SDG indicator 12.c.1 training
Tax Expenditures

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Outline

1. Measurement methods for tax expenditures
2. Benchmarks
3. Scope of tax expenditures
4. Introduction to transfer of risk

Measurement of tax expenditures

- ## Revenue forgone
  - Estimate the difference between the tax revenue raised with and without the tax expenditure, all else being equal. Does not account for behavioural responses related to the removal of the tax expenditure

- ## Revenue gain
  - Estimates the expected increase in government revenue if the tax concession were eliminated, allowing for substitution effects. Removal of the tax concession would be expected to reduce the consumption of the (now more expensive) good, resulting in an increase in tax revenue that is smaller than the revenue forgone.

- ## Expenditure equivalent
  - Estimates the amount of funding that would be required to achieve the same outcome using a direct budgetary transfer. This method tends to result in larger estimations than the above two methods as direct government transfers are generally taxed, while transfers made through tax concessions often are not.

Benchmarks

- **Setting the benchmark on the structural features of the tax system**:
  – This approach treats any "special features", such as higher taxes aimed at raising revenues or internalising externalities, as deviations. Such an approach requires identifying which features should be treated as "special".

- **A reference-law approach**
  – considers as tax concessions only those explicitly stated in law. In this case, a lower tax rate on one product than on another within a broader category would not necessarily be considered a tax exemption.

Scope of Tax Expenditures

- Exemptions

- Allowances

- Credits

- Rate relief

- Tax deferral

Scope of Tax Expenditures

- **Exemptions** – exclusions from tax base
  - Example: In fiscal 2020, Oil company X recorded a taxable income of USD 100 M. Through a programme, the government grants an exemption that only 75% of the taxable income would be used in the calculation of the Corporate Income Tax (CIT).
    - *USD 100 M x 75% = USD 75 M (new, smaller taxable income basis)*
    - *Revenue forgone: USD 25 M x CIT rate*

Scope of Tax Expenditures (2)

- **Allowances** – amounts deducted from the tax base before applying tax rates.
  - Example:
    - Through a programme, the Government grants USD 30 M deduction from the taxable income of fossil fuel companies.
    - *From our previous example:*
      - *USD 100 M – 30 M (deductible allowance) = USD 70 M (new, smaller taxable income basis)*
      - *Revenue forgone: USD 30 M x CIT rate*

Scope of Tax Expenditures (3)

- **Credits – amounts deducted from tax liability**
  - Example:
    - Through a programme, the Government grants USD 15 M credit from the corporate income tax liability of Coal mining companies in the country.
    - *From our previous example:*
      - *If the calculated CIT liability of the coal mining company is USD 30 M, applying the credit:*
        - *USD 30 M – 15 M = USD 15 M (new CIT liability)*
        - *Revenue forgone: USD 15 M*

Scope of Tax Expenditures (4)

- **Rate relief** – reduced tax rate on certain targeted sectors or fuels. This is the most commonly seen form of tax expenditures in the fossil fuel supply chain.

  ⚠️ *most prevalent form, particularly in the consumption sector*

  – Example:

    - Normally, the purchase of diesel is subjected to a 15% VAT rate in Country Y. To help the agricultural sector, the government collects only 5% instead of 15% VAT in diesel when used for agricultural purposes(e.g. tractors, harvesting machines, processing etc.)

      – *Revenue forgone =*

        tax revenue collected under benchmark tax rate (ie 15% VAT) –

        tax revenue collected under preferential tax rate (ie 5% VAT)

Scope of Tax Expenditures (5)

- **Tax deferral** – delay in paying the tax liability.
  - Example:
    - Government grants four-year equal installation option in paying for a company's CIT liability
      - Suppose a company has USD 100 M tax liability in 2020. Applying the above programme, instead of making a one-time full payment of USD 100 M in 2020, it can spread its payment of USD 25 M per year up until 2023.
      - Revenue forgone: USD 75 M in 2020.

