

## ANNEX 4: OECD SYSTEM OF UNIT LABOUR COST AND RELATED INDICATORS

The following metadata tables outline those countries that, for a specific economic activity, could not provide the full data series required for the graphs published in sections D1, D2 and D3. The dates required for the economy activities – Total Economy, Industry Market Services – were 1986-2006.

All data were sourced from the OECD's System of Unit Labour Cost and Related Indicators database, with the exception of Labour Productivity – Total Economy which was sourced via the OECD Productivity Database. If a country is not listed, or the cell is blank, then this country has all the required data for the listed economic activity.

Table 1. Annual Unit Labour Costs

Country	Total Economy	Industry	Market Services
Czech Republic	1992-2006	1995-2006	1995-2006
Greece		1995-2006	1995-2006
Hungary	1992-2006	1995-2006	1995-2006
Iceland	1986-2005	1986-2005	1986-2005
Mexico	1986-2004	1995-2004	1995-2004
Poland	1992-2006	1992-2006	1992-2006
Portugal	1986-2004		
Slovak Republic	1993-2006	1995-2006	1995-2006
Switzerland	1990-2006	NA	NA

Table 2. Annual Labour Productivity

Country	Total Economy	Industry	Market Services
Austria	1995-2006		
Canada		1986-2005	1986-2005
Czech Republic	1993-2006	1995-2006	1995-2006
France		1986-2005	1986-2005
Greece		1995-2006	1995-2006
Hungary	1992-2006	1995-2006	1995-2006
Iceland		NA	NA
Mexico	1991-2006	1995-2004	1995-2004
New Zealand		1989-2005	1989-2005
Poland	1992-2006	1992-2006	1992-2006
Portugal		1986-2004	1986-2004
Slovak Republic	1994-2006	1995-2006	1995-2006
Switzerland		NA	NA
United States		1986-2005	1986-2005

Table 3. Annual Labour Compensation per Unit Labour Input

Country	Industry	Market Services
Canada	1986-2003	1986-2003
Czech Republic	1995-2006	1995-2006
France	1986-2005	1986-2005
Greece	1995-2006	1995-2006
Hungary	1995-2005	1995-2005
Iceland	NA	NA
Ireland	(1995) 1986-2006	(1995) 1986-2006
Mexico	1995-2004	1995-2004
New Zealand	1989-2003	1989-2003
Poland	1992-2005	1992-2005
Portugal	(1995) 1986-2004	(1995) 1986-2004
Slovak Republic	1995-2006	1995-2006
Sweden	(1993) 1986-2006	(1993) 1986-2006
Switzerland	NA	NA
Turkey	1988-2006	1988-2006

*Notes:*

1. Labour Productivity - Total Economy (section D1 of the publication); data for the Euro area and Poland are sourced via the OECD System of Unit Labour Costs and Related Indicators database not the OECD Productivity Database.

2. Table 3 has three countries (Ireland, Portugal and Sweden) with dates in brackets. In these cases the dates in brackets are the actual dates that data provided by the countries allows these series to be calculated. However, using the identity that: "Labour Compensation per Unit of Labour Input *is equivalent to* Labour Productivity per Unit Labour Input *multiplied by* Unit Labour Costs", the Labour Compensation per Unit Labour Input series has been extended to the new date indicated.

*Symbols:*

NA – In these cases, the countries lack either 'Total Labour Costs' or 'Employment' variables. The derived variable cannot be compiled, or if compiled the derived variable would not be comparable with other OECD member countries.

*Growth Rates:*

For section D, annual average growths rates are calculated as follows, using Labour Productivity (Real Output/Hours) as the example:

Annual average growth rates for Real Output per hour worked are computed as compound growth rates,

i.e. annual average growth rate per period = 
$$\sqrt[k]{\frac{\text{Real Output/Hours}_{t+k}}{\text{Real Output/Hours}_t}} - 1$$

where  $t$  and  $t+k$  are two points in time and  $k$  is the number of years between them.

## **Variable descriptions**

Below are more detailed descriptions of the compilation methodology for the annual variables available through the OECD System of Unit Labour Costs and Related Indicators online database, accessible through the user interface at: <http://stats.oecd.org/mei/default.asp?rev=3>

### ***Annual Unit Labour Costs***

#### *Key statistical concept*

Annual unit labour costs are calculated as the quotient of total labour costs and real output. Time series are presented in both level and index form where the base year of real output is 2000. 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. The OECD System of Unit Labour Cost and Related Indicators database produces annual and quarterly ULC and related indicators according to a specific methodology to ensure data are comparable across OECD countries. For detail on country data sources, see: <http://stats.oecd.org/mei/default.asp?lang=e&subject=19>

#### *Recommended uses and limitations*

Every effort has been made to ensure that data are comparable across countries. Therefore cross country comparisons of unit labour cost levels (in ratio form) can be used for static analysis (i.e. comparison of unit labour cost levels across countries or economic activities at a point in time) together with indexes which show comparable development in unit labour costs over time. However, for some countries unit labour cost levels are not presented due to a lack of data to make an adjustment for the self-employed. For these countries only unit labour cost indexes are made available for analysis. Furthermore, the adjustment for the self employed assumes that labour compensation per hour or per person is equivalent for the self employed and employees of businesses. This assumption may be more or less valid across different countries and economic activities thus affecting the comparability of unit labour cost level data.

