

Goal 10: Reduce Inequality within and among countries

Target 10.4: Adopt policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality

[Indicator 10.4.2: Redistributive impact of fiscal policy](#)

## Institutional information:

The World Bank is the official custodian for this indicator. This metadata documentation was developed and agreed by the three institutional data providers, CEQ Institute, OECD and The World Bank.

### Organization(s):

The World Bank Group, Washington DC, USA

## CONCEPTS AND DEFINITIONS

### Definition:

The Redistributive Impact of Fiscal Policy indicator is defined as the Gini index of prefiscal per capita (or equivalized) income less the Gini index of postfiscal per capita (or equivalized) income.

### Rationale:

Developed by the [Commitment to Equity Institute](#) (CEQ) at Tulane University, the Redistributive Impact of Fiscal Policy indicator demonstrates in an accounting framework the total amount by which current income inequality is reduced or increased by the current execution of fiscal policy (including direct and indirect taxes; social insurance and old-age pension contributions; direct cash or near-cash transfers; and subsidies). For example, if the Redistributive Impact of Fiscal Policy is positive, that indicates that the net effect of Fiscal Policy is to reduce the Gini index from what it otherwise would be without Fiscal Policy (in an accounting sense, not as an economic counterfactual). The indicator allows policy makers and the broader stakeholder and advocacy communities to systematically track progress at the country level in the contribution of fiscal policy to more equitable societies.

### Concepts:

-Redistributive Impact of Fiscal Policy: defined as the Gini index of prefiscal household income less the Gini index of postfiscal household income. These terms are elaborated below and can be calculated with some different variations.

-Gini index: a commonly used measure of inequality capturing the statistical dispersion in the distribution of income over a population (Gini, 1936). A Gini index of zero expresses perfect equality: that is, every individual in the population has the same income. A Gini index of 100 expresses maximum inequality: that is, all income accrues to a single individual, and all other individuals have zero income.

Household income: this can be calculated: (i) in per capita terms (household income divided by the number of household members); or (ii) in equivalized terms (household income divided by the

square root of the number of household members). If a different definition is used, it should be noted in the reporting document.

-Prefiscal income: the cumulative income accruing to an individual (or a household) from market and private sources only. The Redistributive Impact of Fiscal Policy indicator can be estimated with reference to two different prefiscal income concepts depending on assumptions regarding the nature of the public, contributory old-age pension system (please also see the figure below, adapted from Lustig (2018) and in Lustig chapter 1, Section 2.2, pp. 20-29):

- 1) Prefiscal income 1 - under the “pensions as deferred income” scenario: When incomes from public contributory old-age pension-system are counted as deferred market income and old-age pension-system contributions are counted as savings from current income (that is, the old-age pension system is treated as the equivalent of a mandatory savings program), prefiscal income is defined as an individual’s earned and unearned incomes from market and other private sources: wages, interest and dividend income; imputed income from owner-occupied housing and from consumption of own production;<sup>1</sup> remittances; private transfers; old-age pension income from the public contributory pension system; and, *less* any contributions to the public old-age contributory pension system. In this case, the prefiscal income concept is called *Market income plus pensions*.
- 2) Prefiscal income 2 - under the “pensions as government transfer” scenario: When incomes from current pension-system are counted as a government transfer and old age pension-system contributions are counted as a tax on current income, prefiscal income is defined as: wages, interest and dividend income; imputed income from owner-occupied housing and from consumption of own production; remittances; and private transfers only. In this case, the prefiscal income concept is called *Market income*.

When pensions are treated as pure government transfers, the redistributive effect of pensions may be exaggerated as retirees with zero or near zero prefiscal incomes will receive pension income that is – at least in part – income deferred when the individual was working. It is important to note that deferral of own income from one’s working years to one’s retired self is possible regardless of whether the pension system is actuarially fair and in both defined-contribution and defined-benefit pension plans. Treating the public contributory pension system income as pure deferred income, however, does not allow us to capture any portion of the redistributive effect of pensions which may in effect exist. Therefore, we view the pensions as government transfer and pensions as deferred income scenarios as imperfect upper and lower bound estimates (respectively) of the true redistributive effect of contributory pensions. Rather than generating estimates of the redistributive effect of fiscal policy under specific assumptions about public contributory pension system income, the OECD instead reports estimates of the redistributive effect for the population under 65 years of age (and treating contributions to the public contributory pension system as a tax, though).

