

KEY INDICATORS
OF THE LABOUR MARKET
Eighth edition

Key Indicators of the Labour Market (KILM), Eighth edition

- KILM 1. Labour force participation rate
- KILM 2. Employment-to-population ratio
- KILM 3. Status in employment
- KILM 4. Employment by sector
- KILM 5. Employment by occupation
- KILM 6. Part-time workers
- KILM 7. Hours of work
- KILM 8. Employment in the informal economy
- KILM 9. Unemployment
- KILM 10. Youth unemployment
- KILM 11. Long-term unemployment
- KILM 12. Time-related underemployment
- KILM 13. Inactivity
- KILM 14. Educational attainment and illiteracy
- KILM 15. Skills mismatch
- KILM 16. Wages and compensation costs
- KILM 17. Labour productivity
- KILM 18. Poverty, income distribution, employment by economic class and working poverty

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Summary of KILM 8th Edition

The KILM has become a cornerstone of information for those concerned with the world of work...

The first *Key Indicators of the Labour Market* (KILM) was released in 1999. It has since become a flagship product of the International Labour Office (ILO) and is used on a daily basis by researchers and policy-makers throughout the world. At the national level, statistical information is generally gathered and analysed by statistical services and ministries. At the global level, the ILO plays a vital role in assembling and disseminating labour market information and analysis to the world community.

...offering timely data and tools for those seeking to run their own analysis.

In this tradition, the KILM programme has undoubtedly met the primary objectives set for it in 1999, namely: (1) to present a core set of labour market indicators; and (2) to improve the availability of the indicators to monitor new employment trends. But that is not all that the KILM has to offer. It has evolved into a primary research tool that provides not only the means for analysis, i.e. the data, but also guidance on interpretation of indicators and data trends. These contributions – including those in this KILM 8th Edition described below – further the ILO’s agenda to identify employment challenges where the growth of decent work opportunities is most needed around the world.

Smart policymaking requires up-to-date and reliable labour market information...

Defining effective labour market strategies at the country level requires first and foremost the collection, dissemination and assessment of up-to-date and reliable labour market information.¹ Once a strategy is decided, continuing information and analysis are essential to monitor progress towards goals and to adjust policies where needed. Labour market information and analysis must be viewed as the cornerstone for developing integrated strategies to promote standards and fundamental principles and rights at work, productive employment, social protection and dialogue, as well as to address the cross-cutting themes of gender and development – this is where the KILM comes in.

...such as that provided in the KILM.

The KILM is a collection of 18 “key” indicators of the labour market, touching on employment and other variables relating to employment (status, sector, hours, flows etc.), the lack of work and the characteristics of jobseekers, education, wages and compensation costs, labour productivity and working poverty. Taken together, the KILM indicators give a strong foundation from which to begin addressing key questions related to productive employment and decent work.

¹ For more detail on the necessity for labour market information with examples of how it can be used when formulating policies, see the section “Guide to understanding the KILM”.

The KILM 8th Edition strengthens the ILO's efforts at promoting measurement of national progress toward the MDG target on "full and productive employment and decent work for all" ...

... and continues to innovate to bring forth the most reliable indicators to measure decent work.

Highlights of current labour market trends

Skills mismatch is high and has increased, in particular in advanced economies

The KILM is a source of national data for all four indicators selected for measuring progress toward the target under the first Millennium Development Goal (MDG) to "achieve full and productive employment and decent work for all, including women and young people". The employment-to-population ratio (KILM 2), share of vulnerable employment in total employment (KILM 3), share of working poor in total employment (KILM 18), and the growth rate of labour productivity (KILM 17), when analysed together, can offer a rich assessment of trends and levels of decent and productive employment in a country.

Part I presents a new indicator that complements the existing KILM data. This indicator complements information on unemployment by displaying inflows into and outflows out of unemployment for 70 developed and emerging economies. This indicator gives a better sense for labour market dynamics as they relate to changes in unemployment. In particular, it allows a better understanding of whether changes in unemployment are driven by job destruction (unemployment inflows) or job creation (unemployment outflows), which will allow countries to target more specifically those categories of workers mainly affected by these two factors.

This KILM 8th Edition offers a series of noteworthy findings, some excerpts of which are presented here:²

- The level of skills mismatch in developed economies is high. In a sample of economies with consistent data series, the index averaged 17.1 per cent in 2012, while during most of the past decade it was well below this level. The lowest value of the index in this group of countries was reached in 2004 (13.8 per cent). The mismatch index has become similar for workers aged 15-29 and those aged 30 and above in more recent years. However, the level of the skills mismatch index has remained higher for women aged 15-29 than for men in this age group.
- In developed economies, the average incidence of overqualification in 2010 was 10.1 per cent (and ranged from 3.6 to 16.8 per cent), while underqualification averaged 28.1 per cent (and ranged from 15.9 to 45.6 per cent). The risk of overqualification is higher for migrants, younger workers and persons with disabilities.
- The incidence of overeducation tends to increase over time, in part due to increasing levels of educational attainment. Furthermore in times of economic crises, when employment opportunities are scarce and unemployment rates are high, the increase in overeducation is likely to accelerate. Similarly, developed economies observed a gradual decrease in undereducation, which was stronger following the height of the global economic crisis in 2008 and 2009.

² For more information relating to the labour market concepts defined or more detail on the trends identified, see the KILM manuscript identified in parentheses.

Working poverty continues to decline and a global middle class is emerging

- For a total of 822 million workers in poverty in the developing world, there are 361 million workers that are among the extreme working poor and an additional 461 million workers that are in moderate poverty. This is equal to 30.6 per cent of the developing world's workforce. In addition to the working poor, an additional 658 million workers (nearly 25 per cent of the developing world labour force) are living just above the poverty line, many at significant risk of falling into poverty. An estimated 1.2 billion workers in the developing world are in the middle class or above, with 852 million in the developing middle class and 352 million with per-capita household consumption greater than or equal to US\$13 a day.
- The developing world's middle class has surged by 870 million between 1991 and 2013, while the number of workers living in extreme poverty has fallen by 470 million. The number of workers in moderate poverty grew by 67 million while the number of near poor workers grew by 376 million over the same period. Taking these trends together, although there has been tremendous progress in establishing a growing middle class in the developing world over the past two decades, a large share of workers remains either poor or susceptible to slipping into poverty.

Unemployment flows can detect labour market dynamics that are relevant for long-term changes in unemployment rates

- Analysing unemployment flows shows that similar rates of unemployment can hide substantial differences in unemployment flows, with implications for the speed of adjustment of labour markets to external shocks and policy measures.
- For instance, even though unemployment rates between the United States (US) and Germany have been at around 6.3 per cent between 1970 and 2013 in both countries, unemployment flows in the US are a multiple of the those in Germany, suggesting that labour markets in the US can react much faster to shocks than in Germany.
- Conversely, unemployment rates have been roughly 30 per cent higher in France than in Germany since 1991. Despite this seemingly lower performance, the French labour market shows a stronger turnover and faster dynamics.
- In other words, headline unemployment rates are likely to give only a rough picture of the functioning of a country's labour market. In particular issues related to the speed at which unemployment rates can react to external shocks and shifts in policies can be better analysed when looking at flows rather than stocks.

The KILM 8th Edition allows easy access and manipulation of the data, including a new user-driven projection tool.

The interactive KILM software is a CD-based programme (also downloadable from www.ilo.org/kilm) that makes searching for relevant labour market information and analysis quick and simple. For those who wish to work from the internet, the KILM indicators can be directly downloaded for individual countries from the KILM web site. Both versions offer a simple user interface for running queries, graphs and reports on the most up-to-date KILM indicators. Users can also access ILO world and regional aggregates of selected key indicators directly from the KILM software and internet database.

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Guide to understanding the KILM

The history of the KILM

Data needed for monitoring and assessing the current realities of the world at work is essential for any organization, institution or government that advocates labour-related strategies. In recognition of this, the International Labour Office (ILO) launched the Key Indicators of the Labour Market (KILM) programme in 1999 to complement the regular data collection programmes and to improve dissemination of data on the key elements of the world's labour markets (see box 1a for the different statistical activities carried out by the ILO).

The KILM was originally designed with two primary objectives in mind: (1) to present a core set of labour market indicators; and (2) to improve the availability of the indicators to monitor new employment trends. The selection of the indicators was based on the following criteria: (a) conceptual relevance; (b) data availability; and (c) relative comparability across countries and regions. The design and presentation of the core indicators has evolved since the first Edition. The 18 indicators in the latest KILM edition represent a streamlining of content and presentation. One indicator was added in this new (8th) Edition (KILM 15 - skills mismatch) and two previous indicators were merged into one (KILM 16 - wages and compensation).

The role of the KILM in labour market analysis

Evidence-best policy making relies on identifying and quantifying best practices and inefficiencies in the labour market - such as labour underutilization and decent work deficits. It is the first step in designing employment policies aimed at enhancing the well-being of workers while also promoting economic growth. This broad view of the world of work calls for a comprehensive collection, organization and analysis of labour market information. In this context, the KILM can serve as a tool in monitoring and assessing many of the pertinent issues related to the functioning of labour markets. The following are some examples of how the KILM can be used to inform policy in key areas of ILO research:

Promoting the ILO's Decent Work Agenda

The ILO's Decent Work Agenda aims to promote opportunities for women and men to obtain productive work, in conditions of freedom, equity, security and human dignity.¹ As a growing number of governments, employers and workers investigate options for designing policies that adhere to the principles of decent work, policy-makers will need to look for ways of interpreting the term "decent". However, perceptions of what constitutes a decent job or a decent wage is likely to differ, depending on a country's circumstances, political views of policy-makers and personal stakes in the labour market. There are, however, certain conditions relating to the world of work that are almost universally accepted as "bad" - working but earning an income that does not lift one above the poverty line or working under conditions where the fundamental principles and rights at work² are not respected, for instance.

Keeping in mind that careful empirical research as well as quantitative assessments of the realities of the world of work should precede policy formulation, the KILM, as a collection of a broad range of labour market indicators, can serve as a tool in assessing many of the pertinent questions relating to the ILO's Decent Work Agenda.

The KILM helps to identify where labour is underutilized and decent work is lacking, especially if measured not only in terms of people who are working yet still unable to lift themselves and their families above the poverty threshold (KILM 18) but also in terms of the quality of work or the lack of any work at all. The lack of any work at all could be identified using unemployment (KILMs 9 and 10) but also more broadly using inactivity (KILM 13). Lack of quality of work

¹ Since the publication of the Report of the Director-General: Decent Work (Geneva, ILO, 1999), the goal of "decent work" has come to represent the central mandate of the ILO, bringing together standards and fundamental principles and rights at work, employment, social protection and social dialogue in the formulation of policies and programmes aimed at "securing decent work for women and men everywhere".

² The ILO Declaration on Fundamental Principles and Rights at Work aims to ensure that social progress goes hand in hand with economic progress and development. See <http://www.ilo.org/declaration> for more information.

Box 1a. Labour market statistics at the ILO

Statistical activities have formed an integral part of the work of the International Labour Organization, as witnessed by the setting up in 1919 of a Statistical Section for “the collection and distribution of information on all subjects relating to the international adjustment of conditions of industrial life and labour” (Article 396 of the Versailles Treaty of Peace and article 10(1) of the Constitution of the ILO). Over the past 90 years, the ILO has endeavoured to carry out its mandate in the face of an ever-changing world. Key statistical functions are performed by the ILO’s Department of Statistics, the focal point for labour statistics in the United Nations system. Formerly a Bureau, the ILO Department of Statistics -- established in 2009 -- is responsible for enhancing data compilation, increasing support to countries and constituents to produce, collect and use more timely and accurate labour and decent work statistics, coordinating and assessing the quality of the ILO statistical activities, setting international statistical standards (by hosting the International Conference of Labour Statisticians and providing guidelines and support) and enhancing capacity building in labour and decent work statistics.

A key publication to disseminate labour market statistics is the the ILO Yearbook of Labour Statistics, first issued in 1935. It contains time series on employment, unemployment, hours of work, wages, costs of living and retail prices, workers’ family budgets, emigration and immigration, and industrial relations. Its coverage has changed over time to reflect current interests and developments. Topics such as food consumption, social security, occupational injuries, national income, international migration, economically active population, household income and expenditure, labour productivity and labour cost were added. Monthly or quarterly updates of the series published in the Yearbook were first issued in the International Labour Review and its statistical supplement, and since 1965 in the quarterly Bulletin of Labour Statistics and its supplement. The Bulletin also contains short articles on statistical practices and methods, and presentations of the results of special projects carried out by the Department of Statistics. Data and metadata from the Yearbook, as well as labour statistics from the Bulletin and other outputs of the Department of Statistics, are now available online in the ILOSTAT database at <http://ilo.org/ilostat>. The active identification of gaps in the information will help the ILO to steer its technical support to countries. The main focus is on establishing a coordinated data base which will be closely monitored in order to have more timely and accurate official figures. Besides, the establishment of new short-term data in 2010 has enabled the ILO to better monitor the employment situation across countries without having to wait for annual data, helping the ILO in reporting to important bodies and meetings such as the G20 and regional meetings.

The Key Indicators of the Labour Market (KILM) complement this effort on providing consistent and comparable labour market information. The KILM differs from the Yearbook in terms of scope and content: First, whereas the Yearbook is the best source of nationally-reported labour statistics, the KILM supplements this information with data from other sources when it is felt that other sources are more accurate or more complete and provide a better scope for international comparability. Second, the KILM, not being restricted to using the national data as reported, can and does take efforts to report indicator series that are more comparable across time and across countries. The KILM offers six series which are, in fact, “harmonized”, meaning they offer a strictly comparable series: labour force participation rates in table 1a, employment-to-population ratios in table 2a, unemployment rates in table 9a, youth unemployment rates in table 10a, inactivity rates in table 13, and employment by economic class in table 18b. Other indicators are not yet strictly comparable, but efforts have been made to select sources and methodologies that provide a series that is as “clean” and comparable as possible, and where anomalies exist in terms of definitions and methodologies, they are listed clearly as such in the table notes. Finally, some indicators are provided in both the Yearbook and the KILM; however, the full list of indicators in each is not identical at the moment. For example, labour productivity and informal employment are indicators in the KILM, but not in the Yearbook, whereas the Yearbook reports data on strikes and lockouts while the KILM does not. Related, the KILM also publishes imputed estimates and combine them with real data (as reported). The KILM is also able to publish imputed estimates and combine them with real data (as reported) to come up with new indicators such as employment by economic class, labour flows and informal employment.

could be determined using a combination of indicators; for example, by identifying which individuals are in vulnerable employment (using status and sector – KILMs 3 and 4), working

excessive hours (KILM 7), working in the informal economy (KILM 8), being underemployed (KILM 12) or working in low-productivity jobs (KILM 17).

Monitoring progress towards the UN's Millennium Development Goals

The United Nations resolved to make the goals of full and productive employment and decent work for all a central objective of its national and international policies as well its national development strategies as part of its efforts to achieve the Millennium Development Goals (MDG).³ Recognizing that decent and productive work for all is central to addressing poverty and hunger, MDG 1 includes a target 1b (agreed upon in 2008) to “achieve full and decent employment for all, including women and young people”. The four indicators selected for monitoring progress toward MDG target 1b are available within the KILM: (1) employment-to-population ratio, (2) the proportion of employed people living below the poverty line (working poverty rate), (3) the proportion of own-account and contributing family workers in total employment (vulnerable employment rate), and (4) the growth rate of labour productivity correspond to KILM indicators 2, 3, 17, and 18.⁴

Monitoring equity in the labour market

Women face specific challenges in attaining decent work. The majority of KILM indicators are disaggregated by sex, allowing for comparison of male and female labour market opportunities. Many of the “trends” analyses associated with individual indicators focus on the progress (or lack thereof) towards the goal of equal opportunity and equal treatment in the labour market.⁵

³ United Nations: 2005 World Summit Outcome, High-level Plenary Meeting of the 60th Session of the General Assembly (A/60/L.1), 20 September 2005, para. 47. As part of the Millennium Declaration of the United Nations “to create an environment – at the national and global levels alike – which is conducive to development and the elimination of poverty”, the international community has adopted a set of international goals for reducing income poverty and improving human development. A framework of eight goals, 18 targets and 48 indicators to measure progress was adopted by a group of experts from the United Nations Secretariat, ILO, IMF, OECD and the World Bank. The indicators are interrelated and represent a partnership between developed and developing economies. For further information on the Millennium Development Goals, see <http://www.un.org/millenniumgoals>.

⁴ KILM 6th Edition, Chapter 1, section C offered a demonstration of how to put all four MDG employment indicators together for a basic analysis of progress at the country level. KILM 7th Edition, Chapter 1, section A gave insights on working poverty in the world and introduced new estimates on working poverty. See, also, T. Sparreboom and A. Albee, eds.: Towards decent work in sub-Saharan Africa: Monitoring MDG employment indicators (Geneva, ILO, 2011); http://www.ilo.org/global/publications/ilo-bookstore/order-online/books/WCMS_157989/lang-en/index.htm.

⁵ For a guide on using KILM indicators to assess gender equality, see ILO: Women in labour markets: Measuring progress and identifying challenges (Geneva, 2010); http://www.ilo.org/empelm/pubs/WCMS_123835/lang-en/index.htm.

Assessing employment in a globalizing world

Globalization has the potential of being beneficial to all, but to date the benefits are not reaching enough people. The goal, therefore, is to welcome globalization but in a way that shapes it to encourage creation of decent work opportunities for all.⁶ One means of doing so is to make employment a central objective of macroeconomic and social policies. The KILM indicators can be useful in this regard by monitoring employment dynamics associated with globalization. For example, there are studies indicating that job loss/creation as well as changes in wages and productivity (and thus international competitiveness) are impacted by globalization. If the indicators reflect negative consequences of globalization, one can seek ways of altering macroeconomic policies so as to minimize the costs of adjustment and to distribute the gains of globalization in a more equitable fashion.

Identifying “best practices”

The KILM can help to identify best practice country examples on a number of issues: where the occupational gender wage gap is non-existent or minimal; where youth do not face disadvantages in terms of access to jobs; where labour productivity and labour compensation are balanced in such a way as to encourage international competitiveness; where economic growth has gone hand in hand with an expansion of employment opportunities; where a country reduces high unemployment; and many others. The key, then, is to identify policies that have led to the positive labour market outcome and to highlight these as possible best practices which could be implemented elsewhere.

Labour market analyses using multiple KILM indicators

More and more countries are producing national unemployment and aggregate employment data. Nevertheless, users should be cautioned about the limitations of the statistics if used alone and are urged to take a broader view of labour market developments, combining a range of statistics. The advantage of using aggregate unemployment rates, for example, is their

⁶ World Commission on the Social Dimension of Globalization: A Fair globalization: Creating opportunities for all (Geneva, 2004); <http://www.ilo.org/public/english/fairglobalization/index.htm>.

relative ease of collection and comparability for a significant number of countries. But looking at unemployment (or any other labour market indicator) alone ignores other elements of the labour market that are more difficult to quantify as it is only one aspect of labour force status.

The first step in labour market analysis, therefore, is to determine the breakdown of labour force status within the population.⁷The working-age population can be broken down into persons who are inactive (outside of the labour force, KILM 13), employed (KILM 2), or not working and seeking work (unemployed, KILM 9 and 10). A large share of the population in either unemployment or inactivity, or both, indicates substantial underutilization of the potential labour force and thus of the economic potential of a country. Governments facing this situation should, if possible, seek to analyse the reasons for inactivity, which in turn could dictate the policy choice necessary to amend the situation.

If the majority of the inactive population is made up of women who are not working because they have household responsibilities, the State might wish to encourage an environment that facilitates female economic participation through, for example, the establishment of day care centres for children or flexible working hours. Alternatively, programmes to promote the employment of the disabled could help to lower the inactivity rate if disability is a common reason for inactivity. It is more difficult to recapture persons who have left the labour market because they are “discouraged”, i.e. because they feel that no suitable work is available, that they do not have the proper qualifications or because they do not know where to look for work, unless perhaps their confidence can be boosted by participation in training programmes and job-search assistance. Regardless, the correct mix of policies can only be designed by looking in detail at the reasons for inactivity.

Unemployment, as well, should be analysed according to sex (KILM 9), age (KILM 10), length (KILM 11) and education level (KILM 14) in order to gain a better understanding of the composition of the jobless population and therefore to target unemployment policies accordingly. Other characteristics of the unemployed not shown in the KILM, such as socio-economic background, work experience, etc., could also be important to analyse, if available, in order to determine which

groups face particular hardships. Paradoxically, low unemployment rates may well disguise substantial poverty in a country (see KILM 18), whereas high unemployment rates can occur in countries with significant economic development and low incidence of poverty. In countries without a safety net of unemployment insurance and welfare benefits, many individuals, despite strong family solidarity, simply cannot afford to be unemployed. Instead, they must eke out a living as best they can, often in the informal economy or in informal work arrangements within the formal economy. In countries with well-developed social protection schemes or when savings or other means of support are available, workers can better afford to take the time to find more desirable jobs. Therefore, the problem in many developing economies is not so much unemployment, but rather the lack of decent and productive work opportunities for those who are employed.

This brings us to the need to dissect the total employment number as well in order to assess the well-being of the working population, under the premise that not all work is “decent work”. If the working population consists largely of own-account workers or contributing (unpaid) family workers (see KILM 3), then looking at the indicator on the total employed population (KILM 2) loses its value as a normative measure. Are these people employed? Yes, according to the international definition. Are they in decent employment? Possibly not. Although technically employed, some self-employed workers’ or contributing family workers’ hold on employment is tenuous and the line between employment and unemployment is often thin. If and when salaried jobs open up in the formal economy, this contingent workforce will rush to apply for them. Further assessment should also be undertaken to determine if such workers are generally poor (KILM 18b), engaged in traditional agricultural activities (KILM 4), selling goods in the informal market with no job security (KILM 8), working excessive hours (KILM 7a) or wanting to work more hours (KILM 12).

In an ideal world an analysis of labour markets using a broad range of indicators such as those available in the KILM would be an easy matter because the data for each indicator would exist for each country. The reality, of course, is quite different. A glance at KILM table D2, which indicates the availability of KILM data for each country, shows that despite recent improvements in national statistics programmes and in the efficiency of collection on the part of the KILM, many holes still exist whereby data are not available.

⁷ For a specific country example of how to analyse labour markets using the KILM indicators, see KILM 7th Edition, Chapter 1, section C, as well as Appendix F in the KILM 4th Edition.

The coverage of KILM indicators is particularly low in African countries, which is understandable given the low priority that is likely to be placed on conducting labour force survey in countries overrun by poverty and political unrest. The paradox is that this is precisely the region where better labour market information is needed for international donor money as well as national policies to be productively targeted to help people “work out of poverty”.⁸ Development of national statistical programmes is desperately needed in many developing economies. Therefore, we urge donors to consider aid in statistical capacity building a suitable and important use of funds, and also encourage governments to place priority on the development of statistical programmes.

KILM organization and coverage

The Statistics Division of the United Nations compiles statistics for approximately 230 countries, areas and territories.⁹ For each edition of the KILM, the ILO has made an intensive effort to assemble data on the 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 KILM.

There are nine major KILM groupings, based on a combination of level of development and geography. It is important to note that the groupings developed for the KILM are intended exclusively for analytical convenience and are not intended to express judgement or appraisal as to a given country's current stage in the development process. There is one developmental grouping – Developed Economies & European Union – and eight geographic groupings: (1) Central & South-Eastern Europe (non-EU) & CIS; (2) East Asia; (3) South-East Asia & the Pacific; (4) South Asia; (5) Latin America & the Caribbean; (6) the

Middle East; (7) North Africa; and (8) Sub-Saharan Africa. Each country appears in only one major grouping; for example, Japan is included in the Developed Economies grouping and is therefore excluded from Asia & the Pacific.

In the KILM database indicators are available for all years since 1980 and data is updated on a continuous basis. The International Labour Office makes every effort to provide the KILM in French and Spanish in addition to the original English. These other languages are provided in the KILM electronic versions only. Users of the software are able to select their language – English, French or Spanish – from the file menu, and can switch between languages at any time.

Information repositories and methodological information

In compiling the KILM, the ILO concentrates on bringing together information from international repositories whenever possible and for countries not included in these repositories, the information is gathered directly from national sources. Compilations of international organizations such as the following are included in the KILM:

- ILO Department of Statistics (LABORSTA and ILOSTAT)
- Organisation for Economic Co-operation and Development (OECD)
- Statistical Office of the European Union (Eurostat)
- The World Bank
- the Conference Board
- UNESCO Institute of Statistics
- United States Bureau of Labor Statistics

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,

⁸ The ILO strongly advocates placing employment at the heart of poverty reduction strategies, noting, in particular, that “it is precisely the world of work that holds the key for solid, progressive and long-lasting eradication of poverty”. ILO: Working Out of Poverty, Report of the Director-General, International Labour Conference, 91st Session (Geneva, 2003).

⁹ “Country or areas, codes and abbreviations”, United Nations Statistics Division; <http://unstats.un.org/unsd/methods/m49/m49alpha.htm>.

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 and previous editions of the KILM, an extensive effort was made to tap into the existing datasets that are increasingly made public by national statistical offices through the internet. This “data mining” process is ongoing and assists the KILM and other ILO publications and research programmes in the expansion of its country and yearly coverage of indicators.

Notes and “breaks”

The collection of labour market indicators requires to balance the desire to have the greatest degree of geographical coverage for a specified time period with the need to ensure the greatest level of comparability or harmonization. Achieving a harmonious balance between coverage and comparability is a difficult task; the only realistic way of dealing with the question is to provide as much methodological information as possible, while at the same time “flagging” the issues that challenge users who wish to make valid comparisons between countries whose statistical methodology and definitions may not match in every respect. Each indicator has a section on “limitations to comparability”, and notes on methodology and sources are as explicit as possible in each table.

Historical continuity is important for many users of labour market information. Without overburdening the indicator tables, it is necessary to alert users to significant changes in the source, definition or coverage of the information from year to year. A “b” placed at the point of a chronological “break” denotes a change in the methodology, scope of coverage and/or type of source used within the country.

Whether the information has been obtained from other international repositories, regional labour market indicator sets or directly from offi-

cial sources, a substantial effort has been made to develop and maintain the links to the source and the information provider. Wherever possible, the user will find a link to the information provider’s sources.

International comparability

To ensure international comparability, it is necessary that international standards on labour statistics exist, for which international community relies on two bodies: (1) Conventions and recommendations, adopted by the International Labour Conference, and (2) resolutions and guidelines adopted by the International Conference of Labour Statisticians (ICLS). Even though resolutions are non-binding, they are instruments which provide detailed guidelines on conceptual frameworks, operational definitions and measurement methodologies to produce and disseminate the various labour statistics.¹⁰

As mentioned above, there will always be important caveats relating to the methodologies of measurement; these require time and effort to sort out before reasonable international comparisons can be made. 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, capital city) and so on. When analysing or making reference to a particular indicator, users are advised to examine closely the section “limitations to comparability” and the notes to the data tables.

Global and regional estimates

The KILM 8th Edition offer users direct access to ILO global and regional estimates from 1991 to the present. Tables are presented for the following indicators: labour force participation (table R1),

¹⁰ Please refer to box 1c for details on the most recent resolution of the ICLS.

Box 1b. ILO methodology for producing global and regional estimates of labour market indicators

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 Team has designed and actively maintains several econometric models which are used to produce estimates of labour market indicators in the countries and years for which real data are not available. The Global Employment Trends Model (GET Model) is used to produce estimates – disaggregated by age and sex – of unemployment, employment-to-population ratios, status in employment, employment by sector and labour productivity (KILMs 2, 3, 4, 9, 10 and 17). The new econometric model described in KILM 18 is utilized to produce estimates on employment by economic class. The global and regional labour force estimates found in KILM 1 and KILM 13 are estimated 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. 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 Initiative (HIPC), 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 data are aggregated across countries to produce the final world and regional estimates. For further information on the Trends Econometric Models, readers can consult the technical background papers available at the following website: http://www.ilo.org/empelm/projects/WCMS_114246/lang--en/index.htm.

employment-to-population ratio (R2), status in employment (R3), employment by sector (R4), unemployment rate (R5), youth unemployment rate (R6), ratio of youth unemployment rate (R7), labour productivity (R8) and employment by economic class (R9).

Like other KILM tables based on country-level data, users will be able to query the new datasets according to year, sex and age group (R1, R2, R7 and R9) and will have access to both raw numbers and rates. The estimates are derived using one of three models which use multivariate regression techniques to impute missing values at the country level. The processes used in the ILO world and regional estimation models are described in detail in box 1b.

Summary of the 18 ILO Key Indicators of the Labour Market

The KILM 8th Edition provides indicators related to labour force, employment, unemployment, educational attainment, wages and compensation costs, productivity and poverty. Each of the 18 indicators is briefly described below.

KILM 1. Labour force participation rate

The labour force participation rate is a measure of the proportion of a country's working-age population that engages actively in the labour market, either by working or looking for

work; it provides an indication of the relative size of the supply of labour available to engage in the production of goods and services. The breakdown of the labour force by sex and age group gives a profile of the distribution of the economically active population within a country.

Table 1a contains labour force participation rate estimates by sex according to the following standardized age groups: 15+, 15-24, 15-64, 25-54, 25-34, 35-54, 55-64 and 65+, and for the years 1980 to 2012. The participation rates are harmonized to account for differences in national data collection and tabulation methodologies as well as for other country-specific factors such as military service requirements. The series includes both nationally reported and imputed data and only estimates that are national, meaning there are no geographic limitations in coverage. Table 1b contains labour force participation rates as nationally reported by sex and age group (total, youth and adult), where available.

KILM 2. Employment-to-population ratio

The employment-to-population ratio provides information on the ability of an economy to create employment; for many countries the indicator is often more insightful than the unemployment rate. Although a high overall ratio is typically considered as positive, the indicator alone is not sufficient for assessing the level of decent work or the level of a decent work deficit. Additional indicators are required to assess such issues as earnings, hours of work, informal employment, underemployment and working conditions. Employment-to-population ratios are of particular interest when broken down by sex, as the ratios for men and women can provide information on gender differences in labour market activity in a given country.

The employment-to-population ratio is defined as the proportion of a country's working-age population that is employed (the youth employment-to-population ratio is the proportion of the youth population - typically defined as persons 15 to 24 years - that is employed). A high ratio means that a large proportion of a country's population is employed, while a low ratio means that a large share of the population is not involved directly in market-related activities, because they are either unemployed or (more likely) out of the labour force altogether. Table 2a provides a harmonized series of employment-to-population ratios as estimated by the ILO (like table 1a) by sex and age group - total (15+), youth (15-24) and adult (25+). Table 2b contains

national estimates of employment-to-population ratios, also by sex and age group, where available.

KILM 3. Status in employment

Indicators of status in employment distinguish between two important and useful categories of the employed - (1) wage and salaried workers and (2) the self-employed. The self-employed are further disaggregated into (a) employers, (b) own-account workers, (c) members of producers' cooperatives, and (d) contributing family workers. Each of these categories is expressed as a proportion of the total employed. Categorization by employment status can help in understanding both the dynamics of the labour market and the level of development of countries. Over the years, and with growth of the country, one would typically expect to see a shift in employment from the agriculture to the industry and services sectors, with a corresponding increase in wage and salaried workers and decreases in self-employed and contributing family workers, previously employed in the agricultural sector.

The method of classifying employment by status is based on the 1993 International Classification by Status in Employment (ICSE), which classifies jobs held by persons at a point in time with respect to the type of explicit or implicit employment contract the person has with other persons or organizations. Such status classifications reflect the degree of economic risk, an element of which is the strength of the attachment between the person and the job, and the type of authority over establishments and other workers that the person has or will have.

KILM 4. Employment by sector

This indicator disaggregates employment into three broad sectors - agriculture, industry and services - and expresses each as a percentage of total employment. The indicator shows employment growth and decline on a broad sectoral scale, while highlighting differences in trends and levels between developed and developing economies. Sectoral employment flows are an important factor in the analysis of productivity trends, because within-sector productivity growth needs to be distinguished from growth resulting from shifts from lower to higher productivity sectors. The addition of further sectoral detail in tables 4b, 4c and 4d is useful for demonstrating trends of employment within individual sectors of the economy.

The sectors of economic activity are defined according to the International Standard Industrial Classification of All Economic Activities

(ISIC), Revision 2 (1968), Revision 3 (1990) and Revision 4 (2008).

KILM 5. Employment by occupation

Employment by occupation is presented according to major classification groups in three tables: table 5a according to the International Standard Classification of Occupation, 2008 (ISCO-08); table 5b according to ISCO-88; and table 5c, according to ISCO-68. All three tables are disaggregated by sex.

There is widespread interest in the indicator: Economists use occupation in the analysis of differences in the distribution of earnings and incomes over time and between groups – men and women, for example –, as well as in the analysis of imbalances of supply and demand in different labour markets. Policy-makers use occupational statistics in support of the formulation and implementation of economic and social policies and to monitor progress with respect to their application, including those of manpower planning and the planning of educational and vocational training. Managers need occupational statistics for planning and deciding on personnel policies and monitoring working conditions, at the enterprise and in the context of the industry and relevant labour markets.

KILM 6. Part-time workers

There has been rapid growth in part-time work in the past few decades in the developed economies. This trend is related to the increase in the number of women in the labour market, but also to attempts to introduce labour market flexibility in reaction to changing work organization within industry and to the growth of the services sector.

The indicator on part-time workers focuses on individuals whose working hours total less than “full time”, as a proportion of total employment. Because there is no agreed international definition as to the minimum number of hours in a week that constitute full-time work, the dividing line is determined either on a country-by-country basis or through the use of special estimations. Two measures are calculated for this indicator: total part-time employment as a proportion of total employment, sometimes referred to as the “part-time employment rate”; and the percentage of the part-time workforce comprised of women.

KILM 7. Hours of work

The number of hours worked has an impact on the health and well-being of workers as well

as on levels of productivity and labour costs of establishments. Measuring the level and trends in the hours worked in a society, for different groups of workers and for workers individually, is therefore important when monitoring working and life conditions as well as when analysing economic developments.

Two measurements related to working time are included in KILM 7 in order to give an overall picture of the time that the employed throughout the world devote to work activities. The first measure relates to the hours an employed person works per week (table 7a). The number of employed are presented according to the following hour bands: less than 25 hours worked per week, between 25 and 34 hours, between 35 and 39 hours, between 40 and 48 hours, between 49 and 59 hours, 40 hours and over, 50 hours and over and 60 hours and over, as available. The data are broken down by sex, age group (total, youth and adult) and employment status (total, wage and salaried worker and self-employed), wherever possible. The second measure is the average annual actual hours worked per person (table 7b).

KILM 8. Employment in the informal economy

The informal economy plays a major role in employment creation, income generation and production in many countries. In countries with high rates of population growth or urbanization, the informal economy tends to absorb most of the growing labour force. Since the informal economy is generally recognized as entailing missing legal identity, poor work conditions, lack of membership in social protection systems, incidence of work related accidents and ailments, and limited freedom of association, generating statistics that count the number of persons in the informal economy broadens the knowledge base concerning the extent and content of policy responses required.

KILM 8 includes national estimates of informal employment. Table 8 combines two measures of the informal economy: employment in the informal sector, the enterprise-based measure defined in the 15th International Conference of Labour Statisticians (ICLS), and informal employment, the broader job-based measure recommended in the 17th ICLS. The latter includes both persons employed in informal sector enterprises and persons in informal employment outside the informal sector (employees holding informal jobs) as well as contributing family workers in formal or informal sector enterprises and own-account workers engaged in the production of goods for own end use by their

household. Informal employment and its subcategories are presented as a share of total non-agricultural employment.

KILM 9. Unemployment

The unemployment rate is probably the best-known labour market measure and certainly one of the most widely quoted by the media in many countries. Together with the labour force participation rate (KILM 1) and employment-to-population ratio (KILM 2), it provides the broadest available indicator of economic activity and status in terms of labour markets for countries that regularly collect information on the labour force. The unemployment rate tells us the proportion of the labour force that does not have a job and is actively looking for work. It should not be misinterpreted as a measurement of economic hardship, however, although a correlation often exists. Table 9a provides a harmonized series of unemployment rates as estimated by the ILO (like table 2a) by sex; table 9b contains national estimates on total unemployment by sex, where possible and table 9c contains flows in and out of unemployment, measured by the probability (hazard rate) to lose a job once employed or to find a job once unemployed.

The resolution concerning statistics of the economically active population, employment, unemployment and underemployment, adopted by the 13th ICLS, defines the unemployed as all persons above a specified age who, during the reference period, were without work, currently available for work and seeking work. However, it should be recognized that national definitions and coverage of unemployment can vary with regard to factors such as age limits, criteria for seeking work, and treatment of, for example, persons temporarily laid off, discouraged about job prospects or seeking work for the first time.

