

## 8.1 Ex-Post evaluation of TEs I: Concepts and Methods

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Dar Es Salaam

Follow-up Technical meeting on Tax  
Expenditures

#TaxDev

# Introduction

- **Overview**
  - Ex-post TE evaluation, Cost-benefit analysis
- **Evaluation Methods when 'ideal' data is unavailable**
- **Cost-benefit & distributional analysis**
- **Concluding Remarks**

## Overview

- TE report
  - Transparency / Accountability ✓
  - Decision-making ✗
- The first half of a Cost-Benefit-Analysis (CBA)
- Doesn't evaluate effectiveness / efficiency of TE
- Doesn't often evaluate vs. alternatives



## Overview

- Often might get demand for “evaluate” or “rationalize” TEs.
- E.g., Uganda: IMF ECF Structural benchmarks

**Table 2b. Uganda: Original Structural Benchmarks – Combined 2<sup>nd</sup> and 3<sup>rd</sup> Review (concluded)**

Measures	Rationale	Deadline	Status	Comments
Adopt a tax exemption rationalization plan applying criteria defined in the tax expenditure framework that would identify at least 0.1 percent of GDP in savings in FY 22/23 and 0.2 percent in subsequent years.	Revenue mobilization through a wider base	June 2022	Not met	<b>Completed</b> in November 2022. The plan is in line with TA recommendations provided by the Fiscal Affairs department of the IMF in July.

- But how do you ‘rationalize’ a TE?

# How do you 'rationalize' a TE?

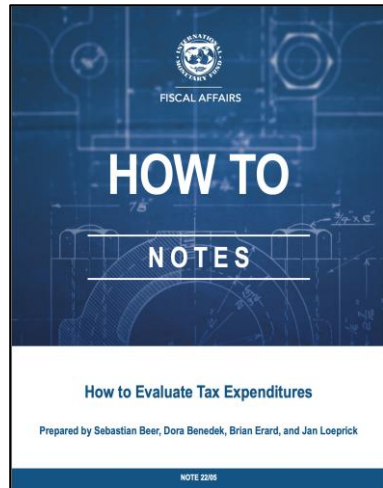
*Rationalization : (e.g.) justifying existence of the TE*

Not straightforward; 3 distinct questions which can become conflated

- Effectiveness: *Does the TE meet stated objectives?*
  - Are these objectives stated anywhere?
  - We would like to know the causal effect of offering a tax incentive on some pre-determined outcome [difficult!]
- Efficiency / Cost-benefit analysis:
  - *Are there net benefits to society?*
  - *If the objective is met, at what cost?*
- Evaluation vis-à-vis alternatives
  - If gov't committed to providing support, is the TE the best way to do so?

## Recent IMF How-to Note

- Beer *et al.* (2022) provide some guidance on TE evaluation
- *“a process that seeks to systematically inform policymakers on the desirability of introducing or maintaining specific tax benefits by gathering and analysing available quantitative and qualitative information on their effects”*
- Only a handful of countries carry out systematic evaluation of TE
- **Germany**: every TE evaluated at least once per decade.
- **Ireland**: aims to evaluate TE every five years.



## IMF: Evaluation methods (1/2)

Tool	Basic Description	Areas Commonly Assessed	Examples
Survey-based qualitative analysis	Provide a descriptive profile of beneficiaries, self-reported impacts, and experience.	Targeted TEs with narrow group of beneficiaries.	Department of Finance (2012) review experience with the Film Tax Credit in Ireland.
Effective tax rate measures <sup>1</sup>	Summarize combined impact of statutory tax rates, tax incentives, and features of the tax system on the effective tax burden.	Assessment of relative impact of different TE investment incentives on tax liabilities. Average effective tax rates are commonly used to assess tax incentives' impact decisions to locate FDI activities.	Botman, Klemm, and Baqir (2010) compare investment incentives for seven East Asian economies.
Interrupted Time Series Analysis	Seek to identify impact of a TE by comparing the pre- and post-implementation outcomes of interest.	Used where incentives apply broadly and no suitable comparison group of taxpayers who did not qualify is available.	Canadian Department of Finance uses administrative data to assess impact of TE on R&D expenditures.
Quasi-experimental econometric methods: (DID) analysis, statistical matching methods, and regression discontinuity designs	Compare relevant outcomes for beneficiaries (or eligible taxpayers) to those of a comparison group of non-beneficiaries (or ineligible taxpayers).	Whenever suitable comparison groups can be identified based on eligibility criteria of the incentives.	Department of Finance (2019) uses trade data to estimate impact of TE on export performance of beneficiaries in Ireland.