-Postfiscal income: The Redistributive Impact of Fiscal Policy indicator can be estimated with reference to two different postfiscal income concepts, Disposable Income and Consumable Income. The most comprehensive concept is that of Consumable Income, which incorporates not only the impact of direct taxes and transfers but also of indirect taxes and price subsidies.

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<sup>1</sup> Some of the income items mentioned may not be part of the income definition used by various NSOs and IGOS, with imputed rents or consumption of own production being a case in point.

Disposable and Consumable Income are equal in value under the “pensions as deferred income” and “pensions as government transfer” scenarios. However, they are derived from prefiscal income 1 and prefiscal income 2 differently; please see the figure below, adapted from Lustig (2018):

1) Postfiscal incomes under the “pensions as deferred income” scenario:

Postfiscal Income A - Disposable Income: prefiscal income less direct taxes paid and less social insurance contributions made to the public fiscal authority plus direct cash transfers and the monetary value of benefits (measured at what governments spend) received by households in the form of near-cash transfers (e.g., foodstamps, school breakfasts, school uniforms).

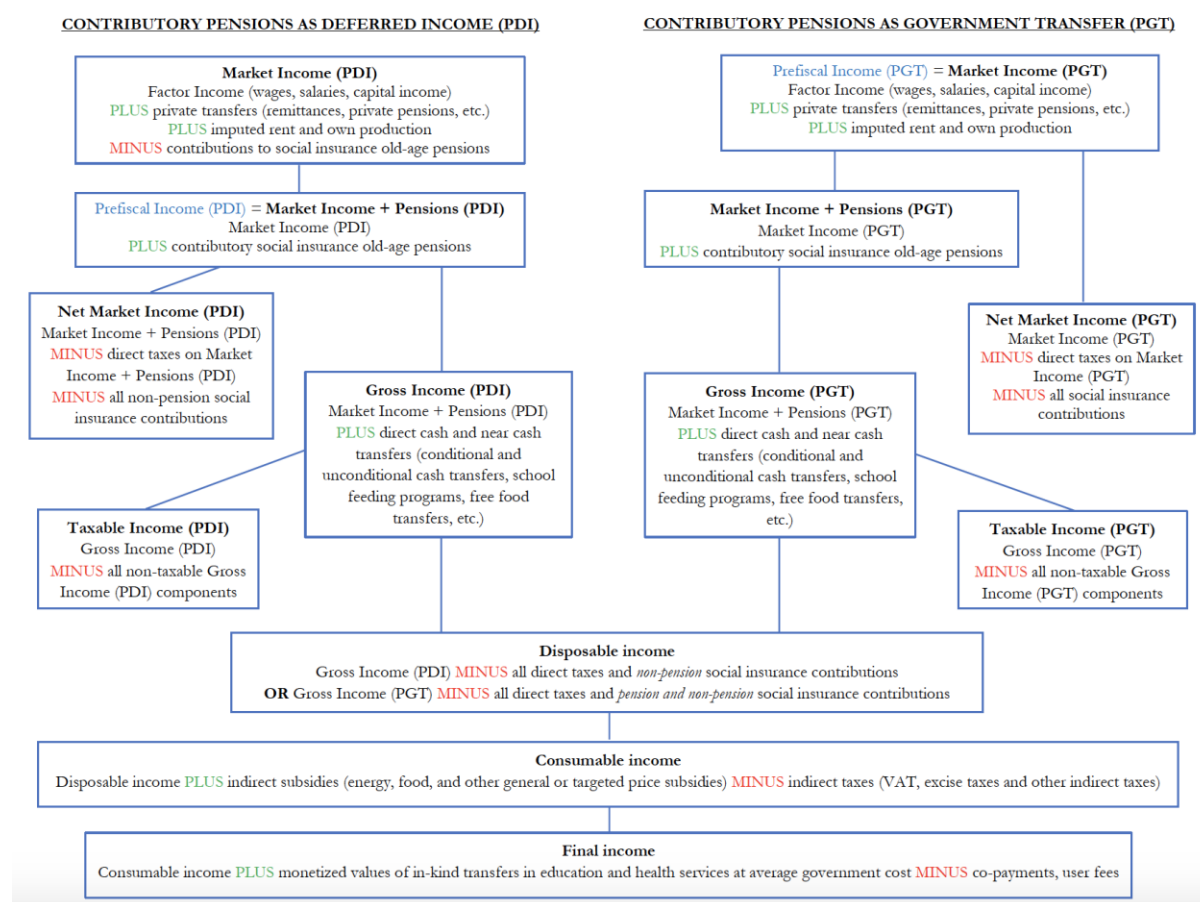
Postfiscal Income B - Consumable Income: prefiscal income less direct *and indirect taxes* paid and less social insurance contributions other than for old-age pensions made to the public fiscal authority plus direct cash transfers and the monetary value of benefits (measured at what governments spend) received by households in the form of near-cash transfers (e.g., foodstamps, school breakfasts, school and indirect price subsidies).