KILM 10. Youth unemployment

Youth unemployment is an important policy issue for many countries, regardless of the stage of development. For the purpose of this indicator, the term “youth” covers persons aged 15 to 24, while “adults” are defined as persons aged 25 and over, although national variations in age definitions do occur. The indicator presents youth unemployment in the following ways: (a) the youth unemployment rate; (b) the youth unemployment rate as a percentage of the adult unemployment rate; (c) the youth share in total unemployment; and (d) youth unemployment as a proportion of the youth population.

The KILM 10 measures should be analysed together; any of the four, when analysed in isolation, could paint a distorted image. For example, a country might have a high ratio of youth-to-adult unemployment but a low youth share in total unemployment. The presentation of youth unemployment as a proportion of the youth population recognizes the fact that a large proportion of young people enter unemployment from outside the labour force. Taken together, the four indicators provide a fairly comprehensive indication of the problems that young people face in finding jobs. Table 10a provides a harmonized series of unemployment rates as estimated by the ILO (like table 9a) by sex and table 10b contains national estimates on total unemployment by sex, where possible. Table 10c complements the labour market situation of youth by showing the number of young people who are not in employment, education or training (NEET) as a percentage of the youth population. The NEET rate is available for youth aged 15 to 24 for some countries, but for others refers to persons aged 15 to 29.

KILM 11. Long-term unemployment

Unemployment tends to have more severe effects the longer it lasts. Short periods of joblessness can normally be dealt with through unemployment compensation, savings and, perhaps, assistance from family members. Unemployment lasting a year or longer, however, can cause substantial financial hardship, especially when unemployment benefits either do not exist or have been exhausted. Long-term unemployment is not generally viewed as an important indicator for developing economies, where the duration of unemployment often tends to be short, due to the lack of unemployment compensation and the fact that most people cannot afford to be without work for long periods. Therefore, most of the information available for this indicator comes from the more developed economies. The data are available by sex and age group (total, youth and adult), wherever possible.

Table 11a includes two separate measures of long-term unemployment: (a) those unemployed one year or more as a percentage of the labour force; and (b) those unemployed one year or more as a percentage of the total unemployed (the incidence of long-term unemployment). Table 11b includes the number of unemployed (as well as their share of total unemployed) at different durations: (a) less than one month; (b) one month to less than three months; (c) three months to less than six months; (d) six months to less than twelve months; (e) twelve months or more.

KILM 12. Time-related underemployment

Underemployment reflects underutilization of the productive capacity of the labour force. Time-related underemployment, as the only component of underemployment, to date, that has been agreed on and properly defined within the international community of labour statisticians, is, therefore, the best available proxy of the underutilized labour force. The indicator is important for improving the description of employment-related problems, as well as assessing the extent to which available human resources are being utilized in the production process of the country. It also provides useful insights for the design and evaluation of employment, income and social programmes. The indicator includes two measures – time-related underemployment as a percentage of the labour force, and as a percentage of total employment.

The international definition of time-related underemployment was adopted in 1982 by the 13th ICLS and amended in 1998 by the 16th ICLS. It includes all persons in employment whose hours of work “are insufficient in relation to an alternative employment situation in which the person is willing and available to engage”.

KILM 13. Inactivity

The inactivity rate is defined as the percentage of the population that is neither working nor seeking work (that is, not in the labour force). The inactivity rate of the age groups 15+, 15-24, 15-64, 25-54, 25-34, 35-54, 55-64 and 65+ are shown in table 13. The 25-54 age group can be of particular interest since it is considered to be the “prime-age” group, in which individuals are generally expected to be in the labour force; it is worthwhile investigating why these potential labour force participants are inactive, since they have normally completed their education but have not yet reached retirement age. The inactivity rate of women, in particular, tells us a lot about the social customs of a country, attitudes towards women in the labour force, and family structures in general.

The inactivity rates, when added to the labour force participation rate (KILM table 1a) for the corresponding group, will equal 100 per cent. Data in table 13 has been harmonized to account for differences in national data collection and tabulation methodologies as well as for other country-specific factors such as military service requirements. The series includes both nationally reported and imputed data and only estimates

that are national, meaning there are no geographic limitations in coverage.

KILM 14. Educational attainment and illiteracy

An increasingly important aspect of labour market performance and national competitiveness is the skill level of the workforce. Information on levels of educational attainment is currently the best available indicator of labour force skill levels. These are important determinants of a country’s capacity to compete successfully in world markets and to make efficient use of rapid technological advances; they are also among the factors determining the employability of workers.

Table 14a presents information on the educational attainment of the labour force, with data broken down by sex and age group (total, youth, young adult and adult), wherever possible. Table 14b presents the distribution of the unemployed population by level of educational attainment, with data broken down by sex and age group (total, youth, young adult and adult), wherever possible. Table 14c presents the unemployment rates of persons who attained education at the primary level or less, secondary or tertiary level. The categories used in the three indicator are conceptually based on the levels of the International Standard Classification of Education (ISCED). ISCED was designed by UNESCO to serve as an instrument for assembling, compiling and presenting comparable indicators and statistics of education, both within countries and internationally. Finally, table 14d is a measure of illiteracy in the population (total, youth and adult).

KILM 15. Skills mismatch

The new indicator KILM 15 on skills mismatch provides information on the extent to which the supply of skills matches the demand for skills. It is a complement to KILM 14 that presents statistics on the level and distribution of the knowledge and skills base of the labour force and the unemployed. Addressing skills mismatch issues is often a complex undertaking because of the many factors that influence skills demand and supply, including for example the level of economic development of a country, technological change, demographics and mobility of workers. At the same time, the extent to which skills supply and demand are successfully being matched is a major factor shaping economic and labour market outcomes, economic growth, productivity and competitiveness. Therefore, the formulation and implementation of effective education and training policies, including responsive education and training systems, is a continu-

ous challenge for all countries. Meeting this challenge requires linking skills development to employment and economic development, involving social partners and key stakeholders in skills development systems, and effective labour market information and analysis systems

The type of skills mismatch presented in table 15a reflects differences between unemployment rates by level of educational attainment (see also KILM 14). Such differences indicate that the level of educational attainment of workers is an important determinant of the probability of finding a job besides the level of unemployment. The second type of skills mismatch, presented in table 15b, consists of mismatch between the qualification requirements of jobs held by workers and the qualifications these workers possess, an indication of over- or underqualification. The information in both tables is available by sex and age group (15 years and over; 15 to 24 or 15 to 29; and 30 years and over).

KILM 16. Wages and compensation costs

Wages represent a measure of the level and trend of workers' purchasing power and an approximation of their standard of living. The compensation costs provides an estimate of employers' expenditure toward the employment of its workforce. The indicators are, in this sense, complementary in that they reflect the two main facets of existing wage measures; one aiming to measure the income of employees, the other showing the costs incurred by employers for employing them. Information on average wages represents one of the most important aspects of labour market information. Because wages are a substantial form of income, accruing to a high proportion of the economically active population, information on wage levels is essential to evaluate the living standards and conditions of work and life of this group of workers in both developed and developing economies. On the other hand, average hourly compensation cost is a measure intended to represent employers' expenditure on the benefits granted to their employees as compensation for an hour of labour. These benefits accrue to employees, either directly – in the form of total gross earnings – or indirectly – in terms of employers' contributions to compulsory, contractual and private social security schemes, pension plans, casualty or life insurance schemes and benefit plans in respect of their employees.

Table 16a presents trends in average monthly wages, both in nominal and real terms (i.e. adjusted for changes in consumer prices). Both the nominal and real average wage series are

presented in national currency. This enables data users to calculate nominal and real wage growth rates without distortion caused by exchange rate fluctuations, and to link wage data to other data expressed in national currency. It also takes account of the fact that wage levels may not be strictly comparable across countries due to methodological differences, while growth rates are less likely to be affected by statistical effects. Table 16b is concerned with the levels, trends and structures of employers' hourly compensation costs for the employment of workers in the manufacturing sector. Total compensation is also broken down into "hourly direct pay" with subcategories "pay for time worked" and "directly paid benefits", and "social insurance expenditure and labour-related taxes" with all variables expressed in US dollars.

KILM 17. Labour productivity

Productivity, in combination with hourly compensation costs, can be used to assess the international competitiveness of a labour market. Economic growth in a country or sector can be ascribed either to increased employment or to more effective work by those who are employed. The latter can be captured by data on labour productivity. Labour productivity, therefore, is a key measure of economic performance. An understanding of the driving forces behind it, in particular the accumulation of machinery and equipment, improvements in organization as well as physical and institutional infrastructures, improved health and skills of workers ("human capital") and the generation of new technology, is important in formulating policies to support economic growth.

Labour productivity is defined as output per unit of labour input. Two measures are presented in table 17a, GDP per person engaged and GDP per hour worked, both in 1990 US\$ and indexed to 1990 = 100 with information taken from the Conference Board. Table 17b includes ILO calculations on labour productivity on GDP per person engaged in 2005 international \$ at PPPs as well as 2005 constant US dollars at market exchange rates.

KILM 18. Poverty, income distribution and the working poor

Poverty can result when individuals are unable to generate sufficient income from their labour to maintain a minimum standard of living. The extent of poverty, therefore, can be viewed as an outcome of the functioning of labour markets. Because labour is often the most significant, if not the only, asset of individuals in poverty, the most effective way to improve the level of welfare is to increase employment opportunities

Box 1c. Proposed resolution concerning work statistics

In October of 2013, the 19th International Conference of Labour Statisticians proposed a “resolution concerning work statistics” in which several concepts in the world or work are redefined. This resolution will introduce several changes to how statistics are currently compiled.

Even though there are no immediate changes to the data in the KILM (statistics such as employment and unemployment are currently based on the “Resolution concerning statistics of the economically active population, employment, unemployment and underemployment”, adopted by the 13th ICLS in 1982¹¹), the new resolution will affect future compilation of labour market statistics, particularly indicators related to the concept of employment will be affected.

A substantial change to the statistics of **employment** is the introduction of “four mutually exclusive forms of work [that are] identified for separate measurement. These forms of work are distinguished on the basis of the intended destination of the production (i.e. for own final use, or for use by other units) and the nature of the transaction (i.e. monetary or non-monetary transactions, and transfers), as follows:

- (a) own-use production work comprising production of goods and services for own final use;
- (b) employment work comprising work performed for pay or profit;
- (c) unpaid trainee work comprising work performed without pay to acquire workplace experience or skills;
- (d) volunteer work comprising non-compulsory work performed for others without pay” (paragraph 7).

Furthermore, “Persons in employment are defined as all those above a specified age who, during a short reference period, were engaged in any activity to *produce goods or provide services for pay or profit*. They comprise:

- (a) employed persons “at work”, i.e. who worked in a job for at least one hour;
- (b) employed persons “not at work” due to temporary absence from a job, or to working-time arrangements (such as shift work, flexitime and compensatory leave for overtime)” (paragraph 27).

The proposed resolution extended on the definition of **unemployment** in that it included examples of “activities to seek employment” and specifically gave mention to two groups of job-seekers who are included in unemployment:

- (a) future starters, defined as persons “not in employment” and “currently available to take up employment” who did not carry out “activities to seek employment” [...] because they had already made arrangements to start a job within a short subsequent period, set according to the general length of waiting time for starting a new job in the national context but generally not greater than three months;
- (b) persons undergoing skills training or retraining within employment promotion programmes, who on that basis, were “not in employment”, not “currently available” and did not carry out “activities to seek employment” because they had a job offer to start within a period generally not greater than three months

The definition for **persons in time-related underemployment** also extended to define this group of people as “as all persons in employment who, during a short reference period, wanted to work additional hours, whose working time in all jobs was less than a specified hours threshold, and who were available to work additional hours given an opportunity for more work, where:

- (a) the “working time” concept is hours usually worked or hours actually worked, in accordance with the measurement objective (long or short-term situations);
- (b) “additional hours” may be hours in the same job, in an additional job(s) or in a replacement job(s);
- (c) the “hours threshold” is based on the boundary between full-time and part-time employment, on the median or modal values of the hours usually worked, or on working time norms as specified in relevant legislation or national practice, and set for specific worker groups;
- (d) “availability” for additional work should be established in reference to a set short reference period that reflects the typical length of time required in the national context between leaving one job and starting another” (paragraph 43)

¹¹ For further information and details on the proposed resolution concerning work statistics, please refer to the 19th ICLS on the website of the Department of Statistics: <http://www.ilo.org/global/statistics-and-databases/meetings-and-events/international-conference-of-labour-statisticians/19/lang-en/index.htm>.

and labour productivity through education and training.

An estimate of the number of people in poverty in a country depends on the choice of the poverty threshold. However, what constitutes such a threshold of minimum basic needs is subjective, varying with culture and national priorities. Definitional variations create difficulties when it comes to making international comparisons. Therefore, in addition to national poverty measurements and the Gini index shown in table 18a, this indicator presents data on employment by economic class which indicates individuals who are employed and who fall within the per-capita consumption thresholds of a given economic class group. By combining labour market characteristics with household consumption group data, employment by economic class estimates give a clearer picture of the relationship between economic status and employment. Because of the important linkages between employment and material welfare, evaluating these two components side by side also provides a more detailed perspective on the dynamics of productive employment generation, poverty reduction and growth in the middle class throughout the world.

KILM electronic versions

The ILO hopes to reach a wider audience by presenting data in the KILM in electronic form. As in previous editions, the electronic version of the KILM contains all the data sets for the indicators, together with interactive software through which users can select and query the indicators by country, year, type of source and other user-defined functions according to specific needs. Data updates will be automatically downloaded each time a user opens the programme (if connected to the Internet). Users who do not have Internet access will be notified by email of the availability of updates, assuming they fill in the registration material. Users can download the KILM programme from www.ilo.org/kilm.

The KILM database can also be directly accessed through the KILM web page, making the access of country-level data for the 18 key labour market indicators as well as the descriptive text explaining the indicators' use, definitions and basic trends easier than ever. Faster than before, users can run quick and easy searches of KILM indicators and display and export data in spreadsheet format directly from the internet. As with the software, the direct access to the KILM indicators is done through www.ilo.org/kilm.

The ILO estimates on unemployment flows¹

Introducing flows to assess the variations in unemployment

1. Introduction

The KILM 8th edition includes new indicators on unemployment flows as part of its series of indicators on unemployment (KILM 9). Workers' inflow rates into and outflow rates out of unemployment are calculated for 70 developed and developing countries based on national labour force or household surveys from 1980 onwards². Both measures neatly relate to modern labour market theories that analyse labour market dynamics not only in terms of variations of the unemployment rate but as the difference of worker flows between different states of the labour market, mostly between being employed and seeking for employment. Data on unemployment flows can also improve the understanding of unemployment dynamics across time and countries.

The unemployment rate is a stock variable and is used as a standard measure to compare the labour market situations of jobseekers across countries. The duration of unemployment also matters, in particular in countries where well-developed social security systems provide alternative sources of income (see KILM 11). In this respect, an increasing proportion of long-term unemployed is likely to reflect structural problems in the labour market. For example, during the economic crisis, many economies saw a sharp rise in the unemployment rate, along with longer unemployment durations (ILO, 2013). In contrast to these stock measures, inflow and outflow rates are flow measures and describe the dynamics in the labour market. The inflow rate measures the rate at which an employed person enters the unemployment pool, while the outflow rate measures how quickly an unemployed person finds a job. These indicators are an essential tool to

better target labour market policies, since unemployment can increase either because inflow rates are high or because outflow rates are low, with significantly different policy implications.

From inflow and outflow rates, also referred to as hazard rates, it is possible to compute an estimate for the number of workers flowing into and out of unemployment in a given period of time as well as the probability for an unemployed worker to become employed and for an employed worker to become unemployed, as will be shown in this chapter. While hazard rates are instantaneous rates of transition, probabilities denote the likelihood of transition occurring within a discrete time period. With the estimation of unemployment flows, the ILO aims at encouraging further research on unemployment and its driving forces. Elsby et al. (2013) for example established that the "variation in unemployment inflows accounts for a substantial fraction of unemployment variation" and therefore conclude that flow measures can be used as "an important leading indicator for changes in unemployment".

Unemployment flows are increasingly being used in forecasting models, following the work of Barnichon and Nekarda (2013).³ The main idea behind these forecasting models is to forecast both unemployment inflows and outflows separately. Forecasts of these flows then implicitly determine the unemployment rate forecast. The use of unemployment flows in forecasting models has been shown to significantly improve forecasting performance for short- and medium-term forecast horizons, primarily because more information enters the forecasts when unemployment inflows and outflows are forecasted as separate drivers of forecasted unemployment.

During the crisis, some countries, in particular in the European Union, saw a simultaneous increase in job destruction rates (approximated by the inflow rate into unemployment) and longer unemployment spells, pushing unemploy-

¹ This chapter was prepared by Christian Viegelahn and Christina Wieser (RESEARCH) with input provided by Francisco Guerrero (STATISTICS). The authors would like to thank Robert Shimer (University of Chicago), Michael Elsby (University of Edinburgh) and members of the ILO's Employment Trends Unit for helpful discussions in preparing this chapter.

² Data are available as early as 1969 for some countries and are available upon request.

³ Some of the *ILO Short-term Forecasting Models* rely on unemployment flows to forecast unemployment.

ment rates beyond the regional average.⁴ For instance, between 2007 and 2011, Ireland and Latvia both saw their national unemployment rates rise by nearly 10 percentage points, as the share of long-term unemployed in total unemployment rose by more than 25 percentage points in both countries and job destruction rates more than doubled (ILO, 2013). Hence, unemployment flows can capture the labour market adjustment mechanisms as response to economic up- or downturns, providing scope for more precise and differentiated policy recommendations.

The main objectives of this chapter are:

1. To describe the data and methodology used to calculate inflow and outflow hazard rates into and out of unemployment.
2. To present a selection of stylized facts on unemployment flows in certain countries to illustrate the use of inflow and outflow measures for labour market analysis.

The remainder of this chapter is structured as follows. Section 2 describes the data used to construct unemployment flows. Section 3 presents key concepts, methodology and the analytical framework behind the construction of unemployment inflow and outflow rates. Section 4 illustrates the uses of inflow and outflow rates for further labour market analysis and describes how to transform inflow and outflow rates into probabilities and absolute number of workers. Section 5 displays some results from a labour market analysis that is based on unemployment flows and section 6 concludes and discusses potential areas for future work.

2. Description of data

The KILM 8th edition contains indicators on unemployment flows for a total of 70 countries in Table 9c. The data used as input into the calculations of unemployment flows are annual data on unemployment by duration and labour force, and both quarterly and annual data on unemployment rates.

The majority of data come from labour force survey datasets, which often provide details on

⁴ Job destruction can be linked to unemployment inflows and job creation to unemployment outflows to the extent that the labour force is constant (or varies only weakly). This is the case for most advanced economies but may pose a problem for emerging economies with fast growing working-age populations.

unemployment duration and labour market status. The following unemployment durations were used as inputs into alternative flow measures as these can be easily computed across most duration data:

- Unemployment for a duration of less than 1 month
- Unemployment for a duration of less than 3 months
- Unemployment for a duration of less than 6 months
- Unemployment for a duration of less than 12 months

Estimates on unemployment by duration and labour force are derived from national labour force surveys. Data are taken from the OECD database (2013), EUROSTAT (2013), and national statistical offices (2013).⁵ The reason for using data from OECD and EUROSTAT is that data are standardized across countries, facilitating cross-country comparisons. In case the different duration categories from the source data do not sum up to total unemployment because of incomplete survey responses or other reasons, their size is scaled up in order to match the total.

Data on quarterly unemployment rates stem from the same data sources but are supplemented for some countries with the Short term indicators of the labour market database of the ILO. For countries or time periods for which unemployment rates are only available at the annual level, annual unemployment rates from KILM Table 9b are used for the flow calculation, imposing that unemployment rates in every quarter of a year correspond to the annual rate. Even though the use of quarterly unemployment rates is preferable when constructing flow measures, the use of annual unemployment rates as an approximation typically yields similar results. Therefore, flow measures are constructed on the basis of annual unemployment rates wherever quarterly data are not available, indicated in a separate column in Table 9c of the KILM.

The data cover 70 countries, including high income, upper- and lower middle income, and low income countries.⁶ For some countries, some

⁵ Data were primarily taken from OECD, subsequently from National Statistical Offices and then from EUROSTAT.

⁶ The sample of countries includes: Argentina, Armenia, Aruba, Australia, Austria, Bahamas, Barbados, Belgium, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, Bulgaria, Canada, Croatia, Cyprus, Czech Republic, Denmark, Ecuador, Estonia, Ethiopia, Fiji, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Jamaica, Japan, Jordan, Latvia, Lithuania, Luxembourg, Macau

of the input data series are not available for all years. In case the data gap is not larger than two years, linear interpolation is used to fill the gap. Any interpolated data that enter a flow estimate is indicated in the Notes column of Table 9c.

For the majority of countries we end up with a relatively long annual time series of monthly unemployment inflow and outflow rate estimates. The availability especially of data on unemployment by duration determines the country coverage for this indicator.

3. Key concepts, methodology and analytical framework

The indicator on unemployment flows consists of inflow and outflow rates into and out of unemployment, estimated on the basis of unemployment by duration, following the methodologies of Shimer (2012) and Elsby et al. (2013).

Two assumptions are required to derive estimates for unemployment inflow and outflow rates:

1. Flows only occur from employment to unemployment or from unemployment to employment and flows into and out of inactivity are not taken into consideration.
2. All workers are identical and have the same probability of finding or losing a job.

Based on these assumptions, Shimer (2012) derives estimates of monthly inflow and outflow rates for the United States on the basis of time series data on employment, unemployment and unemployment with a duration of less than five weeks. Focusing on 14 OECD economies, Elsby et al. (2013) extend this methodology by estimating these rates on the basis of not only one but various durations and weighing them optimally. If flow rates are not related to the duration a worker has been unemployed (i.e. absence of “duration dependence”), then flow rates on the basis of any duration and hence also the weighted rate provide consistent estimates of the aggregate

(note 6 continued)

(China), Malta, Mauritius, Mexico, Morocco, Namibia, Netherlands, New Zealand, Norway, Pakistan, Philippines, Poland, Portugal, Republic of Korea, Republic of Moldova, Romania, Russian Federation, Serbia, Singapore, Slovakia, Slovenia, South Africa, Spain, Sri Lanka, Sweden, Switzerland, Thailand, Trinidad and Tobago, Turkey, Ukraine, United Kingdom, and the United States.

flow rate. If instead this does not hold and there is evidence for duration dependence, flow rates derived on the basis of unemployment with smaller durations are preferred estimates. A statistical test can decide about whether duration dependence is present or not.

In the following, this section describes how to derive the annual data series on monthly inflow and outflow rates included in Table 9c of the KILM.

Unemployment inflow and outflow rates

The unemployment rate u evolves as the difference between inflows into and outflows out of unemployment:

$$\frac{du_t}{dt} = s_t(1 - u_t) - f_t u_t \quad (1)$$

where s_t is the monthly inflow rate into unemployment in month t and f_t denotes the monthly outflow rate from unemployment in month t . This equation is a differential equation in continuous time that can be solved forward one year in order to relate unemployment rates observed at discrete annual time intervals to the monthly inflow and outflow rate that are assumed constant within each year⁷, so that

$$u_t = \frac{1 - e^{-12(s_t + f_t)}}{s_t + f_t} s_t + e^{-12(s_t + f_t)} u_{t-12} \quad (2)$$

In order to derive outflow rate f_t , we consider that the change in unemployment rates from month $t - d$ to month t can be written as

$$u_t - u_{t-d} = u_t^{<d} - F_t u_{t-d} \quad (3)$$

where $u_t^{<d}$ is the number of unemployed workers that have been unemployed for a duration of less than d months, as percentage of the labour force. In other words, $u_t^{<d}$ is the share of workers transiting from employment to unemployment between month $t - d$ and month t , corresponding to the inflows into unemployment. $F_t u_{t-d}$ denotes the outflows from unemployment and F_t is the probability of an unemployed worker to find a job.⁸ The outflow probability F_t can be computed

⁷ See also Shimer (2012) and Elsby et al. (2013).

⁸ Equation (3) is shown in terms of rates, i.e. relative to the labour force. Since the labour force is assumed to be constant (see assumption 1), this does not make any difference.

by using the above identity and rearranging the equation as follows:

$$F_t^{<d} = 1 - \frac{u_t - u_t^{<d}}{u_{t-d}} \quad (4)$$

This probability is directly related to the associated outflow rate $F_t^{<d}$ through:

$$f_t^d = \frac{-\ln(1 - F_t^{<d})}{d} \quad (5)$$

The outflow rate $F_t^{<d}$ describes the monthly rate of transition that is associated with the probability for an unemployed worker at time t to find a job within d months. The monthly inflow and outflow rates are computed on the basis of different unemployment durations. Equations (4) and (5) can be combined to

$$f_t^d = \frac{-(\ln(u_t - u_t^{<d}) - \ln(u_{t-d}))}{d} \quad (6)$$

for $d = 3, 6$, and 12 months. Since unemployment rates are only observed every quarter, the outflow rate for $d = 1$ is approximated by

$$f_t^1 = -\ln(u_t - u_t^{<1}) + \frac{2}{3} \ln u_t + \frac{1}{3} \ln u_{t-3} \quad (7)$$

As in Elsby et al. (2013), the flow rate estimates in equation (6) and (7) rely on averages of the lagged unemployment rates, taken over the year, for which the outflow rate is calculated.⁹

Plugging the expressions in (6) and (7) into equation (2), it is possible to uniquely derive the corresponding monthly inflow rate $s_t^{<d}$ that is consistent with the observed changes in the unemployment rate between months and .

The question arises which of the flow rate estimates should be used as best estimates for the aggregate flow rates. While Shimer (2012) estimates aggregate flow rates on the basis of $d = 1$ exclusively, Elsby et al. (2013) compute estimates for $d = 1, 3, 6, 12$. The reason is that, particularly in European countries, relatively more people tend to be unemployed for a longer time spell than in the United States. Given that there are only few jobseekers in a typical labour force survey that are in the unemployment pool for a duration of less than 1 month, the variance and noise of any estimates that are based on these few observations will be large.

⁹ See also the Appendix of Elsby et al. (2013).

In case flow rates are duration-dependent, the consistency of estimates on the basis of unemployment duration greater than one month cannot be assured. This is due to dynamic selection processes that leave an unrepresentative sample of unemployed workers with low outflow rates in the pool of longer-term unemployed.¹⁰ If there is no duration dependence, the estimate on the basis of any duration is in principle a consistent estimate of the true outflow rate. Elsby et al. (2013) also derive an optimally weighted inflow and outflow rate that minimizes the mean-squared error of the estimate. The way the weighted flow rate estimate in Table 9c of the KILM is computed follows the methodology that is described in Appendix A of Elsby et al. (2013).

KILM Table 9c reports estimates of inflow and outflow rates on the basis of unemployment of various durations as well as the optimally weighted measures. In most of the cases, the various flow rate estimates or at least their trends do not differ much for a given country. There is a trade-off when selecting the preferred flow rate estimates. Estimates on the basis of small unemployment durations are consistent, but possibly biased, particularly when outflow rates are low and estimates are based on small labour force survey datasets. In contrast, the weighted estimates display less noise, but are potentially inconsistent if unemployment flows are duration-dependent.

Elsby et al. (2013) derive a test with the null hypothesis of no duration dependence, so that

$$f_t^{<1} = f_t^{<3} = f_t^{<6} = f_t^{<12} \quad (8)$$

Results of this test depend on the significance level that is chosen for the test. It can also be the case that changes in the data sample by just one other data point impacts the test result. In addition, test results typically rely on assumptions regarding the sample size of the labour force survey.

For countries for which the above mentioned hypothesis is rejected, Elsby et al. (2013) follow the approach of Shimer (2012) and use $f_t^{<1}$ and $s_t^{<1}$ as benchmark estimates of the unemployment outflow and inflow rate respectively. For countries for which the above hypothesis is not rejected, the weighted estimate is used. In KILM Table 9c, a separate column indicates which estimate of the outflow and inflow rate is the preferred one according to this decision rule.¹¹

¹⁰ See Elsby et al. (2013) for more details.

¹¹ The labour force survey sample sizes that are used to calculate the test results are available upon request. More

4. Further use of unemployment inflow and outflow rates

Beyond unemployment inflow and outflow hazard rates, there are other flow measures that can be used in labour market analyses:

- inflow and outflow probabilities, which respectively measure the probability of an employed worker to become unemployed and the probability of an unemployed worker to become employed within a certain period of time
- absolute numbers, which measure the number of workers exiting and entering the unemployment pool within a certain period of time

Monthly inflow and outflow rates are one-to-one related to inflow and outflow probabilities. In order to obtain probabilities out of the flow hazard rate estimates in Table 9c of the KILM, equation (5) can be rearranged, so that the probability for a worker to leave the unemployment pool and get into employment within d months (expressed in per cent) is

$$F_t^d = (1 - e^{-f_t^{dd}}) \times 100 \quad (9)$$

Analogously, the probability for a worker to move from employment into unemployment within d months (expressed in per cent) can be calculated as

$$S_t^d = (1 - e^{-s_t^{dd}}) \times 100 \quad (10)$$

The absolute number of workers moving between unemployment and employment within d months is computed as

$$\varphi_t^d = \frac{F_t^d}{100} \times U_{t-d} \quad (11)$$

where U_{t-d} is the absolute number of unemployed in month $t - d$. Similarly, the absolute number of workers losing their job and moving

from employment into the unemployment pool within d months corresponds to

$$\sigma_t^d = \frac{S_t^d}{100} \times E_{t-d} \quad (11)$$

where E_{t-d} is the absolute number of employed in month $t - d$.

5. Some stylized facts

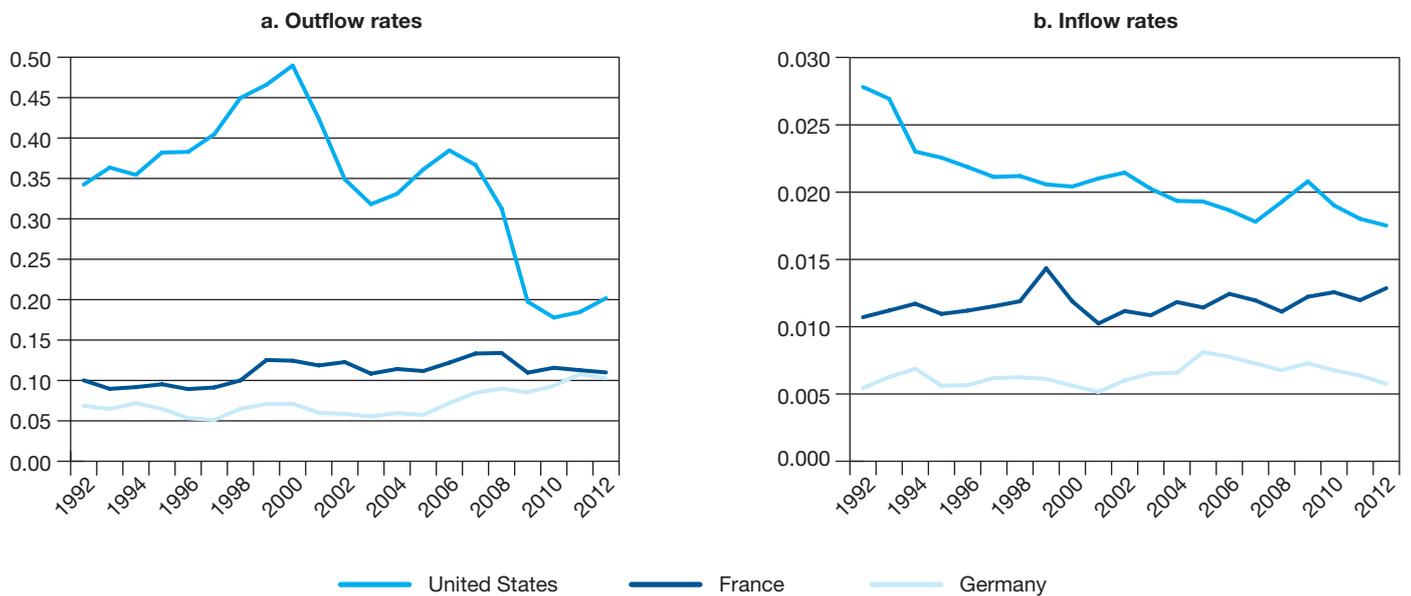
Similar rates of unemployment can hide substantial differences in unemployment flows, with implications for the speed of adjustment of labour markets to external shocks and policy measures. For instance, even though unemployment rates between the United States and Germany have been at around 6.3 per cent between 1970 and 2013 in both countries, unemployment flows in the United States are a multiple of those in Germany, suggesting that labour markets in the United States can react much faster to shocks than in Germany. Conversely, unemployment rates have been roughly 30 per cent higher in France than in Germany since 1991. Despite this seemingly lower performance, the French labour market shows a stronger turnover and faster dynamics. In other words, “headline” unemployment rates are likely to give only a rough picture of the functioning of a country’s labour market. In particular issues related to the speed at which unemployment rates can react to external shocks and shifts in policies can be better analysed when looking at flows rather than at stocks.

The current situation of the labour market is a case in point. After having shot up, the unemployment rate – primarily in advanced economies – is sliding downwards, albeit slowly. This has been taken as an indication that the recovery is underway and that labour markets will eventually revert to the pre-crisis situation. Looking at the flow picture, however, gives a slightly different pitch. Indeed, in some countries where unemployment rates shot up fastest, joblessness seems to recede but mainly as a result of a reduction in job destruction rates or unemployment inflows. At the same time, unemployment duration remains long as job creation rates have failed to pick up to pre-crisis trends. Hence, even though the initial shock that hit at the onset of the Great Recession has now been absorbed and further job destructions will remain muted, the large number of jobseekers still has not found a solution out of their situation. In this sense, a sustain-

(note 11 continued)

technical details on the test can be found in Appendix A of Elsby et al. (2013). Test results partly differ to Elsby et al. (2013), which can be attributed to differences in the input data and periods for which flows are calculated.

Figure 1: Monthly unemployment flows in France, Germany and the United States



Note: Flow rates are calculated on the basis of an unemployment duration of less than 3 months.
Source: Key Indicators of the Labour Market, 8th edition.

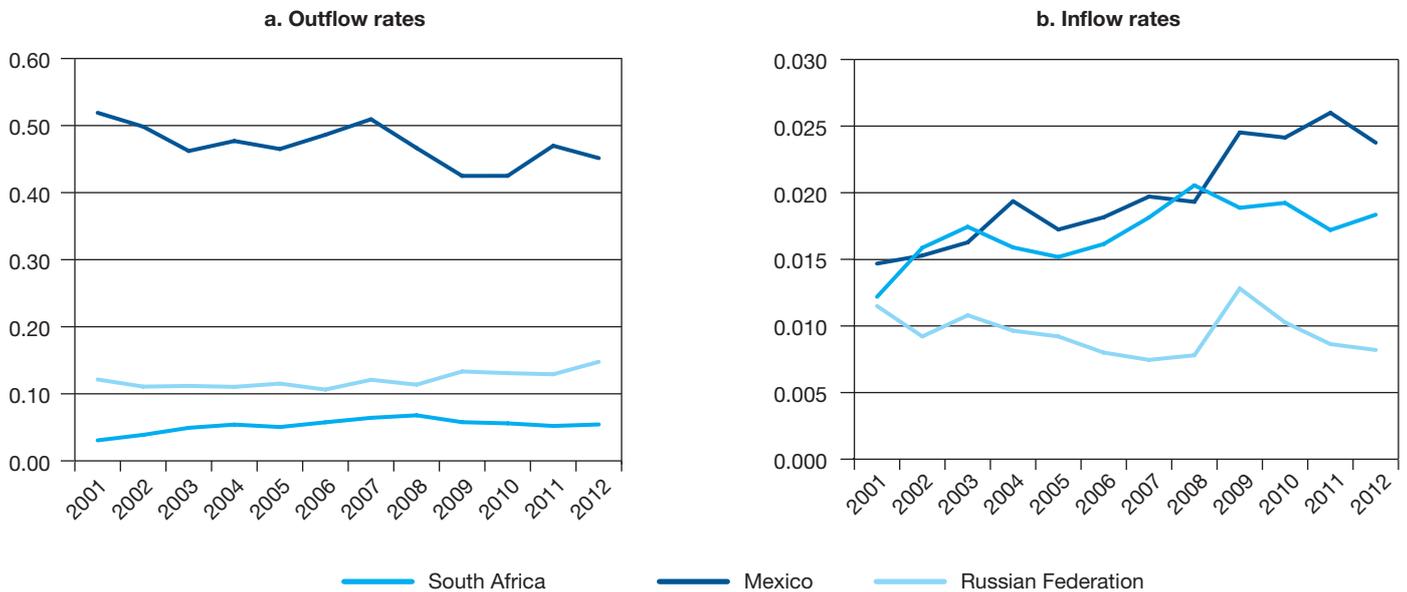
able labour market recovery is nowhere near to be observed. There are notable exceptions, such as Germany, who have limited the job destruction at the beginning of the crisis by using innovative policy instruments to prevent layoffs. Overall, however, the rise and fall in layoffs was not matched by an accelerated creation of new jobs that could have absorbed the bulge of jobseekers now filling the ranks of the long-term unemployed.

