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Labour productivity indicators for the EU28 Member States: Quality Adjusted Labour Input

Topic 7 – Better statistics for a globalised world

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Introduction

Multifactor productivity measurement helps to identify the direct growth contributions of labour, capital and intermediate inputs to productivity change. Particularly for labour, it is known that using simply total hours worked as the input measure for calculating labour productivity changes over time may be misleading since implicitly assumes that each hour worked is of the same quality/productivity (that is, there are no differences due to the qualifications/occupation levels of the labour employed) what obviously is not true in the reality (e.g. the productivity of a software engineer is not the same of a waiter) and disregard the relevance of the dynamics of the workers´ quality mix in the productivity of an economy (e.g. an increase/decrease of 10% of the hours worked in low skilled workers has not the same impact that in high skilled ones).

Methods / Problem statement

It is possible to produce a quality-adjusted measure of the labour input that takes into account the changes in the mix of workers over time by weighting together indicators of quality for different grades of workers: the Quality?Adjusted Labour Input (QALI), a composite indicator build as an index number like the well-known consumer price index or industrial production indexes. To derive QALI indicators, the available literature (OECD, 2001) generally draws the Törnqvist index, to represent the growth in quality?adjusted hours for a period with respect to the previous one, typically defined as a weighted geometric average of growth rates of hours worked differentiated into groups (e.g. skill, age, occupation, status…), where the weights are their productivity (proxied, according to neoclassical economics, by labour income shares across the different groups).

Results / Proposed solution

Some MS (FI, NL, SE, UK) already produced QALI based on national specific administrative data. The JRC has designed and implemented for Eurostat the statistical operation of producing QALI in a harmonised framework, based on official statistical data, for the EU28, EA19 and MS. The industry breakdown varies depending on countries due to reliability and confidentiality constraints of the survey data: 21 industries (NACE Rev.2 A*21) for half of MS, EU28 and EA19| 10 industries (A*10) and the total economy for all. Worker´s qualities considered are three skill and three age groups.

Results are consistent with National Accounts (NA) under the latest regulation (ESA2010). As NA do not include information of the split of hours and earnings according different type of workers, the split is made according to the structures obtained from survey microdata (LFS, SES, EU-SILC) that have been adjusted to NA principles (domestic vs. national) and harmonized across them. Producing consistent yearly data for the whole time series 2003-2014 (not all MS covered in initial years) implied to solve the change (2007/08) in the industrial breakdown (NACE Rev.1.1 vs. Rev.2) of the structures derived from the survey microdata and make estimations for the survey not conducted yearly (e.g. SES).

Conclusions

The QALI measures labour input to production taking into account the dynamics of the composition of the workforce as well as the volume of hours worked. Such approach provides a broader perspective of the input of labour to the production process as opposed to traditional measures, which focus only on the quantity of labour input (e.g. employments, workers, hours), and a conceptually stronger method.