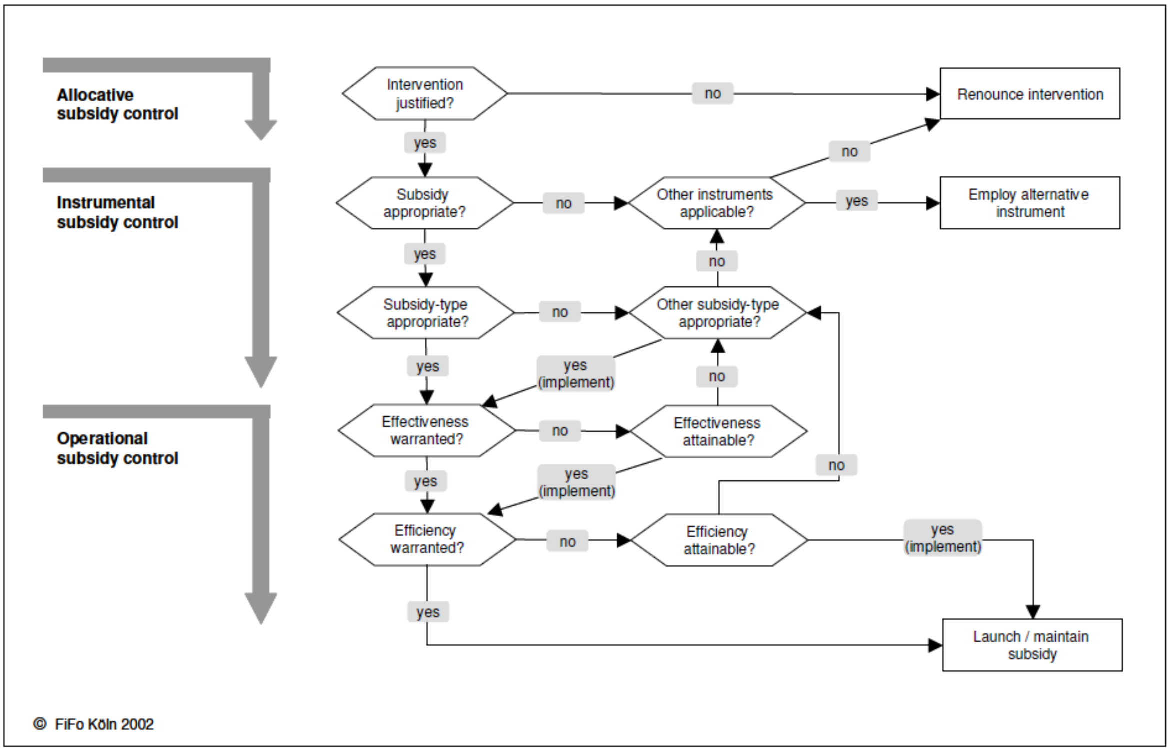
German Evaluation Framework

1. A brief description of the tax expenditure and its evolution over time incorporating the:
    a. Design of the legal and technical aspects of the tax expenditure,
    b. Purpose of the tax expenditure according to law or as announced at point of origin,
    c. Rationale (if different),
    d. Date the tax expenditure was first introduced and the timing of any significant changes in the meantime,
    e. Range of measures with similar purposes
2. Measurement of the tax expenditure's actual volume
    a. Using the revenue forgone method
    b. And applying the marginal cost of public funds
    c. Incorporating administrative costs
3. Record of past evaluations and findings from academic research.
4. Core Evaluation
    a. Transparency of the measure
    b. Rationale of the subsidy
        i. Whether the tax expenditure achieves its statutory purpose(s).
        ii. Whether the tax expenditure complies with the government's spending, subsidy and other policies generally
        iii. Examine tax subsidy in terms of the public interest (using principles such as economic efficiency and horizontal and vertical equity).
    c. Relevance of the subsidy and instrumental subsidy control
        i. Is a tax expenditure the most appropriate intervention? (Possibility of mixed instrument strategies) If yes,
        ii. Which tax is most appropriate?
        iii. What type of tax expenditure is most appropriate? E.g. exemption, allowance, credit, relief, deferral
        iv. Is the measure well designed to achieve the desired objectives and can it be improved on?
    a. Testing for effectiveness
        i. To what extent did the tax subsidy reach its objectives (outcome measures are preferable to outputs) and is this level acceptable?
        ii. Can the level of effectiveness be improved through viable reforms?
    b. Testing for efficiency
        i. What is the cost per unit of target attainment and is this cost effectiveness ratio acceptable?
        ii. Can the cost per unit of subsidy output (or subsidy outcome) be reduced by improving the instrument and its governance?
5. Conclusions and proposals for actions to be taken

Based on: Thöne (2012)

Step 4 above originates from a scheme of optimal subsidy control which was adopted by the German Ministry of Finance which is depicted in the following diagram.