## IMF: Evaluation methods (2/2)

Tool	Basic Description	Areas Commonly Assessed	Examples
Static simulation models: MSM and models based on I-O data and S-U tables	Compute the impact of tax incentives on the tax liabilities of a representative sample (or, in some cases, the entire population) of taxpayers. Other models can be based on household survey data, for example, to evaluate targeting of VAT exemptions and reduced rates.	When seeking to assess distribution of TE benefits across income groups (among individual taxpayers) or by size and sector (among corporate taxpayers).	The U.S Office of Tax Analysis (2016) uses administrative data to measure distribution of retirement savings. Hutton (2010) presents a microsimulation framework for evaluating VAT TEs.
Overlapping generations models	Study long-run life-cycle behavior (for example, retirement savings) and resource allocation across generations.	Impact of TEs affected by demographic trends, such as education, health, and retirement incentives.	Cifuentes (2005) on retirement savings incentives in Chile.
Structural modeling: CGE models and DSGE models	Used to account for spillover effects of TEs on employment, capital investment, productivity, and income and induced (multiplier) effects brought about through increased consumption.	To evaluate TEs intended to promote substantial indirect benefits.	Copenhagen Economics (2007) evaluate the impact of VAT rate reduction in the European Union.
<p>Note: CGE = computable general equilibrium; DID = difference-in-differences; DSGE = dynamic stochastic general equilibrium; FDI = foreign direct investment; I-O = input-output; MSM = microsimulation model; R&amp;D = research and development; S-U = supply-use; TE = tax expenditure.</p> <p><sup>1</sup>See IMF and others (2015) for a more detailed discussion of effective tax rate measures.</p>			




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## Cost-Benefit Analysis

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# Evaluating efficiency (C-B-A)

- IMF paper in 2014 sets out a cost-benefit analysis framework for investment incentives
  - **Social benefits:**
    - Size of net investment effect
    - Net impact of higher investment on jobs and wages
    - Productivity spillovers


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## 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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# Evaluating efficiency (C-B-A)

- IMF paper in 2014 sets out a cost-benefit analysis framework for investment incentives
  - **Social costs:**
    - Net public revenue losses
    - Admin + compliance costs
    - Scarcity of public funds
    - Distorted resource allocation



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## Distributional Analysis

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# Distributional Analysis

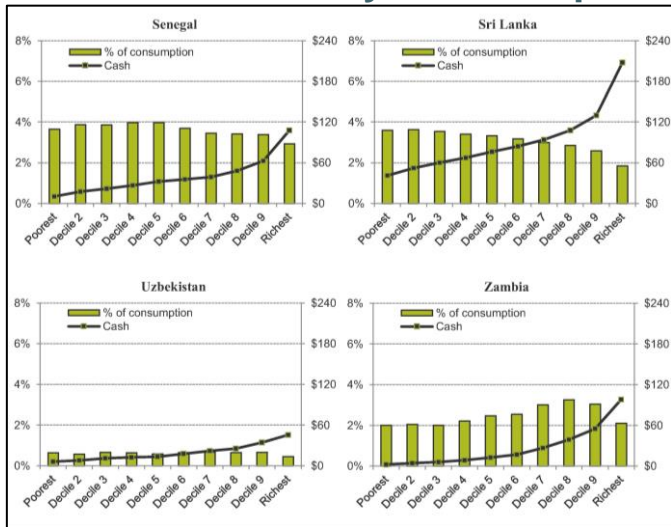
- Distributional analysis can be very useful to help when trying to understand **effectiveness** (for certain TE).
  - E.g., if a VAT exemption on basic foodstuffs is targeted to provide relief to the poorest households, you want to know the extent to which poorest households are benefitting.
  - For VAT expenditures, tax-benefit microsimulation models are very useful
    - Or at least, some modelling using a household consumption survey
  - For PIT expenditures, can use PAYE returns
  - For CIT expenditures, can use CIT returns (firm size).
  - Some examples:

## Distributional Analysis: Examples

- IFS paper looked at poverty & distributional effects of VAT exemptions vs cash transfers
- Use microsimulation models to study the effects of reduced VAT rates and exemptions on revenues, poverty and inequality.
- In isolation, reduced VAT rates and exemptions in six LMICs studied are poverty-reducing.
- Find them to be expensive in terms of foregone tax revenue, and in all cases richer households benefit the most in cash terms.
- Though better targeted at poor households, existing cash transfer programmes often miss large shares of poor households.
- Recycling the revenue yield from a broader VAT base with universal benefits would reduce inequality and most measures of poverty.