2) Postfiscal incomes under the “pensions as government transfer” scenario:

Postfiscal Income A - Disposable Income: prefiscal income less direct taxes paid and less social insurance contributions and less contributory old-age pension contributions made to the public fiscal authority plus direct cash transfers and the monetary value of benefits (measured at what governments spend) received by households in the form of near-cash transfers (e.g., foodstamps, school breakfasts, school uniforms).

Postfiscal Income B - Consumable Income: prefiscal income less direct *and indirect taxes* paid and less social insurance contributions and less contributory old-age pension contributions made to the public fiscal authority plus direct cash transfers and the monetary value of benefits (measured at what governments spend) received by households in the form of near-cash transfers (e.g., foodstamps, school breakfasts, school uniforms), and plus indirect price subsidies.

## CEQ Income Concepts



Source: adapted from Lustig (2018).

### Comments and limitations:

Reporting on assumptions: The choice of whether to report the Redistributive Impact of Fiscal Policy indicator under the pensions as deferred income or pensions as transfers scenario will be left to the country authority or international agency in charge of submitting this indicator, but the choice must be clearly indicated in the reporting document. For countries for which the data exist, prefiscal and postfiscal inequality should be calculated for both pension scenarios, and the default included in the SDGs database is pension as deferred income. If only data treating pensions as transfers are available, it is recommended to report them only for the working age population (under 65 years of age). Some authorities may also choose to use equivalized income instead of per capita income as the welfare indicator. This too should be clearly indicated in the reporting document. Last, some authorities may report these data based on a micro-data set using income or expenditure as the relevant welfare concept. Once these decisions are taken, they should be maintained in subsequent years in order to assure comparability, except that all countries are encouraged to provide data with pension as deferred income. The data reported in the UN Global Database try, to the extent possible, to distinguish between the different concepts used for different countries.

Feasibility: The Redistributive Impact of Fiscal Policy indicator can be estimated for any country with a micro-data set detailing incomes or expenditures (or both) at the household or individual

level and with a set of fiscal, administrative, or budgetary records detailing public expenditures at the program level and revenue collections at the revenue-collection instrument level.

**Suitability/Relevance:** The Redistributive Impact of Fiscal Policy indicator provides a direct estimate of the current impact of fiscal policy on redistribution (of incomes). It therefore provides a direct estimate of progress on SDG Target 10.4: “**Adopt policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality.**”

**Limitations:** The Redistributive Impact of Fiscal Policy indicator does not address wage policy. It does not include the benefits of public provision of in-kind benefits, such as health, education, sanitation and housing services, which may have both present-day and longer-term impacts on present-day and future inequality.

## METHODOLOGY

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### Computation Method:

Prefiscal income can be derived from a nationally-representative micro-data set (an Income and Expenditure Survey, for example). Postfiscal income is estimated via the allocation of the tax burdens and the expenditure-based benefits that stem from fiscal policy (direct and indirect taxes, social contributions, direct cash and near-cash transfers, subsidies, *et cetera*). Procedures for constructing prefiscal and postfiscal income concepts and estimating their distribution from an underlying microdata set are detailed comprehensively in Lustig (2018) (Chapters 1, 6, and 7).

