

Abstract for “Accounting for Total Work”

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Many activities carried out daily by individuals, like household work and care for dependent family members, are often defined as “unpaid work”, as opposed to paid work. Whereas paid work is aimed at the production of good and services which are sold in the market, unpaid work is carried out for own consumption. Thus, the distinction is not based on the intrinsic nature of the good/service produced, but on the destination (market vs. self-consumption). It follows that the measured quantity of labour used in a given economy misses unpaid work. The importance of this issue has been long recognized: e.g. Gronau (“Home Production: A Forgotten Industry,” *Review of Economics and Statistics*, 1980 62: 408-416) proposed a model to measure individual productivity and the value of home production, suggesting that the obvious consequence of the exercise was to find a way to measure the aggregate output of the home sector. The implications would also be important for the assessment of employment levels. The standard definition of the employment rate refers to a social arrangement which values certain activities only if they are carried out in the market, i.e. they contribute to gross domestic product. Thus, child care counts for the employment rate when performed by a paid nanny, but not when performed by a grandparent, though the effects on child well-being need not be different.

The allocation of time between paid and unpaid work is affected by the relative price of goods and services bought in the market or produced at home as well as by the welfare state provisions, the individual preferences, or cultural and social factors. These factors are mostly investigated with reference to the “gender-gap”, as typically unpaid work is concentrated among women and weaker groups in the population (e.g. Hamermesh, “Time to Eat: Household Production Under Increasing Income Inequality,” *Am. J. Agr. Econ.* 2007 89: 852-863). Burda, Hamermesh and Weil (“Total Work, Gender, and Social Norms”, *J. Popul. Econ* 2013, 26:239–261) measure “total work” of individuals as the sum of time spent in paid and unpaid work to analyse the causes of gender differences in total work supplied by individuals in 27 countries.

In this paper we show that unpaid work can be easily accounted for in the generalized employment rate proposed by Brandolini and Viviano (“Behind and beyond the (headcount) employment rate”, Eurostat working paper, 2013). Brandolini and Viviano’s class of generalised indices embodies a richer characterisation of the employment status which considers work intensity, as measured by actual hours of work, rather than the simple dichotomous variable employed/non-employed. Work intensity is defined as the total hours worked in a year as a ratio to the average annual hours worked in a full-time full-year paid job. The “weighted employment rate” assigns each employed person a weight equal to his/her total hours of work relative to the reference standard. The work-intensity weight is a continuous variable which takes nil value for non-employed people, and gives a fuller description of people’s work effort during the reference period. The generalized employment index includes also a parameter that captures alternative normative views about (paid) employment. What matters here is that the use of hours as the aggregator is flexible enough to include the time spent on non-market activities to derive a broader concept of employment rate. Its linear structure implies straightforward decomposition rules that enable us to assess relative contributions to total employment.

The paper will be organised as follows. We first characterise our generalised measures of the total-work employment rate for individuals and we show how to extend it for all household members. Next, we discuss the most relevant measurement issues related to the use of time diary data to measure market employment and discrepancies relative to official (market) employment statistics. We then turn to the definition of unpaid work and total work. Our empirical analysis uses Time Use survey for the 16 countries included in the Multinational Time Use Survey (MTUS) project of the Centre for Time Use research for various years. We study the distribution of total work in MTUS countries for both individuals and households and we compare aggregate total work indices with official standard employment rates.