Figure 1: Scheme of optimal subsidy control



Source: Thöne (2012).

The evaluation framework was applied to the 20 largest tax expenditures in Germany and represents a useful and interesting framework that has been applied in practice.

Government Accountability Office (GAO), United States

In 2012, a body attached to the United States Congress, the Government Accountability Office published 'Tax Expenditures: Background and Evaluation Criteria and Questions' a guidance document to help policymakers in evaluating the merits of a tax expenditure. The document is made up of a series of questions and sub-questions which are each discussed in turn.

Tax Expenditures: Background and Evaluation Criteria and Questions

(1) What is the tax expenditure's purpose and is it being achieved?

- What is the tax expenditure's intended purpose?
- Have performance measures been established to monitor success in achieving the tax expenditure's intended purpose?
- Does the tax expenditure succeed in achieving its intended purpose?

(2) Even if its purpose is achieved, is the tax expenditure good policy?
- Does the tax expenditure generate net benefits in the form of efficiency gains for society as a whole?
  - What is the benefit to society of the activity the tax expenditure encourages?
  - Do any performance measures established for the tax expenditure measure these benefits to society?
  - What are the costs of the resources used to generate the tax expenditure's benefits?
  - Do the benefits of the tax expenditure exceed its costs?
- Is the tax expenditure fair or equitable?
  - Does the tax expenditure result in different benefits for similarly situated taxpayers?
  - Do taxpayers with different abilities to pay receive different benefits from the tax expenditure?
  - Who actually benefits from the tax expenditure?
  - Is the tax expenditure simple, transparent, and administrable?
  - What are planning, recordkeeping, reporting, and other compliance costs for taxpayers in using the tax expenditure?
  - Can taxpayers understand how the tax expenditure works?
  - What are the costs to IRS and third parties in administering the tax expenditure?

(3) How does the tax expenditure relate to other federal programs?
- Does the tax expenditure contribute to a designated cross-agency priority goal?
- Does the tax expenditure duplicate or overlap with another federal effort?
- Is the tax expenditure being coordinated with other federal activities?
- Would an alternative to the tax expenditure more effectively achieve its intended purpose?
  - Is a different tax expenditure design preferable?
  - Is a spending or other non-tax policy tool preferable to the tax expenditure?

(4) What are the consequences for the federal budget of the tax expenditure?
- Are there budget effects not captured by Treasury's or the Joint Committee on Taxation's tax expenditure estimates?
  - Would eliminating or creating the tax expenditure affect revenue loss estimates for other tax expenditures?
  - Would eliminating or creating the tax expenditure affect other federal taxes, such as the payroll tax?
  - Would eliminating or creating the tax expenditure change taxpayer behaviour in ways that affect revenue?
  - Would eliminating or creating the tax expenditure affect the amount the government spends on other programs?
- Are there options for limiting the tax expenditure's revenue loss?
  - Can the aggregate amount that taxpayers claim for the tax expenditure be capped?
  - Can taxpayers' eligibility for the tax expenditure be restricted?
  - For eligible taxpayers, can the value of the tax expenditure be reduced?

(5) How should evaluation of the tax expenditure be managed?
- What agency or agencies should evaluate the tax expenditure?
- When should the tax expenditure be evaluated?
- What data are needed to evaluate the tax expenditure?

Source: GAO, 2012

Joint Legislative Audit and Review Committee, Washington

Washington is considered to have among the most extensive process of tax expenditure review of US states.[12] Tax expenditure evaluations in Washington are conducted by the Joint Legislative Audit and Review Committee (JLARC). The box below sets out the questions for performance reviews of tax preferences under the headings of public policy objectives, beneficiaries, revenue and economic impacts and other states.

Objectives of Tax Expenditure Studies in Washington

Public Policy Objectives

1. What are the public policy objectives that provide a justification for the tax preference? Is there any documentation on the purpose or intent of the tax preference?
2. What evidence exists to show that the tax preference has contributed to the achievement of any of these public policy objectives?
3. To what extent will continuation of the tax preference contribute to these public policy objectives?
4. If the public policy objectives are not being fulfilled, what is the feasibility of modifying the tax preference for adjustment of the tax benefits?

