Metadata for the MDG Employment Indicators
Growth rate of GDP per person employed, percentage

Contact point in international agency

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Definition

The growth rate of GDP per person employed or labour productivity is defined as the growth rate of output per unit of labour input.

Output is measured as “value added”, which is the total production value minus the value of intermediate inputs, such as raw materials, semi-finished products, services purchased and energy inputs. Value added, called “gross domestic product” (GDP) in the national accounts, represents the compensation for input of services from capital (including depreciation) and labour directly engaged in the production.

Labour input is defined as persons employed.

For further information see: http://www.ilo.org/trends

Method of computation

All estimates are made according to the national accounts conventions to ensure that labour productivity for individual sectors can be compared. Hence, the selection of economies is based on the availability of consistent series of output in both national currencies and PPP (purchasing power parity) converted United States (US) dollars and labour input.

Output measures are obtained from national accounts and represent, as much as possible, GDP at market prices for the aggregate economy, which reflects that market value of the output produced, and value added at basic prices for the individual sectors. For the individual sectors GDP at market prices is adjusted to basic price level, i.e. indirect taxes on products are subtracted and subsidies on products are added. The adjusted GDP, therefore, represents the amount receivable by the producer for a unit of good or service produced.

To compare labour productivity levels across economies, it is necessary to convert gross value added to US dollars on the basis of adjusted purchasing power parity (PPP). A PPP represents the amount of a country’s currency that is required to purchase a standard set of goods and services worth one US dollar. Through the use of PPPs one takes account of differences in relative prices between countries. The total economy estimates of gross value added are expressed in terms of 1990 US dollars, as the 1990 PPP
makes it possible to compare the largest set of countries. For the individual sectors the base year is 1997. This year was chosen due to the availability of a new set of multilateral PPPs by industry for this benchmark year. The agricultural sector PPPs were originally for 1995, but have been extrapolated to 1997 to enhance the comparability between sectors.

**Comments and limitations**

Labour productivity is defined as output per unit of labour input (persons employed). Labour productivity growth may be due to either increased efficiency in the use of labour, without more of other inputs, or because each worker works with more of the other inputs, such as physical capital, human capital or intermediate inputs. More sophisticated measures, such as "total factor productivity", which is the output per combined unit of all inputs, are not included. Estimated labour productivity may also show an increase if the mix of activities in the economy or in an industry has shifted from activities with low levels of productivity to activities with higher levels, even if none of the activities have become more productive. For a constant “mix” of activities the best measure of labour input to be used in the productivity equation would be “total number of annual hours actually worked by all persons employed”. In many cases, however, this labour input measure is difficult to obtain or estimate reliably.

The limitations to the international and historical comparability of the estimates are summarized under the following three headings.

1. **Output measures in national currencies**

Output measures are obtained from national accounts and represent, as much as possible, GDP at market prices for the aggregate economy and value added at basic prices for the individual sectors. However, despite common principles that are mostly based on the United Nations System of National Accounts, there are still significant problems in international consistency of national accounts estimates, in particular for economies outside the Organization for Economic Co-operation and Development (OECD). Such problems include:

   - *(a) different treatment of output in services sectors;* *(b) different procedures in correcting output measures for price;* and *(c) different degree of coverage of informal economic activities in developing economies and of the underground economy in developed (industrialized) economies in national accounts.*

2. **Purchasing power parities**

The International Comparison Program (ICP) price surveys to obtain PPPs are carried out for selected benchmark years only. Not all estimates are for the same year, so that it was necessary in Maddison (1995: Monitoring the World Economy, 1820-1992) to carry some data forward to 1990 with the use of national price indices. The precise nature of the ICP price surveys can differ across economies, principally for non-OECD countries. The ICP pricing procedures have been criticized for lack of comparability and reflection of the specified items between economies. Furthermore, the multilateral character of the estimates is affected by the fact that the PPPs are, in fact, estimated for six different regions, and “globalized” with particular interregional (binary) links. Finally, within each of the regions, the
aggregation procedures of the PPPs differ. For example, for 1990 the country PPPs within the European Union are unweighted for size of GDP (using the so-called EKS procedure), whereas the PPPs for non-European OECD countries are combined with those for the European Union and weighted for size of GDP. Even though the industry by origin PPPs for manufacturing, transport and communication and wholesale and retail trade are assumed to be a proxy of relative producer prices, the comparability of these measures suffers from biased sample coverage. Moreover, due to the “unit value” characteristics of part of the information, the method takes, in many cases, insufficient account of quality differences across economies.

3. Employment

Estimates of employment are, as much as possible, for the average number of persons with one or more paid jobs during the year. Particularly for low- and middle-income economies in Asia and Latin America, statistics on the number of self-employed and family workers in agricultural and informal manufacturing activities are probably less reliable than those for paid employees. As in the case of output estimates, the employment estimates are sensitive to under-coverage of informal or underground activities, which harbour a substantial part of labour input. In some cases, informal activities are not included in the production and employment statistics at all. In agriculture the labour force estimates include a substantial part of (part time and seasonal) family workers. However, the estimates presented for the economies in this data set are meant to cover all economic activity.

Sources of discrepancies between global and national figures

The labour force data are harmonized to account for differences in national data and scope of coverage, collection and tabulation methodologies as well as for other country specific factors such as military service requirements. Furthermore, nationally reported data are utilized only when these meet strict criteria in terms of international comparability and geographic coverage. Model estimates are used where national data are not available or satisfactory. See “Comments and Limitations” section for additional details of sources of discrepancies.

Process of obtaining data

ILO gathers data to estimate the indicators from international data repositories managed by various international organisations. It rarely collects information directly from national sources.

The estimates for the aggregate economy are derived from the World Development Indicators (WDI) Database of the World Bank. Complete documentation of sources and methods by country and underlying documentation on the use of PPPs, etc. can be downloaded from the website of the World Bank.