The Gini Index is calculated rescaling the Gini Coefficient by a factor of 100. The Gini Coefficient is calculated according to standard formulas for a (generalized) Gini Coefficient. See, for example, Duclos and Araar (2006):

$$\text{GINI Index} = 100 \text{ GINI}(X; \nu)$$

$$\text{GINI}(X; \nu) = -\nu \text{ Cov} \left( \frac{X}{\mu(X)}, (1 - F(X))^{\nu-1} \right)$$

where  $X$  is a random variable of interest with mean  $\mu(X)$ ,  $F(X)$  is its cumulative distribution function,  $\nu$  is a parameter tuning the degree of ‘aversion to inequality’. The standard Gini corresponds to  $\nu = 2$ . Cov is a Covariance estimate.

### Disaggregation:

The Redistributive Impact of Fiscal Policy indicator can be shown separately for as many different subgroups as are represented in the survey or micro-data from which it is drawn: income subgroups; by gender, age group, ethnic grouping; geographic location; disability status, household size; household dependency ratios, and so on.

### Missing values for some countries or regions:

- At country level: When a nationally representative micro-data set and/or country-level fiscal, budgetary, and administrative data are not available, the indicator cannot be generated. Budget and administrative data exists for every fiscal system but is not always public.
- At regional and global levels: Currently no regional or global aggregates exist for this indicator.

### **Regional aggregates:**

Currently no regional or global aggregates exist for this indicator.

### **Sources of discrepancies:**

Not applicable.

### **Methods and guidance available to countries for the compilation of the data at the national level:**

A complete description of the methodology, recommendations, and guidelines behind the generation of the Redistributive Impact of Fiscal Policy indicator can be found in Chapters 1, 6, 7, 8 and Part IV in [Lustig \(2018\)](#).

This indicator can be calculated based on the current state of household surveys micro-data and budget administrative data.

## **IMPLEMENTATION ARRANGEMENTS**

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### **Data providers:**

Ultimately the data providers are national-level statistical agencies for the micro-data sets and national-level fiscal agencies and bodies for budgetary and administrative data. Most OECD countries also calculate pre- and post-fiscal Ginis. That is they directly calculate the 10.4.2 indicator. These are collated by the OECD and will be sent directly to the World Bank as custodians.

Where a country produces its own 10.4.2 indicator it will take precedence over estimates produced by other institutions, subject to meeting the reporting requirements below. For all other countries, estimates and indicators produced by the World Bank Group and/or the Commitment to Equity Institute will be considered.

### **Quality assurance:**

In its role as custodian agency of the proposed indicator for SDG10.4, the World Bank Group is responsible for quality control of and quality assurance over all data submitted to the SDG Indicators Database, as well as the underlying analysis and documentation.

In practice and taking advantage of the proposed partnership between the WBG and the [Commitment to Equity Institute](#) at Tulane University regarding the monitoring of the proposed indicator, the Institute will be responsible for quality control of and quality assurance over the Redistributive Impact of Fiscal Policy indicators submitted by the Institute. Similarly, the OECD will be responsible for quality control of and quality assurance over the Redistributive Impact of Fiscal Policy indicators submitted by OECD member nations.

For any data reporting outside of the CEQ Institute and OECD, the World Bank will review accompanying technical documentation to confirm that the methodology employed is consistent with that described in Lustig (2018). Where questions arise, the World Bank will engage with the reporting institution to verify the analysis.

### **Reporting requirements:**

The WBG will only submit information to the SDG Indicator Database on those Commitment to Equity Assessments meeting the following requirements:

- Information on both pre-fiscal and post-fiscal Gini is available
- Complete metadata is available
- Technical report on methodology is available
- Master Workbook or equivalent is available

While initially reporting requirements contemplate that the post-fiscal Gini is reported for either consumable or disposable income, countries and international agencies are encouraged to report both whenever possible. When this is not feasible in the short term, they should work towards reporting both indicators over time.

WBG submissions to the SDG Indicator Database will indicate whether information has been prepared by the WBG, the Commitment to Equity Institute, or another agency (e.g. OECD for OECD countries).