Also in emerging economies, there can be important differences in labour market dynamics. Unemployment rates reached levels of 20–30 per cent in South Africa in 2001–2012 but stood below 6 per cent in Mexico over the same period. Despite these different “headline” unemployment figures, job destruction rates (measured by inflow rates into unemployment) have not been very different from each other in the two countries, at least in 2008 and before. The main reason for the observed difference in unemployment rates is that job creation rates (measured by outflow rates out of unemployment) are much higher in Mexico than in South Africa. In other words, more jobs are being created in Mexico per month than in South Africa.

6. Conclusions

By including a new indicator on unemployment flows into the KILM 8th edition, the ILO makes use of recent academic work in the field of labour economics. Unemployment varies because of inflows from employment into unemployment and outflows in the opposite direction. Inflow and outflow rates help understand which of these two margins is more important for movements in the unemployment rate in a particular country and time period. A better understanding of labour market dynamics is essential to design well-suited policies that lower unemployment rates and improve the labour market situation.

The current indicator only considers two states of the labour market, employment and unemployment. In reality, there are also movements in and out of the labour force, which becomes especially relevant when focusing on certain age groups such as youth. In addition, employment can be split into various subgroups

Figure 2: Monthly unemployment flows in Mexico, the Russian Federation and South Africa

Note: Flow rates are calculated on the basis of an unemployment duration of less than 3 months.
Source: Key Indicators of the Labour Market, 8th edition.

such as informal and formal employment, employment by status, or employment by economic class. Future research will therefore focus on the development of indicators, which measure the dynamics between these additional states of the labour market. The publication of the new labour market indicator on unemployment flows in Table 9c of the KILM 8th edition is a first step towards a more detailed labour market analysis that also considers the dynamics in labour markets.

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KILM 1. Labour force participation rate

Introduction

The labour force participation rate is a measure of the proportion of a country's working-age population that engages actively in the labour market, either by working or looking for work; it provides an indication of the size of the supply of labour available to engage in the production of goods and services, relative to the population at working age. The breakdown of the labour force by sex and age group gives a profile of the distribution of the economically active population within a country.

The labour force participation rate is calculated by expressing the number of persons in the labour force as a percentage of the working-age population. The labour force is the sum of the number of persons employed and the number of unemployed. The working-age population is the population above the legal working age – often aged 15 and older, but with variation from country to country based on national laws and practices.

Table 1 contains national estimates of labour force participation rates by sex and age group (total, youth and adult, as nationally defined). This series covers 217 economies over the years 1980 to 2012. The KILM contains an additional table of ILO estimates of labour force participation rates according to the following standardized age groups: 15+, 15-24, 15-64, 25-54, 25-34, 35-54, 55-64 and 65+. The participation rates in table 1a of the software version 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.¹ The series includes both nationally reported and imputed data and

includes only estimates that are national, meaning there are no geographic limitations in coverage. This series of harmonized estimates serves as the basis of the ILO's global and regional aggregates of the labour force participation rate as reported in the *Global Employment Trends* series and made available in the KILM 8th edition software as table R1. Table 1b on the software is based on available national estimates.

Use of the indicator

The labour force participation rate indicator plays a central role in the study of the factors that determine the size and composition of a country's human resources and in making projections of the future supply of labour. The information is also used to formulate employment policies, to determine training needs and to calculate the expected working lives of the male and female populations and the rates of accession to, and retirement from, economic activity – crucial information for the financial planning of social security systems.

The indicator is also used for understanding the labour market behaviour of different categories of the population. The level and pattern of labour force participation depends on employment opportunities and the demand for income, which may differ from one category of persons to another. For example, studies have shown that the labour force participation rates of women vary systematically, at any given age, with their marital status and level of education. There are also important differences in the participation rates of the urban and rural populations, and among different socio-economic groups.

Malnutrition, disability and chronic sickness can affect the capacity to work and are therefore also considered as major determinants of labour force participation, particularly in low-income environments. Another aspect closely studied by demographers is the relationship between fertility and female labour force participation. This relationship is used to predict the evolution of fertility rates, from the

¹ These labour force estimates, along with projections of labour force participation rates are also published in the ILO's Economically Active Population Estimates and Projections Database (EAPEP, Sixth Edition). For further information on the methodology used to produce harmonized estimates, see Bourmpoula, V., Kapsos, S. and Pasteels, J.M.: "ILO estimates and projections of the economically active population: 1990-2020 (Sixth edition)" (ILO, Geneva, 2011). http://laborsta.ilo.org/applv8/data/EAPEP/v6/ILO_EAPEP_methodology_2011.pdf

current pattern of female participation in economic activity.²

Comparison of the overall labour force participation rates of countries at different stages of development reveals a U-shaped relationship. In less-developed economies, labour force participation rates can be seen to decline with economic growth. Economic growth is associated with expanding educational facilities and longer time spent studying, a shift from labour-intensive agricultural activities to urban economic activities, and a rise in earning opportunities, particularly for the prime working age (25 to 54 years) head of household so that other household members with lower earning potential may choose not to work. These factors together tend to lower the overall labour force participation rate for both men and women, although the effect is weaker for the latter and shows a wider variation.

It is also instructive to look at labour force participation rates for males and females by age group. Labour force activity among the young (15 to 24 years) reflects the availability of educational opportunities, while labour force activity among older workers (55 to 64 years or 65 years and over) gives an indication of the attitude towards retirement and the existence of social safety nets for the retired. Labour force participation is generally lower for females than for males in each age category. Among the prime working age, the female rates are not only lower than the corresponding male rates, but they also typically exhibit a somewhat different pattern. During this period of their life-cycle, women tend to leave the labour force to give birth to and raise children, returning – but at a lower rate – to economically active life when the children are older. In developed economies, the profile of female participation is, however, increasingly becoming similar to that of men.

To some degree, the way in which the labour force is measured can have an effect on the extent to which men and women are included in labour force estimates. Unless specific probing questions are built into the survey questionnaire, participation among certain groups of workers may be underestimated – particularly the number of employed persons who (a) work for only a few hours in the reference period, especially if they do not do so regularly, (b) are in unpaid employment, or (c) work near or in

their home, thus mixing work and personal activities during the day. Since women, more so than men, are found in these situations, it is to be expected that the number of women in employment (and thus the female labour force) will tend to be underestimated to a larger extent than the number of men.

Definitions and sources

The labour force participation rate is defined as the ratio of the labour force to the working-age population, expressed as a percentage. The labour force is the sum of the number of persons employed and the number of persons unemployed.³ Thus, the measurement of the labour force participation rate requires the measurement of both employment and unemployment. Employment should, in principle, include members of the armed forces, both the regular army staff and temporary conscripts.

The labour force participation rate is related by definition to other indicators of the labour market. The inactivity rate is equal to 100 minus the labour force participation rate, when the participation rate is expressed as a number between 0 and 100. KILM 13 shows the harmonized inactivity rates of persons according to the standardized age bands used in table 1a of the KILM software. The employment-to-population ratio (KILM 2) is equal to the labour force participation rate after the deduction of unemployment from the numerator of the rate. The unemployment rate (KILM 9) is related to the labour force participation rate and employment-to-population ratio in such a way that two of them determine the value of the third.

Labour force surveys are typically the preferred source of information for determining the labour force participation rate and related indicators. Such surveys can be designed to cover virtually the entire non-institutional population of a given country, all branches of economic activity, all sectors of the economy and all categories of workers, including the self-employed, unpaid family workers, casual work-

² See, for example, ILO: “Female labour force participation rate and fertility”, in *Key Indicators of the Labour Market, Third Edition*, Chapter 1 (Geneva, 2003).

³ Resolution concerning statistics of the economically active population, employment, unemployment and under-employment, adopted by the 13th International Conference of Labour Statisticians, Geneva, October 1982; http://www.ilo.org/global/What_we_do/Statistics/standards/resolutions/lang-en/docName-WCMS_087481/index.htm (see box 2 in KILM 2 for excerpts relating to employment and box 9 in KILM 9 for excerpts relating to unemployment, the sum total of which equal the “labour force” (currently active population)).

ers and multiple jobholders. In addition, such surveys generally provide an opportunity for the simultaneous measurement of the employed, the unemployed and the economically inactive in a coherent framework.

Population censuses are another major source of data on the labour force and its components. The labour force participation rates obtained from population censuses, however, tend to be lower, as the vastness of the census operation inhibits the recruitment of trained interviewers and does not typically allow for detailed probing on the labour market activities of the respondents.

Limitations to comparability

National data on labour force participation rates may not be comparable owing to differences in concepts and methodologies. The single most important factor affecting data comparability is the data source. Labour force data obtained from population censuses are often based on a restricted number of questions on the economic characteristics of individuals, with little possibility of probing. The resulting data, therefore, are generally not consistent with corresponding labour force survey data and may vary considerably from one country to another, depending on the number and type of questions included in the census. Establishment censuses and surveys can – by their nature – only provide data on the employed population, leaving out the unemployed and, in many countries, workers engaged in small establishments or in the informal economy who fall outside the scope of the survey or census.

For international comparisons of labour force data, the most comprehensive source is undoubtedly labour force surveys. Nevertheless, despite their strength, labour force survey data may contain non-comparable elements in terms of scope and coverage, mainly because of differences in the inclusion or exclusion of certain geographic areas, and the incorporation or non-incorporation of military conscripts. Also, there are variations in national definitions of the labour force concept, particularly with respect to the statistical treatment of “contributing family workers” and “unemployed and not looking for work”.

Non-comparability may also arise from differences in the age limits used in measuring the economically active population. Some countries have adopted non-standard upper-age limits for inclusion in the labour force, with a cut-off point of 65 or 70 years, which will affect broad comparisons, and especially comparisons of those at the higher age levels. Finally, differences in the dates to which the data refer, as well as the method of averaging over the year, may contribute to the non-comparability of the resulting statistics.

To a large extent, these comparability issues have been addressed in the construction of the ILO estimates of labour force participation rates shown in table 1a. Only household labour force survey and population census data that are representative of the whole country (with no geographic limitation) were used in the construction of the estimates. In countries with more than one survey source, only one type of source was used. If a labour force survey was available for the country, labour force participation rates derived from these were chosen in favour of those derived from population censuses.

KILM 2. Employment-to-population ratio

Introduction

The employment-to-population ratio⁴ is defined as the proportion of a country's working-age population that is employed. A high ratio means that a large proportion of a country's population is employed, while a low ratio means that a large share of the population is not involved directly in market-related activities, because they are either unemployed or (more likely) out of the labour force altogether.

Virtually every country in the world that collects information on labour market status should, theoretically, have the requisite information to calculate employment-to-population ratios, specifically, data on the working-age population and total employment. Both components, however, are not always published, nor is it always possible to obtain the age breakdown of a population, in which case data are provided for employment only with no accompanying ratio. Table 2 in the KILM shows employment-to-population ratios for 197 economies, disaggregated by sex and age groups (total, youth and adult), where possible.

KILM 2 also contains ILO estimates of employment-to-population ratios, which can help complement missing observations. The series (table 2a) is 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.⁵ It includes both nationally reported and imputed data and includes only estimates that are national, meaning there are no geographic limitations in coverage. This series of harmonized estimates serves as the basis of the ILO's global and regional aggregates of the employment-to-population ratio reported in the *Global*

Employment Trends series and made available in the KILM 8th Edition software as table R2. Table 2b is based on available national estimates of employment-to-population ratios.

Use of the indicator

The employment-to-population ratio provides information on the ability of an economy to create employment; for many countries the indicator is often more insightful than the unemployment rate. Although a high overall ratio is typically considered as positive, the indicator alone is not sufficient for assessing the level of decent work or decent work deficits.⁶ Additional indicators are required to assess such issues as earnings, hours of work, informal sector employment, underemployment and working conditions. In fact, the ratio could be high for reasons that are not necessarily positive – for example, where education options are limited, young people tend to take up any work available rather than staying in school to build their human capital. For these reasons, it is strongly advised that indicators should be reviewed collectively in any evaluation of country-specific labour market policies.

The concept that employment – specifically, access to decent work – is central to poverty reduction was firmly acknowledged in the framework of the Millennium Development Goals (MDG) with the adoption of an employment-based target under the goal of halving the share of the world's population living in extreme poverty. The employment-to-population ratio was adopted as one of four indicators to measure progress towards target 1b on “achieving full and productive employment and

⁴ In this text, we sometimes shorten the term to “employment ratio”.

⁵ For further information on the methodology used to harmonize estimates, see Annex 4, “Note on global and regional estimates”, in ILO: *Global Employment Trends* 2011 (Geneva, 2011); http://www.ilo.org/global/publications/books/WCMS_150440/lang-en/index.htm.

⁶ Since the publication of the ILO: *Decent Work*, Report of the Director-General, International Labour Conference, 87th Session, 1999 (Geneva, 1999), the goal of “decent work” has come to represent the central mandate of the ILO, bringing together standards and fundamental principles and rights at work, employment, social protection and social dialogue in the formulation of policies and programmes aimed at “securing decent work for women and men everywhere”. For more information, see: <http://www.ilo.org/decentwork>.

decent work for all, including women and young people”.⁷

Employment-to-population ratios are becoming increasingly common as a basis for labour market comparisons across countries or groups of countries. Employment numbers alone are inadequate for purposes of comparison unless expressed as a share of the population who could be working. One might assume that a country employing 30 million persons is better off than a country employing 3 million persons, whereas the addition of the working-age population component would show another picture; if there are 3 million persons employed in Country A out of a possible 5 million persons (60 per cent employment-to-population ratio) and 30 million persons employed in Country B out of a possible 70 million (43 per cent employment-to-population ratio), then the employment-generating capacity of Country A is superior to that of Country B. The use of a ratio helps determine how much of the population of a country – or group of countries – is contributing to the production of goods and services.

Employment-to-population ratios are of particular interest when broken down by sex, as the ratios for men and women can provide information on gender differences in labour market activity in a given country. However, it should also be emphasized that this indicator has a gender bias in so far as there is a tendency to undercount women who do not consider their work as “employment” or are not perceived by others as “working”. Women are often the primary child caretakers and responsible for various tasks at home, which can prohibit them from seeking paid employment, particularly if they are not supported by socio-cultural attitudes and/or family-friendly policies and programmes that allow them to balance work and family responsibilities.

Definitions and sources

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

employment-to-population ratios are the proportion of the youth and adult populations – typically persons aged 15 to 24 years and 25 years and over – that are employed.

Employment is defined in the resolution adopted by the 13th International Conference of Labour Statisticians (ICLS) 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.⁸ (See box 2) The resolution also states that 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.

For most countries, the working-age population is defined as persons aged 15 years and older, although this may vary from country to country. 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. The variations on age limits also affect the youth and adult cohorts.

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. In general, information for this indicator is derived from household surveys, including labour force surveys. Some countries, however, use “official estimates” or population censuses as the source of their employment figures.

⁷ The first Millennium Goal includes three targets and nine indicators, see the official list at: <http://mdgs.un.org/unsd/mdg/Host.aspx?Content=Indicators/OfficialList.htm>. The remaining indicators under the target on decent work are the growth rate of GDP per person engaged (i.e. labour productivity growth; KILM 17), working poverty (KILM 18) and the vulnerable employment rate (KILM 3).

⁸ Resolution concerning statistics of the economically active population, employment, unemployment and under-employment, adopted by the 13th International Conference of Labour Statisticians, Geneva, 1982; http://www.ilo.org/global/What_we_do/Statistics/standards/resolutions/lang-en/docName--WCMS_087481/index.htm.

Limitations to comparability

Comparability of employment ratios across countries is affected most significantly by variations in the definitions used for the employment and population figures. 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 also likely to vary according to whether members of the armed forces are included.

Another area with scope for measurement differences has to do with the national treatment of particular groups of workers. The international definition calls for inclusion of all persons who worked for at least one hour during the reference period.⁹ 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 and some countries measure only “all persons engaged”, meaning paid employees plus working proprietors who receive some

remuneration based on corporate shares. Additional 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.¹⁰

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, official estimates or specialized living standards surveys, which can cause problems of comparability at the international level.

Comparisons can also be problematic when the frequency of data collection varies widely. The range of information collection can run from one month to 12 months in a year. Given the fact that seasonality of various kinds is undoubtedly present in all countries, employment ratios can vary for this reason alone. Also, changes in the level of employment can occur throughout the year, but this can be obscured when fewer observations are available. Countries with employment-to-population ratios based on less than full-year survey periods can be expected to have ratios that are not directly comparable with those from full-year, month-by-month collections. For example, an annual average based on 12 months of observations, all other things being equal, is likely to be different from an annual average based on four (quarterly) observations.

⁹ The application of the one-hour limit for classification of employment in the international labour force framework is not without its detractors. The main argument is that classifying persons who engaged in economic activity for only one hour a week as employed, alongside persons working 50 hours per week, leads to a gross overestimation of labour utility. Readers who are interested to find out more on the topic of measuring labour underutilization may refer to ILO: “Beyond unemployment: Measurement of other forms of labour underutilization”, Room Document 13, 18th International Conference of Labour Statisticians, Working group on Labour underutilization, Geneva, 24 November – 5 December 2008; http://www.ilo.org/global/statistics-and-databases/meetings-and-events/international-conference-of-labour-statisticians/WCMS_100652/lang-en/index.htm.

¹⁰ Such exceptions are noted in the “Coverage limitation” field of all KILM tables relating to employment. The higher minimum hours used for contributing family workers is in keeping with an older international standard adopted by the International Conference of Labour Statisticians in 1954. According to the 1954 ICLS, contributing family workers were required to have worked at least one-third of normal working hours to be classified as employed. The special treatment was abandoned at the 1982 ICLS.

Box 2. Resolution concerning statistics of the economically active population, employment, unemployment and underemployment, adopted by the 13th International Conference of Labour Statisticians, October 1982 [relevant paragraphs]

Concepts and definitions

Employment (para. 9)

1. The “employed” comprise all persons above a specified age who during a specified brief period, either one week or one day, were in the following categories:
 - a. “paid employment”:
 - i. “at work”: persons who during the reference period performed some work for wage or salary, in cash or in kind;
 - ii. “with a job but not at work”: persons who, having already worked in their present job, were temporarily not at work during the reference period and had a formal attachment to their job. This formal job attachment should be determined in the light of national circumstances, according to one or more of the following criteria: (i) the continued receipt of wage or salary; (ii) an assurance of return to work following the end of the contingency, or an agreement as to the date of return; (iii) the elapsed duration of absence from the job which, wherever relevant, may be that duration for which workers can receive compensation benefits without obligations to accept other jobs;
 - b. “self-employment”:
 - i. “at work”: persons who during the reference period performed some work for profit or family gain, in cash or in kind;
 - ii. “with an enterprise but not at work”: persons with an enterprise, which may be a business enterprise, a farm or a service undertaking, who were temporarily not at work during the reference period for any specific reason.
2. For operational purposes, the notion of “some work” may be interpreted as work for at least one hour.
3. Persons temporarily not at work because of illness or injury, holiday or vacation, strike or lock-out, educational or training leave, maternity or parental leave, reduction in economic activity, temporary disorganization or suspension of work due to such reasons as bad weather, mechanical or electrical breakdown, or shortage of raw materials or fuels, or other temporary absence with or without leave should be considered as in paid employment provided they had a formal job attachment.
4. Employers, own account workers and members of producers’ cooperatives should become considered as in self-employment and classified as “at work” or “not at work”, as the case may be.
5. Unpaid family workers at work should be considered as in self-employment irrespective of the number of hours worked during the reference period. Countries which prefer for special reasons to set a minimum time criterion for the inclusion of unpaid family workers among the employed should identify and separately classify those who worked less than the prescribed time.
6. Persons engaged in the production of economic goods and services for own and household consumption should be considered as in self-employment if such production comprises an important contribution to the total consumption of the household.
7. Apprentices who received pay in cash or in kind should be considered in paid employment and classified as “at work” or “not at work” on the same basis as other persons in paid employment.
8. Students, homemakers and others mainly engaged in non-economic activities during the reference period, who at the same time were in paid employment or self-employment as defined in subparagraph (1) above, should be considered as employed on the same basis as other categories of employed persons and be identified separately, where possible.
9. Members of the armed forces should be included among persons in paid employment. The armed forces should include both the regular and the temporary members as specified in the most recent revision of the International Standard Classification of Occupations (ISCO).

KILM 3. Status in employment

Introduction

The indicator of status in employment distinguishes between two categories of the total employed. These are: (a) wage and salaried workers (also known as employees); and (b) self-employed workers. These two groups of workers are presented as percentages of the total employed for both sexes and for males and females separately. Information on the subcategories of the self-employed group – self-employed workers with employees (employers), self-employed workers without employees (own-account workers), members of producers' cooperatives and contributing family workers (also known as unpaid family workers) – is not available for all countries but is presented wherever possible. Table 3 currently covers 188 countries.

Use of the indicator

This indicator provides information on the distribution of the workforce by status in employment and can be used to answer questions such as what proportion of employed persons in a country (a) work for wages or salaries; (b) run their own enterprises, with or without hired labour; or (c) work without pay within the family unit? According to the International Classification of Status in Employment (ICSE), the basic criteria used to define the status groups are the types of economic risk that they face in their work, an element of which is the strength of institutional attachment between the person and the job, and the type of authority over establishments and other workers that the job-holder has or will have as an explicit or implicit result of the employment contract.¹

Breaking down employment information by status in employment provides a statistical basis

¹ Resolution concerning the international classification of status in employment, adopted by the 15th International Conference of Labour Statisticians, Geneva, 1993; <http://www.ilo.org/public/english/bureau/stat/download/res/icse.pdf>.

for describing workers' behaviour and conditions of work, and for defining an individual's socio-economic group.² A high proportion of wage and salaried workers in a country can signify advanced economic development. If, on the other hand, the proportion of own-account workers (self-employed without hired employees) is sizeable, it may be an indication of a large agriculture sector and low growth in the formal economy. Contributing family work is a form of labour – generally unpaid, although compensation might come indirectly in the form of family income – that supports production for the market. It is particularly common among women, especially women in households where other members engage in self-employment, specifically in running a family business or in farming. Where large shares of workers are contributing family workers, there is likely to be poor development, little job growth, widespread poverty and often a large rural economy.

Own-account workers and contributing family workers have a lower likelihood of having formal work arrangements, and are therefore more likely to lack elements associated with decent employment, such as adequate social security and a voice at work. Therefore, the two statuses are summed to create a classification of 'vulnerable employment', while wage and salaried workers together with employers constitute 'non-vulnerable employment'. The vulnerable employment rate, which is the share of vulnerable employment in total employment, is an indicator of the MDG employment target on decent work.³ Globally, just below half of the employed are in vulnerable employment, but in many low-income countries this share is much higher.

Because of the stronger association of wage and salaried workers with decent work, KILM 3 also presents this group of workers as a proportion of the working-age population. This

² United Nations: *Handbook for Producing National Statistical Reports on Women and Men*, Social Statistics and Indicators, Series K, No. 14 (New York, 1997), p. 217.

³ See ILO: *Key Indicators of the Labour Market, Sixth Edition* (Geneva, 2009), Chapter 1, section C; ILO: *Key Indicators of the Labour Market, Fifth Edition* (Geneva, 2007), Chapter 1, section A; and United Nations: *The Millennium Development Goals Report 2013* (New York).

proportion - the paid employment-to-population ratio - is useful as a basis for comparisons of employment across countries taking quality of work into account. For example, in Namibia the share of wage and salaried workers in total employment in 2008 was 81 per cent, which is exceptionally high in the context of sub-Saharan Africa. However, the paid employment-to-population ratio was only 28 per cent, and this indicator better illustrates the challenges of creating decent work in this country.⁴

The indicator of status in employment is strongly linked to the employment-by-sector indicator (KILM 4). With economic growth, one would expect to see a shift in employment from the agricultural to the industry and services sectors, which, in turn, would be reflected in an increase in the number of wage and salaried workers. Also, a shrinking share of employment in agriculture would result in a lower proportion of contributing family workers, who are often widespread in the rural sector in developing economies. Countries that show falling proportions of either the share of own-account workers or contributing family workers, and a complementary rise in the share of employees, accompany the move from a low-income situation with a large informal or rural sector to a higher-income situation with high job growth. The Republic of Korea and Thailand are such examples, where large shifts in status in employment have accompanied economic growth.

Shifts in proportions of status in employment are generally not as sharp or as clear as shifts in sectoral employment. A country with a large informal economy, in both the industrial and services sectors, may tend to have larger proportions of both self-employed and contributing family workers (and thus higher rates of vulnerable employment) than a country with a smaller informal economy. It may be more relevant to view status in employment within the various sectors in order to determine whether there has been a change in their relative shares. Such degree of detail is likely to be available in recently conducted labour force surveys or population censuses.⁵

⁴ See Sparreboom, T. and Abdullaev, U.: *Employment trends and decent work in Namibia*, paper presented at the Labour Market Information and Analysis Workshop, Windhoek (March 2013).

⁵ See ILO: *Key Indicators of the Labour Market, Fifth Edition* (Geneva, 2007), Chapter 1, section B.

Definitions and sources

International recommendations for the status in employment classification have existed since before 1950.⁶ In 1958, the United Nations Statistical Commission approved the International Classification by Status in Employment (ICSE). At the 15th International Conference of Labour Statisticians (ICLS) in 1993, the definitions of categories were revised. The 1993 revisions retained the existing major categories, but attempted to improve the conceptual basis for the distinctions made and the basic difference between wage employment and self-employment.

The 1993 ICSE categories and extracts from their definitions follow:

- i. **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.
- ii. **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).
- iii. **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.
- iv. **Members of producers’ cooperatives** are workers who hold “self-employment jobs” [see ii or iii above] in a cooperative producing goods and services.
- v. **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 The Sixth International Conference of Labour Statisticians (1947) and the 1950 Session of the United Nations Population Commission both made relevant recommendations for statistics on employment and unemployment and on population censuses respectively.

- vi. 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 status-in-employment indicator presents all six groups used in the ICSE definitions. The two major groups - self-employed and employees - cover the two broad types of status in employment. The remaining four – employers (group ii); own-account workers (group iii); members of producers' cooperatives (group iv); and contributing family workers (group v) – are sub-categories of total self-employed. The number in each status category is divided by total employment to arrive at the percentages shown in table 3. As was mentioned before, the vulnerable employment rate is calculated as the sum of contributing family workers and own-account workers as a percentage of total employment. The paid employment-to-population ratio expresses the number of employees (group i) as a proportion of the population of working age.

Most of the information for this indicator was gathered from international repositories of labour market data, including the ILO Department of Statistics, Yearbook of Labour Statistics (LABORSTA) database and the new ILOSTAT database,⁷ the Statistical Office of the European Communities (EUROSTAT), the Organisation for Economic Co-operation and Development Labour Force Statistics Database (OECD), and Latin America and the Caribbean Labour Information System (QUIPUSTAT) with additions from websites of national statistical offices.

Limitations to comparability

The indicator on status in employment can be used to study how the distribution of the workforce by status in employment has changed over time for a particular country; how this distribution differs across countries; and how it has developed over the years for different countries. However, 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 (e.g. Slovakia). The effects of this non-standard grouping are likely to be small. More detailed comparisons within the group of self-employed are difficult if only combinations of subcategories are available; for example, in a number of countries own-account workers include employers (e.g. Bahamas, Ukraine), members of producers' cooperatives (e.g. Poland) or contributing family workers (e.g. Azerbaijan) for certain periods.

It is also important to note that information from labour force surveys is not necessarily consistent in terms of what is included in employment. For example, reporting civilian employment 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 some of the Latin American countries with results from the rest of the world because employment-by-status information for several countries (Argentina, Peru) relates to urban areas only.⁸

For “wage and salaried workers” one needs to be careful about the coverage, noting whether, as mentioned above, it refers only to

⁷ 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://laborsta.ilo.org>.

⁸ When performing queries on this table and tables 4a-d on employment by sector, we strongly recommend removing countries that are not of national coverage from the selection when making comparisons across countries. On the software, this can be done by performing the query for all data and then refining the parameters to select “national only” under “Geographic coverage”.

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.

KILM 4. Employment by sector

Introduction

The indicator for employment by sector divides employment into three broad groupings of economic activity: agriculture, industry and services. Table 4a presents data for 194 countries for the three sectors as a percentage of total employment. Although data are limited to one or two years in the majority of countries in sub-Saharan Africa and the Middle East and North Africa, every region is covered. Because users may be interested in analysing trends in employment in greater sectoral detail, the KILM also includes three tables showing detailed breakdowns of employment by sector as defined by the International Standard Industrial Classification of all Economic Activities (ISIC). Table 4b presents employment by the latest revision, ISIC Revision 4 (2008) tabulation category as a percentage of total employment, table 4c presents the same according to ISIC Revision 3 (1990) and table 4d presents the disaggregation according to ISIC Revision 2 (1968) major divisions (See box 4 for the list of 1-digit sector levels for each ISIC revision). Sectoral breakdowns are shown by sex for virtually all countries covered.

Use of the indicator

Sectoral information is particularly useful in identifying broad shifts in employment and stages of development. In the textbook case of economic development, jobs are reallocated from agriculture and other labour-intensive primary activities to industry and finally to the services sector; in the process, workers migrate from rural to urban areas. In a large majority of countries, services are currently the largest sector in terms of employment. In most of the remaining countries employment is predominantly agricultural.

Classification into broad groupings may obscure fundamental shifts within industrial patterns. An analysis of tables 4b to 4d, therefore, allows identification of individual industries and services where employment is growing or stagnating. Teamed with information on job vacancies by sector, the more detailed data,

viewed over time, should provide a picture of where demand for labour is focused and, as such, could serve as a guide for policy makers designing skills and training programmes that are aimed to improve the match between labour supply and demand. Of particular interest to many researchers is employment in the manufacturing sector (ISIC 4, tabulation category C, ISIC 3, tabulation category D and ISIC 2, major division 3). One could also investigate, for example, how employment in the accommodations and food services sector (ISIC 4, tabulation category I and ISIC 3 tabulation category H) has evolved in countries where tourism comprises a major portion of gross national product.

It is also interesting to study sectoral employment flows in connection with productivity trends (see KILM 17) in order to separate within-sector productivity growth (i.e. resulting perhaps from changes in capital or technology) from productivity growth resulting from shifts of workers from lower- to higher-productivity sectors.

Finally, the breakdown of the indicator by sex allows for analysis of gender segregation of employment by sector. Are men and women equally distributed across sectors, or is there a concentration of females among the services sector? Women may be drawn into lower-paying service activities that allow for more flexible work schedules thus making it easier to balance family responsibilities with work life. Segregation of women in certain sectors may also result from cultural attitudes that prevent them from entering industrial employment.

Definitions and sources

For the purposes of the aggregate sectors shown in table 4a, the agriculture, industry and services sectors are defined by the International Standard Industrial Classification (ISIC) System.¹

¹ United Nations: *International Standard Industrial Classification of all Economic Activities*, Series M, No. 4, Rev. 3 (New York, 1989; Sales No. E.90.XVII.11). Also available in Arabic, Chinese, French, Russian and Spanish. All ISIC versions may be found on website <http://unstats.un.org/unsd/cr/registry/>.

Box 4. International Standard Industrial Classification of all Economic Activities

Revision 2, 1968 – Major divisions

- 0 Activities not adequately defined
- 1 Agriculture, hunting, forestry and fishing
- 2 Mining and quarrying
- 3 Manufacturing
- 4 Electricity, gas and water
- 5 Construction
- 6 Wholesale and retail trade and restaurants and hotels
- 7 Transport, storage and communication
- 8 Financing, insurance, real estate and business services
- 9 Community, social and personal services

Revision 3, 1990 – Tabulation categories¹

- A Agriculture, hunting and forestry
- B Fishing
- C Mining and quarrying
- D Manufacturing
- E Electricity, gas and water supply
- F Construction
- G Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods
- H Hotels and restaurants
- I Transport, storage and communications
- J Financial intermediation
- K Real estate, renting and business activities
- L Public administration and defence; compulsory social security
- M Education
- N Health and social work
- O Other community, social and personal services activities
- P Private households with employed persons
- Q Extra-territorial organizations and bodies
- X Not classifiable by economic activity

Revision 4, 2008

Revision 4 of ISIC was adopted in August 2008 by the United Nations Statistical Commission and countries were expected to begin reporting data accordingly in 2009. The revision's objectives are to enhance its relevance and comparability with other standard classifications used around the world, while ensuring its continuity. ISIC Revision 4 incorporates new economic production structures and activities. Moreover, the structure differs significantly from ISIC Revision 3 in order to better reflect current economic organization throughout the world. Meanwhile, the proposed classification structure allows for improved comparison with other standards, such as the Classification of Economic Activities in the European Community (NACE), North American Industry Classification System (NAICS) and Australian and New Zealand Standard Industrial Classification (ANZSIC). Specifically, a comprehensive alignment has been retained with NACE at all levels of the classification, while clear links with NAICS and ANZSIC have been developed at the two-digit level.

¹ In May 2002, ISIC Revision 3.1 superseded Revision 3.0. Because the changes pertain to the more detailed level of the classification hierarchy only, that is, the 2- to 4-digit level, the 1-digit level data presented in table 4c remain unaltered under Revision 3.1.

(box 4 continued)

Tabulation categories:

- A Agriculture, forestry and fishing
- B Mining and quarrying
- C Manufacturing
- D Electricity, gas, steam and air conditioning supply
- E Water supply; sewerage, waste management and remediation activities
- F Construction
- G Wholesale and retail trade; repair of motor vehicles and motorcycles
- H Transportation and storage
- I Accommodation and food service activities
- J Information and communication
- K Financial and insurance activities
- L Real estate activities
- M Professional, scientific and technical activities
- N Administrative and support service activities
- O Public administration and defence; compulsory social security
- P Education
- Q Human health and social work activities
- R Arts, entertainment and recreation
- S Other service activities
- T Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use
- U Activities of extraterritorial organizations and bodies

Full details on the latest revision and links to crosswalks between previous revisions are available at <http://unstats.un.org/unsd/cr/registry/isic-4.asp>.

The agriculture sector comprises activities in agriculture, hunting, forestry and fishing, in accordance with major division 1 of ISIC 2, categories A and B of ISIC 3 and category A of ISIC 4. The industry sector comprises mining and quarrying, manufacturing, construction and public utilities (electricity, gas and water), in accordance with major divisions 2 to 5 of ISIC 2, categories C to F of ISIC 3 or categories B to F of ISIC 4. The services sector consists of wholesale and retail trade, restaurants and hotels, transport, storage and communications, finance, insurance, real estate and business services, and community, social and personal services. This sector corresponds to major divisions 6 to 9 of ISIC 2 or categories G to Q of ISIC 3 or categories G to U of ISIC 4. See the table below for a representation of how the aggregate sectors are calculated according to the different ISIC revisions:

Aggregate sector	ISIC 2 major divisions	ISIC 3 categories	ISIC4 categories
Agriculture	1	A+B	A
Industry	2-5	C-F	B-F
Services	6-9	G-Q	G-U
Sector not adequately defined	0	X	n/a

Information for this indicator has been assembled from a number of international repositories and is derived from a variety of sources, including household or labour force surveys, official estimates and censuses. In a very few cases and only where other types of sources are not available, information is derived from insurance records and establishment surveys. The primary repositories used for the indicator are the ILO's LABORSTA database and the new ILOSTAT database, and EUROSTAT data, which are based on the European Labour Force Survey. These sources are augmented by various regional repositories, such as QUIPUSTAT, the ILO's Latin American and the Caribbean Labour Information System, and by data gathered directly from publications or websites of national statistical offices.

Limitations to comparability

Information on a country provided by the employment-by-sector indicator can differ according to whether the armed forces, the self-employed and contributing family members are included in the estimate. These differences

introduce elements of non-comparability across countries. When the armed forces are included in the measure of employment they are usually allocated to the services sector; the services sector, therefore, in countries that do not include armed forces tends to be understated in comparison with countries where they are included. Information obtained from establishment surveys covers only employees (wage and salary earners); thus, the self-employed and contributing family members are excluded. In such cases, the employment share of the agriculture sector in particular is severely under-represented in comparison with countries that report total employment without exclusion of status groups. In table 4a, the only records from an establishment survey are found for Ethiopia (1994) and Belarus (1987-94).