The aggregate economy estimates for OECD countries, most of which are included in the tables under the headings of “Developed Economies & European Union”, and GDP (after 1990) are mostly obtained from OECD: National Accounts, Volumes I and II (annual issues) and The Statistical Office of the European Communities (Eurostat) New Chronos database. A. Maddison: The World Economy: Historical Statistics (Paris, OECD Development Centre, 2001) has been extensively used to cover the period 1980-

For other countries outside of the OECD, the national accounts and labour statistics assembled from national sources by international organizations such as the World Bank, the Asian Development Bank, the Food and Agriculture Organization (FAO), the ILO and the United Nations Statistical Office, are mostly taken as the point of departure. In individual cases use has also been made of national accounts statistics. The total economy series are linked to a benchmark estimate of GDP at market prices in US dollars for 1990 from Maddison (2003, op. cit.). Maddison’s dollar estimates are based on purchasing power parities for GDP. The original PPPs were obtained from the ICP.

The PPPs for the total economy used by Maddison represent multilaterally weighted PPPs. Multilateralization implies that the weights of all economies are used to obtain the aggregate PPPs, which makes comparisons between economies fully transitive, i.e. comparisons between economies A and B and economies B and C equal a comparison between economies A and C. The year 1990 was chosen because it is still the latest for which a reasonably comprehensive and reliable set of PPPs can be obtained for a largest possible range of economies in the world economy. The multilateral weighting system for the aggregate economy is the Geary-Khamis system, which essentially weighs PPPs for each country on the basis of its relative size in terms of GDP.

Whenever information was available from more than one repository, the information and background documentation from each repository was reviewed in order to select the information most suitable for inclusion, based on an assessment of the general reliability of the sources, the availability of methodological information and explanatory notes regarding the scope of coverage, the availability of information by sex and age, and the degree of historical coverage. Occasionally, two data repositories have been chosen and presented for a single country; any resulting breaks in the historical series are duly noted.

For countries with less-developed labour market information systems, such as those in the developing economies, information may not be easily available. Many of these countries, however, do collect labour market information through household and establishment surveys, population censuses and administrative records.

Limitations to comparability are often indicator-specific; however, there are standard issues that require attention with every indicator. For example, the precision of the measurements made for each country and year, and systematic differences in the type of source, related to the methodology of collection, definitions, scope of coverage and reference period, will certainly affect comparisons. In order to minimize misinterpretation, detailed notes are provided that identify the repository, type of source (household and labour force surveys, censuses, administrative records, and so on), and changes or deviations in coverage, such as age groups and geographical coverage (national, urban, rural, capital city and so on).
**Treatment of missing values**

See “Regional and Global Estimates”, below.

**Data availability**

Data are available for 121 countries. Together these represent more than 95 per cent of the world population and more than 99 per cent of world GDP. Data are produced at least annually.

**Regional and Global estimates**

The biggest challenge in the production of aggregate estimates is that of missing data. In an ideal world, producing world and regional estimates of labour market indicators, such as employment, for example, would simply require summing up the total number of employed persons across all countries in the world or within a given region. However, because not all countries report data in every year and, indeed, some countries do not report data for any years at all, it is not possible to derive aggregate estimates of labour market indicators by merely summing across countries. To address the problem of missing data, the ILO Employment Trends Unit has designed and actively maintains two econometric models which are used to produce estimates of labour market indicators in the countries and years for which no real data exist. The Global Employment Trends Model (GET Model) is used to produce estimates – disaggregated by age and sex – of employment-to-population ratios and other indicators. The world and regional labour force estimates are produced using the Trends Labour Force Model (TLF Model).

Each of these models uses multivariate regression techniques to impute missing values at the country level. The first step in each model is to assemble every known piece of real information (i.e. every real data point) for each indicator in question. It is important to note that only data that are national in coverage and comparable across countries and over time are used as inputs. This is an important selection criterion when the models are run, because they are designed to use the relationship between the various labour market indicators and their macroeconomic correlates (such as per-capita GDP, GDP growth rates, demographic trends, country membership in the Highly Indebted Poor Country (HIPC) Initiative, geographic indicators and country and time dummy variables) in order to produce estimates of the labour market indicators where no data exist. Thus, the comparability of the labour market data that are used as inputs in the imputation models is essential to ensure that the models accurately capture the relationship between the labour market indicators and the explanatory variables.

The last step of the estimation procedure occurs once the datasets containing both the real and imputed labour market data have been assembled. In this step, the ILO Trends Team aggregates the data across countries to produce the final world and regional estimates. For further information on the world and regional econometric models, readers can consult the technical background papers available at the following website: [http://www.ilo.org/trends](http://www.ilo.org/trends)

**Expected time of release**

Data are published every two years, in September, in the Key Indicators of the Labour Market report.

**Please refer to series metadata**
**Employment-to-population ratio, both sexes, percentage**

**Contact point in international agency**

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**Definition**

The employment-to-population ratio is the proportion of a country’s working-age population that is employed.

Employment is defined as persons above a specified age who performed any work at all, in the reference period, for pay or profit (or pay in kind), or were temporarily absent from a job for such reasons as illness, maternity or parental leave, holiday, training or industrial dispute. Unpaid family workers who work for at least one hour should be included in the count of employment, although many countries use a higher hour limit in their definition. ¹

For most countries, the working-age population is defined as persons aged 15 years and older, although this may vary slightly from country to country.

For further information see: [http://www.ilo.org/trends](http://www.ilo.org/trends)


**Method of computation**

The employment-to-population ratios are calculated by expressing the number of persons in employment as a percentage of the population for the corresponding sex and age group (either working-age or youth).

**Comments and limitations**

The ILO standard for the lower age limit is 15 years. For many countries, this age corresponds directly to societal standards for education and work eligibility. However, in some countries, particularly developing
ones, it is often appropriate to include younger workers because “working age” can, and often does, begin earlier. Some countries in these circumstances use a lower official bound and include younger workers in their measurements. Similarly, some countries have an upper limit for eligibility, such as 65 or 70 years, although this requirement is imposed rather infrequently (examples are Egypt (upper limit 64 years) and Finland (upper limit 74 years)).

Apart from issues related to age, the population base for employment ratios can vary across countries. In most cases, the resident non-institutional population of working age living in private households is used, excluding members of the armed forces and individuals residing in mental, penal or other types of institution. Many countries, however, include the armed forces in the population base for their employment ratios even when they do not include them in the employment figures.

