INFORMATION NOTES

In the absence of information at the individual and household level on gross incomes and/or taxes paid, the technique commonly used for converting survey net incomes into gross incomes is the microsimulation model which imputes taxes and social security contributions according to the tax regime for the period to which the income refers.

For the estimation of gross incomes in the EU-SILC survey Istat tested a more complex methodology, adopting jointly the University of Siena's SM2 model and data relating to the integration of survey data and administrative sources by means of exact matching techniques on tax identification numbers and criteria of data harmonisation and reconciliation of values.[1]

The European Commission has adopted the SM2 model as the recommended procedure for constructing the gross variables in the EU-SILC survey[2]. The SM2 model was constructed for the 2003 tax year and tested on data from the ECHP (European Community Household Panel) survey.

The process of production of the EU-SILC gross income variables is summarised in three main stages:
* implementation of the SM2-EU-SILC microsimulation model;
* use of the integration of survey data and administrative sources for the microsimulations and for the calculation of taxes paid and withholding taxes;
* integrated validation of the previous two steps and construction of individual and household gross income target variables.

The implementation by Istat of the SM2-EU-SILC model required the transition from the preliminary version applied to the ECHP data to the version applied to the EU-SILC data and the construction of the input and auxiliary variables on the basis of information collected by the new survey.[3]

The availability of data from administrative sources, used from the stage of construction of net incomes from the survey, has enabled the joint, innovative use of the microsimulation model and administrative archives. As is well known, data from income tax returns do not contain information on a number of income components (untaxed incomes, incomes taxed separately or subject to withdrawal taxes) and may have problems of coverage in relation to the individuals included in the survey sample. The survey data, in turn, may be subject to withholding of information (reticence), under-reporting or inadequate representativeness of certain types of income or income recipients. The joint use of survey and administrative data enhances the advantages obtainable from the exclusive use of fiscal archives on the one hand and microsimulation techniques on the other.

In the EU-SILC survey five administrative archives are currently used: taxpayers income tax return forms, the 730 and Unico Persone Fisiche (UPF, single personal income tax return) forms, withholding agents' declarations, CUD and the 770 form, and the Pension Register (Casellario Pensionistico) drawn up jointly by Istat and INPS (the National Institute of Social Security). Specifically, for the construction of gross incomes the payment summary in the 730 forms was used and Part RN of the UPF were used to

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[1] Cf. Consolini P., *Integrazione dei dati campionari Eu-Silc con dati di fonte amministrativa*, Istat Metodi e Norme no.38, 2009
[2] Cf. Eurostat, *Income in EU-SILC: Net/Gross/Net conversion. Report on common structure of the model; model description and application to the ECHP data for France, Italy and Spain*, prepared by V. Verma, G. Betti and co-researcher. EU-SILC 133/04, Luxembourg 2004.
[3] Adjustments of some conversion routines were needed in particular for the estimation of income from self-employment, the calculation of IRAP and the income of CoCoCo workers (temporary subcontractors). In addition fiscal rules have been updated to include the second module of the IRPEF (personal income tax) reform of 2005 and subsequent amendments to tax legislation.

calculate net and gross incomes by type of source, withholding taxes, taxes paid, deductions[4], and tax credits [5] of declarant and spouse.[6]

After all available information had been gathered, a complex procedure was applied to the integrated database in order to check the consistency and accuracy of data regarding net and gross incomes, withholding taxes and taxes from administrative sources. Specifically, a number of anomalies between withholding taxes, social security contributions and corresponding incomes were eliminated. The withholding taxes or taxes paid from administrative sources were not used when no income data was present, or when the values were inconsistent.

The integrated database was then used as the input file for the microsimulation model and the availability of both microsimulated outputs and fiscal data made it possible to carry out an extremely useful cross-comparison and cross-validation of the results for the construction of the household and individual gross income target variables.

In addition the microsimulation model estimates income taxes and social security contributions for individuals not present in the administrative archives as they are *de facto* members of households (i.e. individuals who were present at the time of interview but who were not included in the household record at the time that the EU-SILC sampling frame was selected) or because it was impossible to establish a match between tax identification numbers (it is not possible, in fact, to capture individuals who report incomplete information on tax identification numbers and personal details). Furthermore, the SM2-EU-SILC model provided an estimation of social security contributions paid by workers and employers.