Where information is reported for total employment or civilian employment for the entire country, comparability across countries is reasonable for the employment-by-sector indicator, because of the similarity in coverage.

For some years in certain countries, the sectoral information relates only to urban areas, so that little or no agricultural work is recorded. This is the case for some Latin American countries. Caution should be used in the analysis of such data.²

Since 1980, different ISIC systems have sometimes been used coincidentally. A slight majority of countries use Revision 3 as opposed to Revision 2 or the new Revision 4. The notes to table 4a show the version of the ISIC used for each country and year. On occasion, a country may have continued to use ISIC 2 even after starting a new data series according to ISIC 3. In such cases, where two series based on different classification systems exist for the same year, the most recent classification is shown in table 4a. Although these different classification systems can have large effects at detailed levels of industrial classification, changes from one ISIC to another should not have a significant impact on the information for the three broad sectors presented in table 4a.

² When performing queries on the employment by sector tables (4a-4d) and table 3 on status in employment, we strongly recommend removing countries that are not of national coverage from the selection when making comparisons across countries. On the software, this can be done by performing the query for all data and then refining the parameters to select "national only" under "Geographic coverage".

KILM 5. Employment by occupation

Introduction

The indicator for employment by occupation comprises statistics on jobs classified according to major groups as defined in one or more versions of the International Standard Classification of Occupations (ISCO). The most recent version of the International Standard of Occupation, ISCO-08, distinguishes 10 major groups: (1) Managers; (2) Professionals; (3) Technicians and associate professionals; (4) Clerical support workers; (5) Service and sales workers; (6) Skilled agricultural, forestry and fishery workers; (7) Craft and related trade workers; (8) Plant and machine operators and assemblers; (9) Elementary occupations; and (10) Armed forces occupations. Since 2008 countries have progressively adapted their national systems to permit them to report data according to ISCO-08. Data for earlier years, and for countries that have not yet adapted their national systems, are classified according to earlier versions of the classification: ISCO-88 and ISCO-68 (see box 5a for the occupational groups covered by these two classification standards).

Table 5a presents data for the major groups of ISCO-08, which are available for 41 countries, and table 5b presents data for the major groups of ISCO-88 for 143 countries. Although at least some observations are available for every region, data are lacking for most countries in sub-Saharan Africa, and are sparse for the Middle East and North Africa. Table 5c presents data according to ISCO-68. This table mostly covers earlier years, but some countries continue to report major groups from ISCO-68 alongside those from ISCO-88. Table 5c contains data on 74 countries.

All tables include both the number of workers by occupation and the share of workers in an occupational group as a percentage of the total number of workers, and for men and women separately.

Use of the indicator

Occupational statistics are used for research on labour market topics ranging from occupational safety and health to labour market segmentation. Occupational analyses also inform economic and labour policies in areas such as educational planning, migration and employment services. Occupational information is particularly important for the identification of changes in skill levels in the labour force. In many advanced economies, but also in developing economies, occupational employment projection models are used to inform policies aiming to meet future skills needs, as well as to advise students and jobseekers on expected job prospects. Ideally, these are conducted on a more detailed level than the ISCO Major groups and go beyond tables 5a through 5c of the KILM.

Changes in the occupational distribution of an economy can be used to identify and analyse stages of development. In the textbook case of economic development, when labour flows from agriculture to the industrial and services sectors, these flows will be visible in the occupational distribution as well. The share of skilled agricultural and fishery workers will typically decrease, while rising skill requirements are likely to be reflected in a decreasing share of elementary occupations, rising shares of high-skilled occupational groups such as professionals and technicians, and the need for rising educational attainment levels.

In developed economies, which already have relatively well-educated labour forces, increases in the shares of high-skilled occupational groups (see box 5a) are associated with the advance of the knowledge economy and additional changes in the structure of economies. Furthermore, shifts within occupational groups may be equally important. For example, the growing importance of information and communication technology (ICT) has resulted in a proliferation of ICT-related jobs.

The breakdown of the indicator by sex allows for an analysis of gender segregation of employment. Division of labour markets on the basis of

sex is one of the most pervasive characteristics of labour markets around the world, which is reflected in differentials in occupational distributions between men and women (as well as in sectoral distributions).¹ Such differentials can be analysed at detailed levels of the occupational classification,² but even at the most aggregated level, large differences by sex are evident.

Definitions and sources

Tables 5a to 5c classify jobs by occupation. A job is defined, according to ISCO-08, as a set of tasks and duties performed, or meant to be performed, by one person, including for an employer or in self-employment. An occupation is defined as a set of jobs whose main tasks and duties are characterised by a high degree of similarity.³ Occupational classifications categorize all jobs into groups, which are hierarchically structured in a number of levels. The International Standard Classification of Occupations 2008 has a four-level hierarchy and breaks down its 10 major groups into sub-major groups, minor groups and unit groups of occupations at its most detailed level. At the most aggregate level, there are ten major groups (see box 5a).⁴ The box also lists the major groups defined in ISCO-88 and ISCO-68. For more details on the International Standard Classifications of Occupations 2008, please refer to box 5b.

The ten major groups in ISCO-08 (and in the previous ISCO-88), are associated with four broad skill levels. These levels are defined in relation to the levels of education specified in the International Standard Classification of Education (ISCED).⁵ In ISCO-08, the nature of the work performed in relation to characteristic

tasks, defined for each skill level, takes precedence over formal educational requirements. The relationship between major groups and skill levels are summarized in box 5a.⁶ The use of ISCED categories to assist in defining the four skill levels does not imply that the skills necessary to perform the tasks and duties of a given job can be acquired only through formal education. The skills may be, and often are, acquired through (informal) training and experience. In addition, it should be emphasized that the focus in both ISCO-88 and ISCO-08 is on the skills required to carry out the tasks and duties of an occupation, and not on whether a worker employed in a particular occupation is more or less skilled, or more or less qualified, than another worker in the same occupation.

Although the ten major groups defined in ISCO-88 and ISCO-08 are similar in content and in name, some occupations are classified in different major groups according to each of these two versions. These changes reflect changes in skill requirements arising from technological change as well as changes in the way the skill concept of skill level was applied to the design of the classification, to give less emphasis to formal educational requirements. Data classified at major group level according to the two versions are therefore not strictly comparable, and represent a break in series.

Information for this indicator has primarily been assembled from international repositories, which have been augmented by some data gathered directly from publications or websites of national statistical offices. The main repositories for this indicator are the databases of the ILO (LABORSTA and ILOSTAT) and EUROSTAT. Additional information is obtained from National Statistical Offices. Most of the information derives from labour force surveys, but in a limited number of countries, the information is gathered from other household surveys, population censuses, official estimates and, in particular for table 5c, establishment surveys.

Limitations to comparability

Information on a country provided by the employment by occupation indicator can differ according to whether the armed forces are included in the estimate. Armed forces constitute a separate major group, but in some countries are included in the most closely matching civilian

¹ See for example, ILO, *Global Employment Trends for Women 2012* (Geneva, 2012); http://www.ilo.org/global/research/global-reports/global-employment-trends/WCMS_195447/lang-nl/index.htm.

² See, e.g., Anker, R.: *Gender and jobs. Sex segregation of occupations around the world* (Geneva, ILO, 1998).

³ Resolution concerning updating the International Standard Classification of Occupations, adopted by the Tripartite Meeting of Experts on Labour Statistics on Updating the International Classification of Occupations (ISCO), 3-6 December 2007; <http://www.ilo.org/public/english/bureau/stat/isco/docs/resol08.pdf>.

⁴ For the classification according to all available ISCO versions and levels, with supporting documentation, see the ILO Department of Statistics website on ISCO at <http://www.ilo.org/public/english/bureau/stat/isco/index.htm>.

⁵ For further details about ISCED, see the manuscript for KILM 14.

⁶ The concept of skills level was introduced with ISCO-88, and was not used explicitly or systematically in ISCO-68.

Box 5a. International Standard Classifications of Occupations: major groups

Occupational classification	ISCO skill level (see Key below)
ISCO-2008 – Major groups	
1 Managers	3+4
2 Professionals	4
3 Technicians and associate professionals	3
4 Clerical support workers	2
5 Service and sales workers	2
6 Skilled agricultural, forestry and fishery workers	2
7 Craft and related trade workers	2
8 Plant and machine operators and assemblers	2
9 Elementary occupations	1
0 Armed forces occupations	1+2+4
ISCO-1988 – Major groups	
1 Legislators, senior officials and managers	–
2 Professionals	4
3 Technicians and associate professionals	3
4 Clerks	2
5 Service workers and shop and market sales workers	2
6 Skilled agricultural and fishery workers	2
7 Craft and related trades workers	2
8 Plant and machine operators and assemblers	2
9 Elementary occupations	1
0 Armed forces	–
ISCO-1968 – Major groups	
0/1 Professional, technical and related workers	n.a.
2 Administrative and managerial workers	n.a.
3 Clerical and related workers	n.a.
4 Sales workers	n.a.
5 Service workers	n.a.
6 Agricultural, animal husbandry and forestry workers, fishermen and hunters	n.a.
7/8/9 Production and related workers, transport equipment operators and labourers	n.a.
X Workers not classifiable by occupation	n.a.
Y Members of the armed forces	n.a.

Key: ISCO skill levels

- (1) The first ISCO skill level was defined with reference to ISCED category 1, comprising primary education which generally begins at the age of 5, 6 or 7 and lasts about five years.
- (2) The second ISCO skill level was defined with reference to ISCED categories 2 and 3, comprising first and second stages of secondary education. The first stage begins at the age of 11 or 12 and lasts about three years, while the second stage begins at the age of 14 or 15 and also lasts about three years. A period of on-the-job training and experience may be necessary, sometimes formalised in apprenticeships or traineeships. This period may supplement the formal training or replace it partly or, in some cases, wholly.

(box 5a continued)

- (3) The third ISCO skill level was defined with reference to ISCED category 5, comprising education which begins at the age of 17 or 18, lasts about four years, and leads to an award not equivalent to a first university degree.
- (4) The fourth ISCO skill level was defined with reference to ISCED categories 6 and 7, comprising education which also begins at the age of 17 or 18, lasts about three, four or more years, and leads to a university or postgraduate university degree, or the equivalent.

Box 5b. International Standard Classification of Occupations – 2008

ISCO-1988, which was until recently the most widely used international classification of occupations, is now superseded by ISCO-08. The revised classification aims to provide:

- a contemporary and relevant basis for the international reporting, comparison and exchange of statistical and administrative information about occupations;
- a useful model for the development of national and regional classifications of occupations; and
- a system that can be used directly in countries that have not developed their own national classifications.

It should be emphasized that, while serving as a model, ISCO-08 is not intended to replace any existing national classification of occupations, as the occupation classifications of individual countries should fully reflect both the structure of the national labour market and information needs for nationally relevant purposes. However, countries whose occupational classifications are aligned to ISCO-08 in concept and structure will find it easier to develop the procedures to make their occupational statistics internationally comparable.

Even though the framework and the concepts underpinning ISCO-08 are essentially unchanged from those used in ISCO-88, there are significant differences in the treatment of some occupational groups. Some of the more significant changes include (see source for a comprehensive overview):

The sections of the classification dealing with managerial occupations have been reorganized so as to overcome problems experienced by users of ISCO-88.

Occupations associated with information and communication technology have been updated and expanded, allowing for the identification of professional and associate professional occupations in this field as sub-major groups.

Occupations concerned with the provision of health services have been expanded, in order to provide sufficient detail to allow ISCO-08 to be used as the basis for the international reporting of data on the health workforce. These occupations have been grouped together, where possible, to provide two sub-major groups and a separate minor group devoted to occupations in health services.

Source: International Standard Classification of Occupations: ISCO-08 (Geneva, ILO), see: http://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_172572.pdf

occupation, depending on the type of work performed by the individual armed forces member concerned, or are included in non-classifiable workers. In some countries, members of the armed forces are excluded from important data sources, such as the Labour Force Survey. Furthermore, in several countries, certain major groups are combined, in particular major groups 2 and 3, and major groups 7, 8 and sometimes 9 (ISCO-88) are taken together in one more aggregated group. These differences introduce elements of non-comparability across countries.

If information is based on establishment surveys, which is mostly limited to table 5c, only employees are covered, which results in non-

comparability with sources covering all employment such as labour force surveys. In terms of the number of countries affected, an even more important difference is the non-comparability of data if occupational information relates to urban areas only. Urban coverage is available for some Latin American countries, and caution should be used in the analysis of such data.⁷

⁷ When performing queries on the employment by occupation tables (5a to c), we strongly recommend removing countries that are not of national coverage from the selection when making comparisons across countries. On the software, this can be done by performing the query for all data and then refining the parameters to select “national only” under “Geographic coverage”.

KILM 6. Part-time workers

Introduction

The indicator on part-time workers focuses on individuals whose working hours total less than “full time”, as a proportion of total employment. Because there is no internationally accepted definition as to the minimum number of hours in a week that constitute full-time work, the dividing line is determined either on a country-by-country basis or through the use of special estimations. Two measures are calculated for this indicator: total part-time employment as a proportion of total employment, sometimes referred to as the “part-time employment rate”; and the percentage of the part-time workforce comprised of women. Table 6 contains information for 104 economies.

Use of the indicator

There has been rapid growth in part-time work in the past few decades in developed economies. This trend is related to the increase in female labour force participation, but also results from policies attempting to raise labour market flexibility in reaction to changing work organization within industries and to the growth of the services sector. Of concern to policy-makers in the apparent move towards more flexible working arrangements is the risk that such working arrangements may be less economically secure and less stable than full-time employment.¹

Part-time employment has been seen as an instrument to increase labour supply. Indeed, as part-time work may offer the chance of a better balance between working life and family responsibilities, and suits workers who prefer shorter working hours and more time for their private life, it may allow more working-age persons to actually join the labour force. Also,

¹ For a review of recent trends in working-time arrangements, see Boulin, J.-Y. et al. (eds.): *Decent working time: New trends, new issues* (Geneva, ILO, 2006) and Messenger, J.C. (ed.): *Working time and workers' preferences in industrialized countries: Finding the balance* (Routledge, 2004).

policy-makers have promoted part-time work in an attempt to redistribute working time in countries of high unemployment, thus lowering politically sensitive unemployment rates without requiring an increase in the total number of hours worked.

Part-time employment, however, is not always a choice. A review of KILM 12, time-related underemployment, confirms that a substantial number of part-timers would prefer to be working full-time. While flexibility may be one advantage of part-time work, disadvantages may exist in comparison with colleagues who work full time. For example, part-time workers may face lower hourly wages, ineligibility for certain social benefits and more restricted career and training prospects.² Since the early 1990s, most OECD countries have introduced measures to improve the quality of part-time work, for example with respect to social benefits for part-time workers in line with those of full-time workers. Nevertheless, occupational segregation between part-time and full-time work remains an issue in most countries as it limits occupational choices of part-time workers.³

Looking at part-time employment by sex is useful to see the extent to which the female labour force is more likely to work part time than the male labour force.⁴ Age breakdowns are also significant and often demonstrate that young workers (aged 15 to 24 years) are more likely than adults (25 years and over) to work part time.⁵ A suggested virtue of part-time work is that it facilitates the gradual entry of young persons into the labour force and the exit of older workers from the labour market.

² “How good is part-time work?”, OECD Position paper, July 2010; <http://www.oecd.org/dataoecd/15/16/45602882.pdf>.

³ See Sparreboom, T.: “Gender equality, part-time work and segregation”, paper presented at the *73rd Decent Work Forum*, February 2013, ILO, Geneva.

⁴ See ILO: *Key Indicators of the Labour Market, Seventh Edition* (Geneva, 2011), Chapter 1, section B, “Gender equality, employment and part-time work in developed economies”.

⁵ See ILO: *Global Employment Trends for Youth 2013: A generation at risk* (Geneva, 2013); <http://www.ilo.org/global/research/global-reports/global-employment-trends/youth2013/lang-en/index.htm>.

Definitions and sources

There is no official ILO definition of full-time work, largely because it is difficult to arrive at an internationally agreed demarcation point between full-time and part-time given the national variations of what these terms mean. At the 81st Session of the International Labour Conference in 1994, the ILO defined “part-time worker” as “an employed person whose normal hours of work are less than those of comparable full-time workers”.⁶ Thus, the demarcation point is left to the individual countries to define. Some countries use worker interpretation of their own employment situation for distinguishing full-time versus part-time work; that is, survey respondents are classified according to how they *perceive* their work contribution. (See, for example, results in table 6 based on the European Labour Force Survey with Eurostat as the source.) Other countries use a cut-off point based on weekly hours usually or actually worked. Dividing lines are typically somewhere between 30 and 40 hours a week. Thus, people who work, say, 35 hours or more per week may be considered “full-time workers”, and those working less than 35 hours “part-time workers”.

The definition of a standard work-week can, and often does, provide a legal or cultural basis for the establishment of starting-points for requirements of employee benefits, such as health care, and overtime premiums for hours worked in excess of the standard week. It should be recognized that what might be thought of as the “standard” work-week for one country, could be higher than the official demarcation point for full-time work in a statistical sense. In other words, while a 35- to 40-hour work-week is the probable cut-off standard for full-time work for many industries and workplaces throughout much of the world, national statistical definitions for full-time work are often somewhere between 30 and 37 hours.

In 1997, the Organisation for Economic Co-operation and Development (OECD) initiated an analysis of part-time work definitions and concluded that a definition of part-time work based on a threshold of 30 hours would better suit the purposes of international

comparisons.⁷ Since then, the OECD has carried out work to harmonize data for its member countries, using a 30-hour cut-off, which is displayed in the data for table 6 for countries with OECD as repository.

Labour force surveys serve as the source of information on part-time work for nearly all countries included in table 6. Establishment-based surveys, in which information on employees comes directly from payroll records of establishments, are unlikely to provide information on the number of hours that individuals work and thus cannot be used as a reliable source for this indicator.

Another reason that labour force surveys are the preferred source of information for distinguishing between full- and part-time work is that a certain, varying proportion of workers in all countries possesses more than one job. In such cases, accounting for the primary jobs of survey respondents may result in their classification as part-time workers, but adding information on the second (and possibly third) jobs may boost their hours over the full-time mark. In other words, it is the total number of hours that an individual normally works in a week that determines full- or part-time status, not that person’s job *per se*. Only labour force surveys (and population censuses with fairly extensive questionnaires) can provide information on the total number of hours that individuals work. Nonetheless, many of the countries with information based on labour force surveys still report the number of hours worked on the main job only, thus disregarding the fact that a person may work the equivalent of full-time hours in multiple jobs.⁸

The table notes include the distinction between “usual” and “actual” hours worked. “Usual hours” indicates that it is the number of hours that people *typically* work in a short reference period such as one week, over a long observation period of a month, quarter, season or year that comprises the short reference measurement period used.⁹ Usual hours

⁶ The 81st Session of the International Labour Conference adopted the Part-Time Work Convention (No. 175) and Recommendation (No. 182); texts available at <http://www.ilo.org/ilolex/english/convdisp1.htm>.

⁷ OECD: “The definition of part-time work for the purpose of international comparisons”, in *Labour Market and Social Policy*, Occasional Paper No. 22 (Paris, 1997).

⁸ Users will find information on jobs covered – all jobs, main job only, etc. – in the “job coverage” field of the data table.

⁹ Resolution concerning the measurement of working time, adopted by the 18th International Conference of Labour Statisticians, Geneva, 2008; http://www.ilo.org/global/statistics-and-databases/standards-and-guidelines/resolutions-adopted-by-international-conferences-of-labour-statisticians/WCMS_112455/lang-en/index.htm.

comprise normal working hours as well as overtime or extra time usually worked, whether paid or not. Usual hours do not take into consideration unplanned leave. As an example, a person who usually works 40 hours a week, but who was sick for one day (eight hours) in the survey period, will nevertheless be classified as a full-time worker (for a country with a 35-hour break point for full-time work).

Limitations to comparability

Information on part-time work can be expected to differ markedly across countries, principally because countries use different definitions of full-time work and also because they may have different cultural or workplace norms. The age inclusions for labour force eligibility can also be an important source of variation. Entry ages vary across countries, as do upper age limits. If one country counts everyone over the age of 10 in the survey, while another starts at age 16, the two countries can be expected to have differences in part-time employment rates for this reason alone. Similarly, some countries have no upper age bounds for coverage eligibility, while others draw the line at some point, such as 65 years. Any cut-off linked to age will result in some people being missed among the “employed” counts; as part-time work is particularly prevalent among the older and younger cohorts, this will lower the measured incidence of part-time employment. Yet another basis for variation stems from the definitions used for “unpaid family workers”. Countries that have no hourly bound for inclusion (one hour or more) or a relatively low bound – for instance, 10 hours per week – can be expected to have more part-time workers than those with higher bounds such as 15 hours.

Use of the OECD data set, discussed in the previous section, while largely of benefit to cross-country comparisons, can also have some negative effects. These will depend on the individual situation for each country included in the set, as countries vary in terms of each of the following: the range of full-time/part-time hour cut-offs; standard work-weeks in general or in particular industries or occupations; individual conceptual frameworks for full- and part-time measurement; and the extent of information available to the OECD for the estimation and adjustment process.¹⁰

Although harmonized to the greatest extent possible, part-time measurement still varies according to the usual or actual hours criterion. A criterion based on actual hours will generally yield a part-time rate higher than one based on usual hours, particularly if there are temporary reductions in working time as a result of holiday, illness, etc. Therefore, seasonal effects will play an important role in fluctuations in actual hours worked. In addition, the specification of main job or all jobs may be important. In some countries, the time cut-off is based on hours spent on the main job; in others, on total hours spent on all jobs. Measures may therefore reflect usual or actual hours worked on the main job or usual or actual hours worked on all jobs.

Because of these differences, as well as others that may be specific to a particular country, cross-country comparisons must be made with great care. These caveats notwithstanding, measures of part-time employment can be quite useful for understanding labour market behaviour, more for individual countries but also across countries.

¹⁰ Users with a keen interest in these comparisons should examine OECD: “The definition of part-time work for the purpose of international comparisons”, op. cit.

KILM 7. Hours of work

Introduction

Two measurements related to working time are included in KILM 7 in order to give an overall picture of the time that the employed throughout the world devote to work activities. The first measure relates to the hours that employed persons work per week (table 7a) while the second measure is the average annual hours actually worked per person (table 7b). The statistics in 7a are presented separately for male and female; according to age group (total, youth and adult); and employment status (total, wage and salaried workers and self-employed). The following hour bands are applied in table 7a: less than 25 hours worked per week, between 25 and 34 hours, between 35 and 39 hours, between 40 and 48 hours, between 49 and 59 hours, 40 hours and over, 50 hours and over and 60 hours and over, as available. Currently statistics for 104 economies are presented in table 7a and for 62 economies in table 7b.

Use of the indicator

Issues related to working time have received intensive attention following labour market dynamics triggered by the global economic crisis. Low and stable unemployment rates despite large drops in output in some advanced economies have been claimed to be related to flexibility in working time.¹ Beyond the medium run, the number of hours worked has an impact on the health and well-being of workers.² Some persons in developed and developing economies working full-time have expressed concern about their long working hours and its effects

¹ Hijzen, A. and Martin, S.: "The role of short-time work schemes during the global financial crisis and early recovery: a cross-country analysis", *IZA Journal of Labor Policy*, Vol. 2:5 (Bonn, Institute for the Study of Labor, 2013).

² Spurgeon, A.: *Working time: Its impact on safety and health* (Geneva, ILO, 2003); http://www.ilo.org/travail/whatwedo/publications/lang-en/WCMS_TRAVAIL_PUB_25/index.htm.

on their family and community life.³ Additionally, the number of hours worked has an impact on workers' productivity and on the labour costs of establishments. Measuring the level and trends in working time in a society, for different groups of persons and for individuals, is therefore important when monitoring working and living conditions as well as for analysing economic and broader social developments.⁴

Employers have also shown interest in enhancing the flexibility of working arrangements. They are increasingly negotiating non-standard working arrangements with their workers.⁵ Employees may work only part of the year or part of the week, work at night or on weekends, or enter or leave the workplace at different times of the day. They may have variable daily or weekly schedules, perhaps as part of a scheme that fixes their total working time over a longer period, such as one month or one year. Consequently, employed persons' daily or weekly working time may show large variations, and a simple count of the number of people in employment or the weekly hours of work is insufficient to indicate the level and trend in the volume of work.

"Excessive" working time may be a concern when individuals work more than a "normal" workweek due to inadequate wages earned from the job or jobs they hold. In table 7a, persons could be considered to work excessive hours if they fall within the 49 to 59 hours band, the 50 hours and over or the 60 hours and over bands. (Workers within the 40 to 48 hours per week band are more debateable, and dependant, to a degree, on national circumstances. Only those at the upper end of the range could be safely categorized as working

³ Messenger, J.C. (ed.): *Working time and workers' preferences in industrialized countries: Finding the balance* (Routledge, 2004).

⁴ ILO: *Report II: Measurement of working time*, 18th International Conference of Labour Statisticians, Geneva, November-December 2008; http://www.ilo.org/wcmsp5/groups/public/---dgreports/---stat/documents/publication/wcms_099576.pdf.

⁵ Policy suggestions that preserve health and safety, are family friendly, promote gender equality, enhance productivity and facilitate workers' choice and influence their working hours are provided in: Lee, S., McCann, D. and Messenger, J.: *Working time around the world* (Geneva, ILO, 2007).

excessive hours.) Long hours can be voluntary or involuntary (when imposed by employers). “Inadequate employment related to excessive hours”, also called “over-employment” has been referred to as “a situation where persons in employment wanted or sought to work fewer hours than they did during the reference period, either in the same job or in another job, with a corresponding reduction of income”.⁶

Few countries have actually measured “over-employment” so the measure of persons in employment for more than 50 hours a week could be used as a proxy for persons in employment who usually work beyond what is considered “normal hours” in many countries. However, whether or not this situation is actually desired cannot be assessed, so nothing can be assumed about how many hours people might wish to work. Clearly, the number of hours worked will vary across countries and depends on, other than personal choice, such important aspects as cultural norms, real wages and levels of development.

Definitions and sources

Statistics on the percentage of persons in employment by hours worked per week (table 7a) are mostly calculated on the basis of information on employment by usual-hour bands provided primarily by household-based surveys which cover all persons in employment (exceptions are identified in the notes to table 7a). In all cases, persons totally absent from work during the reference week are excluded. Annual hours actually worked per person (table 7b) are estimated from the results of both household and establishment surveys. For the most part, coverage comprises total employment or employees (wage earners and salaried employees).

The “hours usually worked” per week identifies the most common weekly working schedule of a person in employment over a selected period. The internationally-agreed statistical definition of “usual hours of work” refers to the hours worked in any job during a typical short period such as one week, over a longer period of time, or more technically, as the modal value of the “hours actually worked” per week over a

longer observation period (see box 7).⁷ The definition is applicable to all types of jobs, even those where the worker does not possess a working contract – for example, in small-scale or family enterprises and self-employed workers. Hours usually worked includes overtime that occurs systematically every day or week and excludes time not worked on a usual basis. This measure is not affected by unusual absence or by irregular or unusual overtime, whether worked for premium pay, regular pay, or without compensation.

For some countries, data are available only according to “hours actually worked”. This measure includes time spent at the workplace on productive activities (“direct hours” in the resolution) and on other activities that are part of the tasks and duties of the job concerned (“related hours”). The latter can include, for example, cleaning and preparing working tools, certain on-call duties. The concept also includes time spent at the place of work when the person is inactive for reasons linked to the production process or work organization (“down time”), as during these periods paid workers, for example, still remain at the disposal of their employer while self-employed will continue working on other tasks and duties. “Hours actually worked” also includes (“resting time”) short rest periods spent at the place of work as they are necessary for human beings and because they are difficult to distinguish separately, even if paid workers, for example, are not “at the disposal” of their employer during those periods. Explicitly excluded are lunch breaks if no work is performed, as they are normally sufficiently long to be easily distinguished from work periods. The international definition relates to all types of workers – whether in salaried or self-employment, paid or unpaid, and carried out in any location, including the street, field, home, etc.

Average annual hours actually worked, as presented in table 7b, is a measure of the total number of hours actually worked during a year per employed person. The measure incorporates variations in part-time and part-year employment, in annual leave, paid sick leave and other types of leave, as well as in flexible daily and weekly working schedules. Conventional

⁶ ILO: *Final Report*, 16th International Conference of Labour Statisticians, Geneva, October 1998; <http://www.ilo.org/public/english/bureau/stat/download/16thicls/repconf.pdf>.

⁷ “Resolution concerning the measurement of working time”, adopted by the 18th International Conference of Labour Statisticians, Geneva, November-December 2008; http://www.ilo.org/global/What_we_do/Statistics/standards/resolutions/lang-en/docName-WCMS_112455/index.htm. (See box 7 for a summary and relevant paragraphs.)

measures of employment and weekly hours worked (as in table 7a) cannot do so. Household-based surveys unless continuous are rarely able to measure accurately the hours actually worked by the population for a long reference period, such as a year. Establishment surveys may use longer reference periods than household surveys but do not cover the whole working population unlike household surveys. Consequently, the “average annual hours actually worked” is often estimated on the basis of statistics from both sources.

The Organisation for Economic Co-operation and Development (OECD) is the source of most estimates of annual hours actually worked per person in table 7b. The OECD estimates for nine countries⁸ reproduced in table 7b are based on National Accounts questionnaires that measure hours worked by employed persons (employees and self-employed) in domestic production during one year. Hours worked refer to production within effective and normal working hours, with addition for overtime while deducting absences due to sickness, leave of absence, vacations and any labour conflicts. The estimated hours generated are the same that are used by national accountants as input for the calculation of productivity (output per hour worked). Additional countries provide data based on their own series that are consistent with the National Accounts (Australia, Canada, Finland, France, Germany, Hungary, Norway, Slovakia and Sweden).

OECD estimates for Belgium, Ireland, Luxembourg, the Netherlands and Portugal apply a second estimation procedure, taking information from legislation or collective agreements that concern “normal hours”. This consists of multiplying the weekly “normal hours” (measured in the European Labour Force Survey) by the number of weeks that workers have been in employment during the year. Annual leave and public holidays are subtracted to obtain a net amount of “annual normal time”. Estimates of overtime obtained from sources such as household or establishment surveys are added, and estimates of time taken in substantial forms of absences, obtained from household surveys or administrative sources, are then subtracted. In practice, some additional adjustments may be needed when the “normal hours” vary over the year.

The remainder of OECD country estimates are based on statistics for time actually worked

for each week of the year, derived from continuous household surveys. Statistics for a month or quarter when used need to be adjusted for the number of working days in that period. Further adjustments are made for public holidays and strike activity, normally on the basis of information obtained from administrative sources. The resulting estimates may then be added up to obtain the total annual “hours actually worked”, which is then divided by the average number of employed persons during the year.

Limitations to comparability

Statistics based on hours usually worked are not strictly comparable to statistics based on hours actually worked. A criterion using hours actually worked will generally yield a higher weekly average than usual hours, particularly if there are temporary reductions in working time as a result of holiday, illness, etc. that will have an impact on the measure of average weekly hours. Seasonal effects will also play an important role in fluctuations in hours actually worked. In addition, the specification of main job or all jobs may be an important one. In some countries, the time cut-off is based on hours spent in the main job; in others on total hours spent in all jobs. Measures may therefore reflect hours usually or actually worked in the main job or in all jobs. Because of these and other differences that may be specific to a particular country, cross-country comparison in table 7a should be undertaken with great care.

The different estimation methods for annual hours of work depend to a large extent on the type and quality of the information available and may lead to estimates that are not comparable. All estimates presented are derivations from numbers gathered from surveys and other sources, usually produced within the national statistical agency. It is difficult to evaluate the impact of estimation differences on their comparability across countries.

The various data collection methods also represent an important source of variation in the working time estimates. Household-based surveys (including the population census) that obtain data from working persons or from other household members can and often cover the whole population, thus including the self-employed. As they use the information respondents provide, their response may contain substantial errors. On the other hand, the data

⁸ Austria, Denmark, Greece, Italy, Republic of Korea, Slovenia, Spain, Switzerland and Turkey.

Box 7. Resolution concerning the measurement of working time, adopted by the 18th International Conference of Labour Statisticians, November-December 2008

Summary

In 2008, the International Conference of Labour Statisticians (ICLS) adopted the resolution concerning the measurement of working time. The resolution revises the existing standards on statistics of hours of work (Resolution concerning statistics of hours of work, adopted by the 13th ICLS, 1962) in order to reflect the working time of persons in all sectors of the economy and in all forms of productive activity towards the achievement of decent work for all, and to provide measurement methodologies and guidelines on a larger number of measures than previously defined internationally, thereby enhancing the standards' usefulness as technical guidelines to States and the consistency and international comparability of related statistics.

The resolution provides definitions for seven concepts of working time associated with the productive activities of a person and performed in a job:

- *Hours actually worked*, the key concept of working time defined for statistical purposes applicable to all jobs and to all working persons;
- *Hours paid for*, linked to remuneration of hours that may not all correspond to production;
- *Normal hours of work*, refers to legally prevailing collective hours;
- *Contractual hours of work*, individuals are expected to work according to contractual relationships as distinct from normal hours;
- *Hours usually worked*, most commonly in a job over a long observation period,
- *Overtime hours of work*, performed beyond contracts or norms; and
- *Absence from work hours*, when working persons do not work;

It also provides definitions for two concepts of working-time arrangements that describe the characteristics of working time in a job, namely the *organization* and *scheduling* of working time, regardless of type of job, and formalized working-time arrangements, that are specific combinations of the characteristics having legal recognition.

Relevant paragraphs

Concepts and definitions

Hours actually worked

11.

- (1) *Hours actually worked* is the time spent in a job for the performance of activities that contribute to the production of goods and/or services during a specified short or long reference period. **Hours actually worked applies to all types of jobs (within and beyond the SNA production boundary)** and is not linked to administrative or legal concepts.
- (2) Hours actually worked measured *within the SNA production boundary* includes time spent directly on, and in relation to, productive activities; down time; and resting time.
 - (a) "Direct hours" is the time spent carrying out the tasks and duties of a job. This may be performed in any location (economic territory, establishment, on the street, at home) and during overtime periods or other periods not dedicated to work (such as lunch breaks or while commuting).
 - (b) "Related hours" is the time spent maintaining, facilitating or enhancing productive activities and should comprise activities such as:
 - (i) cleaning, repairing, preparing, designing, administering or maintaining tools, instruments, processes, procedures or the work location itself; changing time (to put on work clothes); decontamination or washing up time;
 - (ii) purchasing or transporting goods or basic materials to/from the market or source;
 - (iii) waiting for business, customers or patients, as part of working-time arrangements and/or that are explicitly paid for;

- (iv) on-call duty, whether specified as paid or unpaid, that may occur at the work location (such as health and other essential services) or away from it (for example from home). In the latter case, it is included in hours actually worked depending on the degree to which persons' activities and movements are restricted. From the moment when called back for duty, the time spent is considered as direct hours of work;
 - (v) travelling between work locations, to reach field projects, fishing areas, assignments, conferences or to meet clients or customers (such as door-to-door vending and itinerant activities);
 - (vi) training and skills enhancement required by the job or for another job in the same economic unit, at or away from the work location. In a paid-employment job this may be given by the employer or provided by other units.
- (c) "Down time", as distinct from "direct" and "related hours", is time when a person in a job cannot work due to machinery or process breakdown, accident, lack of supplies or power or Internet access, etc., but continues to be available for work. This time is unavoidable or inherent to the job and involves temporary interruptions of a technical, material or economic nature.
- (d) "Resting time" is time spent in short periods of rest, relief or refreshment, including tea, coffee or prayer breaks, generally practised by custom or contract according to established norms and/or national circumstances.
- (3) Hours actually worked measured *within the SNA production boundary* excludes time not worked during activities such as:
- (a) Annual leave, public holidays, sick leave, parental leave or maternity/paternity leave, other leave for personal or family reasons or civic duty. This time not worked is part of absence from work hours (defined in paragraph 17);
 - (b) Commuting time between work and home when no productive activity for the job is performed; for paid employment, even when paid by the employer;
 - (c) Time spent in educational activities distinct from the activities covered in paragraph 11. (2) (b) (vi); for paid employment, even when authorized, paid or provided by the employer;
 - (d) Longer breaks distinguished from short resting time when no productive activity is performed (such as meal breaks or natural repose during long trips); for paid employment, even when paid by the employer.

Hours usually worked

15.