Comparability of employment ratios across countries is affected most significantly by variations in the definitions used for the employment and population figures, as described above. Perhaps the biggest differences result from age coverage, such as the lower and upper bounds for labour force activity. Estimates of both employment and population are likely to vary according to whether members of the armed forces are included. To a large extent, these comparability issues have been addressed in the construction of the table as employment and population figures are harmonized.

However, the use of nationally reported data in the construction of the estimates can also create issues with comparability due to the nature of the data source. National labour force surveys tend to be similar in several essential features, and data derived from them are likely to be more comparable than data obtained from other sources or from a combination of different sources. Nevertheless, despite their strength, labour force survey data may contain non-comparable elements in terms of scope and coverage or variations in national definitions of the employment concept.

An example of measurement differences that can arise has to do with the national treatment of particular groups of workers. The international definition, as stated above, calls for inclusion of all persons who worked for at least one hour during the reference period. The worker could be in paid employment or in self employment or engaged in less obvious forms of work, each of which is dealt with in detail in the resolution, such as unpaid family work, apprenticeship or non-market production. The majority of exceptions to coverage of all persons employed in a labour force survey have to do with slight national variations to the international recommendation applicable to the alternate employment statuses. For example, some countries measure persons employed in paid employment only (United States Virgin Island) and some countries measure only “all persons engaged” (Albania until 2002, Lithuania until 1993, Malta until 1999), meaning paid employees plus working proprietors who receive some remuneration based on corporate shares. Additional, although of less significance, variations that apply to the “norms” pertaining to measurement of total employment include hours limits (beyond one hour) placed on contributing family members before inclusion. The United States, for example, includes only contributing family members who worked more than 15 hours per week during the reference period.
For most cases, household labour force surveys are used, and they provide estimates that are consistent with ILO definitional and collection standards. A small number of countries use other sources, such as population censuses or official estimates, which can cause problems of comparability at the international level. Ratios may diverge slightly from nationally reported figures because of the harmonization process.

### Sources of discrepancies between global and national figures

Nationally reported data are utilized only when these meet strict criteria in terms of international comparability and geographic coverage. Model estimates are used where national data are not available or satisfactory. See “Comments and Limitations” section for additional details of sources of discrepancies.

### Process of obtaining data

The ILO has made an intensive effort to assemble data on labour market indicators for as many countries, areas and territories as possible. Where there is no information for a country, it is usually because the country involved was not in a position to provide information for the indicator. Even when information for an indicator was available, it may not have been sufficiently current or may not have met other qualifications established for inclusion in the Key Indicators of the Labour Market (KILM), on which the information for the employment-to-population rate is based.

In compiling the KILM, the ILO concentrates on bringing together information from international repositories. In other words, the KILM team rarely collects information directly from national sources, but rather takes advantage of existing compilations held by various organizations, such as the following:

- International Labour Office (Bureau of Statistics)
- United Nations Statistics Division
- Organisation for Economic Co-operation and Development (OECD)
- World Bank
- United Nations Industrial Development Organization (UNIDO)
- Statistical Office of the European Union (Eurostat)
- United Nations Educational, Scientific and Cultural Organization (UNESCO)
- United States Bureau of Labor Statistics (BLS)

Information maintained by these organizations has generally been obtained from national sources or is based on official national publications.

Whenever information was available from more than one repository, the information and background documentation from each repository was reviewed in order to select the information most suitable for inclusion, based on an assessment of the general reliability of the sources, the availability of
methodological information and explanatory notes regarding the scope of coverage, the availability of information by sex and age, and the degree of historical coverage. Occasionally, two data repositories have been chosen and presented for a single country; any resulting breaks in the historical series are duly noted.

For countries with less-developed labour market information systems, such as those in the developing economies, information may not be easily available. Many of these countries, however, do collect labour market information through household and establishment surveys, population censuses and administrative records, so that the main problem remains the communication of such information to the global community. In this situation, the ILO Labour Market Indicators Library (LMIL) programme was used. The LMIL is a system for sharing information between the ILO regional offices and headquarters. ILO regional offices are closer to the original micro-sources of data and have therefore been successful in filling in numerous gaps where data at headquarters – used in the production of the KILM – had not existed. It is an ongoing programme that continues to assist the KILM and other ILO publications and research programmes in the expansion of its country and yearly coverage of indicators.

**Treatment of missing values**

See “Regional and Global Estimates”, below.

**Data availability**

Data are available for over 176 economies.

The lag between the reference year and actual production of data series is one year or more. Data are produced at least annually.

**Regional and Global estimates**

The biggest challenge in the production of aggregate estimates is that of missing data. In an ideal world, producing world and regional estimates of labour market indicators, such as employment, for example, would simply require summing up the total number of employed persons across all countries in the world or within a given region. However, because not all countries report data in every year and, indeed, some countries do not report data for any years at all, it is not possible to derive aggregate estimates of labour market indicators by merely summing across countries.

To address the problem of missing data, the ILO Employment Trends Unit has designed and actively maintains two econometric models which are used to produce estimates of labour market indicators in the countries and years for which no real data exist. The Global Employment Trends Model (GET Model) is used to produce estimates – disaggregated by age and sex – of employment-to-population ratios and other indicators. The world and regional labour force estimates are produced using the Trends Labour Force Model (TLF Model).

Each of these models uses multivariate regression techniques to impute missing values at the country level. The first step in each model is to assemble every known piece of real information (i.e. every real
data point) for each indicator in question. It is important to note that only data that are national in coverage and comparable across countries and over time are used as inputs. This is an important selection criterion when the models are run, because they are designed to use the relationship between the various labour market indicators and their macroeconomic correlates (such as per-capita GDP, GDP growth rates, demographic trends, country membership in the Highly Indebted Poor Country (HIPC) Initiative, geographic indicators and country and time dummy variables) in order to produce estimates of the labour market indicators where no data exist. Thus, the comparability of the labour market data that are used as inputs in the imputation models is essential to ensure that the models accurately capture the relationship between the labour market indicators and the macroeconomic variables.