The final database of individual and household incomes gross of tax and social security contributions is therefore constructed as the sum of net incomes, taxes paid and withholding taxes from administrative sources, if available, or as the sum of net incomes and microsimulated taxes. It includes, additionally, social security contributions paid by workers and employers. A stochastic component has been added to the withholding taxes and taxes paid from administrative sources to render the information used anonymous.

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[4] Deductions for principal dwelling, social security and welfare contributions, regular maintenance allowances paid to spouse, social security contributions for home helps and carers, donations to religious institutions, medical and care expenses for disabled persons, supplementary health insurance and other expenditure.

[5] Tax credits for expenditures as per Section I and III of Part E (medical expenses, mortgage interest, life assurance and accident insurance, tuition fees, funeral expenses, care expenses, expenses for children's sports activities,

estate agents' fees, rent costs for students living away from home, other costs and expenses for building renovation work which are deductible at the rate of 41 per cent or 36 per cent) and other tax credits as per Section IV, Section V, Section VI and Section VII of Part E.

[6] For taxpayers who filed both 730 and UPF returns, the UPF form was used as it generally contains additional, subsequent information compared with the 730 form.

GLOSSARY

Social security contributions: they include the actual contributions, i.e. compulsory contributions (and voluntary ones if provided for under collective employment agreements) in order to obtain social security and welfare benefits (illness, disability, occupational injury or illnesses, old age and maternity) paid by the employee, self-employed or temporary subcontractor worker, and by the employer. Deemed contributions are not recorded in the EU-SILC survey.

Social security contributions paid by employer: they include contributions paid by the employer, the amount set aside for severance and termination payments (TFR = Trattamento di Fine Rapporto) and contributions paid by the principals of temporary subcontractor workers (so-called "collaboratori coordinati e continuativi" and "collaboratori a progetto").

Social security contributions paid by self-employed workers: they include the social security contributions of self-employed and temporary subcontractor workers.

Labour costs: the sum of gross earnings and social security contributions paid by the employer.

Tax wedge: the sum of personal income tax, social security contributions paid by the employee and social security contributions paid by the employer.

Personal income tax: the sum of direct taxes (IRPEF, additional regional and municipal taxes and withdrawal taxes on financial activities). For employment income, pensions and unemployment benefits, personal income tax corresponds to the withholding tax (according to the Eurostat definition of gross income), while for self-employment income it corresponds to the net income tax, as advance tax payments levied on self-employed workers, unlike withholding taxes levied on employment income and pensions, may diverge significantly from the final net income tax. The tax on self-employment also includes a part of IRAP. The regional tax on productive activities is estimated by applying the IRAP tax rate to the part of the self-employed taxpayer's taxable income that corresponds to the IRPEF taxable income. As it is calculated on the basis of the IRPEF taxable income, this part of IRAP is equivalent to a direct tax.

IRAP: Regional Tax on Productive Activities (Imposta Regionale sulle Attività Produttive), introduced by Legislative Degree on 15 December1997.

Gross individual income net of social security contributions: gross income from employment, self-employment, pensions, real and financial capital and non-pension transfers, such as unemployment benefits, CIG (Cassa Integrazione Guadagni (special lay-off pay fund)), vocational training allowances, and severance pay for employees on temporary job. It corresponds to the sum of net income and tax on income by type of source.

Gross household income net of social security contributions: the sum of net household income and income tax paid by the household's members.

Net household income: the sum of incomes from employment and self-employment, incomes from real and financial capital, pensions and other public and private transfers net of personal taxes, ICI (Imposta Comunale sugli Immobili - municipal property tax) and social security contributions. Transfers paid to other households are also subtracted from this sum (for example, alimonies paid for a former spouse/husband). Incomes from employment include the value of a company car provided for private use but not luncheon vouchers or other non-monetary fringe benefits. Any goods produced by the household for its own consumption are not included.

Gross earnings: the sum of net income from employment, personal income tax and social security contributions paid by the worker.