#### *Sector: Sector coverage*

The economic activities listed are derived from the International Standard Industrial Classification (ISIC Rev. 3): <http://www.ilo.org/public/english/bureau/stat/class/isic.htm>

### ***Annual Total Labour Costs***

#### *Key statistical concept*

The target variable for annual total labour costs is compensation of employees (COE) compiled according to the System of National Accounts 1993, adjusted for the self employed by multiplying COE by the ratio of total hours worked by all persons in employment to total hours worked by all employees of businesses. This target variable covers a significant part of total labour costs such as wages and salaries; bonuses; payments in kind related to labour services (e.g. food, fuel, housing, etc); severance and termination pay and; employers' contributions to pension schemes, casualty and life insurance and workers compensation.

However, COE excludes some relevant items of total labour cost such as the cost of employee training, welfare amenities and recruitment; taxes on employment (e.g. payroll tax) and; fringe benefits tax. Furthermore, the adjustment for the self employed assumes that labour compensation per hour or per person is equivalent for the self employed and employees of businesses. This assumption may be more or less valid across different countries and economic activities.

In the interest of producing the longest possible time series for annual total labour costs, current series are often linked to related historical time series provided to the OECD sometime in the past. As a result time series extend back to 1970 for most OECD member countries. The variables and their sources used for each country and economic activity are noted in the country metadata under the heading 'Sources'.

### *Aggregation and consolidation*

Total labour costs for economic activities G\_K (Market Services) and C\_K (Business Sector) are compiled by summing their respective activity components.

### **Annual Real Output**

#### *Key statistical concept*

The target variable for annual real output is constant price value added compiled according to the System of National Accounts 1993. In the interest of producing the longest possible time series for annual real output, current series are often linked to related historical time series provided to the OECD sometime in the past. As a result time series extend back to 1970 for most OECD member countries. The variables and their sources used for each country and economic activity are noted in the country metadata under the heading 'Sources'.

### *Aggregation and consolidation*

All volume series of real output are re-referenced such that the national currency series are expressed in prices of the prevailing OECD base year. Series for activity aggregates G\_K and C\_K are compiled through annual chain linking of their respective components, using current price value added data as weights.

#### *Other manipulations*

The real output of activity J\_K is adjusted to remove the (estimated) component attributed to the services provided by a dwelling to its occupants as this activity has no associated labour input. For a detailed explanation of this issue and the methodology used to perform the adjustment, see <http://www.oecd.org/dataoecd/37/31/37664867.pdf>. Consequently the published time series of real output for activities, J\_K, G\_K and C\_K will differ from related national source data.

### **Annual Labour Productivity**

#### *Key statistical concept*

Labour Productivity is defined in the OECD System of Unit Labour Cost and Related Indicators database as real output divided by total labour input. The labour input measure used is hours worked by those in employment for Australia, Austria, Canada, Denmark, France, Germany, Greece, Hungary, Italy, Korea, Netherlands, Norway, Slovak Republic, Spain, Sweden and Switzerland. For all other countries total employment in persons is used as the labour input measure.

#### *Recommended uses and limitations*

The main purpose of the Labour Productivity measure compiled through the OECD System of Unit Labour Cost and Related Indicators is to enable users to decompose movements in the annual Unit Labour Cost into a numerator which shows Labour Compensation per Unit Labour Input and a denominator which shows Labour Productivity.

Estimates of Labour Productivity are very sensitive to the quality of data used for the labour input measure. This issue is explained in depth in the OECD Productivity Database which also presents measures of Labour Productivity at the Total Economy level which may differ from those shown in the OECD System of Unit Labour Cost and Related Indicators database for some countries. The main source of this difference is the labour input measure used.

The OECD Productivity Database uses total hours worked as the labour input measure for all countries where this is defined as the product of series for average hours per worker or per job multiplied by total number of workers or the total number of jobs. National accounts is the default source for this data, complemented by data

from labour force surveys for those countries and years for which national accounts provide no information on hours worked. By contrast, all labour input data (i.e. total hours worked or total employment) used for the OECD System of Unit Labour Cost and Related Indicators database is sourced from the OECD System of Annual National Accounts database. This implies that where a country has only a short-time series of hours worked data available, the historical series will have been linked to the series on total employment. The period for which hours worked data is available in those countries where it is used as the labour input measure is shown in the country data sources.

There are other minor reasons which may also lead to discrepancies between the Labour Productivity measures presented at the Total Economy level between the two respective databases. A detailed description of these reasons and an analysis of discrepancies on a country by country basis are available on request.