The last step of the estimation procedure occurs once the datasets containing both the real and imputed labour market data have been assembled. In this step, the ILO Trends Team aggregates the data across countries to produce the final world and regional estimates. For further information on the world and regional econometric models, readers can consult the technical background papers available at the following website: [http://www.ilo.org/trends](http://www.ilo.org/trends)

**Expected time of release**

Data are published every two years, in September, in the Key Indicators of the Labour Market report.

**Please refer to series metadata**
Proportion of employed people living below $1 (PPP) per day, percentage

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Definition
The proportion of employed persons living below $1 (PPP) per day, or working poor, is the share of individuals who are employed, but nonetheless live in a household whose members are estimated to be living below the international poverty line of $1.25 a day, measured at 2005 international prices, adjusted for purchasing power parity (PPP).

For further information see: http://www.ilo.org/trends

Method of computation
The proportion of employed people living below the poverty line is calculated by dividing the total number of employed persons living in households with per capita consumption or income below the poverty line by the total number of employed persons.

$$\text{Working Poverty Rate} = \frac{\text{Employed Persons Living Below Poverty Line}}{\text{Total Employment}}$$

For international comparisons, a poverty line of $1.25 a day measured at 2005 international prices and adjusted for PPP is used. The purchasing power parity (PPP) conversion factor is the number of units of a country's currency required to buy the same amounts of goods and services in the domestic market as one United States dollar would buy in the United States.

Employment is defined as persons above a specified age who performed any work at all, in the reference period, for pay or profit (or pay in kind), or were temporarily absent from a job for such reasons as illness, maternity or parental leave, holiday, training or industrial dispute. Unpaid family workers who work for at least one hour should be included in the count of employment, although many countries use a higher hour limit in their definition.¹
For most countries, the working-age population is defined as persons aged 15 years and older, although this may vary slightly from country to country.

For further information see: http://www.ilo.org/trends


Comments and limitations

In the case of estimates based on an international poverty line, the use of PPP, rather than exchange rates, ensures that the prices of non-traded goods are taken into account. However, it cannot be categorically asserted that two people in two different countries, consuming at $1.25(PPP) (or $2(PPP)) a day, face the same degree of deprivation or have the same degree of need. Apart from the well-known problems in economics in making interpersonal comparisons of welfare, there are other problems, such as rural-urban price differentials, which may or may not have been taken into account. One estimate may relate to consumption and the other to income; and a daily income of $1.25(PPP) (or $2(PPP)) may permit less consumption than a daily consumption expenditure of the same amount. The adjustments that are often made to convert income estimates into consumption estimates also impart bias to the resulting consumption distributions. Again, the extent of non-market activity and the way in which non-market production and consumption are valued in the two hypothetical countries could substantially hamper comparability.

Even if measurements of poverty using international poverty lines were perfect, several unanswered questions would remain. For example, is a person with a particular consumption level (say $1.25(PPP) a day) in a poor country better or worse off than a person with the same consumption level in a rich country? Or is a person receiving $1.25(PPP) a day worse off if he or she lives in a country that has high inequality?

Sources of discrepancies between global and national figures

Poverty data are based on measures derived using the international poverty line, and therefore will differ from poverty estimates based on national poverty lines. Population and labour force are derived from nationally reported data and harmonized labour force data. The labour force data are harmonized to account for differences in national data and scope of coverage, collection and tabulation methodologies as well as for other country specific factors such as military service requirements. Furthermore, nationally reported data are utilized only when these meet strict criteria in terms of international comparability and geographic coverage. Model estimates are used where national data are not available or satisfactory. See “Comments and Limitations” section for additional details of sources of discrepancies.
**Process of obtaining data**

The ILO has made an intensive effort to assemble data on labour market indicators for as many countries, areas and territories as possible. Where there is no information for a country, it is usually because the country involved was not in a position to provide information for the indicator. Even when information for an indicator was available, it may not have been sufficiently current or may not have met other qualifications established for inclusion in the Key Indicators of the Labour Market (KILM), on which the information for working poverty is based.

In compiling the KILM, the ILO concentrates on bringing together information from international repositories. In other words, the KILM team rarely collects information directly from national sources, but rather takes advantage of existing compilations held by various organizations, such as the following:

- International Labour Office (Bureau of Statistics)
- United Nations Statistics Division
- Organisation for Economic Co-operation and Development (OECD)
- World Bank
- United Nations Industrial Development Organization (UNIDO)
- Statistical Office of the European Union (EUROSTAT)
- United Nations Educational, Scientific and Cultural Organization (UNESCO)
- United States Bureau of Labor Statistics (BLS)

Information maintained by these organizations has generally been obtained from national sources or is based on official national publications.

Whenever information was available from more than one repository, the information and background documentation from each repository was reviewed in order to select the information most suitable for inclusion, based on an assessment of the general reliability of the sources, the availability of methodological information and explanatory notes regarding the scope of coverage, the availability of information by sex and age, and the degree of historical coverage. Occasionally, two data repositories have been chosen and presented for a single country; any resulting breaks in the historical series are duly noted.

For countries with less-developed labour market information systems, such as those in the developing economies, information may not be easily available to policy-makers and the social partners, and even less so to international organizations seeking to compile global data sets. Many of these countries, however, do collect labour market information through household and establishment surveys, population censuses and administrative records, so that the main problem remains the communication of such
information to the global community. In this situation, the ILO Labour Market Indicators Library (LMIL) programme is used. The LMIL is a system for sharing information between the ILO regional offices and headquarters. ILO regional offices are closer to the original micro-sources of data and have therefore been successful in filling in numerous gaps where data at headquarters – used in the production of the KILM – had not existed. It is an ongoing programme that continues to assist the KILM and other ILO publications and research programmes in the expansion of its country and yearly coverage of indicators.

**Treatment of missing values**

See “Regional and Global Estimates”, below.

**Data availability**

Estimates of the working poor are available for 112 economies (101 from the year 2000 or later). Information on poverty is mainly available for developing economies because similar data simply do not exist for most high-income economies, where extreme poverty is a more rare occurrence.

The lag between the reference year and actual production of data series is one year or more.

Data are produced at least annually.