Tax Expenditures along the Fossil Fuel Supply chain

Production				Direct Consumption	
Exploration & development, Production, Refining, Transportation & distribution of fuels				End-users of fossil fuels – residential, industrial, transport, commercial, etc.	
Output returns	Enterprise income	Cost of intermediate input	Cost of production factors	Unit cost of consumption	Household or enterprise income
Production tax credit	**Reduced rate of income tax**	**Reduction in excise, sales tax on input**	**Reduction in social charges, reduction in property tax, investment tax credit, capital allowances**	**VAT or excise tax concession on fuel**	**Tax deduction related to energy purchases that exceed given share of income**
[USA]: Companies who mine coal in Indian tribal lands are eligible for a Corporate Income Tax (CIT) credit worth about USD 2/tonne of mined coal. [US-AK]: Platforms extracting in the Inlet region of AK can benefit from a reduced royalty tax rate.	[RUS]: To encourage O&G exploration in specific regions of Russia, a full exemption on extraction tax is made available for these companies. [COL]: Companies can deduct 30% of capital investment value from their taxable income.	[FRA]: Petroleum products and natural gas used as process energy inputs in refining are exempted from excise tax. [US-OK]: Electricity used in fracking and other enhanced recovery methods are exempt from OK sales tax.	[BRA]: Temporary exemptions from the PIS/COFINS social contributions are available for equipment and capital used in the O&G sectors. [TUR]: Power generation projects including those prioritising coal plants receive support through preferential social security premium rates for employees.	[MEX]: Mexico applies reduced excise tax rates for gasoline purchases in cities near the US-MEX border. [ARG]: Liquid fuels purchased in the southern regions of the country are exempted from (sales, carbon) taxes. [CHL]: Truck companies meeting a weight criteria are eligible up to 25% of diesel excise tax refund.	[MEX]: Diesel fuel used in commercial activities and general machinery (vehicles excepted) are eligible for a tax credit for companies less than MXN 60 M revenues.

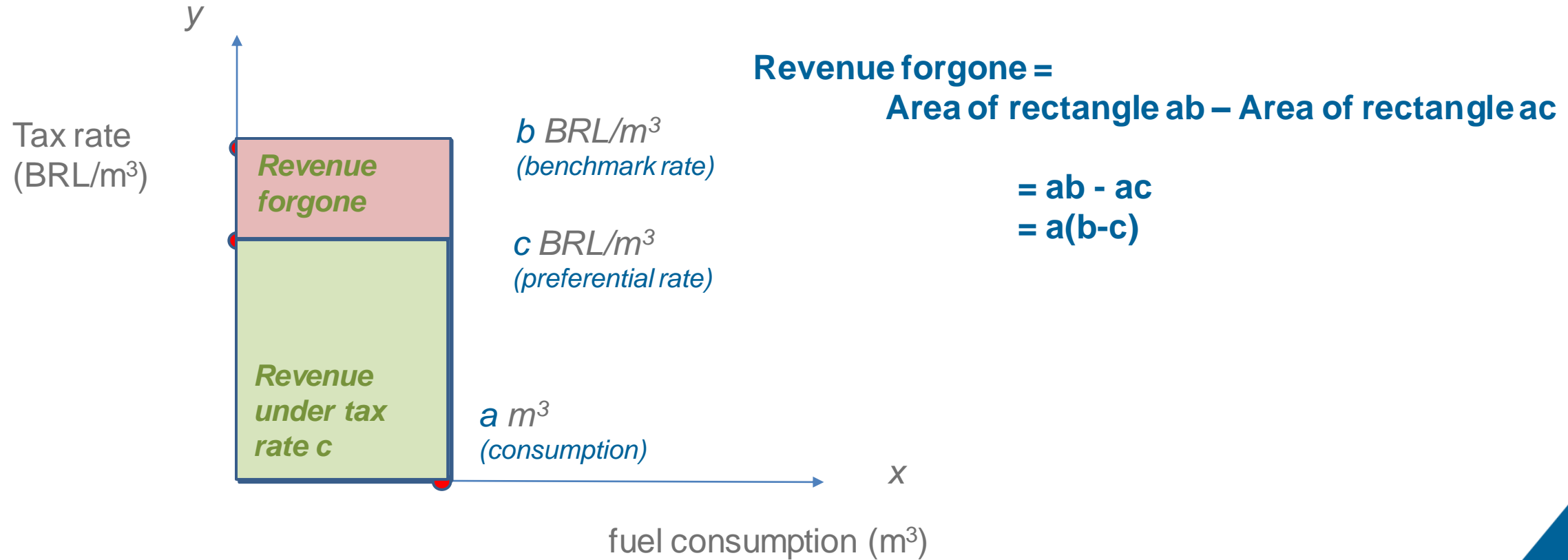## Calculating estimated revenue forgone for rate relief consumer support measure
Example: Brazil's PIS/COFINS fuel tax reductions

- Introduced in 2004 to limit domestic fuel-price variations.

