Net Replacement Rates to Unemployment in the EU28:
The Advantage of Using Microdata Compared to Hypothetical Families

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Definitions
- The Net replacement rate (NRR) of individual i is defined as:
  \[ NRR_i = \frac{Y_i^U}{W_i} \]
  - \( Y_i^U \) is household disposable income when individual i is unemployed (U).
  - \( W_i \) is household disposable income when individual i is in work (W).
- NRR can be decomposed as:
  \[ NRR_i = \frac{\Omega_i^U + \beta_i^U - Y_i^U}{\Omega_i^W} \]
  - \( \Omega_i^U \) is original income (income before any tax and transfer)
  - \( \beta_i^U \) are benefits and pensions
  - \( Y_i^U \) are taxes and social insurance contributions

Methodology
- \( Y_i^U \) and \( Y_i^W \) are obtained using EUROMOD by simulating transitions from work to unemployment for all people currently in work in the data (EU-SILC and FRS).

NRR in the EU28
- NRR vary widely across EU countries.
- Income from other household members (original income) plays an important role in NRR.
- The contribution of unemployment benefits is significant in most EU countries (except in the UK).
- Other instruments capture the effect of family composition (pensions, family benefits, taxes and SICs)

OECD NRR
- EUROMOD NRR are compared to OECD NRR based on hypothetical families.
- OECD uses six family types:
  - Single person with no children
  - Single person with two children
  - One-earner couples with no children
  - One-earner couples with two children
  - Two-earner couples with no children
  - Two-earner couples with two children
- Three wage levels are used: 67%, 100% and 150% of average wage
- Wages of second earner are 67% of average wage

Advantages of Microdata
- OECD family types represent less than 30% of the population in the microdata in most countries.
  - The percentage of OECD family types is particularly low in Southern and Eastern European countries
- OECD NRR do not capture an appropriate representation of the distribution of NRR in the population in some countries (e.g. BE, EL, FR, LV, RO, SE)
- OECD NRR do not account for the distribution of earnings in the population or the effect of income from other household members (e.g. secondary earners and low earners have significantly lower NRR)

References
- OECD, Tax Benefit Models (www.oecd.org/els/social/workincentives)

Notes:
- The blue continuous vertical line is the EUROMOD average NRR. The dashed vertical lines are OECD NRR for 18 synthetic families and their average is the continuous vertical black line.