- (1) Hours usually worked is the typical value of hours actually worked in a job per short reference period such as one week, over a long observation period of a month, quarter, season or year that comprises the short reference measurement period used. Hours usually worked applies to all types of jobs (*within and beyond the SNA production boundary*).
- (2) The typical value may be the modal value of the distribution of hours actually worked per short period over the long observation period, where meaningful.
- (3) Hours usually worked provides a way to obtain regular hours worked above contractual hours.
- (4) The short reference period for measuring hours usually worked should be the same as the reference period used to measure employment or household service and volunteer work.

obtained from establishment surveys depend on the type, range and quality of their records on attendance and payment. While consistency in reporting overtime may be higher, the information may contain undetected biases. Furthermore, their worker coverage is never complete, as these surveys tend to cover medium-to-large establishments in the formal sector with regular employees, and exclude managerial and peripheral staff as well as self-employed persons.

Comparability of statistics on working time is complicated even further by the fact that estimates may be based on more than one source – results may be taken primarily from a household survey and supplemented with information from an establishment survey (or other administrative source) or vice versa. In such cases, more than one survey type is noted in the corresponding column of the notes. For these reasons, the OECD, which provided the major-

ity of the national estimates presented, is careful to note that “the data [on average annual hours worked per person] are intended for comparisons of trends over time; they are

unsuitable for comparisons of the level of average annual hours of work for a given year, because of differences in their sources”.⁹

⁹ See Statistical Annex of the annual publication OECD: *Employment Outlook*.

KILM 8. Employment in the informal economy

Introduction

The KILM 8 indicator is a measure of employment in the informal economy as a percentage of total non-agricultural employment. There are wide variations in definitions and methodology of data collection related to the informal economy. Some countries now provide data according to the 2003 guidelines concerning a statistical definition of informal employment.¹ The KILM 8th edition contains national estimates on informal employment. Where available, KILM 8 reports on informal employment, with its subcomponents, employment in the informal sector and informal employment outside of the formal sector. Information on employment in the informal sector, measured according to the Resolution of the 15th International Conference of Labour Statisticians (ICLS), is also included. Users are advised to review the specific definitions of each record carefully and to use caution when making country-to-country comparisons.

Table 8 contains national estimates for 62 countries in total. Recent data, 2005 or later, are available for approximately two-thirds of the countries. A gender-specific breakdown for the indicator is given where the data are available. In most cases, information on persons in informal employment is given as absolute numbers and as a percentage of total non-agricultural employment.

Use of the indicator

The informal sector represents an important part of the economy, and certainly of the labour market, in many countries and plays a major role in employment creation, production and income generation. In countries with high rates

of population growth or urbanization, the informal sector tends to absorb most of the expanding labour force in the urban areas. Informal employment offers a necessary survival strategy in countries that lack social safety nets, such as unemployment insurance, or where wages and pensions are low, especially in the public sector. In these situations, indicators such as the unemployment rate (KILM 9) and time-related underemployment (KILM 12) are not sufficient to describe the labour market completely.

Globalization is also likely to have contributed to the raising the share of informal employment in many countries. Global competition erodes employment relations by encouraging formal firms to hire workers at low wages with few benefits or to subcontract (outsource) the production of goods and services.² In addition, the process of industrial restructuring in the formal economy is seen as leading to greater decentralization of production through subcontracting to small enterprises, many of which are in the informal sector.

The informal economy represents a challenge to policy-makers that pursue the following goals: improving the working conditions and legal and social protection of persons in informal sector employment and for employees in informal jobs; increasing the productivity of informal economic activities; developing training and skills; organizing informal sector producers and workers; and implementing appropriate regulatory frameworks, governmental reforms, urban development, and so on. Poverty, too, as a policy issue, overlaps with the informal economy. There is a link – although not a perfect correlation – between informal employment and being poor. This stems from the lack of labour legislation and social protection covering workers in informal employment, and from the fact that persons in informal employment earn, on average, less than workers in formal employment.

¹ Guidelines concerning a statistical definition of informal employment, adopted by the 17th International Conference of Labour Statisticians, Geneva, 2003; http://www.ilo.org/global/What_we_do/Statistics/standards/guidelines/lang-en/docName--WCMS_087622/index.htm.

² See evidence presented in Bacchetta, M. et al.: *Globalization and Informal Jobs in Developing Countries* (Geneva, ILO and WTO, 2009); http://www.wto.org/english/res_e/booksp_e/jobs_devel_countries_e.pdf.

Statistics on informal employment are essential to obtaining a clear idea of the contributions of all workers, women in particular, to the economy. Indeed, the informal economy has been considered as “the fallback position for women who are excluded from paid employment. [...] The dominant aspect of the informal economy is self-employment. It is an important source of livelihood for women in the developing world, especially in those areas where cultural norms bar them from work outside the home or where, because of conflict with household responsibilities, they cannot undertake regular employee working hours”.³

Definitions and sources⁴

In 1993, the statistical conception of informal sector activities was adopted at the 15th ICLS.⁵ More than 15 years later, the concept of informality has evolved, broadening its scope from employment in a specific type of production unit (or enterprises) to an economy-wide phenomenon, with the current focus now on the development and harmonization of informal economy indicators. The conceptual change from the informal sector to the informal economy (described further below), while certainly technically sound and commendable as a reflection of the evolving realities of the world of work, has resulted in challenges for the measurement of a concept that was already fraught with difficulties. The current statistical concept of informal employment is also described below. However, because it takes time for a “new” statistical concept to take hold some countries will continue to report on the concept of employment in the informal sector for a few years to come. The national statistics are reproduced in table 8 and where data according to the broader measure do not exist, the statistical definition of the latter is also included.

³ United Nations: *Handbook for Producing National Statistical Reports on Women and Men*, Social Statistics and Indicators, Series K, No. 14 (New York, 1997), p. 232.

⁴ Large parts of text in this section, including boxes, are reproduced from ILO: *The Informal Economy and Decent Work: A Policy Resource Guide supporting transitions to formality*, chapter 2 (Geneva, ILO, 2013), available at: http://www.ilo.org/emppolicy/pubs/WCMS_212688/lang-en/index.htm.

⁵ Resolution concerning statistics of employment in the informal sector, adopted by the 15th International Conference of Labour Statisticians, Geneva, 1993; http://www.ilo.org/global/What_we_do/Statistics/standards/resolutions/lang-en/docName--WCMS_087484/index.htm.

Employment in the informal sector and informal sector enterprises

The definition of employment in the informal sector that was formally adopted by the 15th ICLS is based on the concept of the informal sector enterprise, with all jobs deemed to fall under such an enterprise included in the count. In other words, employment in the informal sector basically comprises all jobs in unregistered and/or small-scale private unincorporated enterprises that produce goods or services meant for sale or barter.

There are considerable nuances and complexities to the definition. The term “enterprise” is used in a broad sense, as it covers both units which employ hired labour and those run by individuals working on own account or as self-employed persons, either alone or with the help of unpaid family members. Workers of all employment statuses are included if deemed to be engaged in an informal enterprise. Thus, self-employed street vendors, taxi drivers and home-based workers are all considered enterprises. The logic behind establishing the criterion based on employment size was that enterprises below a certain size are often exempted, under labour and social security laws, from employee registration and are unlikely to be covered in tax collection or labour law enforcement due to lack of government resources to deal with the large number of small enterprises (many of which have a high turnover or lack easily recognizable features).

Certain activities, which are sometimes identified with informal activities, are not included in the definition of informal enterprises for practical as well as methodological reasons. Excluded activities include: agricultural and related activities, households producing goods exclusively for their own use, e.g. subsistence farming, domestic housework, care work, and employment of paid domestic workers; and volunteer services rendered to the community.

The definition of informal sector enterprises was subsequently included in the System of National Accounts (SNA 1993), adopted by the United Nations Economic and Social Council on the recommendation of the United Nations Statistical Commission.⁶ Inclusion in the SNA was considered essential, as it was a prerequisite for identification of the informal sector as a

⁶ Information on the System of National Accounts (SNA 1993) is available from the Statistics Division, United Nations, New York; <http://unstats.un.org/unsd/nationalaccount/>.

separate entity in the national accounts and hence for quantification of the contribution of the informal sector to gross domestic product.

Informal employment

The definition of the 15th ICLS relates to the informal sector and the employment therein. But it has been recognized, also within the statistical community, that there are also aspects of informality that can exist outside of informal sector enterprises as currently defined. Casual, short term and seasonal workers, for example, could be informally employed – lacking social protection, health benefits, legal status, rights and freedom of association, but when they are employed in the formal sector are not considered within the measure of employment in the informal sector.

In the early 2000s, there was a growing momentum behind the call for more and better statistics on the informal economy, statistics that capture informal employment both within and outside of the formal sector. There was a gradual move among users of the statistics, spearheaded by the Expert Group on Informal Sector Statistics (the Delhi Group) – an international forum of statisticians and statistics users concerned with measurement of the informal sector and improving the quality and comparability of informal sector statistics – towards promotion of this broader concept of informality. The idea was to complement the enterprise-based concept of employment in the informal sector with a broader, job-based concept of informal employment. At its 5th Meeting in 2001, the Delhi Group called for the development of a statistical definition and measurement framework of informal employment to complement the existing standard of employment in the informal sector.

The ILO Department of Statistics and the 17th ICLS took up the challenge of developing new frameworks which could better capture the phenomenon of informality. The ILO conceptualized a framework for defining the informal economy that was presented and adopted at the 2002 International Labour Conference. The informal economy was defined as “all economic activities by workers or economic units that are – in law or practice – not covered or sufficiently covered by formal arrangements”. In 2003, the 17th ICLS adopted guidelines endorsing the framework as an international statistical standard.⁷

⁷ Guidelines concerning a statistical definition of informal employment, op. cit.

In tracing the evolution of the informal concept (see box 8b), it is important to bear in mind that the purpose of the expansion to an informal economy concept was not to replace one term with another (see box 8a), but rather to broaden the concept to take into consideration different aspects of the “informalization of employment”. It is also worth bearing in mind that for statistical purposes the 17th ICLS did not endorse using the term “employment in the informal economy” to represent the totality of informal activities. The reasons are (i) that the different types of observation unit involved (enterprise vs. job) should not be confused, (ii) that some policy interventions would have to be targeted to the enterprise and others to the job, and (iii) that the informal sector concept from the 15th ICLS needed to be retained as distinct from informal employment since it had become a part of the SNA and a large number of countries were already collecting statistics based on this definition.

The 17th ICLS defined informal employment as the total number of informal jobs, whether carried out in formal sector enterprises, informal sector enterprises, or households, during a given reference period. Included are:

- Own-account workers (self-employed with no employees) in their own informal sector enterprises;
- Employers (self-employed with employees) in their own informal sector enterprises;
- Contributing family workers, irrespective of type of enterprise;
- Members of informal producers’ cooperatives (not established as legal entities);
- Employees holding informal jobs as defined according to the employment relationship (in law or in practice, jobs not subject to national labour legislation, income taxation, social protection or entitlement to certain employment benefits (paid annual or sick leave, etc.);
- Own-account workers engaged in production of goods exclusively for own final use by their household.

Only items i, ii and iv would have been captured in full under the statistical framework for employment in the informal sector. The remaining statuses might or might not be included, depending on the nature of the production unit under which the activity took place (i.e. if deemed an informal enterprise). The major new element of the framework was

Box 8a. Avoiding confusion in terminologies relating to the informal economy

Within the statistical community, application of accurate terminology is important. To the layperson, the terms “informal sector”, “informal economy”, “employment in the informal sector” and “informal employment” might all seem to be interchangeable. They are not. The nuances associated with each term are extremely important from a technical point of view. The following can serve as an easy reference for the terminology associated with informality and their technical definitions:

(a) Informal economy	all economic activities by workers or economic units that are – in law or practice – not covered or sufficiently covered by formal arrangements (based on ILC 2002)
(b) Informal sector	a group of production units (unincorporated enterprises owned by households) including “informal own-account enterprises” and “enterprises of informal employers” (based on 15th ICLS)
(c) Informal sector enterprise	unregistered and/or small-scale private unincorporated enterprises engaged in non-agricultural activities with at least some of the goods or services produced for sale or barter (based on 15th ICLS)
(d) Employment in the informal sector	all jobs in informal sector enterprises (c), or all persons who were employed in at least one informal sector enterprise, irrespective of their status in employment and whether it was their main or a secondary job (based on 15th ICLS)
(e) Informal wage employment	all employee jobs characterized by an employment relationship that is not subject to national labour legislation, income taxation, social protection or entitlement to certain employment benefits (based on 17th ICLS)
(f) Informal employment	total number of informal jobs, whether carried out in formal sector enterprises, informal sector enterprises, or households; including employees holding informal jobs (e); employers and own-account workers employed in their own informal sector enterprises; members of informal producers’ cooperatives; contributing family workers in formal or informal sector enterprises; and own-account workers engaged in the production of goods for own end use by their household (based on 17th ICLS)
(g) Employment in the informal economy	sum of employment in the informal sector(d) and informal employment (f) outside the informal sector; the term was not endorsed by the 17th ICLS

Source: Reproduced from ILO: “The Informal Economy and Decent Work: A Policy Resource Guide supporting transitions to formality”, chapter 2 (Geneva, ILO, 2013).

item v, employees holding informal jobs. This category captures the bulk of the “informal employment outside the informal sector” in many countries and includes workers whose “[...] employment relationship is, in law or in practice, not subject to national labour legislation, income taxation, social protection or entitlement to certain employment benefits (advance notice of dismissal, severance pay, paid annual or sick leave, etc.)”. These include:

- Unregistered employees who do not have explicit, written contracts or are not subject to labour legislation;
- Workers who do not benefit from paid annual or sick leave or social security and pension schemes;
- Most paid domestic workers employed by households;
- Most casual, short term and seasonal workers.

Box 8b. Timeline of informality as a statistical concept

- 1993:** Definition of informal sector adopted by the 15th ICLS.
- 1999:** Third meeting of the Expert Group on Informal Sector Statistics (Delhi Group), where it was concluded that the group should formulate recommendations regarding the identification of precarious forms of employment (including outwork/home-work) inside and outside the informal sector.
- 2001:** Fifth meeting of the Expert Group on Informal Sector Statistics (Delhi Group), where it was concluded that the definition and measurement of employment in the informal sector needed to be complimented with a definition and measurement of informal employment and that Group members should test the conceptual framework developed by the ILO.
- 2002:** 90th Session of International Labour Conference, where the need for more and better statistics on the informal economy was emphasized and the ILO was tasked to assist countries with the collection, analysis and dissemination of statistics. The ILC also proposed a definition for the informal economy.
- 2002:** Sixth meeting of the Expert Group on Informal Sector Statistics (Delhi Group), recognized the need for consolidating the country experiences and recommended further research for developing a statistical definition of informal employment and methods of compiling informal employment statistics through labour force surveys.
- 2003:** The 17th ICLS adopts guidelines on a definition of informal employment as an international statistical standard.
- 2012:** The ILO published a manual on measuring informality on methodological issues for undertaking surveys of the informal economy at the country level.

^a ILO: "Measuring informality: a Statistical Manual on the informal sector and informal employment" (ILO, Geneva, 2012), available at: http://www.ilo.org/stat/Publications/WCMS_182300/lang--en/index.htm.

The ILO Department of Statistics has played a leading role in developing methods for the collection of data on the informal sector, in compiling and publishing official statistics in this area, and in providing technical assistance to national statistical offices to improve their data collection. In 1998, the Department established a database on the informal sector, which was subsequently used as the basis for some of the more dated statistics in table 8. The data set was updated in 2001 and issued as a Compendium with available official national statistics and related methodological information.⁸ More recently, the Department produced a collection of statistics on informal employment.⁹ This document, supplemented with some additional data from the ILO Regional Office for Latin America and the Caribbean, served as the repositories used for the production of table 8.

⁸ All details of Department of Statistics' activities in the field of the informal economy are detailed in ILO: *ILO compendium of official statistics on employment in the informal sector*, STAT Working Paper 2002 – No. 1 (Geneva, 2002).

⁹ ILO Department of Statistics: *Statistical update on employment in the informal economy*, Geneva, June 2011; http://www.ilo.org/global/statistics-and-databases/WCMS_157467/lang--en/index.htm.

Limitations to comparability

The concept of informal sector was consciously kept flexible in order to accommodate country situations and specific country needs. In practice, this has led to a collection of national statistics on employment in the informal sector, with countries reporting on their preferred variation of the criteria laid out in the international resolution. Some countries apply the criterion of non-registered enterprises but registration requirements can vary from country to country. Others apply the employment size criterion only (which may vary from country to country) and other countries still apply a combination of the two. As a result of the national differences in definitions and coverage, the international comparability of the employment in the informal sector indicator is limited.

In summary, problems with data comparability for the measure of employment in the informal sector result especially from the following factors:

- Differences in data sources;
- Differences in geographic coverage;

- Differences in the branches of economic activity covered. At one extreme are countries that cover all kinds of economic activity, including agriculture, while at the other are countries that cover only manufacturing;
- Differences in the criteria used to define the informal sector, for example, size of the enterprise or establishment versus non-registration of the enterprise or the worker;
- Different cut-offs used for enterprise size;
- Inclusion or exclusion of paid domestic workers;
- Inclusion or exclusion of persons who have a secondary job in the informal sector but whose main job is outside the informal sector, e.g. in agriculture or in public service.

As with the concept of the informal sector, the concept of informal employment was designed in such a way as to allow countries to accommodate their own situations and needs. The 17th ICLS Guidelines specifically say that “the operational criteria for defining informal jobs of employees are to be determined in accordance with national circumstances and data availability.” Some countries (especially developing countries) may choose to develop a measure that includes informal jobs of own-

account workers, employers and members of producers’ cooperatives, while other countries (especially developed countries) may wish to limit the measurement of informal employment to employee jobs only. The built-in flexibility of the statistical concept, while certainly a commendable and necessary feature for a new concept, does create limitations when it comes to the comparability of statistics across countries. More comparability will only be achieved in the long run when good practices will have driven out less good ones.

In order to reduce comparability issues and to improve the availability and quality of data, the ILO, in collaboration with members of the Delhi Group, has published the manual “Measuring informality: a Statistical Manual on the informal sector and informal employment”.¹⁰ This manual pursues two objectives: (1) to assist countries planning a programme to produce statistics on the informal sector and informal employment, in undertaking a review and analysis of their options; and (2) to provide practical guidance on the technical issues involved with the development and administration of the surveys used to collect relevant information, as well as on the compilation, tabulation and dissemination of the resulting statistics.

¹⁰ ILO: *Measuring informality: a Statistical Manual on the informal sector and informal employment* (Geneva, 2012), available at: http://www.ilo.org/stat/Publications/WCMS_182300/lang-en/index.htm.

KILM 9. Total unemployment

Introduction

The unemployment rate is probably the best-known labour market measure and certainly one of the most widely quoted by media in many countries as it is believed to reflect the lack of employment at national levels to the greatest and most meaningful extent. Together with the employment-to-population ratio (KILM 2), it provides the broadest indicator of the labour market situation in countries that collect information on the labour force. The KILM 8th edition complements national estimates with ILO estimates of unemployment rates. To supplement the stock indicator of unemployment with a more dynamic view of the labour market, KILM 9 also includes an indicator on unemployment flows, namely inflows into and outflows from unemployment.

National estimates on unemployment rates are available for a total of 207 economies in table 9b. Information on the number of unemployed persons is available for additional countries in both tables, but the lack of statistics on the labour force, the necessary denominator, prevents the calculation of the unemployment rate for them. ILO estimates on unemployment rates (table 9a) is 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 differing national definitions.¹ Table 9a is based on available national estimates of unemployment rates and includes these reported rates as well as imputed data for 178 economies. ILO estimates on unemployment rates are national data, meaning there are no geographic limitations in coverage. This series of harmonized estimates serves as the basis of the ILO's global and regional aggregates of the unemployment rates reported in the *Global Employment Trends* series and made available in the KILM 8th edition as table R5. Estimates of unemployment flows (table 9c) are calculated on the basis of data on unemployment by

duration. They can contribute to the better understanding of variations in unemployment which are the result of variations in the rate at which workers move from employment to unemployment and vice versa. Unemployment flows are available for 70 economies.

Use of the indicator

The overall unemployment rate for a country is a widely used measure of its unutilized labour supply. If employment is taken as the desired situation for people in the economically active population (the labour force), unemployment becomes the undesirable situation. Still, some short-term unemployment can be necessary for ensuring adjustment to economic fluctuations. Unemployment rates by specific groups, defined by age, sex, occupation or industry, are also useful in identifying groups of workers and sectors most vulnerable to joblessness.

While the unemployment rate may be considered the single, most informative labour market indicator reflecting the general performance of the labour market and the economy as a whole, it should not be interpreted as a measure of economic hardship or of well-being. When based on the internationally recommended standards (outlined in more detail under "definitions and sources" below), the unemployment rate simply reflects the proportion of the labour force that does not have a job but is available and actively looking for work. It says nothing about the economic resources of unemployed workers or their family members. Its use should, therefore, be limited to serving as a measurement of the utilization of labour and an indication of the failure to find work. Other measures, including income-related indicators, would be needed to evaluate economic hardship.

An additional criticism of the aggregate unemployment measure is that it masks information on the composition of the jobless population and therefore misses out on the particularities of the education level, ethnic origin, socio-economic background, work experience, etc. of the unemployed. Moreover,

¹ For further information on the methodology used to harmonize estimates, see Annex 4, "Note on global and regional estimates", in ILO: *Global Employment Trends* 2011 (Geneva, 2011); http://www.ilo.org/global/publications/books/WCMS_150440/lang-en/index.htm.

the unemployment rate says nothing about the type of unemployment – whether it is cyclical and short-term or structural and long-term – which is a critical issue for policy-makers in the development of their policy responses, especially given that structural unemployment cannot be addressed by boosting market demand only.

Paradoxically, low unemployment rates may well disguise substantial poverty², as high unemployment rates can occur in countries with significant economic development and low incidence of poverty. In countries without a safety net of unemployment insurance and welfare benefits, many individuals, despite strong family solidarity, simply cannot afford to be unemployed. Instead, they must eke out a living as best they can, often in the informal economy or in informal work arrangements. In countries with well-developed social protection schemes or when savings or other means of support are available, workers can better afford to take the time to find more desirable jobs. Therefore, the problem in many developing countries is not so much unemployment but rather the lack of decent and productive work, which results in various forms of labour underutilization (i.e. underemployment, low income, and low productivity).³

A useful purpose served by the unemployment rate in a country, when available on at least an annual basis, is the tracking of business cycles. When the rate is high, the country may be in recession (or worse), economic conditions may be bad, or the country somehow unable to provide jobs for the available workers. The goal, then, is to introduce policies and measures to bring the incidence of unemployment down to a more acceptable level. What that level is, or should be, has often been the source of considerable discussion, as many consider that there is a point below which an

unemployment rate cannot fall without the occurrence of intense inflationary pressures. Because of this supposed trade-off, the unemployment rate is closely tracked over time.

The usual policy goal of governments, employers and trade unions is to have a rate that is as low as possible yet also consistent with other economic and social policy objectives, such as low inflation and a sustainable balance-of-payments situation. When using the unemployment rate as a gauge for tracking cyclical developments, we are interested in looking at changes in the measure over time. In that context, the precise definition of unemployment used (whether a country-specific definition or one based on the internationally recommended standards) does not matter nearly as much – so long as it remains unchanged – as the fact that the statistics are collected and disseminated with regularity, so that measures of change are available for study.

Internationally, the unemployment rate is frequently used to compare how labour markets in specific countries differ from one another or how different regions of the world contrast in this regard. Unemployment rates may also be used to address issues of gender differences in labour force behaviour and outcomes. The unemployment rate has often been higher for women than for men. Possible explanations are numerous but difficult to quantify; women are more likely than men to exit and re-enter the labour force for family-related reasons; and there is a general “crowding” of women into fewer occupations than men so that women may find fewer opportunities for employment. Other gender inequalities outside the labour market, for example in access to education and training, also negatively affect how women fare in finding jobs.

The indicator on unemployment flows (table 9c) included in the KILM 8th edition provides estimates of the inflows into and outflows from unemployment in order to determine why high unemployment rates persist. The data series intend to improve the understanding of varying unemployment rates across time and countries.

Unemployment rates alone often do not reveal the full picture of the labour market situation in an economy as they do not say much about the driving forces behind variations in unemployment. In particular, changes in unemployment rates result from the net effect of flows into unemployment and flows out of unemployment. Both flow margins can be

² Information relating to poverty, working poverty and inequality is provided in KILM 18.

³ Readers interested in the broader topic of labour underutilization should refer to ILO, “Beyond unemployment: Measurement of other forms of labour underutilization”, Room Document 13, 18th International Conference of Labour Statisticians, Working group on Labour underutilization, Geneva, 24 November – 5 December 2008; http://www.ilo.org/global/statistics-and-databases/meetings-and-events/international-conference-of-labour-statisticians/WCMS_100652/lang-en/index.htm or ILO, “Report and proposed resolution of the committee on work statistics”, 19th International Conference of Labour Statisticians, Committee on Work Statistics, Geneva, 2 November – 11 November 2013; http://www.ilo.org/global/statistics-and-databases/meetings-and-events/international-conference-of-labour-statisticians/19/WCMS_223719/lang-en/index.htm.

affected by different factors that may vary over the course of the business cycle or follow longer term trends. In order to allow for a more detailed analysis of these dynamics, the inflows into and outflows from unemployment are constructed in an attempt to shift from a simple stock approach to an understanding of the variation in unemployment as the variation in the rate at which workers move from one labour market state to another. More specifically, the flow approach illustrates how quickly workers transition from employment into unemployment (inflow) and unemployment into employment (outflow). The estimated inflow and outflow rates that are shown in table 9c are directly related to the probability that an employed worker becomes unemployed (inflow) and the probability that an unemployed worker finds a job (outflow). These measures provide an essential tool to target labour market policies more specifically at certain groups of the labour market or to adjust them according to which aspect of the unemployment dynamics dominate in a particular situation.

It can be very insightful to track the behaviour of inflows and outflows during economic up- and downturns, or to use flow measures in forecasting the unemployment rate. Moreover, an analysis of unemployment flows together with other labour market indicators can be useful to better understand labour market distress and develop policy recommendations. For a deeper understanding of fluctuations in unemployment, it is essential to understand fluctuations in the transition rate from employment to unemployment and vice versa.⁴

Definitions and sources

The unemployment rate is defined mathematically as the ratio resulting from dividing the total number of unemployed (for a country or a specific group of workers) by the corresponding labour force, which itself is the sum of the total persons employed and unemployed in the group. It should be emphasized that it is the labour force or the economically active portion of the population that serves as the base for this statistic, not the total population. This distinction is not necessarily well understood by the public. Indeed, the terms “labour force” and

“employment” are sometimes mistakenly used interchangeably.

According to the resolution adopted in 1982 by the 13th International Conference of Labour Statisticians (ICLS), the standard definition of unemployed persons is those individuals without work, seeking work in a recent past period, and currently available for work⁵ (see box 9). Persons who did not look for work but have a future labour market stake (arrangements for a future job start) are counted as unemployed.

In many national contexts there may be persons not currently in the labour market who want to work but do not actively “seek” work because they view job opportunities as limited, or because they have restricted labour mobility, or face discrimination, or structural, social or cultural barriers. The exclusion of people who want to work but are not seeking work (often called the “hidden unemployed” or “discouraged workers”) is a criterion that will affect the count of both women and men although women may have a higher probability of being excluded from the count of unemployed because they suffer more from social barriers overall that impede them from meeting this criterion. As stated in the resolution (paragraph 10.1.c.), there are situations where the conventional means of seeking work are of limited relevance – for example, in developing economies where the informal economy is rampant and where the labour force is largely self-employed. In such cases, the standard definition of unemployment would greatly undercount the untapped human resources of a country and would give a picture of the labour market that was more positive than reality would warrant. Labour market analysts, therefore, often promote the measurement of unemployment according to the “relaxed definition”, meaning relaxing the criterion of seeking work.

Another factor leading to exclusion from the unemployment count concerns the criterion that workers be available for work during the short reference period. A short availability period tends to exclude those who would need to make personal arrangements before starting work, such as for care of children or elderly relatives or other household affairs, even if they are “available for work” soon after the short reference period. As women are often responsible for

⁴ For a detailed analysis of factors influencing labour flows and their consequences for unemployment dynamics see, e.g., Ernst, E. and Rani, U.: “Understanding unemployment flows”, *Oxford Review of Economic Policy Making*, Vol. 27, No. 2, pp. 268-294 (Oxford, 2011).

⁵ Resolution concerning statistics of the economically active population, employment, unemployment and under-employment, 13th International Conference of Labour Statisticians, Geneva, 1982); http://www.ilo.org/global/What_we_do/Statistics/standards/resolutions/lang--en/docName--WCMS_087481/index.htm.

household affairs and care, they are a significant part of this group and would therefore not be included in measured unemployment. Various countries have acknowledged this coverage problem and have extended the “availability” period to the two (or more) weeks following the reference period. Even then, women – more than men – tend to be excluded from unemployment, probably because this period is still not sufficiently long to compensate for constraints that are more likely to affect them.

To acknowledge these two groups, those people who are currently unemployed but were either not available or not actively seeking work, the resolution concerning work statistics proposed by the 19th International Conference of Labour Statisticians in 2013 created a definition of the “potential labour force”. This potential labour force includes unavailable jobseekers or available potential jobseekers and therefore also the unemployed formerly included in the “relaxed definition” of unemployment, namely those wanting work but not actively seeking a job.⁶

Household labour force surveys are generally the most comprehensive and comparable sources for unemployment statistics. Other possible sources include population censuses and official estimates. Administrative records such as employment office records and social insurance statistics are also sources of unemployment statistics; however, coverage in such sources is limited to “registered unemployed” only. A national count of either unemployed persons or work applicants that are registered at employment offices is likely to be only a limited sub-set of the total persons seeking and available for work, especially in countries where the system of employment offices is not extensive. This may be because of eligibility requirements that exclude those who have never worked or have not worked recently, or to other discriminatory impediments that preclude going to register.

On the other hand, administrative records can overstate registered unemployment because of double-counting, failure to remove people from the registers when they are no

longer looking for a job, or because it allows inclusion of persons who have some work. Due to these measurement limitations, national unemployment data based on registered unemployed should be treated with care; registered unemployment data can serve as a useful proxy for the extent of persons without work in countries where data on total unemployment are not available and time-series of registered unemployment data by country can serve as a good indication of labour market performance over time, but due to the limitation in comparability to “total unemployment”, the two measures should not be used interchangeably. Table 9a and 9b provide data on total employment only.

The indicator on unemployment flows (table 9c) is calculated based on different durations of unemployment (see KILM 11 on long-term unemployment) and quarterly unemployment rates. In cases in which quarterly unemployment rates are not available, annual unemployment rates are used (as indicated in the column “use of annual data for unemployment rates” of table 9c). Data to compute unemployment flows (unemployment by duration, unemployment rates and labour force) are taken from labour force or household surveys.

Unemployment flows in table 9c are displayed as monthly transition rates from employment to unemployment (inflow) and vice versa (outflow). Estimates of inflow and outflow rates are calculated on the basis of data on unemployment spells of different durations, namely less than one month, less than three months, less than six months, and less than twelve months. The estimates on the basis of unemployment with a duration of less than one month follow the methodology applied by Shimer (2012).⁷

The table also contains weighted flow rate estimates. Weights are calculated on the basis of the methodology proposed by Elsby et al. (2013) who use these weighted flow rate estimates in case of no evidence for duration dependence and flow rates calculated on the basis of unemployment with a duration of less than one month otherwise.⁸ The column “result of test for no duration dependence” indicates the result of the test to determine

⁶ For more details on the potential labour force and the changes to the definition in unemployment, please refer to the ILO, “Report and proposed resolution of the committee on work statistics”, 19th International Conference of Labour Statisticians, Committee on Work Statistics, Geneva, 2 November – 11 November 2013; http://www.ilo.org/global/statistics-and-databases/meetings-and-events/international-conference-of-labour-statisticians/19/WCMS_223719/lang-en/index.htm.

⁷ For more details, see Shimer, R.: “Reassessing the ins and outs of unemployment”, *Review of Economic Dynamics*, Vol. 15, No. 2, pp. 127-148 (2012).

⁸ See Elsby, M.; Hobijn, B.; Sahin, A.: “Unemployment dynamics in the OECD”, *Review of Economics and Statistics*, Vol. 95, No. 2, pp. 530-548 (2013).

which flow rate estimate to choose, following Elsbey et al. (2013).⁹

Limitations to comparability

A significant amount of research has been carried out over the years in producing unemployment rates that are fully consistent conceptually, in order to contrast unemployment rates of different countries for different hypotheses. Interested users can compare the series of “ILO-comparable” unemployment estimates¹⁰ with the information shown in table 9b. In a few cases the adjusted rates are the same as those found in table 9b; elsewhere they are quite different as the information in table 9b may be obtained from multiple sources, while the adjusted “ILO-comparable” rates are always based on a household labour force sample survey.

There are a host of reasons why measured unemployment rates may not be comparable between countries. A few are provided below, to give users some indication of the range of potential issues that are relevant when attempting to determine the degree of comparability for unemployment rates between countries. Users with knowledge of particular countries or special circumstances should be able to expand on them:

1. Different sources. To the extent that sources of information differ, so will the results. Comparability difficulties resulting from the difference between sources measuring registered unemployment and total unemployment has been removed by separating the two and only including total unemployment. The remaining sources in KILM 9 – labour force surveys, official estimates and population censuses – can still pose issues of comparability in cross-country analyses. Official estimates are generally based on information from different sources and can be combined in

many different ways. A population census generally cannot probe deeply into labour force activity status. The resulting unemployment estimates may, therefore, differ substantially (either upwards or downwards) from those obtained from household surveys where more questions are asked to determine respondents’ labour market situation. For more information regarding sources, users may also refer to the discussion of the pros and cons of various sources in the corresponding section of KILM 1 (labour force participation rates).

- 2. Measurement difference.** Where the information is based on household surveys or population censuses, differences in the questionnaires can lead to different statistics - even allowing for full adherence to ILO guidelines. In other words, differences in the measurement tool can affect the comparability of labour force results across countries.
- 3. Conceptual variation.** National statistical offices even when basing themselves on the ILO conceptual guidelines may not follow the strictest measurement of employment and unemployment. They may differ in their choices concerning the conceptual basis for estimating unemployment, as in specific instances where the guidelines allow for a relaxed definition, thereby causing the labour force estimates (the base for the unemployment rate) to differ. They may also choose to derive the unemployment rate from the civilian labour force rather than the total labour force or economically active population. To the extent to which such choices vary across countries, so too will the statistics displayed in KILM 9.
- 4. Number of observations per year (reference period).** Statistics for any given year can differ depending on the number of observations - monthly, quarterly, once or twice a year, and so on. Among other things, a considerable degree of seasonality can influence the results when the full year is not covered.
- 5. Geographic coverage.** Survey coverage that is less than national coverage – urban areas, city, regional – has obvious limitations to comparability to the extent that coverage is not representative of the country as a whole.¹¹

⁹ More detailed information on how unemployment flows are constructed can be found in the technical chapter on unemployment flows in part 1 of the KILM 8th edition.

¹⁰ The “ILO-comparable” unemployment rates are national labour force survey estimates that have been adjusted to make them conceptually consistent with the strictest application of the ILO statistical standards. The unemployment rates obtained are based on the total labour force including the armed forces. For more information regarding the methodology, see Lepper, F.: *Comparable annual employment and unemployment estimates*, Department of Statistics Paper, ILO (Geneva, 2004); http://www.ilo.org/global/statistics-and-databases/WCMS_087893/lang-en/index.htm. The estimates (up to 2005 only) are available at <http://laborsta.ilo.org>.

¹¹ When performing queries on this table and others, users have the option to omit records that are of sub-national geographic coverage. On the software, this can be done by performing the query for all data and then refining the parameters to select “national only” under “Geographic coverage”.

Box 9. Resolution concerning statistics of the economically active population, employment, unemployment and underemployment, adopted by the 13th International Conference of Labour Statisticians, October 1982 [relevant paragraphs]

Concepts and definitions

...