- It provides for a reduction in the PIS/COFINS fuel tax levied on *all retail sale* of refined petroleum products (e.g. diesel, gasoline, natural gas, kerosene) in Brazil.

- Tax is levied on the basis of fixed prices and volume sold

- General concept of revenue forgone estimation:

    – **subtracting the revenue generated using the reduced fuel-tax rates from the revenue generated when standard fuel-tax rates** *are applied using appropriate consumption data (e.g. national, sectoral, sub-national etc.)*

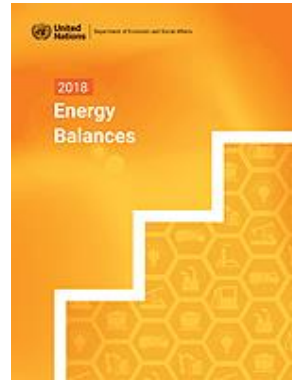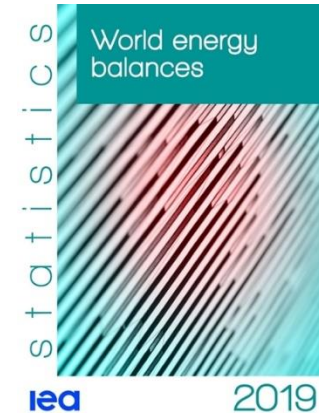# Graphical illustration: revenue forgone for rate relief consumer support

Tax rate (BRL/m^3)

y

Revenue forgone =
Area of rectangle ab – Area of rectangle ac

b BRL/m^3
(benchmark rate)

Revenue forgone

c BRL/m^3
(preferential rate)

= ab - ac
= a(b-c)

Revenue under tax rate c

a m^3
(consumption)

x

fuel consumption (m^3)

Example: PIS/COFINS tax rates for diesel

Diesel tax rate	2019
PIS/COFINS standard sales tax rate (BRL/m^3)	BRL 461.5/m^3
PIS/COFINS effective reduced sales tax rate (BRL/m^3)	BRL 351.5/m^3
Differential rate (standard – reduced)	**BRL 110/m^3**

- We obtain the benchmark and preferential tax rates from Ministry of Finance, Internal Revenue Authority or Customs sources

- Next is to determine the fuel consumption to be used.

Example: PIS/COFINS tax rates for diesel (2)

- Sources of consumption figures (in order of priority)

  - Tax authorities, Internal Revenue bureaux, Ministry of Finance, Customs bureaux

    - most complete information and breakdown

    - Programme administrators have an interest to maintain consumption data of very good quality as financial transactions are involved

    - VAT returns

  - Ministry of Energy

  - National energy balance data based on sectoral and fuel breakdown

    - IEA World Energy Balances (data in ktoe) or United Nations Energy Balances (data in TJ)

  - Household or Industry surveys on final consumption

Example: PIS/COFINS tax rates for diesel (3)

- For this example, we use consumption data from Brazil's energy balance from IEA where data are expressed in ktoe (*kt of oil equivalent*)

  – The measure affects all domestic fuel sales of diesel in Brazil → Total Final Consumption of NONBIODIES expressed in *ktoe*

- Our tax rate is given in BRL/m³ → We convert ktoe into equivalent m³ (e.g. using dimensional analysis)

  – $1 \; ktoe \; diesel \; x \; \dfrac{1 \; kt}{1.01 \; ktoe} \; x \; \dfrac{1,186,000 \; l}{1 \; kt} \; x \; \dfrac{1 \; m^3}{1\,000 \; l}$

Diesel tax rate	2019
PIS/COFINS standard sales tax rate (BRL/m3)	BRL 461.5/m³
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Differential rate (standard – reduced)	**BRL 110/m³**

- We use this conversion factor to get the equivalent consumption in m³ .