### ***Annual Labour Productivity per Person Employed***

#### *Key statistical concept*

Labour productivity per person employed is defined in the OECD System of Unit Labour Cost and Related Indicators database as real output (gross value added) divided by total employed persons.

### ***Annual Labour Productivity per Hour***

#### *Key statistical concept*

Labour productivity per hour is defined in the OECD System of Unit Labour Cost and Related Indicators database as real output (gross value added) divided by total hours worked by all persons in employment.

### ***Annual Labour Compensation per unit labour input***

#### *Key statistical concept*

Labour Compensation per Unit Labour Input is defined in the OECD System of Unit Labour Cost and Related Indicators database as compensation of employees divided by total hours worked by employees (Australia, Austria, Canada, Denmark, France, Germany, Greece, Hungary, Italy, Korea, Norway, Slovak Republic, Spain and Sweden) or total employees (all other countries).

### ***Annual Labour Compensation per Employee***

#### *Key statistical concept*

Labour compensation per employee is defined in the OECD System of Unit Labour Cost and Related Indicators database as compensation of employees divided by total employees.

### ***Annual Labour Compensation per Hour***

#### *Key statistical concept*

Labour compensation per hour is defined in the OECD System of Unit Labour Cost and Related Indicators database as compensation of employees divided by total hours worked by employees.

### ***Annual Labour Compensation per Unit Labour Input USD (PPP adjusted)***

#### *Key statistical concept*

USD (PPP adjusted) Labour compensation per unit labour input is defined in the OECD System of Unit Labour Cost and Related Indicators database as compensation of employees converted from national currency to USD using private consumption purchasing power parities, divided by total hours worked by employees (for Australia, Austria, Canada, Denmark, France, Germany, Greece, Hungary, Italy, Korea, Netherlands, Norway, Slovak Republic, Spain and Sweden) and total employees for all other countries. Note, for those countries with hours worked data, where a longer time series for total employees exists the data is linked to extend the time series.

***Annual Labour Compensation per Employee USD (PPP adjusted)***

*Key statistical concept*

USD (PPP adjusted) Labour compensation per employee is defined in the OECD System of Unit Labour Cost and Related Indicators database as compensation of employees converted from national currency to USD using private consumption purchasing power parities, divided by total employees.

***Annual Labour Compensation per Hour USD (PPP adjusted)***

*Key statistical concept*

USD (PPP adjusted) Labour compensation per hour is defined in the OECD System of Unit Labour Cost and Related Indicators database as compensation of employees converted from national currency to USD using private consumption purchasing power parities, divided by total hours worked by employees.

***Annual self employment ratio***

*Key statistical concept*

The self-employment ratio (either using 'hours worked' or 'persons') is calculated simply as: Total employment divided by employees. The resulting ratio gives the user an understanding of the proportion of the self-employed to employees in total employment. Looked across economic activities over time, the ratio can also give the user an understanding of the changing self-employed/employee composition of the country's labour force.

The ratio is based on hours worked data for Australia, Austria, Canada, Denmark, France, Germany, Greece, Hungary, Italy, Korea, Netherlands, Norway, Slovak Republic, Spain and Sweden. For all other countries data on persons is used, with the exception of Switzerland, Turkey and Iceland where data is not available to perform the calculation.

*Recommended uses and limitations*

In compiling ULC's the ratio is multiplied by compensation of employees (national accounts base) to give an adjusted compensation of employees measure more suitable for use in the Unit Labour Cost (ULC) compilation process. Compensation of employees as defined in the national accounts does not include labour compensation for the self-employed which is covered in the item 'operating surplus and mixed income'. However, the output of the self-employed contributes to value added and thus introduces an inconsistency between the numerator and denominator when deriving ULC indexes. If an adjustment is not made to the labour compensation measure to account for the impact of the self-employed, this has the potential to distort the comparability of ULC indexes across countries if there are large differences in the level or, more importantly, changes over time in the number of self-employed persons across countries. Also, this impact is likely to vary across industries, as some industries are more likely to have a higher proportion of self employed (e.g. Agriculture) than others.

## ***Annual Nominal Output***

### *Key statistical concept*

Annual nominal output is current price value added compiled according to the SNA 93.

### *Aggregation and consolidation*

Annual Nominal Output series are used as weights when compiling annually chain linked Real Output series for economic activities G\_K (Market Services) and C\_K (Business Sector). The Annual Nominal Output series for each economic activity are also used as the denominator for the Labour Income Share ratio - also known as the Real Unit Labour Cost.

### *Other manipulations*

The real output of activity J\_K is adjusted to remove the (estimated) component attributed to the services provided by a dwelling to its occupants as this activity has no associated labour input. For a detailed explanation of this issue and the methodology used to perform the adjustment, see: [www.oecd.org/dataoecd/37/31/37664867.pdf](http://www.oecd.org/dataoecd/37/31/37664867.pdf). Consequently the published time series of real output for activities, J\_K, G\_K and C\_K will differ from related national source data.