Required metadata include:

- Welfare aggregate: consumption or income
- Welfare aggregate: per capita or equivalized
- Treatment of pensions: pensions as deferred incomes or government transfers
- Population coverage: all or working age
- Indirect effects of indirect taxes and subsidies included: YES/NO
- Level of government: general or consolidated; federal or federal plus subnational
- Alternative market income Gini using (PTT/PDI, whichever is not one of the main indicators), where available
- Date of household survey
- Date of submission
- Link to official report and technical documentation
- Reporting institution and contact person

### **Role of and coordination among data compilers**

There will be three main data compilers: the WBG, the Commitment to Equity Institute and the OECD. Data compilers will be responsible for compiling the necessary information and documentation in ways that are compliant with the posting requirements described above as follows:

- The WBG will compile information all Commitment to Equity Assessments conducted by WBG teams and by (non-OECD) national participants working independently. The focus of this exercise will be on assessments conducted in or after 2015.
- The Commitment to Equity Institute will compile information on all Commitment to Equity Assessments conducted by the Institute. The Institute's submissions to the WBG

will include information on pre-fiscal and post-fiscal Gini, information needed to complete the necessary metadata, and do-files needed for replication.

- The OECD will compile information on all fiscal assessments conducted by OECD high-income national participants.

The WBG and the Commitment to Equity Institute will meet twice a year to review the reporting and submission process, exchange information on (new) methodological changes, and coordinate on further methodological innovation regarding the Commitment to Equity Assessment as needed. Similarly, the WBG and the Commitment to Equity Institute will meet twice a year with the OECD to review the reporting and submission process and exchange information methods and technical approaches for distributional analysis of fiscal policy.

## DATA SOURCES

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### Description:

The Redistributive Impact of Fiscal Policy indicator requires a nationally representative micro-data set (a Household Budget Survey, for example, or an Income and Expenditure Survey) and, especially for the construction of Consumable Income, fiscal or budgetary or administrative data on revenue collections, social expenditures, and expenditures on consumption subsidies.

### Collection process:

Nationally representative micro-data sets are often collected and hosted by the national statistics agency. However, access to such data sets is frequently given to a different part of the administration (the Ministry of Finance, for example, or the Ministry of Development and Planning). Fiscal or budgetary or administrative data is occasionally available in unabridged summaries with enough detail at the program or policy level for the estimation of the indicator. More often, however, budgetary and administrative data is kept by the agency executing the program (so, for example, the Ministry of Education will keep data on its own fiscal-year expenditures).

The validation process requires consultation with each of the ministries and agencies responsible for executing programmatic expenditures or revenue collections.

## DATA AVAILABILITY

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### Description:

Currently the Redistributive Impact of Fiscal Policy indicator is available from the Commitment to Equity Institute and the World Bank and *for at least one year* in 82 countries across the following regions:

- East Asia and the Pacific: 9
- Europe and Central Asia: 17
- Latin America and the Caribbean: 18
- Middle East and North Africa: 6
- North America: 1
- South Asia: 5
- Sub-Saharan Africa: 26



The indicator is available for 34 of the 37 OECD member countries for Pre-fiscal and Disposable Income only. Data are available annually (with the exception of countries whose income survey is fielded every two or three years) through the OECD Income Distribution Database.

**Time series:**

The Redistributive Impact of Fiscal Policy indicator is currently *for the most part* available for single country/year pairs only. The earliest estimations of the indicator are for 2008-era data. The most recent estimations are for 2015-era data. The only limitation to producing more frequent time series is the availability of more frequent household surveys. However, that is also a limitation faced by other SDG indicators.

## CALENDAR

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**Data collection:**

Source data collection follows the update cycle for country-specific micro-data sets as well as the audit cycle for fiscal year revenues and expenditures.

**Data release:**

There is not yet a regularized new data release or update schedule for this indicator. The WBG would be the custodian of any international agreement committing individual countries to an update schedule.

Existing CEQ Assessments listed here: [commitmenttoequity.org/publications-ceqworkingpapers/](https://commitmenttoequity.org/publications-ceqworkingpapers/)

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## RELATED INDICATORS

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The Impact of Fiscal Policy on Poverty (see Lustig, 2018, chapter 6).

## REFERENCES

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Duclos, Jean Yves, and Abdelkrim Araar. 2006. Poverty and Equity: Measurement, Policy, and Estimation with DAD. Springer US.

Gini, Corrado. (1936). "On the Measure of Concentration with Special Reference to Income and Statistics", Colorado College Publication, General Series No. 208, 73–79.

Lustig, Nora (ed). 2018. CEQ Handbook: Estimating the Impact of Fiscal Policy on Inequality and Poverty. CEQ Institute at Tulane University and Brookings Institution Press. [commitmenttoequity.org/publications-ceq-handbook](https://commitmenttoequity.org/publications-ceq-handbook) (open source; available online free of charge).