# Introduction of quarterly Unit Labour Cost indicators

The March 2007 edition of the Main Economic Indicators (MEI) publication and associated electronic products marks the introduction of quarterly Unit labour Cost indicators, which are an output of the newly established OECD System of Unit Labour Cost Indicators.

Unit Labour Costs (ULC) measure the average cost of labour per unit of output.  They are calculated as the ratio of total labour costs to real output, or equivalently as the ratio of average labour costs per hour to labour productivity (output per hour). As such, ULC represent a link between productivity and the cost of labour in producing output. The OECD System of Unit Labour Cost Indicators calculates annual and quarterly ULC measures according to a specific methodology to ensure data are comparable across OECD member countries.  As the scope of the MEI is on short-term economic indicators, developments in quarterly ULC indexes are the focus for this publication.

**Coverage**

Data have been compiled for 27 of the 30 OECD member countries (and the Euro area) for the following economic activities, according to the International Standard Industrial Classification (ISIC Rev. 3):

• Total economy
• Manufacturing (ISIC D)
• Industry (ISIC C_E)
• Construction (ISIC F)
• Trade, transport and communication (ISIC G_I)
• Finance and business services (ISIC J_K)
• Market services (ISIC activity based proxy G_K)
• Business sector excluding agriculture (ISIC activity based proxy C_K)

**Methodology**

*Quarterly indicator variables*

As outlined above, ULC are calculated as the ratio of total labour costs to real output.  In the OECD System of Unit Labour Cost Indicators the target variable for the quarterly indicator of total labour costs is compensation of employees compiled according to the System of National Accounts 1993 (SNA 93).  Whilst this variable excludes some aspects of labour costs such as the cost of employee training and recruitment, taxes on employment (e.g. payroll tax) and also does not account for labour costs of the self-employed, it is the broadest indicator of total labour costs available at a quarterly frequency.  Where this target variable is not available a suitable proxy is sought, with the following general order of preference: gross wages and salaries; labour cost index multiplied by total hours worked; average earnings multiplied by total employment. The target variable for quarterly real output is constant price value added compiled according to the SNA 93.  Where this target variable is not available a production index covering the respective economic activities is sought.

The quarterly indicators of total labour costs and real output are then benchmarked (using the Fernández methodology) to comprehensive annual data to compile temporally disaggregated quarterly time series of total labour costs and real output on the preferred methodological basis which are comparable across countries.

*Source data*

The majority of quarterly indicator series are sourced from the OECD Quarterly National Accounts Database. For those countries that do not have complete GDP by income or production accounts proxy variables for quarterly total labour costs and / or real output are collected directly from national sources or sourced from the Statistical Office of the European Communities (Eurostat).  All annual benchmark data are sourced from the OECD System of National Accounts Database.

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*Quarterly Unit Labour Cost indexes*

All quarterly component indicators as described above are sought in original (i.e. unadjusted) form. Raw quarterly Unit Labour Costs are then calculated as the quotient of the temporally disaggregated (benchmarked) quarterly time series of total labour costs and real output. The raw ULC are then seasonally adjusted using the TRAMO - SEATS method in the software package Demetra. In addition to the seasonally adjusted series, TRAMO - SEATS produces a trend-cycle series which includes all non-seasonal and non-irregular movements in the underlying time series. This series can be regarded as a smoothed seasonally adjusted series, where the degree of smoothing is dependent on the underlying ARIMA model and will thus vary from series to series. The OECD has performed extensive testing of this methodology and found that it significantly reduces the volatility of estimated quarter-on-previous-quarter rates of change whilst still effectively extracting the underlying signal in the raw data.

**Series available in MEI products**

All series and related methodological information can be downloaded at http://stats.oecd.org/mei/ under the Unit Labour Costs heading.

Due to the volatility inherent in a derived series such as the ULC, the headline measure promoted by the OECD and consequently the data presented in this publication are based on the quarterly trend-cycle series. This is in the form of annual and quarter-on-previous-quarter rates of change in the Part 1 tables for Industry (27 countries) and Market services (25 countries), and indices for each of the eight economic activities listed above in Part 2. All OECD member countries are represented for at least some economic activities with the exception of Greece, Iceland and Switzerland; where suitable quarterly indicator series for total labour costs are not available.

Substantially more data are provided in MEI electronic products where some 1398 series are available. This includes ULC indices (2000 = 100) in raw, seasonally adjusted and trend-cycle form for all economic activities together with annual and quarter-on-previous-quarter rates of change for the trend-cycle and seasonally adjusted series. Furthermore, the temporally disaggregated quarterly time series of total labour costs and real output in national currency units are also provided.

Every effort has been made to compile the longest time series possible. In many cases, this has involved linking currently available time series on quarterly indicators to related historical data sources where these could be found. Whilst this inevitably has lead to some variation in the length of time series available across all OECD member countries, more than 60% of countries covered have time series of 15 years or more for the ULC indexes. Furthermore, Unit Labour Cost index trend-cycle series have been extended to have the same length as the corresponding annual series (i.e. in most cases back to 1970) through linking to a quarterly series interpolated from the annual Unit Labour Cost index using the Denton temporal disaggregation technique.

**Future work**

The OECD will be continually reviewing the availability of relevant quarterly indicator series to further increase the country by economic activity coverage in the database. There are also plans to produce zone aggregate series in the near future as provided with other key series in Part 1 of the MEI. In the second half of 2007 OECD will release a database containing annual Unit Labour Cost indicators together with a range of complementary analytical series such as: real Unit Labour Costs; exchange rate adjusted Unit Labour Costs; unit labour compensation indices and; labour productivity indices by economic activity. These measures may also be extended to the major OECD non-member countries of China, Brazil, India, South Africa and the Russian Federation.

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