**Regional and Global estimates**

The biggest challenge in the production of aggregate estimates is that of missing data. In an ideal world, producing world and regional estimates of labour market indicators, such as employment, for example, would simply require summing up the total number of employed persons across all countries in the world or within a given region. However, because not all countries report data in every year and, indeed, some countries do not report data for any years at all, it is not possible to derive aggregate estimates of labour market indicators by merely summing across countries.

To address the problem of missing data, the ILO Employment Trends Unit has designed and actively maintains three econometric models which are used to produce estimates of labour market indicators in the countries and years for which no real data exist. The Global Employment Trends Model (GET Model) is used to produce estimates – disaggregated by age and sex – of employment-to POPULATION ratios and other indicators. The world and regional labour force estimates are produced using the Trends Labour Force Model (TLF Model) and finally, the working poor estimates come from the Trends Working Poverty Model (TWP Model).

Each of these models uses multivariate regression techniques to impute missing values at the country level. The first step in each model is to assemble every known piece of real information (i.e. every real data point) for each indicator in question. It is important to note that only data that are national in coverage and comparable across countries and over time are used as inputs. This is an important selection criterion when the models are run, because they are designed to use the relationship between the various labour market indicators and their macroeconomic correlates (such as per-capita GDP, GDP growth rates, demographic trends, country membership in the Highly Indebted Poor Country (HIPC)
Initiative, geographic indicators and country and time dummy variables) in order to produce estimates of the labour market indicators where no data exist. Thus, the comparability of the labour market data that are used as inputs in the imputation models is essential to ensure that the models accurately capture the relationship between the labour market indicators and the explanatory variables.

The last step of the estimation procedure occurs once the datasets containing both the real and imputed labour market data have been assembled. In this step, the ILO Trends Team aggregates the data across countries to produce the final world and regional estimates. For further information on the world and regional econometric models, readers can consult the technical background papers available at the following website:


**Expected time of release**

Data are published every two years, usually in September, in the Key Indicators of the Labour Market report.

**Please refer to series metadata**
Proportion of own-account and contributing family workers in total employment, both sexes, percentage

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Definition
Vulnerable employment is defined as the sum of the employment status groups of own-account workers and contributing family workers.

Own-account workers are those workers who, working on their own account or with one or more partners, hold the type of jobs defined as a self-employment jobs (i.e. remuneration is directly dependent upon the profits derived from the goods and services produced), and have not engaged on a continuous basis any employees to work for them during the reference period.

Contributing family workers, also known as unpaid family workers, are those workers who are self-employed, as own-account workers in a market-oriented establishment operated by a related person living in the same household.

For further information see: http://www.ilo.org/trends

Method of computation
The share of vulnerable employment is calculated as the sum of contributing family workers and own-account workers as a percentage of total employment.

The indicator of status in employment – used to identify people in vulnerable employment – distinguishes between three categories of the employed, following the International Classification by Status in Employment (ICSE), approved by the United Nations Statistical Commission in 1958 and revised at the 15th International Conference of Labour Statisticians (ICLS) in 1993: (1) wage and salary workers; (2) contributing family workers; and, (3) self-employed workers, including self-employed workers with employees (employers), self-employed workers without employees (own-account workers) and members of producers’ cooperatives.

1. **Employees** are all those workers who hold the type of jobs defined as “paid employment jobs”, where the incumbents hold explicit (written or oral) or implicit employment contracts that give
them a basic remuneration that is not directly dependent upon the revenue of the unit for which they work.

2. **Employers** are those workers who, working on their own account or with one or a few partners, hold the type of jobs defined as a “self-employment jobs” (i.e. jobs where the remuneration is directly dependent upon the profits derived from the goods and services produced), and, in this capacity, have engaged, on a continuous basis, one or more persons to work for them as employee(s).

3. **Own-account workers** are those workers who, working on their own account or with one or more partners, hold the type of jobs defined as a “self-employment jobs” [see ii above], and have not engaged on a continuous basis any employees to work for them.

4. **Members of producers’ cooperatives** are workers who hold “self-employment jobs” [see ii or iii above] in a cooperative producing goods and services.

5. **Contributing family workers** are those workers who hold “self-employment jobs” as own-account workers [see iii above] in a market-oriented establishment operated by a related person living in the same household.

6. **Workers not classifiable by status** include those for whom insufficient relevant information is available, and/or who cannot be included in any of the preceding categories.

The latest figures for this indicator, published on the 2010 update of the MDG Database, were estimated based on three different projection models (or scenarios) as follows:

- Scenario 1 was generated using the historical relationship between economic growth and unemployment at the country level between 1991 and 2008, together with the IMF GDP growth projections for 2009.
- Scenario 2 was generated on the basis of the relationship between economic growth and unemployment during the worst observed economic downturn in each country, by applying this relationship to the 2009 IMF GDP growth projections.
- Scenario 3 was generated by taking the worst observed year-on-year increase in each country’s unemployment rate and assumes that this same increase would happen simultaneously in all developed countries in 2009. Given the lagged impact of the crisis in developing economies, for these countries, half of the largest observed increase is assumed to occur in 2009.


**Comments and limitations**

When using the indicator on status in employment to assess vulnerable employment, one has to bear in mind that there are often differences in definitions, as well as in coverage, across countries and for different years, resulting from variations in information sources and methodologies that make comparisons difficult.

Some definitional changes or differences in coverage can be overlooked. For example, it is not likely to be significant that status-in-employment comparisons are made between countries using information from
labour force surveys with differing age coverage. (The generally used age coverage is 15 years and over, but some countries use a different lower limit or impose an upper age limit.) In addition, in a limited number of cases one category of self-employed – the members of producers’ cooperatives – are included with wage and salaried workers (Czech Republic and Poland). The effects of this non-standard grouping are likely to be small.

What is more important to note is that information from labour force surveys is not necessarily consistent in terms of what is included in employment. For example, the information supplied by the OECD relates to civilian employment, which can result in an underestimation of “employees” and “workers not classifiable by status”, especially in countries that have large armed forces. The other two categories, self-employed and contributing family workers, would not be affected, although their relative shares would be.