Unemployment (para. 10)

1. The “unemployed” comprise all persons above a specified age who during the reference period were:
 - a. “without work”, i.e. were not in paid employment or self-employment as defined in paragraph 9 (see box 2 in the KILM 2 manuscript);
 - b. “currently available for work”, i.e. were available for paid employment or self-employment during the reference period; and
 - c. “seeking work”, i.e. had taken specific steps in a specified recent period to seek paid employment or self-employment. The specific steps may include registration at a public or private employment exchange; application to employers; checking at worksites, farms, factory gates, market or other assembly places; placing or answering newspaper advertisements; seeking assistance of friends or relatives; looking for land, building, machinery or equipment to establish own enterprise; arranging for financial resources; applying for permits and licences, etc.
2. In situations where the conventional means of seeking work are of limited relevance, where the labour market is largely unorganized or of limited scope, where labour absorption is, at the time, inadequate or where the labour force is largely self-employed, the standard definition of unemployment given in subparagraph (1) above may be applied by relaxing the criterion of seeking work.
3. In the application of the criterion of current availability for work, especially in situations covered by subparagraph (2) above, appropriate tests should be developed to suit national circumstances. Such tests may be based on notions such as present desire for work and previous work experience, willingness to take up work for wage or salary on locally prevailing terms, or readiness to undertake self-employment activity given the necessary resources and facilities.
4. Notwithstanding the criterion of seeking work embodied in the standard definition of unemployment, persons without work and currently available for work who had made arrangements to take up paid employment or undertake self-employment activity at a date subsequent to the reference period should be considered as unemployed.
5. Persons temporarily absent from their jobs with no formal job attachment who were currently available for work and seeking work should be regarded as unemployed in accordance with the standard definition of unemployment. Countries may, however, depending on national circumstances and policies, prefer to relax the seeking work criterion in the case of persons temporarily laid off. In such cases, persons temporarily laid off who were not seeking work but classified as unemployed should be identified as a separate subcategory.
6. Students, homemakers and others mainly engaged in non-economic activities during the reference period who satisfy the criteria laid down in subparagraphs (1) and (2) above should be regarded as unemployed on the same basis as other categories of unemployed persons and be identified separately, where possible.

Unemployment in urban areas may tend to be higher than total unemployment because of the exclusion of the rural areas where workers are likely to work, although they may be underemployed or unpaid family workers, rather than seek work in a non-existent or small formal sector.

6. **Age variation.** The generally used age coverage is 15 years and over, but some countries use a different lower limit or impose an upper age-limit.

7. **Collection methodology.** Sample sizes, sample selection procedures, sampling frames, and coverage, as well as many other statistical issues associated with data collection, may make a significant difference. The better the sample size and coverage, the better the results. Use of well-trained interviewers, proper collection and processing techniques, adequate estimation procedures, etc. are crucial for accurate results. Wide variations in this regard can clearly affect the comparability of the unemployment statistics.

When viewing the unemployment rate as a gauge for tracking cyclical developments within a country, one would be interested in looking at changes in the measure over time. In this context, the definition of unemployment used (whether a country-specific definition or one based on the internationally recommended standards) does not matter as much – so long as it remains unchanged – as the fact that the statistics are collected and disseminated with regularity, so that measures of change are available for study. Still, for users making cross-country comparisons it will be critical to know the source of the data and the conceptual basis for the estimates. It is also important to recognize that minor differences in the resulting statistics may not represent significant real differences.

Two examples of substantial difference in household surveys may be useful for understanding some of the complexities of optimal comparisons. The first concerns “job search”. The ILO conceptual framework assumes that persons looking for work must indicate one or more “active” methods – such as applying directly to employers or visiting an employment exchange office – in order to be counted as unemployed. Among the potential methods is the consultation of “newspaper advertisements”. In many parts of the world, this may not be a common or readily available means. In others, newspapers are an excellent source of information about potential jobs, and many

jobseekers do indeed consult them. However, some countries accept the mere reading or looking at advertisements as a search method, whereas others require that persons actually answer one or more advertisement before the newspaper search is counted as an acceptable method. The issue comes down to whether the “passive” versus the “active” search is allowed, and countries vary in their approach to this.¹²

The second example relates to “discouraged workers”: persons who are not currently looking for work but may have looked in the past and clearly desire a job “now” (see “definitions and sources” above). Most surveys do not include them in the unemployed counts, but some do. Inclusion of discouraged workers is fairly common in a number of countries (for example in the Caribbean), based on the relaxation of the ILO definition that is envisaged as part of the relevant guidelines. Users wishing to account for such a definitional difference would need to obtain relevant information (perhaps at the “micro” level) in order to adjust for differences in unemployment rates.

The above two examples illustrate aspects of conceptual variation and measurement difference. The degree of complexity of these and other differences in the measurement and estimation of unemployment that can occur around the world serve as a reminder that great care should be taken in any attempt to draw exacting comparisons.

¹² The proposed resolution of the committee on work statistics extended on the “activities to seek employment” and includes examples of such activities. For more details, see ILO, “Report and proposed resolution of the committee on work statistics”, 19th International Conference of Labour Statisticians, Committee on Work Statistics, Geneva, 2 November – 11 November 2013; http://www.ilo.org/global/statistics-and-databases/meetings-and-events/international-conference-of-labour-statisticians/19/WCMS_223719/lang-en/index.htm.

KILM 10. Youth unemployment

Introduction

Youth unemployment is widely viewed as an important policy issue for many countries, regardless of their stage of development. For the purpose of this indicator, the term “youth” covers persons aged 15 to 24 years and “adult” refers to persons aged 25 years and over.

KILM 10 consists of three tables. Tables 10a and 10b contain ILO estimates and national estimates, respectively, of four distinct measurements of aspects of the youth unemployment problem. The four measurements are: (a) youth unemployment rate (youth unemployment as a percentage of the youth labour force); (b) ratio of the youth unemployment rate to the adult unemployment rate; (c) youth unemployment as a proportion of total unemployment; and (d) youth unemployment as a proportion of the youth population. Table 10c presents estimates of the proportion of young people not in employment, education or training, the “NEET” rate. Part of the information in table 10c refers to persons aged 15 to 24, but for a number of countries NEET rates are only available for persons aged 15 to 29. NEET rates for both age groups have been included if this information is available. The information in all three tables is disaggregated by sex.

ILO estimates of youth unemployment in table 10a are harmonized to account for differences in scope of coverage, collection and tabulation methodologies as well as for other country-specific factors such as military service requirements. This table includes both nationally reported and imputed data and includes only estimates that are national, meaning there are no geographic limitations in coverage. It is this series of harmonized estimates that serve as the basis of the ILO’s global and regional aggregates of the labour force participation rate as reported in the *Global Employment Trends* series and made available in the KILM 8th edition software as table R6.

The youth unemployment rate in table 10a is available for 178 economies (from 1991 to 2012), and in table 10b for 181 economies for at least one year. For the other three measurements, information is presented for all years in

table 10a and for at least one year for 164 economies in table 10b. NEET rates in table 10c are available for 68 economies for at least one year.

Use of the indicator

Young men and women today face increasing uncertainty in their hopes of undergoing a satisfactory entry to the labour market, and this uncertainty and disillusionment can, in turn, have damaging effects on individuals, communities, economies and society at large. Unemployed or underemployed youth are less able to contribute effectively to national development and have fewer opportunities to exercise their rights as citizens. They have less to spend as consumers, less to invest as savers and often have no “voice” to bring about change in their lives and communities. In certain cases, this results in social unrest and a rejecting of the existing socio-economic system by young people. Widespread youth unemployment and underemployment also prevents companies and countries from innovating and developing competitive advantages based on human capital investment, thus undermining future prospects.

Knowing the costs of non-action, many governments around the world prioritize the issue of youth unemployment and attempt to develop appropriate policies and programmes.¹ Measuring the impact of such policies requires age-disaggregated indicators, such as those provided in KILM 10. The KILM youth indicators also constitute the basis for the ILO’s *Global Employment Trends for Youth*, which serves as a key product for quantifying and analysing the current labour market trends and challenges of young people.²

While KILM 10 is the only of the 18 KILM indicators relating specifically to youth, age-disaggregation has been included for numerous

¹ See, for example, the inventory of crisis-response programmes and policies put into place by countries in ILO: *Global Employment Trends for Youth: Special issue on the impact of the global economic crisis on youth* (Geneva, 2010); http://www.ilo.org/empelm/pubs/WCMS_143349/lang-en/index.htm.

² All ILO *Global Employment Trends for Youth* publications are available at <http://www.ilo.org/trends>.

other indicators in the KILM. Thus, KILM users can access and analyse data for youth (in comparison to the adult and total populations) for labour force participation rates (tables 1a and 1b), employment-to-population ratios (tables 2a and 2b), part-time employment (table 6), employment by hours worked per week (table 7a), long-term unemployment (table 11), time-related underemployment (table 12), inactivity rates (table 13), labour force by level of educational attainment (table 14a), unemployment by level of educational attainment (table 14b), illiteracy (table 14d), skills mismatch (tables 15a and 15b), and working poverty (table 18b).

The KILM information on youth unemployment illustrates the different dimensions of the lack of jobs for young people. In general, the higher the four rates presented in tables 10a and 10b, the worse the employment situation of young people. These measurements are likely to move in the same direction, and should be looked at in tandem, as well as together with other indicators now available in the KILM for the youth cohort, in order to assess fully the situation of young people within the labour market and guide appropriate policy initiatives.

In a country where the youth unemployment rate is high and the ratio of the youth unemployment rate to the adult unemployment rate is close to one, it may be concluded that the problem of unemployment is not specific to youth, but is country-wide. However, unemployment rates of youth are typically higher than those of adults, reflected by youth-to-adult unemployment rates that exceed one. In 2012, regional ratios ranged from 2.0 in Sub-Saharan Africa to 5.2 in South-East Asia and the Pacific, and globally the ratio stood at 2.8 in this year.³ There are various reasons why youth unemployment rates are often higher than adult unemployment rates and not all of them are negative. On the supply side, young persons might voluntarily engage in multiple short spells of unemployment as they gain experience and “shop around” for an appropriate job. Moreover, because of the opening and closing of educational institutions over the course of the year, young students are far more likely to enter and exit the labour force as they move between employment, school enrolment and unemployment.

However, high youth unemployment rates are also the consequences of a labour market

biased against young people. For example, employers tend to lay off young workers first because the cost to establishments of releasing young people is generally perceived as lower than for older workers. Also, employment protection legislation usually requires a minimum period of employment before it applies, and compensation for redundancy usually increases with tenure. Young people are likely to have shorter job tenures than older workers and will, therefore, tend to be easier and less expensive to dismiss. Finally, since they comprise a disproportionate share of new jobseekers, young people will suffer most from economically induced reductions or freezes in hiring by establishments.

Information on the other two aspects of the youth unemployment problem captured by KILM 10, namely the share of unemployed youth in total unemployment and the proportion of unemployed youth in the youth population, helps to complete a portrait of the depth of the youth employment challenge. The former complements the ratio of youth-to-adult unemployment rate in reflecting to what degree the unemployment problem is a youth-specific problem as opposed to a general problem. If, in addition to a high youth unemployment rate, the proportion of youth unemployment in total unemployment is high, this would indicate an unequal distribution of the problem of unemployment. In this case, employment policies might usefully be directed towards easing the entry of young people into the world of work. The proportion of youth unemployed in the youth population places the youth unemployment challenge into perspective by showing what share of the youth population unemployment actually touches. Youth who are looking for work might have great difficulty finding it but when this group only represents less than 5 per cent of the total youth population then policy-makers may choose to address it with less urgency.

The proportion of youth unemployed in the youth population is also an element in the total proportion of youth not in employment, education or training. The NEET rate is a broad measure of untapped potential of youth who could contribute to national development through work. Because the NEET group is neither improving their future employability through investment in skills nor gaining experience through employment, this group is particularly at risk of both labour market and social exclusion.⁴ In addition, the NEET group is

³ ILO: *Global Employment Trends for Youth 2013: A generation at risk* (Geneva, 2013), table A6; <http://www.ilo.org/global/research/global-reports/global-employment-trends/youth/2013/lang-en/index.htm>.

⁴ Note that youth in education and youth in employment are not mutually exclusive groups.

already in a disadvantaged position due to lower levels of education and lower household incomes.⁵ In view of the fact that the NEET group includes unemployed youth as well as economically inactive youth, the NEET rate provides important complementary information to labour force participation rates and unemployment rates. For example, if youth participation rates decrease during an economic downturn due to discouragement, this may be reflected in an upward movement in the NEET rate.⁶ More generally, a high NEET rate and a low youth unemployment rate may indicate significant discouragement of young people. A high NEET rate for young women suggests their engagement in household chores, and/or the presence of strong institutional barriers limiting female participation in labour markets.

Definitions and sources

Young people are defined as persons aged 15 to 24; young adults are those aged 25 to 29; and adults are those aged 25 and above. However, countries vary somewhat in their operational definitions. In particular, the lower age limit for young people is usually determined by the minimum age for leaving school, where this exists. Differences in operational definitions have implications for comparability, which is discussed below. The resolution concerning statistics of the economically active population, employment, unemployment and underemployment, adopted by the 13th International Conference of Labour Statisticians (ICLS), outlines the international standards for (youth) unemployment. The resolution states that the unemployed comprise all persons above a specified age who, during the reference period, were: (a) without work; (b) currently available for work; and (c) actively seeking work.⁷ As is the case for KILM 9, the unemployment rate is

⁵ Eurofound (European Foundation for the Improvement of Living and Working Conditions): *Young people and NEETs in Europe: First findings (résumé)* (Dublin, 2011).

⁶ ILO: *Global Employment Trends for Youth 2013: A generation at risk* (Geneva, 2013), chapter 2.1; <http://www.ilo.org/global/research/global-reports/global-employment-trends/youth/2013/lang-en/index.htm>.

⁷ Resolution concerning statistics of the economically active population, employment, unemployment and underemployment, adopted by the 13th International Conference of Labour Statisticians, October 1982; http://www.ilo.org/global/What_we_do/Statistics/standards/resolutions/lang-en/docName--WCMS_087481/index.htm. Readers can find the excerpts pertaining to the definition of unemployment in box 9 in the manuscript for KILM 9 and may also wish to review the text in the “Definitions and sources” section in there.

defined as the number of unemployed in an age group divided by the labour force for that group. In the case of youth unemployment as a proportion of the young population, the population for that age group replaces the labour force as the denominator.⁸

The NEET rate in table 10c is defined as the number of youth who are not in employment, education or training as a percentage of the youth population. The NEET rate is available for youth aged 15 to 24 for some countries, but for others refers to persons aged 15 to 29.

As in KILM table 9, information on unemployment is commonly obtained from one of three sources: household surveys of the labour force, official estimates and population censuses. In tables 10b and 10c the most commonly used source is the labour force survey.

Limitations to comparability

There are numerous limitations to the comparability of KILM 10 data across countries and over time; some are more significant than others.⁹ One major limitation to comparability relates to the source used in deriving unemployment rates. The main difficulty with using population censuses as the source is that, owing to their cost, they are not undertaken frequently and the information on unemployment is unlikely to be up to date. In addition, sources other than labour force surveys often do not include probing questions related to employment and therefore may not produce a comparable estimate of employment across different groups of workers. On occasion, unemployment information is based on official estimates. Again, these are unlikely to be comparable and are typically based on a combination of administrative records and other sources. In any event, users should be aware of the primary source and take this into account when comparing data across time or across countries.

An additional point should be made regarding the definition of unemployment. For some countries – see, for example, Trinidad and

⁸ Youth unemployment as a percentage of the youth population is sometimes called the youth unemployment ratio or the youth unemployment-to-population ratio. The (youth) unemployment-to-population ratio and the (youth) employment-to-population ratio (KILM 2) add up to the (youth) labour force participation rate (KILM 1).

⁹ For the sake of completeness, users are also advised to review the corresponding discussion in KILM 9.

Tobago – the unemployment figures exclude those who have not been previously employed (i.e. excluding first time jobseekers). This definition will tend to lower the level of reported youth unemployment.

Although less important than other factors, differences in the age groups utilized should also be mentioned as the age limits applied for both youth and adults may vary across countries. In general, where a minimum school-leaving age exists, the lower age limit of youth will usually correspond to that age. This means that the lower age limit often varies between 10 and 16 years, according to the institutional arrangements in the country. This should not greatly affect most of the youth unemployment measures. However, the size of the age group may influence the measure of the young unemployed as a percentage of total unemployment. Other things being equal, the larger the age group the greater will be this percentage.

In a few cases there is a larger discrepancy in the lower and upper age limits applied. There are also differences in the operational definition of adults. In general, adults are defined as all individuals above the age of 25, but some countries apply an upper age limit.

Reference periods of the information reported might also vary across countries. Because there will be a substantial group of school-leavers (either permanently or for the extended holiday break) in the reported figures, the level of youth unemployment is likely to vary significantly over the year as a result of different school opening and closing dates. Most of the information reported relates to annual averages. In other cases, however, the figures relate to a specific month of the year (as is the case with census data). The implications of the particular month chosen will vary across countries, owing to differences in institutional arrangements.

As mentioned previously, NEET rates are available for youth (aged 15 to 24), for persons aged 15 to 29 or for both age groups. Information referring to persons aged 15 to 29, which includes 'young adults' (aged 25 to 29), better reflects that not all persons complete their education by the age of 24. However, differences in age groups for unemployment rates and NEET rates may hamper a coherent analysis of youth employment issues, which is why information regarding both groups has been included whenever available.

KILM 11. Long-term unemployment

Introduction

The indicators on long-term unemployment look at duration of unemployment, that is, the length of time that an unemployed person has been without work and is looking for a job. KILM 11 consists of two indicators, one containing long-term unemployment, people who are unemployed for longer than one year; and the other containing different durations of unemployment.

The first type of indicator, displayed in table 11a, includes two separate measures of long-term unemployment: (a) the long-term unemployment rate – those unemployed one year or longer as a percentage of the labour force; and (b) the incidence of long-term unemployment – those unemployed for one year or longer as a proportion of total unemployed. Both measures are given for a total of 100 countries, and are disaggregated by sex and age group (total, youth, adult), where possible.

The second type of indicator, displayed in table 11b, includes the number of unemployed (as well as their share of total unemployed) at different durations: (a) less than one month; (b) one month to less than three months; (c) three months to less than six months; (d) six months to less than twelve months; (e) twelve months or more. Table 11b is available for 81 economies.

Use of the indicator

While short periods of joblessness are of less concern, especially when unemployed persons are covered by unemployment insurance schemes or similar forms of support, prolonged periods of unemployment bring with them many undesirable effects, particularly loss of income and diminishing employability of the jobseeker. Moreover, short-term unemployment may even be viewed as desirable when it allows time for jobless persons to find optimal employment; also, when workers can be temporarily laid off and then called back, short spells of unemployment allow employers to weather temporary declines in business activity.

The duration of unemployment matters, in particular in countries where well-developed social security systems provide alternative sources of income. In this respect, an increasing proportion of long-term unemployed is likely to reflect structural problems in the labour market. During the economic crisis for example, many economies saw a sharp rise in the unemployment rate often as a result of longer unemployment durations.

Reducing the duration of periods of unemployment is a key element in many strategies to reduce overall unemployment. Long-duration unemployment is undesirable, especially in circumstances where unemployment results from difficulties in matching supply and demand because of demand deficiency. The longer a person is unemployed, the lower his or her chance of finding a job. Drawing income support for the period of unemployment certainly diminishes economic hardship, but financial support does not last indefinitely. In any case, unemployment insurance coverage is often insufficient and not available to every unemployed person; the most likely non-recipients are persons entering or re-entering the labour market. Eligibility criteria and the extent of coverage, as well as the very existence of insurance, vary widely across countries.¹

Research has shown that the duration of unemployment varies with the length of time that income support can be drawn. This occurs largely because jobless persons with long-duration unemployment benefits are able to extend their periods of joblessness in order to find the job most consistent with their skills and financial needs. It might also indicate simply that unemployment is caused by a long-term deficiency in the supply of jobs. Evidence of the effect of “generosity” – that is, a high level of income supplement benefits – on the duration of unemployment periods is less clear.

Before drawing conclusions about the effects of features of the benefit system on unemployment duration, it is necessary to anal-

¹ The International Social Security Association publishes a series of useful reports that details social security coverage by country. See the “Social Security Programs Throughout the World” series and database at www.issa.int.

use the qualifying and eligibility conditions as well as the extent of nominal and real income replacement. Nevertheless, experts and policy-makers agree that long-term unemployment merits special attention and even, at times, political action. There are concerns that unemployment statistics fail to record significant numbers of people who want to work but are excluded from the standard definition of unemployment because of the requirement that an active job search be undertaken in the reference period. Alternatively, one may wish to apply a broader statistical concept known as “long-term joblessness”, covering working-age persons not in employment and who have not worked within the past one or two years. This measure of the long-term jobless includes “discouraged workers”, that is, persons who are unemployed but not seeking work because they believe no work is available to them. If long-term joblessness is high, then unemployment, as strictly defined, is less reliable as an indicator to monitor effective labour supply, and macroeconomic adjustment mechanisms may not bring unemployment down.

Long-term unemployment is clearly related to the personal characteristics of the unemployed, and often affects older or unskilled workers, and those who have lost their jobs through redundancy. High ratios of long-term unemployment, therefore, indicate serious unemployment problems for certain groups in the labour market and often a poor record of employment creation. Conversely, a high proportion of short-term unemployed indicates a high job creation rate and more turnover and mobility in the labour market (see further details on the indicator on labour flows – table 9c). Such generalizations must be made with great care, however, as there are many factors, including the issue of unemployment benefit programmes cited above, that can influence the relationship between long-term unemployment and the relative health of a given country. Indeed, in the absence of some sort of compensatory income (or a limited period of support), unemployed workers may be obliged to lower their expectations and take whatever job is available, thereby shortening their period of unemployment.

Definitions and sources

The standard definition of long-term unemployment (table 11a) is all unemployed persons with continuous periods of unemployment extending for one year or longer (52 weeks and over); it is expressed as a percentage of the

overall labour force (long-term unemployment rate) and of total unemployment (incidence of long-term unemployment). For more details on the international definition of unemployment, users should refer to the corresponding section in KILM 9.

Data on long-term unemployment are often collected in household labour force surveys. Some countries obtain the data from administrative records, such as those of employment exchanges or unemployment insurance schemes. In the latter instances, data are less likely to be available by sex; moreover, since many insurance schemes are limited in their coverage, administrative data are likely to yield different distributions of unemployment duration. In addition, the use of administrative data reduces, and may even totally preclude, the likelihood that ratios can be calculated using a statistically consistent labour force base. Therefore, all the data for this indicator come from labour force or household surveys, alternative sources having been eliminated as likely to cause inconsistency across the countries for which data are provided.

Because the data relate to the period of unemployment experienced by persons who are still unemployed they necessarily reflect persons in a “continuing spell of unemployment”. The duration of unemployment (table 11b) refers to the duration of the period during which the person recorded as unemployed was seeking and available for work. Data on the duration of unemployment are collected in labour force or household surveys and the durations consist of a continuous period of time up to the reference period of the survey. Table 11b breaks down total unemployment into different unemployment durations and for each unemployment duration, data are expressed in thousands of persons as well as a share of total unemployment.

Statistics on unemployment by duration are gathered using the databases of the Organisation of Co-operation and Development (OECD); the Statistics Agency of the European Commission (EUROSTAT); and National Statistical Offices. To facilitate cross-country comparison, data from OECD and EUROSTAT were preferred. Unemployment by duration is broken down by the following durations:

- Unemployment with a duration of less than one month
- Unemployment with a duration of one month but less than three months

- Unemployment with a duration of three months but less than six months
- Unemployment with a duration of six months but less than twelve months
- Unemployment with a duration of twelve months or more

The category of the unemployed with a duration of twelve months or more (long-term unemployment) is included in both tables (table 11a and 11b); however, data in one table may slightly differ from the other as different sources or coverage may be used.²

Limitations to comparability

Because all data presented in tables 11a and 11b come from labour force surveys or household surveys, fewer caveats need to accompany cross-country comparisons. Nevertheless, while data from household labour force surveys make international comparisons easier, as data from a variety of sources, they are not perfect. Questionnaire design, survey timing, differences in the age groups covered and other issues affecting comparability (see the discussion under KILM 9) mean that care is required in interpreting cross-country differences in levels of unemployment. Also, as mentioned above, users will want to know something about the nature of unemployment insurance coverage in countries of interest to them, as substantial differences in such coverage - especially the lack of it altogether - can have a profound effect on differences in long-term unemployment.

It should also be acknowledged that the length of time that a person has been unemployed is, in general, more difficult to measure than many other statistics, particularly when the data are derived from labour force surveys. When unemployed persons are interviewed, their ability to recall with any degree of precision the length of time that they have been jobless diminishes significantly as the period of joblessness extends. Thus, as it nears a full year, it is quite easy to say “one year”, when in reality the respondent may have been unemployed between 10 and 14 months. If the household respondent is a proxy for the unemployed person, the specific knowledge and the ability to recall are reduced even further. Moreover, as the jobless period lengthens, not only is the likelihood of accurate recall reduced, but the jobless period is more likely to have been interrupted by limited periods of work (or of stopping searching), but either this is forgotten over time or the unemployed person may not consider that work period as relevant to his or her “real” unemployment problem (which is undoubtedly consistent with society’s view as well).

All things considered, then, it must be clearly understood that data on the duration of unemployment are more likely to be unreliable than most other labour market statistics. However, this problem ought not to diminish the importance of this indicator for individual countries. The fact remains that the indicator covers a group of individuals with serious difficulties in the labour market. Whether the period of joblessness is one year and longer or ten months and longer, the group taken as a whole is markedly afflicted by an undesirable, unwanted status.

² Table 11b was constructed as an input for the calculation of labour flows (table 9c) and hence, durations of unemployment (table 11b) were included in the KILM with the aim to construct the longest possible time series while long-term unemployment (table 11a) was constructed with the aim to use repositories that are consistent with other indicators of the KILM (such as KILM 1, KILM 9, and KILM 10).

KILM 12. Time-related underemployment

Introduction

This indicator relates to the number of employed persons whose hours of work in the reference period are insufficient in relation to a more desirable employment situation in which the person is willing and available to engage. The indicator was previously known as “visible underemployment”. Two time-related underemployment rates are presented: one gives the number of persons in time-related underemployment as a percentage of the labour force, and the other as a percentage of total employment. The information presented in table 12 covers 71 countries. All information is based on results from household surveys and are disaggregated by sex and age group (total, youth and adult), where possible.

Use of the indicator

Underemployment reflects under-utilization of the productive capacity of the labour force. The concept of “underutilization” is a complex one with many facets. In order to draw a more complete picture of underutilization in relation to the decent work deficit, one needs to examine a set of indicators which includes but is not limited to labour force, employment-to-population ratios, inactivity rates, status in employment, working poverty and labour productivity. Utilizing a single indicator to paint a picture of underutilization will often provide an incomplete picture.

Underemployment has been broadly interpreted and has come to be used to imply any sort of employment that is “unsatisfactory” (as perceived by the worker) in terms of insufficient hours, insufficient compensation or insufficient use of one’s skills. The fact that the judgement about underemployment is based on personal assessment that could change daily at the whim of the respondent, makes it a concept that is difficult to quantify and to interpret. It is better to deal with the more specific (more quantifiable) components of underemployment sepa-

rately; the “visible” underemployment can be measured in terms of hours of work (time-related underemployment) whereas “invisible” underemployment, which is measured in terms of income earned from the activity, low productivity, or the extent to which education or skills are underutilized or mismatched, are much more difficult to quantify. Time-related underemployment is the only component of underemployment to date that has been agreed on and properly defined within the international community of labour statisticians.

Statistics on time-related under-employment are useful as a supplement to information on employment and unemployment, particularly the latter, as they enrich an analysis of the efficiency of the labour market in terms of the ability of the country to provide full employment to all those who want it.¹ Thus this indicator can provide insights for the design, implementation and evaluation of employment, income and social policies and programmes. Particularly in developing economies people only rarely fall under the clear-cut dichotomy of either “employed” or “unemployed”. Rather, the vast majority of the population will be the underemployed who eke out a living from small-scale agriculture and other types of informal activities. As noted in a study on the subject in Namibia,² very few persons working only a few hours per week on their small plots or guarding goats considered themselves to be employed, particularly since the earnings, in cash or kind from these activities were minimal. They were, however, classified as employed by the labour force survey according to the international

¹ Time-related underemployment is listed as one variable of “labour slack” in the framework for statistically capturing the wider concept of “labour underutilization”. Interested readers can refer to ILO: “Beyond unemployment: Measurement of other forms of labour underutilization”, Room Document 13, 18th International Conference of Labour Statisticians, Working group on Labour underutilization, Geneva, 24 November – 5 December 2008; http://www.ilo.org/wcmsp5/groups/public/---dgreports/---stat/documents/meetingdocument/wcms_100652.pdf.

² Wolf, S.: “Simplified measurement of underemployment: Results of a labour force sample survey in Namibia”, in *Bulletin of Labour Statistics* (Geneva, ILO), 1994-3; http://www.ilo.org/wcmsp5/groups/public/---dgreports/---stat/documents/publication/wcms_087909.pdf.

definition of employment. In such situations, where the majority of the population do not consider themselves to be gainfully employed, an attempt should be made to distinguish between the fully employed and the underemployed.

Whereas unemployment is the most common indicator used to assess the performance of the labour market, in isolation it does not provide sufficient information for an understanding of the shortcomings of the labour market in a country. For example, in the situation above, employment as measured by the standard labour force survey would be high and unemployment low. Low unemployment rates in these countries, however, do not necessarily mean that the labour market is effective. Rather, the low rates mask the fact that a considerable number of workers work fewer hours, earn lower incomes, use their skills less, and, in general, work less productively than they could do and would like to do. As a result, many are likely to be competing with the unemployed in their search for alternative jobs and a clearer picture of the underutilization of the productive potential of the country's labour force can be gained by adding the number of underemployed to the number of unemployed as a share of the overall labour force. Therefore, adding an indicator of time-related underemployment can assist in building a better understanding of the true employment situation

Definitions and sources

The international definition of time-related underemployment was adopted by the 16th International Conference of Labour Statisticians in 1998 and several revisions to the text were proposed in the 19th International Conference of Labour Statisticians in 2013 in order to clarify ambiguities.³ The international definition is based on three criteria: it includes all persons in employment who, during a short reference period, were (a) willing to work additional hours, (b) available to work additional

hours and (c) had worked less than a threshold relating to working time. Each of these criteria is defined in further detail in the resolution itself (see box 12a and 12b). Regarding the first criterion, for example, workers should report that they 1) want another job or jobs in addition to their current employment, 2) that they want to replace any of their current jobs with another job or jobs with increased hours of work, 3) that they want to increase the hours of work of any of their current jobs; or 4) that they want a combination of these three possibilities. This criterion also encompasses those persons who actively seek to work additional hours, using for this purpose the same definition of job search as in the measurement of unemployment.

The current international definition of time-related underemployment includes all workers who report a desire to work additional hours. This contrasts with the definition of unemployment, which includes non-employed persons who would like to work only if they report having actively sought work. There is evidence that the number of time-related underemployed persons would decrease significantly if the definition were to include only those who report having actually sought to work additional hours. This change would almost certainly result in a greater decrease for women than for men and would, therefore, illustrate the fact that women tend not to look for additional work even if they actually want it, perhaps because the time required for job seeking would compete with the time needed for activities related to the gender role assigned to them by society; that of caring for their households and family members, for example.

Despite the improvements in the clarity of the definition of underemployment over the last 20 years,⁴ few countries apply the definition consistently because the criteria on which it is specified are still not entirely precise. (This is similar to the imprecise full-time/part-time cut-off points, as discussed in KILM 6.) This lack of precision has discouraged the production of regular statistics on the subject and has made it difficult to compare the levels of time-related underemployment between countries. For example, countries differ according to whether actual or usual hours are used to identify

³ Resolution concerning the measurement of underemployment and inadequate employment situations, adopted by the 16th International Conference of Labour Statisticians, Geneva, 1998; http://www.ilo.org/global/What_we_do/Statistics/standards/resolutions/lang-en/docName--WCMS_087487/index.htm. Resolution concerning the statistics of work, employment and labour underutilization, adopted by the 19th International Conference of Labour Statisticians, Geneva, 2013: http://www.ilo.org/wcmsp5/groups/public/---dgreports/---stat/documents/publication/wcms_220535.pdf.

⁴ Underemployment was first addressed in resolution III adopted by the 11th International Conference of Labour Statisticians concerning measurement and analysis of underemployment and underutilization of manpower (1966), and in resolution I adopted by the 13th International Conference of Labour Statisticians concerning statistics of the economically active population, employment, unemployment and underemployment (1982).

persons working less than the normal duration, an issue also touched upon in KILM 6.

The indicator, as shown in table 12, reflects the variety of interpretations of the standard definition of time-related underemployment. The national definitions are grouped according to the following three common concepts (or definition codes):⁵

- (1) Persons in employment who reported that they were working part-time or whose hours of work (actual or usual) were below a certain cut-off point, and who also reported involuntary reasons for working fewer than full-time hours - these are also known as “involuntary part-time workers”.
- (2) Persons in employment whose hours of work (actual or usual) were below a certain cut-off point and who *wanted* to work additional hours.
- (3) Persons in employment whose hours of work (actual or usual) were below a certain cut-off point and who *sought* to work additional hours.

It is possible to compare countries that apply the strictest definition (code 3) with countries that apply a wider definition (codes 1 or 2) to see to what extent the definition applied affects the count of underemployed workers. The hours cut-off information shown in the notes table is the number of hours of work (actual or usual) at which a person is no longer counted in the underemployment estimate.

As mentioned above, statistics for this indicator are based exclusively on household surveys. They were obtained mainly from the OECD’s labour statistics database⁶ and for non-OECD countries, national publications were used.

Limitations to comparability

National definitions of time-related underemployment vary significantly between countries. Based on a review of country practices, most national definitions include workers who want to work additional hours (definition code 2). Many other definitions include only workers who report involuntary reasons either for not working more hours or for working the

current number of hours (definition code 1). The specific reasons considered as “involuntary”, however, vary significantly across countries. A certain number of countries obtain this information in two stages. The first stage identifies workers who usually work less than a threshold for involuntary reasons, while the second stage identifies workers whose actual hours are below their usual hours for economic or technical reasons. The reasons considered as “involuntary” are not equivalent for the two groups of workers identified, however. Few economies apply the definition requiring workers to seek to work additional hours (definition code 3; currently applies to Armenia, Barbados, Hong Kong (China), Israel, Norway, Pakistan and Panama).

Most definitions include persons whose “hours actually worked” during the reference week were below a certain threshold. Some definitions include persons whose “hours usually worked” were below a certain threshold and other definitions include both groups of workers. Perhaps because no international definition of “part time” exists, national determinations of hourly thresholds are not always consistent. In a few countries the threshold is defined in terms of the legal hours or the usual hours worked by full-time workers. Some countries enquire directly as to whether workers work part time, or define the threshold in terms of the worker’s own usual hours of work. As a consequence, the threshold used varies significantly from country to country. The hours cut-off for Costa Rica, for example, is the full-time equivalent of 47 hours, whereas most OECD countries report involuntary part-time only, meaning persons working at or below 30 hours a week.

It should be clear from the foregoing discussion concerning the wide variety of possibilities for measuring time-related underemployment that failure to isolate the definitional components will greatly limit comparability between countries. Despite the fact that all the information for this measurement comes from household surveys, a variety of other potential limitations to comparability result from differences in the timing of surveys, sampling procedures, collection questionnaires, and so on. A succinct description of such limitations is provided in the section in the manuscript for KILM 9 on “Limitations to comparability”.

⁵ KILM users should consult the notes to table 12 to clarify which definition applies to each country.

⁶ The OECD publishes statistics online at <http://stats.oecd.org/Index.aspx>.

Box 12a. Resolution concerning the measurement of underemployment and inadequate employment situations, adopted by the 16th International Conference of Labour Statisticians, October 1998 [relevant paragraphs]

Objectives

1. The primary objective of measuring underemployment and inadequate employment situations is to improve the analysis of employment problems and contribute towards formulating and evaluating short-term and long-term policies and measures designed to promote full, productive and freely chosen employment as specified in the Employment Policy Convention (No. 122) and Recommendations (Nos. 122 and 169) adopted by the International Labour Conference in 1964 and 1984. In this context, statistics on underemployment and indicators of inadequate employment situations should be used to complement statistics on employment, unemployment and inactivity and the circumstances of the economically active population in a country.
2. The measurement of underemployment is an integral part of the framework for measuring the labour force established in current international guidelines regarding statistics of the economically active population; and the indicators of inadequate employment situations should as far as possible be consistent with this framework.

Scope and concepts

3. In line with the framework for measuring the labour force, the measurement of underemployment and indicators of inadequate employment should be based primarily on the current capacities and work situations as described by those employed. Outside the scope of this resolution is the concept of underemployment based upon theoretical models about the potential capacities and desires for work of the working-age population.
4. Underemployment reflects underutilization of the productive capacity of the employed population, including those which arise from a deficient national or local economic system. It relates to an alternative employment situation in which persons are willing and available to engage. In this resolution, recommendations concerning the measurement of underemployment are limited to time-related underemployment, as defined in subparagraph 8(1) below.
5. Indicators of inadequate employment situations that affect the capacities and well-being of workers, and which may differ according to national conditions, relate to aspects of the work situation such as use of occupational skills, degree and type of economic risks, schedule of and travel to work, occupational safety and health and general working conditions. To a large extent, the statistical concepts to describe such situations have not been sufficiently developed.
6. Employed persons may be simultaneously in underemployment and inadequate employment situations.