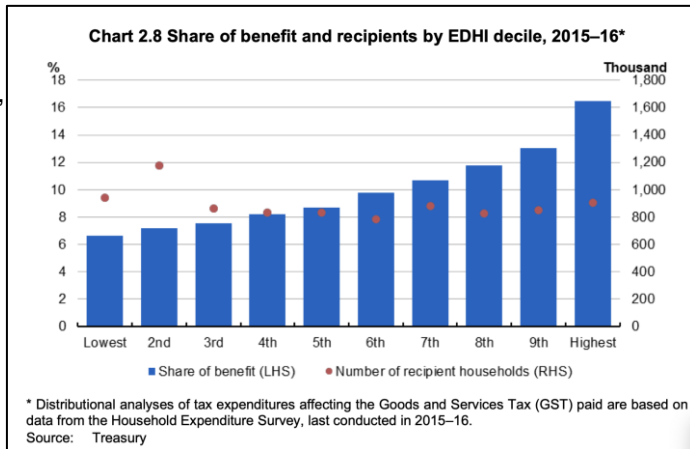
# Distributional Analysis: Examples



Crucially, depicts the value of the TE as a *share of consumption*

# Distributional Analysis: Examples

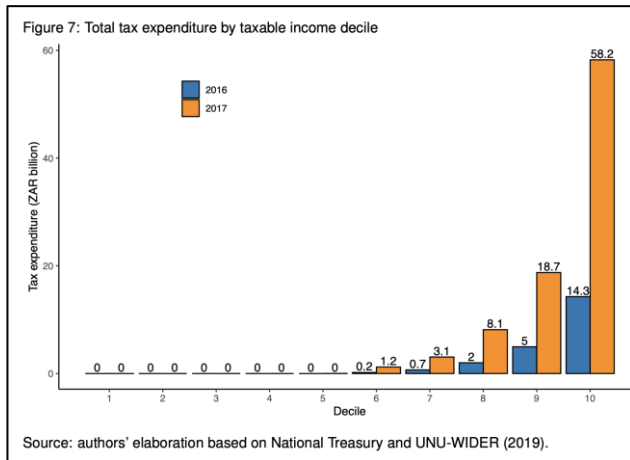
- [Australia's TE Report](#) contains an entire chapter of distributional analysis of “large” TE.
- Analyses these TE by income, age, gender, and industry
- Example: GST exemption on basic foodstuffs by income decile
- The benefit received by the top five deciles averaged 1.0 per cent of their income, whereas it averaged 1.9 per cent of income for the bottom five.





# Distributional Analysis: Examples

- Axelson & Redonda (2021)
- Examined distributional effects of a pension credit on PIT in South Africa.



## Evaluation: Important Practicalities & Lessons

- Build procedures for ongoing review (ex post evaluation)
- This might require:
  - Defining *ex-ante* what the *ex-post* evaluation will look like
  - Determining information needs.
    - Is administrative or legislative change required?
  - Openness to reform / removal of ineffective TEs.
- Partnering with external researchers etc. can bring much-needed objectivity

## Conclusions & Practical take-aways

- Lessons:
  - Evaluation is time-consuming & resource intensive
  - Often **difficult to arrive at a clear answer** with just one set of data
    - Manage expectations of decision-makers accordingly.
  - Qualitative and quantitative analysis can complement one another
  - If not part of an 'official' review process: where do the findings go?
  - Good to evaluate / monitor TE, but structures, procedures must be in place for the results to feed into decision making.

## Conclusions & Practical take-aways

- Many different approaches to evaluation / effectiveness / efficiency / CBA etc.
- Set out in advance the questions that will be asked, methods employed, and how the results are used.
- TEs with clearly defined objectives are easier to evaluate.
- Manage expectations
  - Unlikely that a clear-cut answer will exist.
- **Start to build the evidence base today**



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