With respect to geographic coverage, information from a source that covers only urban areas or only particular cities cannot be compared fairly with information from sources that cover both rural and urban areas, that is, the entire country. It is, therefore, not meaningful to compare results from many of the Latin American countries with results from the rest of the world because employment-by status information for most Latin American countries relates to urban areas only. Similarly, for some sub-Saharan African countries – where very limited information is available anyway – the self-employed group often does not include members of producers’ cooperatives, while for other countries it may.

For “wage and salaried workers” one needs to be careful about the coverage, noting whether, as mentioned above, it refers only to the civilian population or to the total population. Moreover, the status-in-employment distinctions used in this chapter do not allow for finer distinctions in working status – in other words, whether workers have casual or regular contracts and the kind of protection the contracts provide against dismissals, as all wage and salaried workers are grouped together.

**Sources of discrepancies between global and national figures**

Population and labour force are derived from nationally reported data and harmonized labour force data. The labour force data are harmonized to account for differences in national data and scope of coverage, collection and tabulation methodologies as well as for other country specific factors such as military service requirements. Furthermore, nationally reported data are utilized only when these meet strict criteria in terms of international comparability and geographic coverage. Model estimates are used where national data are not available or satisfactory. See “Comments and Limitations” section for additional details of sources of discrepancies.

**Process of obtaining data**

In compiling the KILM, the ILO concentrates on bringing together information from international repositories. In other words, the KILM team rarely collects information directly from national sources, but rather takes advantage of existing compilations held by various organizations, such as the following:

International Labour Office (Bureau of Statistics)
United Nations Statistics Division

Organisation for Economic Co-operation and Development (OECD)

World Bank

United Nations Industrial Development Organization (UNIDO)

Statistical Office of the European Union (EUROSTAT)

United Nations Educational, Scientific and Cultural Organization (UNESCO)

United States Bureau of Labor Statistics (BLS)

Most of the information for the indicator Status in Employment is gathered from three international repositories of labour market data: (a) the ILO Bureau of Statistics, Yearbook of Labour Statistics (LABORSTA) database, (b) the Organisation for Economic Co-operation and Development (OECD); and the ILO Labour Market Indicators Library (LMIL). Additional documentation regarding national practices in the collection of statistics is provided in ILO: Sources and Methods: Labour Statistics, Vol. 3: Economically Active Population, Employment, Unemployment and Hours of Work (Household Surveys); Vol. 5: Total and Economically Active Population, Employment and Unemployment (Population Censuses). The Sources and Methods are available online at the country level on website: http://laborista.ilo.org

Information maintained by these organizations has generally been obtained from national sources or is based on official national publications.

Whenever information was available from more than one repository, the information and background documentation from each repository was reviewed in order to select the information most suitable for inclusion, based on an assessment of the general reliability of the sources, the availability of methodological information and explanatory notes regarding the scope of coverage, the availability of information by sex and age, and the degree of historical coverage. Occasionally, two data repositories have been chosen and presented for a single country; any resulting breaks in the historical series are duly noted.

For countries with less-developed labour market information systems, such as those in the developing economies, information may not be easily available to policy-makers and the social partners, and even less so to international organizations seeking to compile global data sets. Many of these countries, however, do collect labour market information through household and establishment surveys, population censuses and administrative records, so that the main problem remains the communication of such information to the global community. In this situation, the ILO Labour Market Indicators Library (LMIL) programme is used. The LMIL is a system for sharing information between the ILO regional offices and headquarters. ILO regional offices are closer to the original micro-sources of data and have therefore been successful in filling in numerous gaps where data at headquarters – used in the production of the
KILM – had not existed. It is an ongoing programme that continues to assist the KILM and other ILO publications and research programmes in the expansion of its country and yearly coverage of indicators.

**Treatment of missing values**

See "Regional and Global Estimates", below.

**Data availability**

The information for the indicator on status in employment is included, at least to some extent, for 131 economies.

Data are available for most developed economies, as well as for many Central and Eastern European, Eastern Asian, Latin American and Caribbean countries. Unfortunately, there are only a few sub-Saharan African countries for which this indicator is available and, where coverage does exist, extensive time series are lacking. Currently, information is also unavailable for some large developing countries, such as China and India.

The lag between the reference year and actual production of data series is one year or more.

Data are produced at least annually.

**Regional and Global estimates**

The biggest challenge in the production of aggregate estimates is that of missing data. In an ideal world, producing world and regional estimates of labour market indicators, such as employment, for example, would simply require summing up the total number of employed persons across all countries in the world or within a given region. However, because not all countries report data in every year and, indeed, some countries do not report data for any years at all, it is not possible to derive aggregate estimates of labour market indicators by merely summing across countries.

To address the problem of missing data, the ILO Employment Trends Unit has designed and actively maintains two econometric models which are used to produce estimates of labour market indicators in the countries and years for which no real data exist. The Global Employment Trends Model (GET Model) is used to produce estimates – disaggregated by age and sex – of employment-to-population ratios and other indicators. The world and regional labour force estimates are produced using the Trends Labour Force Model (TLF Model).

Each of these models uses multivariate regression techniques to impute missing values at the country level. The first step in each model is to assemble every known piece of real information (i.e. every real data point) for each indicator in question. It is important to note that only data that are national in coverage and comparable across countries and over time are used as inputs. This is an important selection criterion when the models are run, because they are designed to use the relationship between the various labour market indicators and their macroeconomic correlates (such as per-capita GDP, GDP growth rates, demographic trends, country membership in the Highly Indebted Poor Country (HIPC)
Initiative, geographic indicators and country and time dummy variables) in order to produce estimates of the labour market indicators where no data exist. Thus, the comparability of the labour market data that are used as inputs in the imputation models is essential to ensure that the models accurately capture the relationship between the labour market indicators and the macroeconomic variables.

The last step of the estimation procedure occurs once the datasets containing both the real and imputed labour market data have been assembled. In this step, the ILO Trends Team aggregates the data across countries to produce the final world and regional estimates. For further information on the world and regional econometric models, readers can consult the technical background papers available at the following website:


Expected time of release

Data are published every two years, usually in September, in the Key Indicators of the Labour Market report.
Indicator 3.2 Share of women in wage employment in the non-agricultural sector

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Definition
The share of women in wage employment in the non-agricultural sector is the share of female workers in wage employment in the non-agricultural sector expressed as a percentage of total wage employment in that same sector.