- **Revenue forgone = equivalent consumption in m^3 x differential tax rate**

Example: PIS/COFINS tax rates for diesel (4)

- BRA final consumer diesel sales, (IEA, 2019): 42,071 ktoe

- To convert to m³, apply our conversion factor:

$$42{,}071 \; ktoe \; diesel \; x \frac{1 \; kt}{1.01 \; ktoe} x \frac{1{,}186{,}000 \; l}{1 \; kt} x \frac{1 \; m^3}{1\,000 \; l} = 49{,}402{,}017 \; m^3 \; diesel$$

- **Revenue forgone = consumption in m^3 x differential tax rate**

- Revenue forgone = 49,402,017 m³ X 110 BRL/m³ = **BRL 5.43 billion**

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Status of tax expenditure reporting in ECLAC, CARICOM

Countries	Reporting status
Tax expenditure data estimates available	**(5 members)** - Argentina, Brazil, Chile, Colombia, Mexico,
Data available for partial estimates calculations	**(4 members)** - Dominican Republic, El Salvador, Guatemala, Trinidad & Tobago
Estimates budget reporting not available	Antigua & Barbuda, Barbados, Costa Rica

- ECLAC countries with legal requirement to produce tax expenditure

  – Chile, Colombia, Dominican Republic, Ecuador, Guatemala, Mexico, Uruguay

- Country reporting tax expenditure related to social security contribution

  – Argentina

Challenges of Tax Expenditure Reporting in Developing and Emerging Economies

- **Availability**
  - tax data are not available in structured electronic format.

- **Capacity challenges**
  - collection of data deemed to be difficult due to financial and technical constraints in developing countries

- **Absence of institutional setting and legal framework**
  - legal framework among responsible ministries (Ministry of Finance, Internal Revenue or Tax Authority, Customs, Ministry of Energy etc.) does not exist for confidential data sharing.

Transfer of risk: sub-types

Sub-types	Credit support	Debt restructuring & cancellation	Insurance & indemnification	Assumption of risks to occupational health and accidents	Assumption of responsibility for remediating environmental damage
Details	Loan guarantees: at below-market rates	Debt restructuring: gov't orders easing of debt burden Debt cancellation: gov't forgives outstanding balance of a loan made with no compensation from beneficiary	Gov't insurance and indemnification: market or below-market risk-management or risk-shifting services	Assumption of occupational health and accident liabilities	Responsibility for closure and post-closure risks: facility decommissioning and clean-up; long-term monitoring; remediation of contaminated sites Waste management and environmental damages: avoidance of fees payable to deal with waste, avoidance of liability
Country examples	[JPN]: The Development Bank of Japan implements a programme that covers the interests of loans that domestic oil development companies make for capital purchases.	[US]: a programme by the DoE allows the US Federal government to cover an O&G firm's debt obligation in the event of borrower default. This is available for pilot technology projects or where private investment is inhibited.	Governments may waive or shoulder the insurance of certain fossil fuel projects to cover in cases of serious or 'exceptional' events.	[DEU]: Instead of coal companies, a government programme shoulders the payment of some health insurance contributions in Germany's hard coal mining sector.	[AUS-QLD]: public funding from QLD to cover home repair or relocation costs as a result of a ground subsidence incident of a former coal mine.

Transfer of Risk: data sources

- Statistically complex to quantify
  - Need to estimate: (i) amount of damage possible and (ii) likelihood of event happening
- System of National Accounts
  - Other capital transfers (10.210)
    - Cancellation of debt
    - Compensation in serious damage beyond private insurance coverage (eg Fukushima disaster [but for nuclear industry support])
- Some countries report in their budgets under 'Expenditures'
- Company financial documents sometimes show 'Government transfers'
- **SDG reporting status**:
  - Due to statistical difficulties, transfer of risks is only recommended for *future reporting.*
  - This sub-indicator will be re-evaluated in 2025 for its full inclusion.

Thank you for your attention

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