Measures of time-related underemployment

7. Time-related underemployment exists when the hours of work of an employed person are insufficient in relation to an alternative employment situation in which the person is willing and available to engage.
- 8(1) Persons in time-related underemployment comprise all persons in employment, as defined in current international guidelines regarding employment statistics, who satisfy the following three criteria during the reference period used to define employment:
 - (a) “willing to work additional hours”, i.e. wanted another job (or jobs) in addition to their current job (or jobs) to increase their total hours of work; to replace any of their current jobs with another job (or jobs) with increased hours of work; to increase the hours of work in any of their current jobs; or a combination of the above. In order to show how “willingness to work additional hours” is expressed in terms of action which is meaningful under national circumstances, those who have actively sought to work additional hours should be distinguished from those who have not.

(Box 12a continued)

Actively seeking to work additional hours is to be defined according to the criteria used in the definition of job search used for the measurement of the economically active population, also taking into account activities needed to increase the hours of work in the current job;

- (b) “available to work additional hours”, i.e. are ready, within a specified subsequent period, to work additional hours, given opportunities for additional work. The subsequent period to be specified when determining workers’ availability to work additional hours should be chosen in light of national circumstances and comprise the period generally required for workers to leave one job in order to start another;
- (c) “worked less than a threshold relating to working time”, i.e. persons whose “hours actually worked” in all jobs during the reference period, as defined in current international guidelines regarding working-time statistics, were below a threshold, to be chosen according to national circumstances. This threshold may be determined by e.g. the boundary between full-time and part-time employment, median values, averages, or norms for hours of work as specified in relevant legislation, collective agreements, agreements on working-time arrangements or labour practices in countries.

Box 12b. Resolution concerning the statistics of work, employment and labour underutilization, adopted by the 19th International Conference of Labour Statisticians, October 2013 [relevant paragraphs]

155. The resolution incorporates guidelines for the measurement of time-related underemployment based on the recommendations of the 16th ICLS resolution on this topic. The operational definition of time-related underemployment has not been changed. However, several revisions to the text are proposed in order to clarify ambiguities identified by countries in applying the international standards. These relate particularly to the defining criteria of time-related underemployment, the relevant working-time concepts used, and the different subgroups that may be identified to shed light on structural and cyclical situations of time-related underemployment.

Time-related underemployment

156. As set forth in the 16th ICLS resolution, the definition of time-related underemployment comprised three criteria. It referred to persons in employment who, in the short reference period, wanted to work additional hours, had worked less than an hours threshold set at national level, and who were available to work additional hours in a subsequent reference period. A main source of ambiguity relates to the requirement to establish an hour’s threshold as part of the definition. This criterion was introduced in order to focus the measure on situations related to insufficient quantity of employment, as evidenced by the number of hours actually worked at all jobs in the reference week. Exclusion of the threshold from the definition would result in the inclusion of persons who wanted to work additional hours because of issues not related to insufficient quantity of work, particularly due to low income, thus no longer being a measure of time-related underemployment.

157. To establish the hours threshold, countries may use a variety of approaches, including a distinction based on notions of part-time/full-time employment, or on median or modal values of hours usually worked. At the time when the standards were adopted by the 16th ICLS, an international definition of hours usually worked did not exist. As a result, the resolution used the notion of normal hours. Even then, however, the intention was to recommend the concept of hours usually worked in order to have a measure in reference to the typical working time associated with specific groups of persons in employment. As different industries may have different typical working-time patterns, for example in agriculture, the draft resolution allows the setting of different hours thresholds for different worker groups, depending on national circumstances.

158. A second source of ambiguity concerns the reference period against which to assess the availability criterion. The 16th ICLS resolution provides detailed guidelines for establishing the reference period for availability as comprising the “period generally required for workers to leave one job in order to start another”. In practice however, most countries have used a similar period as that

(Box 12a continued)

used for establishing availability as part of the definition of unemployment. Such practice is likely to result in an underestimation of time-related underemployment by referring to a situation in the past when the person would not have made arrangement to become available for additional work. This would be, in particular, the case for persons with responsibilities outside of employment, including those providing care for dependent members of the household, and those engaged also in other forms of work.

159. A final source of ambiguity is the distinction between the two categories of persons in time-related underemployment, namely, those who work usually less than the hours threshold and those who usually work more than the hours but who, during the short reference period, were not at work or actually worked reduced hours for economic reasons. These two groups are mutually exclusive:

- (a) The first group is in a prolonged situation of time-related underemployment (with both hours actually worked and hours usually worked below the threshold for time-related underemployment). As such, when separately identified, this group may be useful for examining structural situations of insufficient quantity of employment among the employed.
- (b) The second group is in a temporary situation of time-related underemployment. As such it reflects situations of insufficient quantity of employment due to cyclical or seasonal factors.

KILM 13. Inactivity

Introduction

The inactivity rate is the proportion of the working-age population that is not in the labour force. Summing up the inactivity rate and the labour force participation rate (see KILM 1) will yield 100 per cent. Information on this indicator is given for 189 economies for the same standardized age groupings provided in KILM table 1a: 15+, 15-24, 15-64, 25-54, 25-34, 35-54, 55-64 and 65+. The estimates are harmonized to account for differences in countries' data collection and tabulation methodologies as well as for other country-specific factors such as military service requirements. The series includes both country reported and imputed data.

Use of the indicator

Although labour market economists tend to focus on the activities and characteristics of people in the labour force, there has been continued, if less visible, interest in individuals outside of the labour market, especially those who want to work but are not currently seeking work.¹ Much of this growing interest stems from concern over improving the availability of decent and productive employment opportuni-

ties in developing and developed economies alike. Individuals are considered to be outside the labour force, or inactive, if they are neither employed nor unemployed, that is, not actively seeking work. There is a variety of reasons why some individuals do not participate in the labour force; such persons may be occupied in caring for family members; they may be retired, sick or disabled or attending school; they may believe no jobs are available; or they may simply not want to work.

In some situations, a high inactivity rate for certain population groups should not necessarily be viewed as "bad"; for instance, a relatively high inactivity rate for young people aged 25 to 34 years may be due to their non-participation in the labour force to receive education. Furthermore, a high inactivity rate for women aged 25 to 34 years may be due to their leaving the labour force to attend to family responsibilities such as childbearing and childcare. Using the data in KILM 13, users can investigate the extent to which motherhood relates to the labour force patterns of women. It has long been recognized that aspects of household structure are associated with labour market activity. For example, female heads of households tend to have relatively high inactivity rates. Among married-couple families, husbands typically have low inactivity rates, especially if there are children in the family. However, a low rate of female inactivity could coincide with a high rate for men, for instance if the male is completing his education or is physically unable to work, thus making the wife the primary wage earner.

A subgroup of the inactive labour force comprises those known as discouraged workers, defined as persons not in the labour force, who are available for work but no longer looking for work because they think they will not find any. This is typically for personal reasons associated with their perception of lack of job availability. Regardless of their reasons for being discouraged, these potential workers are generally considered underutilized. The presence of discouraged workers is implied if the measured labour force grows when unemployment is falling (although demographic pressures should also be taken into consideration). People who were not counted as unemployed (because

¹ The resolution concerning the statistics of work, employment and labour underutilization, adopted by the 19th International Conference of Labour Statisticians, Geneva, 2013 taps into this pool of inactive by identifying situations of inadequate absorption of labour, beyond those captured by unemployment. The resolution introduces a definition of potential labour force and proposes that the definition cover persons who have indicated some interest in employment but who are currently counted as inactive. It distinguishes three mutually exclusive groups:

- a) unavailable jobseekers, referring to persons without employment who are seeking employment but are not available;
- b) available potential jobseekers, referring to persons without employment who are not seeking employment but are available; and willing potential jobseekers,
- c) comprising persons without employment who are neither seeking nor available for employment but who want employment. Further information can be sought at: http://www.ilo.org/wcmsp5/groups/public/---dgreports/--stat/documents/publication/wcms_220535.pdf.

they were not actively searching for work) when there were few jobs to be had may change their mind and look for work when the odds of finding a job improve. Furthermore, when numbers of discouraged workers are high, policy-makers may attempt to “recapture” members of this group by improving job placement services. (See discussion on “discouragement” also in KILM 10.)

Definitions and sources

There are several aspects of the definition to consider for the inactivity indicator. Foremost is the fact that estimates must be made for the entire population, either through labour force surveys, population censuses, or similar means. Typically, determinations are made as to the labour force status of the relevant population. The labour force is defined as the sum of the employed and the unemployed. The remainder of the population is the number of persons not in the labour force.

Only labour force participation rates and population figures deemed sufficiently comparable across countries were used in the construction of table 13.² To this end, only labour force survey and population census-based data were used in the construction of the estimates. In countries with more than one survey source, only one type of source was used. If a labour force survey was available for the country, inactivity rates derived from these

were chosen in favour of those derived from a population census. Only inactivity rates that are sufficiently representative of the standardized age groups (15+, 15-24, 15-64, 25-54, 25-34, 35-54, 55-64 and 65+) were used in the construction of the series.

Table 13 includes both real (country reported) inactivity rates as well as rates that were imputed using econometric modelling techniques. GDP levels and growth rates, population age structure variables and dummy variables to capture time trends, region-specific trends and country fixed effects were among the explanatory variables used to generate the imputed labour force participation rates in KILM table 1a, which were then used in the construction of table 13. These rates were estimated separately both for each age group as well as for the sexes.

Limitations to comparability

The usual comparability issues stemming from differences in concepts and methodologies according to types of survey, variations in age groups, geographic coverage, etc., do not apply in the case of table 13. The table is derived from the harmonized labour force participation rates in table 1a, where only data deemed sufficiently comparable across countries were used, which makes table 13 harmonized (and comparable) by default. The selection criteria for creating the harmonized data set were explained in the previous section.

² See the corresponding section of the KILM 1 manuscript for details on the construction of the harmonized table 1a. Since table 13 is the complement of table 1a, the same methodologies for construction apply.

KILM 14. Educational attainment and illiteracy

Introduction

KILM 14 reflects the levels and distribution of the knowledge and skills base of the labour force and the unemployed. Tables 14a and 14b show the distribution of the educational attainment of the labour force and the unemployed for 139 and 140 countries, respectively, according to five levels of schooling – less than one year, pre-primary level, primary level, secondary level, and tertiary level. Table 14c provides information on the unemployment rate, that is, the share of the unemployed in the labour force, according to three groupings of educational attainment: primary or less, secondary and tertiary for 112 countries. Finally, table 14d presents information on illiteracy rates as the percentage of illiterate persons in the population for 155 countries.

The data in tables 14a, 14b, 14c, and 14d are broken down by sex and wherever possible by the following age cohorts: total (15 years and over), youth (15 to 24 years), and adult (25 years and over).

Use of the indicator

In all countries, human resources represent, directly or indirectly, the most valuable and productive resource; countries traditionally depend on the health, strength and basic skills of their workers to produce goods and services for consumption and trade. The advance of complex organizations and knowledge requirements, as well as the introduction of sophisticated machinery and technology, means that economic growth and improvements in welfare increasingly depend on the degree of literacy and educational attainment of the total population. The population's predisposition to acquire such skills can be enhanced by experience, informal and formal education, and training.

Although the natural endowments of the labour force remain relevant, continuing economic and technological change means that

the bulk of human capital is now acquired, not only through initial education and training, but increasingly through adult education and enterprise or individual worker training, within the perspective of lifelong learning and career management. Unfortunately, quantitative data on lifelong learning, and indicators that monitor developments in the acquisition of knowledge and skills beyond formal education, are sparse. Statistics on levels of educational attainment, therefore, remain the best available indicators of labour force skill levels to date. These are important determinants of a country's capacity to compete successfully and sustainably in world markets and to make efficient use of rapid technological advances. They also should affect the employability of workers.

The ability to examine education levels in relation to occupation and income is also useful for policy formulation, as well as for a wide range of economic, social and labour market analyses. Statistics on levels and trends in educational attainment of the labour force can: (a) provide an indication of the capacity of countries to achieve important social and economic goals; (b) give insights into the broad skill structure of the labour force; (c) highlight the need to promote investments in education for different population groups; (d) support analysis of the influence of skill levels on economic outcomes and the success of different policies in raising the educational level of the workforce; (e) give an indication of the degree of inequality in the distribution of education resources between groups of the population, particularly between men and women, and within and between countries; and (f) provide an indication of the skills of the existing labour force, with a view to discovering untapped potential.

By focusing on the educational characteristics of the unemployed, the KILM 14 indicator can also aid to shed light on how significant long-term events in a country, such as skill-based technological change, increased trade openness or shifts in the sectoral structure of the economy, alter the experience of high- and low-skilled workers in the labour market. The information provided can have important

implications for both employment and education policy. To the extent that persons with low education levels are at a higher risk of becoming unemployed, the political reaction may be either to seek to increase their education level or to create more low-skilled occupations within the country.

Alternatively, a higher share of unemployment among persons with higher education could indicate a lack of sufficient professional and high-level technical jobs. In many countries, qualified jobseekers are being forced to accept employment below their skill level. Where the supply of qualified workers outpaces the increase in the number of professional and technical employment opportunities, high levels of skills-related underemployment (see the manuscript for KILM 12 for more information) are inevitable. A possible consequence of the presence of highly educated unemployed in a country is the “brain drain”, whereby educated professionals migrate in order to find employment in other areas of the world.

While not a labour market indicator in itself, the illiteracy rate of the population may be a useful proxy for basic educational attainment in the potential labour force. Literacy and numeracy are increasingly considered to be the basic minimal skills necessary for entry into the labour market.

Definitions and sources

Educational attainment¹

The seven categories of educational attainment used in KILM 14 are conceptually based on the ten levels of the International Standard Classification of Education (ISCED). The ISCED was designed by the United Nations Educational, Scientific and Cultural Organization (UNESCO) in the early 1970s to serve as an instrument suitable for assembling, compiling and presenting comparable indicators and statistics of education, both within countries and internationally. The original version of ISCED (ISCED-76) classified educational programmes by their content along two main axes: levels of education and fields of education. The cross-classification variables were maintained in the revised ISCED-97; however, the rules and criteria for allocating

programmes to a level of education were clarified and tightened, and the fields of education were further elaborated.² Many countries continue to classify education levels according to the levels of ISCED-76, but more and more countries have made the change to the nine levels and ten subcategories of ISCED-97. In 2011, a new classification ISCED 2011 was introduced; however, reporting according to ISCED-11 will not start until 2014.³ Tables 14a to 14c clearly identify which classification system applies for each record. The main education levels are also summarized in the table below.

The major attainment levels in KILM 14 are primary, secondary and tertiary education. Primary education aims to provide the basic elements of education (for example, at elementary or primary school and lower secondary school) and corresponds to ISCED levels 1 and 2. Curricula are designed to give students a sound basic education in reading, writing and arithmetic, along with an elementary understanding of other subjects such as history, geography, natural science, social science, art, music and, in some cases, religious instruction. Some vocational programmes, often associated with relatively unskilled jobs, as well as apprenticeship programmes that require further education, are also included. Students generally begin primary education between the ages of 5 and 7 years and end at 13 to 15 years. Literacy programmes for adults, similar in content to programmes in primary education, are also classified under primary education.

Secondary education is provided at high schools, teacher-training schools at this level, and schools of a vocational or technical nature. General education continues to be an important constituent of the curricula, but separate subject presentation and more specialization are also found. Secondary education consists of ISCED levels 3 (designated “upper secondary education”) and 4 (designated “post-secondary non-tertiary education”), and students generally begin between 13 and 15 years of age and finish between 17 and 18 years of age. It should be noted that the KILM classifications of primary and secondary education differ from the classifications used in UNESCO publications, in which level 2 is termed “lower secondary education”.

² For further details about the ISCED see UNESCO: *International Standard Classification of Education/ISCED 1997* (Paris, 1998); <http://www.uis.unesco.org/Education/Pages/international-standard-classification-of-education.aspx>.

³ For further details on ISCED 2011, see UNESCO: *International Standard Classification of Education/ISCED 2011* (Paris, 2012); <http://www.uis.unesco.org/Education/Pages/international-standard-classification-of-education.aspx>.

¹ For more information relating to definitions of the labour force and unemployment, users can consult the manuscripts of KILMs 1 and 9, respectively.

Education classifications used in KILM table 14

KILM Level	ISCED-97 Level	ISCED-76 Level	Description
Less than one year	X: No schooling	X: No schooling	Less than one year of schooling
Pre-primary	0: Pre-primary education	0: Education preceding the first level	Education delivered in kindergartens, nursery schools or infant classes
Primary	1: Primary education or first stage of basic education	1: First level	Programmes are designed to give students a sound basic education in reading, writing and arithmetic. Students are generally 5-7 years old. Might also include adult literacy programmes.
	2: Lower secondary or second stage of basic education	2: Second level, first stage	Continuation of basic education, but with the introduction of more specialized subject matter. The end of this level often coincides with the end of compulsory education where it exists. Also includes vocational programmes designed to train for specific occupations as well as apprenticeship programmes for skilled trades.
Secondary	3: Upper secondary education	3: Second level, second stage	Completion of basic level education, often with classes specializing in one subject. Admission usually restricted to students who have completed the 8-9 years of basic education or whose basic education and vocational experience indicate an ability to handle the subject matter of that level.
	4: Post-secondary non-tertiary education		Captures programmes that straddle the boundary between upper-secondary and post-secondary education. Programmes of between six-months and two years typically serve to broaden the knowledge of participants who have successfully completed level 3 programmes.
Tertiary	5: First stage of tertiary education (not leading directly to an advanced research qualification); subdivided into:		
	5A	6: Third level, first stage leading to a first university degree	Programmes are largely theoretically based and are intended to provide sufficient qualifications for gaining entry into advanced research programmes. Duration is generally 3-5 years.
	5B	5: Third level, first stage, leading to an award not equivalent to a first university degree	Programmes are of a typically "practical" orientation designed to prepare students for particular vocational fields (high-level technicians, teachers, nurses, etc.).
	6: Second stage of tertiary education (leading to an advanced research qualification)	7: Third level, second stage	Programmes are devoted to advanced study and original research and typically require the submission of a thesis or dissertation.
Not definable		9: Education not definable by level	Programmes for which there are no entrance requirements.
Not stated	?: Level not stated	?: Level not stated	

Tertiary education is provided at universities, teacher-training colleges, higher professional schools and sometimes distance-learning institutions. It requires, as a minimum condition of admission, the successful completion of

education at the secondary level or evidence of the attainment of an equivalent level of knowledge. It corresponds to ISCED levels 5, 6 and 7 (levels 5A, 5B and 6 in ISCED-97 and levels 5, 6 and 7 in ISCED-76).

In addition to primary, secondary and tertiary education, KILM 14 also covers three other categories of educational attainment that correspond to ISCED levels: less than one year of schooling (level X); pre-primary (level 0); and education not defined by level (ISCED-76 level 9).

The statistics on educational attainment of the labour force, including the unemployed, were obtained from ILO databases (such as LABORSTA and ILOSTAT); the Caribbean Labour Statistics Dataset; the OECD and EUROSTAT online databases; and information collected from National Statistical Offices. Information on educational attainment is typically collected through household surveys, official estimates and population censuses conducted by national statistical services.

Illiteracy rates

Literacy is defined as the skills to read and write a simple sentence about everyday life. Illiteracy is the inverse, that is, the lack of the skills to read and write a simple sentence about everyday life. The source of information for the number of illiterate persons and the illiteracy rates is UNESCO's Institute for Statistics (UIS).⁴

The estimates are either national, based on data collected during national population censuses and household surveys, or are UIS estimates. Information about the model estimation methodology is available on the UIS website.

Limitations to comparability

A number of factors can limit the appropriateness of using the indicators for comparisons of statistics on education between countries or over time. First, it should be noted that the same limitations relating to comparability of other indicators based on labour force apply here as well. The discussion in the corresponding section of the KILM 1 and 9 manuscripts should be read for additional details on the caveats relating to comparability.

In addition to the differences associated with varying information sources, the way in which individuals in the labour force are

assigned to educational levels can also severely limit the feasibility of cross-country comparisons. Many countries have difficulty establishing links between their national classification and ISCED, especially with respect to technical or professional training programmes, short-term programmes and adult-oriented programmes (ranging around levels 3 and 5 of ISCED-76 and levels 3, 4 and 5 of ISCED-97). In numerous situations, ISCED classifications are not strictly adhered to; a country may choose to include level 3 (secondary) with levels 5, 6 and 7 (tertiary), e.g. Botswana; or levels 1 or 2 (primary) may include levels 0 (less than one year) and 1 (pre-primary), e.g. Canada. It should also be noted that in a few countries ISCED levels are combined in different way; for instance, levels 1 and 2 (taken together as the primary level) may refer to level 1 only, as in many countries in Latin America & the Caribbean, or to level 2 only, e.g. Austria. It is necessary to pay close attention to the notes – specifically, the notes given in the column “Classification note” – in order to ascertain the actual distribution of education levels before making comparisons.

An issue that affects several countries in the European Union subgroup of the Developed Economies originates from the way in which those who have received their highest level of education in apprenticeship systems are classified. The classification of apprenticeship in the “secondary” level – despite the fact that this involves one or more years of study and training beyond the conventional length of secondary schooling in other countries – can lower the reported proportion of the labour force or population with tertiary education, compared with countries where the vocational training is organized differently. This classification issue substantially holds down the levels of tertiary education reported by Austria and Germany, for instance, where the participation of young people in the apprenticeship system is widespread.

Limitations to comparability of information on illiteracy rates, as given in table 14d, exist because of variations in the definition of illiteracy. The most common definition is the inability to read and write a simple statement about everyday life. However, different countries have different social and cultural contexts, different definitions and standards of literacy, and different methodologies for collecting and compiling the literacy data, as well as variations in the quality of data collected, and caution is needed in comparing the literacy situations among countries and regions. Some countries

⁴ The UIS literacy and illiteracy estimates are available at website: <http://www.uis.unesco.org/Literacy/Pages/default.aspx>.

define illiteracy, not by reading and writing aptitude, but by the years of schooling attained. For example, a person is categorized as illiterate in Estonia who has not completed primary education, and in Malaysia, an illiterate is a person who has never been to school. These countries, therefore, should not be compared against, say, Angola, where illiterate persons are defined as those who cannot easily read a letter or a newspaper.

KILM 15. Skills mismatch

Introduction

The new indicator KILM 15 provides information on the extent to which the supply of skills matches the demand for skills. It is a complement to KILM 14 that presents statistics on the level and distribution of the knowledge and skills base of the labour force and the unemployed.

Table 15a presents an index summarizing skills mismatch between labour supply and demand by educational attainment and table 15b provides information on the incidence of skills mismatch between job requirements and qualifications.

The information in both tables is available by sex and age group (15 years and over; 15 to 24 or 15 to 29; and 30 years and over). The mismatch index in table 15a has been calculated for 48 economies, and information in table 15b is available for 49 economies.

Use of the indicator

The issue of skills mismatch has received renewed attention in advanced economies following the global economic crisis in 2008-2009, but various forms of mismatch are always present in labour markets. Addressing skills mismatch issues is often a complex undertaking because of the many factors that influence skills demand and supply, including for example the level of economic development of a country, technological change, demographics and mobility of workers. At the same time, the extent to which skills supply and demand are successfully being matched is a major factor shaping economic and labour market outcomes, economic growth, productivity and competitiveness. Therefore, the formulation and implementation of effective education and training policies, including responsive education and training systems, is a continuous challenge for all countries. Meeting this challenge requires linking skills development to employment and economic development, involving social partners and key stakeholders in skills develop-

ment systems, and effective labour market information and analysis systems.¹

There is no internationally agreed method to measure skills mismatch. Skills mismatch is an encompassing term which refers to various types of imbalances between skills offered and skills needed in the world of work, and it applies equally to the employed and the unemployed. Furthermore, in most countries skills and competencies per se are not measured by regular statistical programmes. That is why skill proxies are used, such as qualifications, years of schooling and occupations.

The type of skills mismatch presented in table 15a reflects differences between unemployment rates by level of educational attainment (see also KILM 14). Such differences indicate that the level of educational attainment of workers is an important determinant of the probability of finding a job besides the level of unemployment. Differences across groups of workers with different levels of educational attainment are summarized in an index, and the higher the value of the index, the higher the level of mismatch according to this measure. For example, the skills mismatch index for the age group 30 and above in Lithuania (26.6 per cent) was much higher than in Portugal (8.0 per cent) in 2012. This is due to the fact that in Lithuania the unemployment rate for workers with primary education is much higher (33 per cent) than those for workers with secondary and with tertiary education (15 per cent and 4.1 per cent, respectively). In Portugal, the differentials are far more limited; unemployment rates for workers with primary, secondary and tertiary education were 14.5, 13.8 and 8.4 per cent, respectively. Put differently, this indicates that the unemployment rate in Portugal is more a reflection of problems with aggregate demand rather than specific problems related to education, at least when compared to Lithuania.

The level of the index by itself does not give information concerning the group of unem-

¹ See ILO Recommendation No. 195 (2004) on human resources development; http://www.ilo.org/dyn/normlex/en/?p=NORMLEXPUB:12100:0::NO:12100:P12100_INSTRUMENT_ID:312533:NO.

ployed which is in a relatively favourable position. However, the development of the levels over time shows whether skills mismatch is increasing or decreasing. If increases or decreases occur consistently over longer periods, this may point to the need for more support of particular labour market groups. For example, the index may show an increase over time due to a (relative) deterioration of the labour market position of unemployed with a low level of educational attainment. In Spain for example, the index increased from 11.8 per cent in 2002 to 20.2 per cent in 2012 for the age group 30 and over. Even though unemployment rates increased for workers of all levels of education in Spain during this period, the increase was more severe for workers with primary education, which underlines the need to promote investment in education particularly for this group.

The second type of skills mismatch, presented in table 15b, consists of mismatch between the qualification requirements of jobs held by workers and the qualifications these workers possess, an indication of over- or underqualification. Concerns about this type of mismatch, in particular overqualification, have been growing due to the increasing supply of tertiary-educated workers in advanced economies and their employment in jobs previously held by workers with lower educational attainment. Increasing supply may result in competition for jobs, which pushes better educated workers into jobs or occupations usually taken by those with lower levels of education.² This type of mismatch is likely to increase in times of economic crises, when employment opportunities are scarce and unemployment rates are high.³ In developing economies, where educational attainment levels are often lower, underqualification is more likely to be an important labour market issue. Widespread underqualification points at the need for more education, even if it occurs alongside relatively high unemployment rates for tertiary-educated workers. The latter often reflect the supply and demand for skills and secure jobs in the formal sector, while underqualification is more likely to be

characteristic of the labour market as a whole in developing economies.⁴

Measurements of the incidence of skills mismatch between jobs held by workers and the qualifications they possess vary widely, and are sensitive to methods that have been used, among other factors. Based on the same methodology that has been used to produce table 15b (see more details in *Definitions and sources* below), the *Global Employment Trends for Youth 2013* report estimates that the average incidence of overqualification in a sample of European economies in 2010 was 10.1 per cent (and ranged from 3.6 to 16.8 per cent), while underqualification averaged 28.1 per cent (and ranged from 15.9 to 45.6 per cent). The same report finds that the risk of overqualification is higher for migrants, younger workers and persons with disabilities. Given the strong rise in educational attainment and the structural change in labour markets occurring in parts of the developing world, it is less clear whether younger workers are more likely to be overqualified outside the advanced economies as well.

Research suggests that mismatch between jobs held by workers and the qualifications they possess has negative consequences for workers, enterprises and the economy.⁵ For the overeducated, wages are often higher than for the well-matched at the same job, but returns to the years of schooling beyond the required level are lower. Undereducated workers earn less than the well-matched at the same job, but more than workers with the same educational level and a matching job. Studies show that overqualified workers are less satisfied with their job than the well-matched, which in turn is likely to affect productivity. Evidence also suggests that the overeducated are more likely to engage in job search and therefore add to turnover of staff. At the macroeconomic level, skills mismatch may raise unemployment rates, reduce labour market flexibility and reduce output and productivity growth.

² Karakaya, G., Plasman, R., and Rycx, F.: "Overeducation on the Belgian labour market: Evaluation and analysis of the explanatory factors through two types of approaches", in *Compare: A Journal of Comparative and International Education*, Vol. 37, No. 4, pp. 513–532 (2007).

³ See ILO: *Global Employment Trends for Youth 2013: A generation at risk* (Geneva, 2013); <http://www.ilo.org/global/research/global-reports/global-employment-trends/youth/2013/lang-en/index.htm>.

⁴ See, for example, Sparreboom, T. and Nübler, I.: *Productive transformation, employment and education in Tanzania*, paper presented at the 2013 UNU-WIDER Development Conference on Learning to Compete: Industrial Development and Policy in Africa, 24–25 June, Helsinki; <http://www1.wider.unu.edu/L2Cconf/sites/default/files/L2CPapers/Sparreboom.pdf>.

⁵ For an overview of the effects of skills mismatch, see Quintini, G.: *Over-qualified or under-skilled: A review of existing literature*, OECD Social, Employment and Migration Working Papers, No. 121 (Paris, 2011); http://www.oecd-ilibrary.org/social-issues-migration-health/over-qualified-or-under-skilled_5kg58j9d7b6d-en; much of the literature is focusing on developed economies.

As was mentioned before, underqualification in developing economies is often a manifestation of low levels of educational attainment. This means that, for example, professional jobs (teachers, engineers, health professionals) are taken by workers with (at most) secondary education. Low levels of educational attainment may also result in underqualification in occupations which require low levels of skills, such as elementary occupations, which is rare in developed economies.⁶

Definitions and sources

Table 15a presents skills mismatch between supply of labour and demand for labour in the form of an index of dissimilarity based on the differences in the shares of educational attainment of the employed in comparison with the unemployed. This index captures one dimension of mismatch, namely mismatch between skills demand (defined by the skills of the employed) and skills supply (defined by the skills of the unemployed), both proxied by level of educational attainment, and is defined as follows:

$$ID^{Mismatch} = \frac{1}{2} \sum_{i=1}^3 ABS \left(\frac{E_i}{E} - \frac{U_i}{U} \right)$$

where: i : an indicator for the level of education (primary or less; secondary; tertiary); ABS : the operator for the absolute difference; E_i/E : the proportion of the employed with education level i ; U_i/U : the proportion of unemployed with education level i ; for information regarding educational attainment readers may consult the manuscript of KILM 14.

Apart from being a measure of mismatch between skills supply and demand, the index can be interpreted as a summary measure of the relative position of labour market groups with different levels of education. If primary, secondary and tertiary graduates all have the same unemployment rate, the index will have a value of zero (no dissimilarity between groups), while the index would reach a value of 1 (complete dissimilarity) if, for example, all those with primary and tertiary education are employed and all those with secondary education are unemployed.

⁶ ILO: *Global Employment Trends for Youth 2013: A generation at risk* (Geneva, 2013), table 10, shows underqualification and overqualification by ISCO major group in selected developing economies; <http://www.ilo.org/global/research/global-reports/global-employment-trends/youth/2013/lang-en/index.htm>.

ISCO major groups and skill levels used for table 15b

ISCO major group	Broad occupation group	Skill level
1: Legislators, senior officials, managers	High-skilled non-manual	Tertiary (ISCED 5-6)
2: Professionals		
3: Technicians and associate professionals		
4: Clerks	Low-skilled non-manual	Secondary (ISCED 3-4)
5: Service workers, shop, market sales workers		
6: Skilled agricultural and fishery workers	Skilled manual	
7: Craft and related trades workers		
8: Plant and machine operators and assemblers		
9: Elementary occupations	Unskilled	Primary (ISCED 1-2)

Note: Excluding armed forces occupations.

Skills mismatch in the sense of overeducation or undereducation means that workers have either more education or less education than is required. Measurement of this type of skills mismatch in table 15b is based on the International Standard Classification of Occupations (ISCO, see KILM 5). This measure of mismatch starts from a division of major occupational groups (first-digit ISCO levels) into four broad groups (see table below) and assigns a level of education to each occupational group in accordance with the International Standard Classification of Education (ISCED). Workers in a particular group who have the assigned level of education are considered well matched. Those who have a higher (lower) level of education are considered overeducated (undereducated). For instance, a university graduate working as a clerk (a low-skilled non-manual occupation) is overeducated, while a secondary school graduate working as an engineer (a high-skilled non-manual occupation) is undereducated.

The statistics on employment and unemployment by educational attainment that were used to produce table 15a are obtained from KILM 14a and KILM 14b. The information presented in table 15b shows ILO calculations based on two sources:

- The European Social Survey (ESS), rounds 1 through 5 (published by Norwegian Social

Box 15. Work4Youth: An ILO project in partnership with The MasterCard Foundation

The Work4Youth (W4Y) project is a partnership between the ILO Youth Employment Programme and The MasterCard Foundation. The project has a budget of US\$14.6 million and will run for five years to mid-2016. Its aim is to “promot[e] decent work opportunities for young men and women through knowledge and action”. The immediate objective of the partnership is to produce more and better labour market information specific to youth in developing countries, focusing in particular on transition paths to the labour market. The assumption is that governments and social partners in the project’s 28 target countries will be better prepared to design effective policy and programme initiatives once armed with detailed information on:

- what young people expect in terms of transition paths and quality of work;
- what employers expect in terms of young applicants;
- what issues prevent the two sides – supply and demand – from matching; and
- what policies and programmes can have a real impact.

Science Data Services), a biennial survey covering over 30 countries (even though country coverage differs by round).⁷

- School-to-work transition surveys, which are household surveys conducted within the scope of the ILO’s Work4Youth partnership with The MasterCard Foundation (see box 15).

Limitations to comparability

The limitations to comparability with respect to the employed and the labour force noted in KILM 1, 2 and 9 manuscripts apply equally to KILM 15. The same is true for limitations on the comparability of indicators on education between countries and over time noted in KILM 14.

An advantage of the ISCO-based measure of skills mismatch is that the definition of mismatch does not change over time and the results are therefore strictly comparable. A disadvantage of this measure is that, by construction, it does not allow for overeducation in major groups 1 to 3. The ISCO-based measure also assumes that job titles always have the same meaning in terms of job content and have the same educational requirement in all countries, which is not necessarily true.⁸

For the purpose of measuring mismatch, the upper age bound for young people is extended to 29 years (including ‘young adults’ aged 25 to 29). This is in recognition of the fact that some young people remain in education beyond the age of 24 years, particularly those in tertiary education in developing economies, but this difference in age group may hamper a coherent analysis of youth employment issues (as youth are usually defined as persons aged 15 to 24).

⁷ See <http://www.europeansocialsurvey.org/>.

⁸ For an overview of alternative methods to measure skills mismatch between job requirements and qualifications, see Quintini 2011, op.cit.

KILM 16. Wages and compensation costs

This chapter presents two distinct and complementary indicators. The first, table 16a, shows trends in average monthly wages in the total economy for 139 countries, while the second, table 16b, presents the trends and structure of employers' average compensation costs for the employment of workers in the manufacturing sector, available for 34 countries.

These two indicators differ in their nature and primary objectives. Wages are important from the workers' point of view and represent a measure of the level and trend of their purchasing power and an approximation of their standard of living, while the second indicator provides an estimate of employers' expenditure toward the employment of its workforce. The indicators are, nevertheless, complementary in that they reflect the two main facets of existing wage measures; one aiming to measure the income of employees, the other showing the costs incurred by employers for employing them.

For most employees, wages – the income they receive from paid employment – represent the main part of their total income. Information on workers' wages is a valuable economic indicator for planners, policy-makers, employers and workers themselves. The statistical series in table 16a show nominal average wages and real average wages.

From the employers' standpoint, wages are only one component of the cost of employing labour, which is usually referred to as labour costs (according to the ILO concept), employment costs or compensation costs. Other cost elements include employers' expenditure on social security benefits, provided either as direct payments to the employees or as contributions to funds set up for the purpose, as well as the cost of various benefits, services and facilities (such as housing, vocational training and welfare provisions) which are primarily intended to benefit workers. Table 16b presents both the level and structure of compensation costs, with distinction made between total hourly direct pay and hourly social insurance expenditures and labour-related taxes. Assessing the change in labour costs over time can play a central role in wage negotiations and

in implementing and assessing employment, wages and other social policies. Information on labour cost per unit of labour input (that is, per time unit) is particularly useful in the analysis of certain industrial problems, as well as in the field of international economic cooperation and international trade.