The non-agricultural sector includes industry and services. ‘Industry’ includes mining and quarrying (including oil production), manufacturing, construction, electricity, gas, and water, corresponding to divisions 2-5 in the International Standard Industrial Classification of All Economic Activities (ISIC-Rev.2) and to tabulation categories C-F in ISIC-Rev. 3. ‘Services’ include wholesale and retail trade and restaurants and hotels; transport, storage, and communications; financing, insurance, real estate, and business services; and community, social, and personal services, corresponding to divisions 6-9 in ISIC-Rev. 2, and to tabulation categories G-Q in ISIC-Rev. 3.

Employment refers to people above a certain age who worked or held a job during a specified reference period (according to the ILO Resolution concerning statistics of the economically active population, employment, unemployment and underemployment; adopted by the Thirteenth International Conference of Labour Statisticians (ICLS), October 1982).

Wage employment refers only to wage earners and salaried employees, or "persons in paid employment jobs". Employees are typically remunerated by wages and salaries, but may be paid by commission from sales, piece-rates, bonuses or payments in kind such as food, housing, training, etc. These persons are in wage employment as opposed to self-employment – that is employers, own-account workers, members of producers' cooperatives and contributing family workers. The different statuses in employment are defined according to the ILO Resolution concerning the International Classification of Status in Employment (ICSE), adopted by the 15th ICLS (1993).

1 http://laborsta.ilo.org/
The indicator is calculated as the number of women in non-agricultural paid employment divided by the total number of persons in paid employment in the non-agricultural sector. This is the proportion of women in "paid employment jobs" (in other words "women employees") in the non-agricultural sector.

\[
\text{Share of women in wage employment in the non-agricultural sector} = \frac{\text{Number of women in paid employment in non-agricultural sector}}{\text{Total number of persons in paid employment in non-agricultural sector}} \times 100
\]

**Comments and limitations**

**Comparability and availability of data**

As all other indicators, this one faces the problem of availability and comparability of country-level data.

**Comparability:** There are a number of reasons why the indicator may not be strictly comparable across countries:

*Conceptual variation* – Although there are clear international standards for the relevant concepts, countries may use different definitions for employment status, especially for part-time workers, students, members of the armed forces, and household or contributing family workers. National statistical offices, even when using ILO conceptual guidelines, do not necessarily follow the same definitions or classifications. Also the coverage of paid employment may differ from one country to another and within one country over time.

*Different sources* – National estimates are based on information from different sources, namely population censuses, labour force/household surveys, establishment surveys, administrative sources (mostly social security records) and official estimates that are based on results from several sources. Each source has its own characteristics and provides certain types of data. The first two and the last source may cover the whole relevant population. Results from establishment surveys and administrative records are likely to cover only large private and public sector employers, in particular in developing countries.

Depending on the source, the measurement and coverage may differ between countries and within countries over time.
Availability of data over time – Only about half of the countries provide the data necessary for estimating the indicator with more or less regular frequency.

Comments and limitations of the indicator:

The indicator shows the extent to which women have access to paid employment, which will affect their integration into the monetary economy. It also indicates the degree to which labour markets are open to women in industry and services sectors which affects not only equal employment opportunity for women, but also economic efficiency through flexibility of the labour market and the economy’s capacity to adapt to changes over time.

The indicator has a number of limitations, the main one being its volume factor which does not fully reflect quality, especially the economic benefits of such employment. The examples of limitations are the following:

(a) In many countries (especially developing countries), non-agricultural wage employment represents only a small portion of total employment. As a result the contribution of women to the national economy is underestimated and therefore misrepresented.

(b) The indicator is difficult to interpret, unless additional information is available on the share of women in total employment, which would allow an assessment to be made of whether women are under- or over-represented in non-agricultural wage employment.

(c) The indicator does not reveal any differences in the quality of the different types of non-agricultural wage employment (that apply also to all jobs), regarding earnings, conditions of work, or the legal and social protection, which they offer. The indicator cannot reflect whether women are able to reap the economic benefits of such employment, either.

(d) It should be noted that the extent of female employment of any kind tends to be underreported in all kinds of surveys. In addition, the employment share of the agricultural sector, for both men and women, is severely underreported.

Sources of discrepancies between global and national figures

In principle, there is no discrepancy between global and national figures as national data are not modified.

Process of obtaining data
Comprehensive, detailed statistics on total and paid employment disaggregated by sex, by branch of economic activity, occupation and status in employment are collected annually through a specialised questionnaire for the Yearbook of Labour Statistics sent directly to the official national authorities (ministries responsible for labour, central statistical services, etc.) in all member States and Territories. Statistics are also gleaned from national publications and websites.

These statistics are published, respectively, in the ILO Yearbook of Labour Statistics and the Bulletin of Labour Statistics, and are also available online in LABORSTA.

In addition to the statistics, the Bureau also collects and disseminates the relevant national methodological information used to produce these statistics. The methodological information on national practices is available for consultation at http://laborsta.ilo.org/, under “Sources and Methods”. To improve country coverage a special action inquiry to national statistical offices was sent out in 2003. It consisted of a questionnaire requesting data, as of 1990, on Paid Employment in Non Agricultural Activities, and Unemployment by Age Group, for totals, women and men separately, from all available data sources (i.e. labour force survey, establishment survey, administrative records, official estimates).

A number of validation and consistency tests are executed on the data received. These include qualitative as well as quantitative checks. All departures from the international standards or classifications are indicated with footnotes. Where necessary, countries are contacted for further clarifications.

The annual questionnaire is pre-filled with the statistics provided in the previous years (maximum of ten), so that when countries update their series they also have the possibility to review, verify and, where needed, modify the data previously provided.

In principle, the data are not adjusted, as they are collected through a standard questionnaire, and reported in line with the international classifications. All departures from the international standard definitions and classifications are indicated in notes.