Beneficiaries

5. Who are the entities whose state tax liabilities are directly affected by the tax preference?
6. To what extent is the tax preference providing unintended benefits to entities other than those the Legislature intended?

Revenue and Economic Impacts

7. What are the past and future tax revenue and economic impacts (consumption and expenditures) of the tax preference to the taxpayer and to the government if it is continued?
8. If the tax preference were to be terminated, what would be the negative effects on the taxpayers who currently benefit from the tax preference and the extent to which the resulting higher taxes would have an effect on employment and the economy?
9. If the tax preference were to be terminated, what would be the effect on the distribution of liability for payment of state taxes?
10. For those preferences enacted for economic development purposes, what are the economic impacts of the tax preference compared to the economic impact of government activities funded by the tax? (This analysis involves conducting an economic impact study using an input-output model.)

Other States

11. Do other states have a similar tax preference and what potential public policy benefits might be gained by incorporating a corresponding provision in Washington?

Source: (Washington JLARC, 2013)

[12] Appendix B of (Minnesota, 2011)

Dutch Evaluation Framework

The OECD (2010b) outlines that the purpose of evaluation in the Netherlands is to estimate the effectiveness and efficiency of the tax expenditure in question. They highlight specified questions for the evaluations to answer including:

- Does the tax expenditure accomplish its objective?
- Can the same goals be achieved with lower costs through a different policy instrument?
- Is the tax expenditure the logical instrument to achieve these objectives?
- Is the tax expenditure really the cause of any perceived effect, or would the same outcomes have occurred without the tax expenditure?

The focus and intent of evaluations in the Netherlands differ depending on whether the evaluation is ex ante or ex post. In ex ante evaluations, the focus is on questions regarding the rationale for the tax expenditure. This reflects the likely lack of data available to perform an effectiveness or efficiency review at the outset of a tax expenditure as well as the necessity for a high bar in the establishment of any new tax expenditure. Ex post evaluations focus on aspects of efficiency and effectiveness.

Dutch Ex ante Evaluation Framework	**Central Questions in Dutch Ex post Evaluation**
1) Is the problem clear? 2) Is the object stated clearly and unambiguously? 3) Can it be proven why financial intervention is necessary? 4) Can it be proven why a subsidy is preferred over a levy? 5) Can it be proven why a tax incentive is preferred over a direct subsidy? and 6) Is the evaluation of the provision sufficiently safeguarded?	1) Is there goal achievement and to what extent? (Requires SMART goals) 2) Is it an effective tool: To what extent is the realization of the objectives of policy due to the instrument? (Causation) 3) Is the instrument efficient (or cost effective)? What are the associated costs & benefits and how do they compare to alternative instruments? 4) Is the instrument executed efficiently?

Based on: Hemels, (2011) and Netherlands, (2010)

OECD Application of ROAMEF Framework

The OECD (2010a) applies part of the ROAMEF framework from the British Treasury's (2011) Green Book to some example tax incentives. The acronym ROAMEF (Rationale, Objectives, Appraisal, Monitoring, Evaluation and Feedback) represent stages of the policy cycle. The first three stages can be applied to the ex ante appraisal of a tax break (OECD, 2010a).

OECD Application of ROAMEF Framework to Ex ante Evaluation of a Tax Expenditure.

1. **Rationale –** examining whether government intervention is necessary in the first instance. Then, whether and how a tax break would address that need?
2. **Objectives –** identifying and setting out clearly desired outputs and outcomes, and when possible targets which are SMART [Specific, Measureable, Achievable, Relevant and Time-bound].
   The objective(s) is categorised as to whether it is a provision: for expenses incurred to generate income; for ability to pay adjustments; to change behaviour either for social, cultural, political or economic reasons; or for administrative and compliance reasons.
3. **Appraisal / Assessment –** for each alternative policy instrument an estimation and comparison of costs and benefits including:
   - i) Administrative and compliance costs – which can be due to increased complexity of the tax code
   - ii) Impact on efficiency – identify difficulties associated with implementation of measure and distortions (including higher compensating tax rates) caused by it (e.g. transition costs, politics). How do substitute goods compare in terms of taxation (before/after)? Design and timing also play a role.
   - iii) Distributional impact – Vertical and horizontal equity are considered along with the potential wealth impacts of the measure and its removal.
   - iv) Impact on tax revenues – This depends on benchmark, revenue gain, revenue forgone and equivalent outlay calculations. It may be appropriate to consider changes in a General Equilibrium framework rather than static CBA.
   - v) Effectiveness – focused on the objective(s), deadweight, econometric modelling and targeting

Based on: OECD, (2010a).

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