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BETTER POLICIES FOR BETTER LIVES

4.3 Data treatment: computation of standard errors

Context

- Most of the indicators collected in the OECD income distribution database are sample estimates based on surveys
- Ideally, estimated standard errors should be reported in order to:
  - Assessing the accuracy of estimates at one point in time
  - Measuring significant differences between countries
  - Identifying which changes are statistically significant over time
- Dissemination of standard errors is recommended in Canberra Handbook (2011) for ensuring quality of the statistics on income distribution (chap. 5)
- So far, standard errors have been rarely provided by countries in OECD data collections, even for key indicators (and with very large cross-country differences in estimates)
- Standard errors should be computed in consistent manner, taking into account complex sampling design of each country, while ensuring sufficient level of cross-country comparability

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Technical issues

- Ideally, sample design, weighting procedure, imputation methodology and non-linearity of the indicators should be taken into account
- Which methodology?
  - Direct estimation: analytical variance formulas for linear indicators and linearization for non-linear ones
  - Re-sampling estimation: high number of sub-surveys replication to approximate the true distribution of the indicator
- Trade-off between quality and empirical implementation:
  - Re-sampling estimation are highly flexible, allow coping with any type of sample design and indicators, and are highly accurate...but computationally very demanding
  - Direct-estimation require almost no computational effort...but are based on sometimes heavy assumptions
- Both require the availability of sample design variable and need to be computable with standard statistical packages
- No international guidelines available in this field

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For discussion

- Are standard errors already produced nationally?

- Can standard errors on key indicators (Gini, poverty rates) be computed in a systematic way for the OECD income distribution database?

- Would technical assistance (i.e. guidelines, code...) from the OECD be required to ease computations?

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