**Treatment of missing values**

Where country data are not available, and there is no an auxiliary variable that can be used as a proxy indicator, the values are imputed. These imputed values are used solely for the production of the regional and global estimates of the indicator. Their use for monitoring at the national level may not be the most appropriate.

In order to impute the missing values for the indicator, various multilevel modelling techniques (5 basic models and their variants) have been developed and tested. The model adopted was selected on the basis of its goodness-of-fit to the existing data as well as its predictive power, as determined through a jack-knife procedure. The model is fitted separately for each region and takes into account the variation over time within and between countries. The missing values are predicted on the assumption that the data that are available for a given country are representative of that country’s deviation from the average trend across time, which is estimated based on the whole sample in the region.
Data availability

As of the beginning of 2008, the ILO database on this indicator covers statistics for 218 countries and territories. The indicator at the country level is calculated only on the basis of observed values provided by the countries.

(a) 122 countries provide data on paid employment in the non-agricultural sector
14 countries provide data on total paid employment
45 countries provide data on total employment in the non-agricultural sector
27 countries provide data on total employment
2 countries provide data on economically active population in non-agriculture
8 countries do not provide data but the information on the economically active population (estimates).

(b) For 157 countries the data are available for at least two points in time over the period 1990-2005
For 42 countries the data are available for two to five points in time
For 21 countries the data are available for six to nine points in time
For 93 countries the data are available for 10 to 17 years over the period 1990-2005.

Not all available data perfectly match the indicator as defined above. Where paid employment data do not exist, a proxy series (total employment rather than paid employment) has been used. This is on the expectation that the share of women for total employment is not much different from that for paid employment. For 35 out of 198 countries there are no employment data available at all. For these countries, information on the economically active population has been used as a proxy for employment, on the assumption that the shares for employment and unemployment do not differ greatly. Sensitivity analysis conducted on a selected number of countries have shown that there is strong correlation between the indicator and the auxiliary variable.

The data are submitted to the ILO at least 6 months after the end of the reference period. It takes another 3 months before the ILO disseminates them on its website http://laborsta.ilo.org/

Regional and Global estimates

Regional and global estimates are calculated as weighted averages of the country level indicator where the weights correspond to each country’s share in the total economically active population in the non-agricultural sector in the region/world in the benchmark year 1990(a). The total economically active
population in the non-agricultural sector in the region/world is estimated on the basis of the same concept in the countries for which the indicator (observed or imputed) is available. As the estimates of economically active population in the non-agricultural sector are not available for about 20 countries and territories (mainly small islands with population of less than 30,000), their weights are estimated by assuming that about one third of the total population is active in the non-agricultural sector.

The formula used to estimate the indicator at the regional and global level is as follows:

$$I_w = \frac{\sum_{i=1}^{\pi} \psi_i I_i}{\sum_{i=1}^{\pi} \psi_i}$$

Where $I_i$ is the indicator for country $i$ and $\psi_i$ is the share of country $i$ in the total economically active population in non-agricultural sector in the world.


**Expected time of release**

The data used to calculate the indicator are collected and disseminated annually, usually in September/October of each year for the year $t-1$. They are published in the ILO Yearbook of Labour Statistics and disseminated on the ILO website http://laborsta.ilo.org/

**Indicator 3.3 Proportion of seats held by women in national parliament**

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**Definition**

The proportion of seats held by women in national parliaments is the number of seats held by women members in single or lower chambers of national parliaments, expressed as a percentage of all occupied seats.

National parliaments can be bicameral or unicameral. This indicator covers the single chamber in unicameral parliaments and the lower chamber in bicameral parliaments. It does not cover the upper
chamber of bicameral parliaments. Seats are usually won by members in general parliamentary elections. Seats may also be filled by nomination, appointment, indirect election, rotation of members and by-election.

Seats refer to the number of parliamentary mandates, or the number of members of parliament.

**Method of computation**

The proportion of seats held by women in national parliament is derived by dividing the total number of seats occupied by women by the total number of seats in parliament.

There is no weighting or normalising of statistics.

**Comments and limitations**

- The number of countries covered varies with suspensions or dissolutions of parliaments. As of 1 November 2007, 189 countries are included.
- There can be difficulties in obtaining information on by-election results and replacements due to death or resignation. These changes are ad hoc events which are more difficult to keep track of. By-elections, for instance, are often not announced internationally as general elections are.
- The data excludes the numbers and percentages of women in upper chambers of parliament. The information in available on the IPU website at [http://www.ipu.org/wmn-e/classif.htm](http://www.ipu.org/wmn-e/classif.htm).
- Parliaments vary considerably in their internal workings and procedures, however, generally legislate, oversee government and represent the electorate. In terms of measuring women’s contribution to political decision making, this indicator may not be sufficient because some women may face obstacles in fully and efficiently carrying out their parliamentary mandate.

**Sources of discrepancies between global and national figures**

Not applicable.

**Process of obtaining data**

- The data used are official statistics received from parliaments.
- IPU member parliaments provide information on changes and updates to the IPU secretariat. After each general election or renewal a questionnaire is dispatched to parliaments to solicit the latest available data. If no response is provided, other methods are used to obtain the information, such as from the electoral management body, parliamentary web sites or Internet searches. Additional information gathered from other sources is regularly crosschecked with parliament.
- Data are not adjusted for international comparability. Though, for international comparisons, generally only the single or lower house is considered in calculating the indicator.

**Treatment of missing values**

No adjustments are made for missing values.

**Data availability**

Data are available for 189 countries.
Information is available in all countries where a national legislature exists and therefore does not include parliaments that have been dissolved or suspended for an indefinite period.

The data are provided by national parliaments and updated after an election or parliamentary renewal. National parliaments also transmit their data to the IPU at least once a year and when the numbers change significantly.

Data are collated and updated on a monthly basis, and are available on the IPU website at http://www.ipu.org/wmn-e/classif.htm

**Regional and Global estimates**

Regional averages are determined by dividing the total number of women members by the total number of seats filled in single or lower chambers of parliament per region.

World average percentage is determined by dividing the total number of women members divided by the total number of seats filled in single or lower chambers in all national parliaments.

**Expected time of release**

Data are updated on a monthly basis, up to the last day of the month.