Introduction

Table 16a presents trends in average monthly wages, both in nominal and real terms (i.e. adjusted for changes in consumer prices). Average wages represent one of the most important aspects of labour market information as wages are a substantial form of income, accruing to a high proportion of the economically active population, namely persons in paid employment (employees). In most developed economies, more than 85 per cent of the employed population are paid employees, and the share of paid employees has been constantly rising in many of the newly industrializing countries (see KILM 3). Information on wage levels is essential to evaluate the living standards and conditions of work and life of this group of workers in both developed and developing economies. It helps to assess how far economic growth and rising labour productivity (KILM 17) translate into better living standards for ordinary workers and to the reduction of working poverty (KILM 18).¹

There is also a particular need for information on average wages in planning economic and social development, establishing income and fiscal policies, fixing social security contributions and benefits, and in regulating minimum wages and for collective bargaining. Policy-makers, as well as employers and trade unions, pay close attention to wage trends. At the global level, the ILO's biennial *Global Wage Report* analyses wage trends across different

¹ This was also the rationale for including average real wages into the ILO's list of Decent Work Indicators; see *Guide to the Millennium Development Goals Employment Indicators* (Geneva, ILO, 2nd edition, 2013); http://www.ilo.org/empelm/what/WCMS_208796/lang-en/index.htm.

regions and discusses the role of wages policies (see box 16a).² In addition to the relevance of wage data, international standards were long ago developed, adopted and implemented for the concepts, scope and methods of collection, as well as for the compilation and classification of wage statistics (see “definitions and sources”). This should, in principle, facilitate international comparisons.

The indicator of table 16b is concerned with the levels, trends and structures of employers’ hourly compensation costs for the employment of workers in the manufacturing sector. The measure is shown for all employees and it includes the total compensation cost levels expressed in absolute figures in US dollars and as an index relative to the costs in the United States (on the basis of US = 100). Total compensation is also broken down into “hourly direct pay” with subcategories “pay for time worked” and “directly paid benefits”, and “social insurance expenditure and labour-related taxes” with all variables expressed in US dollars.

Average hourly compensation cost is a measure intended to represent employers’ expenditure on the benefits granted to their employees as compensation for an hour of labour. These benefits accrue to employees, either directly - in the form of total gross earnings - or indirectly - in terms of employers’ contributions to compulsory, contractual and private social security schemes, pension plans, casualty or life insurance schemes and benefit plans in respect of their employees. This latter group of benefits is commonly known as “non-wage benefits” or “non-wage labour costs” when referring to employers’ expenditure and in table 16b is captured in “social insurance expenditures and labour-related taxes”.

Compensation cost is closely related to labour cost, although it does not entirely correspond to the ILO definition of total labour cost contained in the 1966 ILO resolution concerning statistics of labour cost, adopted by the 11th International Conference of Labour Statisticians (ICLS),³ in that it does not include all items of labour costs (see box 16c). In particular, the

costs of recruitment, employee training, and plant facilities and services, such as cafeterias, medical clinics and welfare services, are not included. It is estimated that the labour costs not included in hourly compensation costs account for around 1 to 2 per cent of total labour costs for those countries for which information is presented. This measure is also closely related to the “compensation of employees” measure used in the system of national accounts,⁴ which can be considered a proxy for total labour costs.

Use of the indicator

Real wages in an economic activity are a major indicator of employees’ purchasing power and a proxy for their level of income, independent of the actual work performed in that activity. Real wage trends are, therefore, useful indicators, both within countries and across them. Significant differences in the purchasing power of wages, over time and between countries, reflect the modern world economy, and comparisons of the movement of real wages can provide a measure of the material progress (or regression) of the working population. Real average wages are therefore an important indicator for monitoring changes in working conditions. And they should be reviewed in conjunction with trends in working poverty (KILM 18) and the low pay incidence.

Trends in nominal wages can be used to inform adjustments in minimum wages, the lowest remuneration that employers may legally pay to workers under national law.⁵ While there is no single, recommended ratio between minimum wages and average wages, information on average wages can inform policy-makers when setting minimum wages and enable them to monitor whether those at the bottom of the distribution fall behind general wage increases.⁶

Social partners – workers’ and employers’ organizations – rely on wage data for collective bargaining. A fundamental concern of employ-

² For the latest report, please refer to ILO: *Global Wage Report 2012/13: Wages and equitable growth* (Geneva, 2012); http://www.ilo.org/global/research/global-reports/global-wage-report/2012/WCMS_194843/lang-en/index.htm.

³ ILO, Resolution concerning statistics of labour cost, adopted by the 11th International Conference of Labour Statisticians, Geneva, 1966; http://www.ilo.org/global/What_we_do/Statistics/standards/resolutions/lang-en/docName--WCMS_087500/index.htm (see box 16c).

⁴ See *System of National Accounts 2008* (New York, United Nations, 2009); <http://unstats.un.org/unsd/nationalaccount/docs/SNA2008.pdf>.

⁵ Note that minimum wages are set in nominal terms, so nominal average wages are the primary comparator. For a review of minimum wage legislation, see ILO: *Working Conditions Laws Report 2010* (Geneva, 2010).

⁶ See Chapter 5.2 of ILO: *Global Wage Report 2010/11: Wage policies in times of crisis* (Geneva, 2010).

ees and trade unions is to protect the purchasing power of wages, particularly in periods of high inflation, by raising nominal wages in line with changes in consumer prices. Real wage increases become feasible without putting the sustainability of enterprises into jeopardy when labour productivity is growing.

When used together with other economic variables such as employment, production, and income and consumption, trends in average real wages are valuable indicators for the analysis of overall macroeconomic trends, as well as in economic planning and forecasting. Importantly, they can indicate the extent to which economic growth and rising labour productivity translates into income gains for workers. These, in turn, influence aggregate demand, and countries with external surpluses can utilize wage policies to re-balance their economies by strengthening domestic consumption.

Information on hourly compensation costs (table 16b), like total labour cost, is valuable for many purposes. The level and structure of the cost of employing labour and the way costs change over time can play a central role in every country, not only for wage negotiations but also for defining, implementing and assessing employment, wage and other social and fiscal policies that target the distribution and redistribution of income. At both the national and international levels, labour costs are a crucial factor in the abilities of enterprises and countries to compete. When specific to the manufacturing sector, labour costs serve as an indicator of competitiveness of manufactured goods in world trade. This is why governments and the social partners, as well as researchers and national and international institutions, are interested in labour cost information that can be compared between countries and industries. Also, the measurement and analysis of non-wage labour costs have become an important issue in debates on labour market flexibility, employment policies, analyses of cost disparities, and comparisons of productivity levels among countries.

Not all countries compile statistics on total labour costs as defined in the relevant ILO resolution. This is because special surveys are required, which tend to be costly and burdensome, particularly for employers. Although guidelines are given to ILO constituents with regard to the type of information to be compiled and published, ILO information on average labour costs in manufacturing is derived from various sources. It is expressed in different time units, and information on hours of work –

required to calculate hourly labour costs – is not always available from the countries covered. International comparisons are thus hampered by a lack of harmonization in terms of definitions, methodology and measurement units. National definitions of earnings differ considerably, earnings do not include all items of labour compensation and the omitted items of compensation may represent a large proportion of total compensation.⁷

For these reasons, table 16b is based on another source of information, namely the estimates of hourly compensation costs of employees in manufacturing as compiled by the International Comparison program at the United States Bureau of Labor Statistics (BLS).⁸ The BLS series adjust published earnings data for items of compensation not included in earnings and although these estimates do not entirely correspond to the ILO definition of total labour costs, they are closely related to it and account for nearly all labour costs in any country presented within the indicator, resulting in the most reliable available series in terms of international comparability.

Information on compensation or labour costs is not generally available separately for men and women. Many establishments from which this information is collected do not maintain separate data by sex for non-direct pay. In addition, the distribution of male and female workers according to occupation, levels of skill and supervisory responsibilities are often dissimilar within an industry, between establishments and among countries. Therefore, comparisons of compensation cost information between men and women based on an allocation of costs proportional to the respective number of persons or the amount of earnings could lead to erroneous conclusions. The same remarks apply to the measurement of total labour costs, where it is even more difficult to allocate the cost of certain components, such as welfare services or vocational training, between men and women. With these difficulties in mind, the ILO resolution concerning

⁷ Capdevielle, P. and Sherwood, M.: "Providing comparable international labor statistics", in *Monthly Labor Review* (Washington DC, BLS, June 2002); <http://www.bls.gov/opub/mlr/2002/06/art1full.pdf>.

⁸ The BLS series on hourly compensation costs through 2012 are available at <http://www.bls.gov/fls/ichcc.htm>. However, BLS has decided to eliminate the International Labor Comparisons program (the source of the data), and 2012 was the last update provided. Nevertheless, The Conference Board has acquired all the BLS data files and will continue to produce updates to the series; <http://www.conference-board.org/ilcprogram/>.

statistics of labour cost did not recommend the compilation of labour cost statistics according to sex.

Definitions and sources

The annual average wages (table 16a) are presented both in nominal and in real terms. The series of wage statistics are generally available in nominal terms, expressed in absolute figures and in national currency. This reflects the way these data are collected, usually from those who pay wages (enterprises) or from those who receive them (paid employees). Wage statistics in nominal terms (and in national currency) are required by policy-makers, who set minimum wages in nominal terms, or by employers and trade unions, who bargain over nominal wage rates. Other data users also need nominal wage data, for example if they want to compare wage levels to other indicators that are available in nominal form (such as poverty thresholds or prices of goods), or if they want to convert them from one currency to another.

However, changes in nominal average wages are not necessarily very informative when it comes to assessing changes in the welfare of wage earners: They indicate only the earnings of an average employee in monetary terms, but not the amount of goods and services that can be purchased with wages. In other words, nominal wages do not provide information on the purchasing power of employees. This purchasing power is influenced by, among other factors, increases (or decreases) in prices of goods and services that employees acquire, use, or pay for – i.e. by the inflation rate. Average monthly wages are therefore not only presented in nominal terms, but also in real terms by adjusting for changes in consumer prices. Note, however, that the consumer price index (CPI) reflects price changes as viewed from the perspective of the average consumer and that some wage earners might experience a different rate of price changes (for example, when they spend a higher proportion of their income on food items than the average consumer).⁹

Both the nominal and real average wage series are presented in national currency. This enables data users to calculate nominal and

real wage growth rates without distortion caused by exchange rate fluctuations, and to link wage data to other data expressed in national currency. It also takes account of the fact that wage levels may not be strictly comparable across countries due to methodological differences, while growth rates are less likely to be affected by statistical effects.

Table 16a shows average monthly wage series from the ILO's Global Wage Database that were compiled for the latest edition of the *Global Wage Report* on the basis of official, national sources.¹⁰ The series referring to real average monthly wages are generally taken directly from the National Statistical Office if available. Otherwise, nominal values are collected and deflated by the International Monetary Fund's (IMF) CPI. In cases where neither real values nor the IMF CPI are available, data on the CPI are collected directly from national sources. Real wages are standardized to a common base year, namely the base year that individual countries use as the CPI base year.¹¹

Nominal average monthly wages are based on a variety of national sources, as published by national statistical agencies. In an ideal case, the indicator refers to monthly average wages in the sense of "earnings" (as defined by the 12th ICLS; see box 16b)¹² for the entire economy and all employees in a given country. However, countries use different approaches when collecting wage data. Methodological differences relate to the type of source used, the coverage of the source, and how the data are aggregated to produce monthly average wages. When data for the target concept were not available, closely related wage series were used instead (for details refer to "limitations to comparability").

The most common source for wage data – in particular in advanced economies, in Central and South-Eastern Europe and the CIS countries – are labour-related establishment surveys. They collect data at the source, namely from establishments that employ workers. Since establishments usually keep accurate records of all wages paid for their own book-keeping and

¹⁰ For a few countries, international databases such as the ILOSTAT, OECD, or EUROSTAT were used.

¹¹ In most cases, data on CPIs from the IMF's World Economic Outlook are used. The base year information for individual countries can be found in the IMF metadata.

¹² Resolution concerning an integrated system of wages statistics, adopted by the 12th International Conference of Labour Statisticians, Geneva, 1973; http://www.ilo.org/global/What_we_do/Statistics/standards/resolutions/lang-en/docName--WCMS_087496/index.htm.

⁹ For some purposes, other price measures such as the producer price index (PPI) or implicit GDP deflator might be more appropriate.

for tax purposes, this approach has the advantage of producing reliable wage data without having to rely on the re-call of individual employees. However, in countries where enterprises routinely pay wages outside their normal book-keeping (so-called “envelope wages”) in order to avoid taxes and social security contributions, the establishment-based approach has limitations.

Household surveys, the second major source for wage data, have the advantage that they cover all employees regardless of where they work.¹³ Wage data from household surveys usually cover the public and private sector, formal and informal enterprises and all industrial sectors. There are, however, a number of subtle methodological differences that can affect comparability between countries of wage levels based on household surveys (for details refer to “limitations to comparability”).

Finally, a few countries rely on administrative data sources such as social security records to compile wage data, or combine several different primary sources to produce a synthetic wage series. In some countries the national accounts sections of central statistical offices produce the wage series that match the desired concept most closely. However, national accounts are only a useful source for data on average wages when compensation of employees is disaggregated into its two major components – wages and salaries and employers’ social contributions – and when matching data on total wage employment exist.

While most countries report wages with a calendar month as a reference period, some report only daily, weekly or annual wages. In order to ensure comparability, these source data were standardized into the same monthly reference period, e.g. annual wages were divided by 12 months to produce average monthly wages.

Hourly compensation costs for employees in manufacturing (table 16b) are estimates from the International Comparison Program, a program that was – up to 2012 – compiled by the BLS and thereafter by The Conference Board based on national statistics from establishment and labour cost surveys. Earnings statistics are obtained from country-specific surveys of employment, hours and earnings, or from manufacturing surveys or censuses. Total

compensation is computed by adjusting each country’s average earnings series for items of total hourly direct pay, social insurance and labour-related taxes and subsidies not included in earnings. Where countries measure earnings on the basis of “hours paid for”, the figures are also adjusted in order to obtain estimates of earnings based on “hours actually worked”.

Adjustment factors are obtained from various sources, such as periodic labour cost surveys (interpolated on the basis of other information for non-survey years), annual tabulations of employers’ social security contribution rates, and information on contractual and legislated changes in fringe benefits. The statistics are further adjusted, where necessary, to take account of major differences in workers’ coverage, industrial classification systems and changes over time in survey coverage or frequency.

A country’s compensation costs are computed in national currency units and converted into US dollars using the average daily as published by either the US Federal Reserve Board or the International Monetary Fund. For euro area countries, data are converted to US dollars using the euro to dollar exchange rate only for years in which the euro was officially currency in the countries. For years prior to adoption of the euro, the data in the old national currency for all years are converted to US dollars using historical US dollar to national currency exchange rates or fixed exchange rates established at the time of the country’s conversion to the euro.

The hourly compensation measures relate to manufacturing as defined by the North American Industry Classification System (NAICS). NAICS is the common industrial classification used by the United States, Canada, and Mexico. The NAICS definition of manufacturing differs somewhat from the definition of manufacturing used in other countries. In such cases, BLS makes adjustments to ensure comparability across the series.

The following definitions apply to the data series in table 16b:

Total hourly compensation costs include (1) total hourly direct pay, (2) employer social insurance expenditures and (3) labour-related taxes.

Total hourly direct pay includes all payments made directly to the worker, before payroll deductions of any kind, consisting of *pay for time worked and directly-paid benefits*. defini-

¹³ Persons living in institutional households, such as military barracks, prisons or monasteries, are commonly excluded.

tion is the equivalent of the ILO concept of “gross earnings”, which consists of (a) pay for time worked, including basic time and piece rates, overtime premiums, shift differentials, other premiums and bonuses paid regularly each pay period, and cost-of-living adjustments, and (b) other direct pay, such as pay for time not worked (vacations, annual holidays and other paid leave for personal or family reasons, civic duties, and so on, except sick leave), seasonal or irregular bonuses and other special payments, selected social allowances and the cost of payments in kind.

Social insurance expenditures refer to the value of social contributions (legally required as well as private and contractual) incurred by employers in order to secure entitlement to social benefits for their employees; these contributions often provide delayed, future income and benefits to employees.

Labour-related taxes refer to taxes on payrolls or employment (or reductions to reflect subsidies), even if they do not finance programs that directly benefit workers.

All employees include production workers as well as all others employed full or part time in an establishment during a specified payroll period. Temporary employees are included. Persons are considered employed if they receive pay for any part of the specified pay period. The self-employed, unpaid family workers and workers in private households are excluded.

Limitations to comparability

As mentioned in the preceding section, country-specific practices differ with respect to the sources and methods used for wage data collection and compilation, which in turn have an influence on the results and comparability across countries. The main sources of information (establishment censuses and surveys, and household surveys) usually differ in terms of objectives, scope, collection and measurement methods, survey methodology and so on. The scope of the information may vary in terms of geographical coverage, workers’ coverage (for example, exclusion of part-time workers)¹⁴ and

establishment and enterprise coverage (based on establishment size or sector covered).

While most countries include firms regardless of size into establishment surveys, some countries exclude small firms with less than five or less than ten employees. Some countries also limit the coverage to the private sector (i.e. exclude the public sector) or to specific industries within the private sector (such as manufacturing). If small enterprises pay lower wages than large enterprises or wages differ between the public and the private sector, these exclusions will affect the level of the collected wage data – depending on how large differences are, and how many employees are excluded from the coverage. However, if wages in the excluded establishment move roughly in line with those enterprises for which data are available, these exclusions will only have a marginal effect on trends over time. Even data with less than full coverage can therefore be a useful proxy to analyse wage growth in an economy.

Establishment surveys usually draw their sample from an establishment register that is maintained either by the central statistical office or another institution, such as the Registrar of Companies. In developing countries with a large informal sector, this is a serious limitation since many small, unregistered establishments are missing from the sample frame. Also excluded are individual households employing paid domestic workers, which account for a significant proportion of total paid employment in some developing regions.¹⁵ In some developing countries, establishment surveys therefore capture only a small proportion of all wage employees (those in the public sector and those in large, modern enterprises). Under these circumstances, collecting information from the recipients of wages can be the better alternative.

Household surveys encompass a greater range of jobs and workers than establishment surveys, however, they tend to experience problems associated with self-reporting of earnings. Furthermore, household surveys display methodological differences that can affect comparability. For instance, some surveys collect data on the usual monthly wages while others ask for the actual wage received in the

¹⁴ It should be noted here that wage series covering all persons employed should not be directly compared with series covering employees only, since a bias may be introduced with the inclusion of working proprietors and contributing family members.

¹⁵ According to ILO estimates, the global share of domestic workers in paid employment is 3.6 per cent, but reaches 11.9 per cent in Latin America and the Caribbean and 8.0 per cent in the Middle East. See ILO: *Global and regional estimates on domestic workers*, Domestic Work Policy Brief No. 4 (Geneva, 2011).

past month. At times it is also not clear whether respondents are asked to report their gross or net wages (i.e. before or after deduction of taxes and compulsory social security contributions). These differences can have a material effect on the reported level of wages, while they are less likely to have a major impact on trends over time as long as the survey instrument remains unchanged.

Even when using the same concept of wages (for example, earnings), there are likely to be differences with regard to the inclusion or exclusion of various components (such as periodic bonuses and allowances, or payments in kind). Earnings statistics show fluctuations that reflect the influence of both changes in wage rates and supplementary payments. In addition, daily, weekly and monthly earnings are dependent on variations in hours of work (in particular, hours of paid overtime or short-time working), while hourly earnings are influenced by the concept of hours of work – hours actually worked, hours paid for, or normal hours of work – used in the computation (see KILM 7 for information on the various concepts pertaining to hours of work).

When making comparisons of real wage trends between countries, one should keep in mind that this indicator is not only based on country-specific series of wages, but also that measures of real wages will be affected by the choice of the price deflator, that is, the CPI. The scope of CPIs can vary not only in terms of the types of household or population groups covered, but also in terms of the geographical coverage. Country-specific practices also differ regarding the treatment of certain issues relating to the computation of CPIs, including the treatment of seasonal items, new products and quality changes, durable goods and owner-occupied housing, the inclusion or exclusion of financial services and indirect taxes, and so on.

Other factors may influence the comparability of real wage trends – and therefore purchasing power – across countries. One is the reference period of both wages and CPIs. Annual averages of hourly or monthly wages may be averages of information based on weekly, monthly or quarterly reference periods. In some cases, they are based on the whole calendar or financial year. On the other hand, the CPI data are annual averages of an index that is compiled, in most cases, monthly, or in a few cases quarterly or biannually. When nominal wages and CPI information do not refer to exactly the same period, this can give rise to problems for countries experiencing rapid inflation.

When using the information presented in table 16b on hourly compensation costs to make comparisons of international competitiveness, it should be borne in mind that differences in hourly compensation costs are only one factor in competitiveness and therefore, when used alone, may be misleading. It is also important to remember that this indicator measures compensation of employees specific to manufacturing and is significant only in so far as countries strive to compete in the manufacturing sector. However, when used in conjunction with other indicators, such as labour productivity (KILM 17), relative changes can be helpful in assessing trends in competitiveness.

Care should also be taken not to interpret hourly compensation costs as the equivalent of the purchasing power of worker incomes, for two reasons. The first relates to the components and nature of compensation costs. In addition to the payments made directly to the workers, compensation includes employers' payments to funds for the benefit of workers. Such "non-direct pay" can include current social security benefits such as family or dependants' allowances, deferred benefits, as in payments to retirement and pension funds, or various types of insurance entitlements, such as unemployment and health benefit funds, which will represent income to workers only under certain conditions. In a few countries, non-wage costs also include some taxes paid by employers – or deductions for subsidies received – for the employment of labour, such as taxes on employment or payroll.

The second reason for differentiating hourly compensation costs from the concept of workers' purchasing power lies in the fact that the prices of goods and services vary greatly among countries, and the commercial exchange rates used here to convert national figures into a single currency do not indicate relative differences in prices. A more meaningful international comparison of the relative purchasing power of workers' income would involve the use of purchasing power parities (PPPs), that is, rates at which the currency of one country must be converted into the currency of another in order to buy an equivalent basket of goods and services.

In spite of the various adjustments made to the series of hourly compensation costs of employees in manufacturing (table 16b) in order to ensure a high level of comparability across countries and over time, differences may still be found in the information presented. The average earnings series used as a basis for these

Box 16a. The ILO's Global Wage Report

The biennial Global Wage Report is the ILO's flagship publication on wage trends and wage policies. It uses a number of indicators to analyse global wage developments, including the growth of average real wages, the low-pay incidence (defined as the share of wage workers with earnings below two-thirds of the median) and the wage share in national income. It is unique in its global scope and builds on data from some 115 countries and territories that between them account for 94 per cent of the world's wage workers. Based on a standard methodology that corrects for the remaining response bias, the report documents wage growth for the world and in seven regions.

The report also provides practical illustrations of how collective bargaining, minimum wages and income policies can be building blocks of effective wage policies that contribute to equitable outcomes. It is inspired by the objective to promote "policies in regard to wages and earnings, hours and other conditions of work, designed to ensure a just share of the fruits of progress to all and a minimum living wage to all employed and in need of such protection", one of the central elements of the Decent Work Agenda (see ILO Declaration on Social Justice for a Fair Globalization). The relevance of this approach has been underscored by the global economic crisis, during which many governments expanded income support policies and wage subsidies in order to stabilize domestic demand and to support recovery.

Further information is available from the Inclusive Labour Markets, Labour Relations and Working Conditions Branch (INWORK), the ILO's lead programme on wage data analysis and policy advice, or online at <http://www.ilo.org/travail/lang--en/index.htm>. The econometric model developed in the paper utilizes available national household survey-based estimates of the distribution of employment by economic class, augmented by a larger set of estimates of the total population distribution by class together with key labour market, macroeconomic and demographic indicators. The output of the model is a complete panel of national estimates and projections of employment by economic class for 142 developing countries, which serve as the basis for the production of regional aggregates.

Source: Kapsos, S. and Bourmpoula, E. (2013). "Employment and economic class in the developing world", ILO Research Paper No. 6. http://www.ilo.org/wcmsp5/groups/public/---dgreports/---inst/documents/publication/wcms_216451.pdf.

estimates may be influenced by changes over time in the industrial structure, that is, the growth or decline of establishments, levels of activity and changes in the structure of the workforce employed (changes in the relative proportions of men and women, skilled and unskilled labour, full-time and part-time workers, and so on). All these factors influence the levels of earnings and workers' benefits within a country.

Hourly compensation costs are partly estimated, and each year the most recent information is subject to revision by the BLS. For example, in 2001 the hourly compensation costs series were revised for the United States from 1997 onwards to incorporate results on non-wage costs from an annual survey of manufacturers. In 2006, data for Mexico were revised back to 1999 to incorporate benchmark data from an industrial census and data for Ireland and Norway were revised back to 2001 to incorporate non-wage compensation costs from the 2004 labour cost surveys.

The comparative-level figures are averages for all manufacturing industries and are not

necessarily representative of all component industries. In some countries, such as the United States and Japan, differentials in hourly compensation cost levels by industry group are quite wide, while other countries, such as Germany and Sweden, have narrower differentials. Furthermore, changes over time in relative compensation cost levels in US dollars are also affected by (a) the differences in underlying national wage and benefit trends measured in national currencies, and (b) frequent and sometimes sharp changes in relative currency exchange rates.

Further to limitations to comparability for each of the indicators, there are also limitations concerning the comparison between the indicators. Making comparisons of wage rates, earnings or labour costs over time and between countries is probably one of the most difficult tasks for the users of the information presented in this publication. Users should, in particular, be aware of the following issues:

(1) Within each of the indicators, the information may be affected by differences in sources; that is, there may not be a close corre-

Box 16b. Resolution concerning an integrated system of wages statistics, adopted by the 12th International Conference of Labour Statisticians, October 1973 [relevant paragraphs]

8. The concept of earnings, as applied in wages statistics, relates to remuneration in cash and in kind paid to employees, as a rule at regular intervals, for time worked or work done, together with remuneration for time not worked, such as for annual vacation, other paid leave or holidays. Earnings exclude employers' contributions in respect of their employees paid to social security and pension schemes and also the benefits received by employees under these schemes. Earnings also exclude severance and termination pay.

9. Statistics of earnings should relate to employees' gross remuneration, i.e. the total before any deductions are made by the employer in respect of taxes, contributions of employees to social security and pension schemes, life insurance premiums, union dues and other obligations of employees.

10. (i) Earnings should include: direct wages and salaries, remuneration for time not worked (excluding severance and termination pay), bonuses and gratuities and housing and family allowances paid by the employer directly to his employees.

(a) Direct wages and salaries for time worked, or work done, cover: (i) straight-time pay of time-rated workers; (ii) incentive pay of time-rated workers; (iii) earnings of piece-workers (excluding overtime premiums); (iv) premium pay for overtime, shift, night and holiday work; (v) commissions paid to sales and other personnel. Included are: premiums for seniority and special skills, geographical zone differentials, responsibility premiums, dirt, danger and discomfort allowances, payments under guaranteed wage systems, cost-of-living allowances and other regular allowances.

(b) Remuneration for time not worked comprises direct payments to employees in respect of public holidays, annual vacations and other time off with pay granted by the employer.

(c) Bonuses and gratuities cover seasonal and end-of-year bonuses, additional payments in respect of vacation period (supplementary to normal pay) and profit-sharing bonuses.

(ii) Statistics of earnings should distinguish cash earnings from payments in kind.

Box 16c. Resolution concerning statistics of labour cost, adopted by the 11th International Conference of Labour Statisticians, October 1966 [relevant paragraphs]

The 11th ICLS (Geneva, 1966) adopted a resolution concerning statistics on labour cost, recommending the following International Standard Classification of Labour Cost:

I. Direct wages and salaries

1. Straight-time pay of time-related workers
2. Incentive pay of time-rated workers
3. Earnings of piece-workers (excluding overtime premiums)
4. Premium pay for overtime, late shift and holiday work

II. Remuneration for time not worked

1. Annual vacation, other paid leave, including long-service leave
2. Public holidays and other recognized holidays
3. Other time off granted with pay (e.g. birth or death of family members, marriage of employees, functions of titular office, union activities)
4. Severance and termination pay where not regarded as social security expenditure

(Box 16c continued)

III. Bonuses and gratuities

1. Year-end and seasonal bonuses
2. Profit-sharing bonuses
3. Additional payments in respect of vacation, supplementary to normal vacation pay and other bonuses and gratuities

IV. Food, drink, fuel and other payments in kind

V. Cost of workers' housing borne by employers

1. Cost for establishment-owned dwellings
2. Cost for dwellings not establishment-owned (allowances, grants, etc.)
3. Other housing costs

VI. Employers' social security expenditure

1. Statutory social security contributions (for schemes covering old age, invalidity and survivors, sickness, maternity, employment injury, unemployment, and family allowances)
2. Collectively agreed, contractual and non-obligatory contributions to private social security schemes and insurances (for schemes covering old age, invalidity and survivors, sickness, maternity, employment injury, unemployment and family allowances)
- 3a. Direct payments to employees in respect of absence from work due to sickness, maternity or employment injury, to compensate for loss of earnings
- 3b. Other direct payments to employees regarded as social security benefits
4. Cost of medical care and health services
5. Severance and termination pay where regarded as social security expenditure

VII. Cost of vocational training, including fees and other payments for services of outside instructors, training institutions, teaching material, reimbursements of school fees to workers, etc.

VIII. Cost of welfare services

1. Cost of canteens and other food services
2. Cost of education, cultural, recreational and related facilities and services
3. Grants to credit unions and cost of related services for employees

IX. Labour cost not elsewhere classified, such as costs of transport of workers to and from work undertaken by employer (including reimbursement of fares, etc.), cost of work clothes, cost of recruitment and other labour costs

X. Taxes regarded as labour cost, such as taxes on employment or payrolls, included on a net basis, i.e. after deduction of allowances or rebates made by the State.

spondence between the concepts and definitions used, the scope and coverage, the methods used for compilation, and the ways in which the information is presented. Table 16a is based on unadjusted national data that reflect these differences. Table 16b, a number of adjustments have been made by the BLS to ensure a high level of comparability between countries; however, some disparities may still

exist. Users should take account of the notes to the tables for each indicator.

(2) Care should be taken when comparing trends in annual average wages and hourly compensation costs for the same countries. It should be noted that wages and total compensation costs are not substitutes for each other. The difference between the two may be affected

by factors such as the rapid growth (or the freeze) of nominal wages and the development of non-wage benefits, changes over time in the nature of social security schemes and benefits, the relative contributions of employers, employees and the state to such schemes, and so on.

(3) Finally, it should be noted that the series presented in table 16a show the trends in real and nominal monthly wages based on information expressed in national currency, while table 16b shows the levels and trends of hourly compensation costs and their structure in US dollars. In the first indicator, account has been taken of changes in the consumer price index

(CPI) in each country, while in table 16b, to produce a real series in addition to the nominal series, nominal national data have been converted into US dollars and are thus affected by variations, over time and between countries, in the US dollar exchange rates.

In spite of these comparability issues, which are inherent in the underlying statistical series, every effort has been made to choose information that is as close as possible to the target concept and thus comparable across countries. As long as users are alert to these issues, the wage and labour compensation indicators presented can provide valuable insights for socio-economic analyses.

KILM 17. Labour productivity

Introduction

This chapter presents information on labour productivity for the aggregate economy with labour productivity defined as output per unit of labour input (persons engaged or hours worked). Labour productivity measures the efficiency of a country with which inputs are used in an economy to produce goods and services and it offers a measure of economic growth, competitiveness, and living standards within a country.

Use of the indicator

Economic growth in a country can be ascribed either to increased employment or to more effective work by those who are employed. The latter effect can be described through statistics on labour productivity. Labour productivity therefore is a key measure of economic performance. The understanding of the driving forces behind it, in particular the accumulation of machinery and equipment, improvements in organization as well as physical and institutional infrastructures, improved health and skills of workers (“human capital”) and the generation of new technology, is important for formulating policies to support economic growth. Such policies may focus on regulations on industries and trade, institutional innovations, government investment programmes in infrastructure as well as human capital, technology or any combination of these.

Labour productivity estimates can support the formulation of labour market policies and monitor their effects. For example, high labour productivity is often associated with high levels or particular types of human capital, indicating priorities for specific education and training policies. Likewise, trends in productivity estimates can be used to understand the effects of wage settlements on rates of inflation or to ensure that such settlements will compensate workers for (part of) realized productivity improvements.

Finally, productivity measures can contribute to the understanding of how labour market performance affects living standards. When the

intensity of labour utilization - the average number of annual working hours per head of the population - is low, the creation of employment opportunities is an important means of raising per capita income in addition to productivity growth.¹ In Europe, for example, with productivity levels relatively close to the United States but lower per capita income levels, living standards can be improved by increasing labour utilization. This can be achieved by encouraging a higher labour force participation rate or by encouraging workers to work more hours, e.g. by creating more decent and productive employment opportunities for economic activity. In contrast, when labour intensity is already high, for example in East Asia, increasing productivity is essential to improving living standards. In any case, increasing labour force participation is at best a transitional source of growth depending on the rate of population growth and the age structure of the population. In the long run, it is the productivity of labour which determines the rise in per capita income.

Definitions and sources

Productivity represents the amount of output per unit of input. In KILM 17, output is measured as gross domestic product (GDP) for the aggregate economy expressed at purchasing power parities (PPP) to account for price differences in countries; as well as at market exchange rates for table 17a, which reflect the market value of the output produced.

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

¹ It is clear that living standards do not equal per capita income, but the latter can still be viewed as a reasonably good proxy of the former, even though the link is not automatic. For example, the United Nations Development Programme (UNDP) *Human Development Report 2006* reveals that, out of 177 economies with information on both the human development index (HDI) and GDP per capita (at PPP) in 2004, 102 rank higher in HDI than in GDP, one ranks the same and 74 rank higher in GDP than in HDI.

output per combined unit of all inputs, are not included in KILM 17.² 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 by themselves.

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 to estimate reliably. For this reason, two series for labour productivity are shown in table 17b, GDP per person engaged and GDP per hour worked; and one series in table 17a, GDP per person engaged.

To compare labour productivity levels across economies, it is necessary to convert output to US dollars on the basis of 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. Had official currency exchange rates been used instead, the implicit assumption would be that there are no differences in relative prices across countries. The labour productivity estimates in table 17b are expressed in terms of 1990 US dollars converted at PPPs (as the 1990 PPP made it possible to compare the largest set of countries – see details below) and in table 17a in terms of 2005 international dollars converted at PPPs as well as constant 2005 US dollars.

The labour productivity estimates in table 17b are derived from the Total Economy Database of The Conference Board and are available for 124 economies. This database also includes measures of labour compensation to obtain unit labour cost. A full documentation of sources and methods by country and underlying documentation on the use of PPPs, etc. can be downloaded from the database website.³

² For recent estimates of total factor productivity growth, please refer to The Conference Board Total Economy Database™, January 2013, <http://www.conference-board.org/data/economydatabase/>. Estimates at the industry level can be obtained from the EU KLEMS Growth and Productivity Accounts (<http://www.euklems.net>).

³ The Total Economy Database is maintained at: <http://www.conference-board.org/data/productivity.cfm>. The database was previously housed at the Groningen Growth and Development Centre of the University of Groningen,

In table 17b, GDP estimates for OECD countries after 1990, most of which are found in the Developed Economies & European Union grouping of the KILM, are mostly obtained from the OECD *National Accounts*, Volumes I and II (annual issues) and the Eurostat New Cronos database. The series up to 1990 are mostly derived from Maddison (1995).⁴

To compute labour productivity per person engaged in table 17b, GDP is divided by total employment. These employment estimates are primarily taken from OECD: Labour Force Statistics (annual issues); Eurostat’s New Cronos database; the ILO estimates on employment; and the Vienna Institute for Comparative Economic Studies (WIIW). To compute labour productivity per hour worked, estimates on annual hours worked are based on a variety of sources deemed to be most appropriate source of the preferred concept of “actual hours worked per person employed” in each individual country. National sources are used as well as collections such as that of the OECD Growth Project, which are updated by Scarpetta et al. (2000).⁵ In later years, the trend of the OECD *Employment Outlook* has been used. Full details on sources used for each variable – GDP, employment and hours – are available on the Total Economy Database website and displayed in the notes sections of the KILM data tables.

For countries outside of the OECD, the national accounts and labour statistics which were 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 were used as the point of departure.⁶ These series were complemented by the series from Maddison (1995) in particular to cover the period 1980-90. Maddison (1995) also provides benchmark esti-

(Note 3 continued)

Netherlands. This research centre still undertakes research on comparative analysis of levels of economic performance and differences in growth rates. See <http://www.ggdc.net/index.htm> for the latest publications.

⁴ A. Maddison, database on “Historical statistics”, available at Maddison’s homepage: <http://www.ggdc.net/maddison/>.

⁵ See Scarpetta, S. et al.: *Economic growth in the OECD area: Recent trends at the aggregate and sectoral level*, Economics Department Working Papers, No. 248, (Paris, OECD, 2003), Table A.13.

⁶ World Bank: World Development Indicators (various issues); Asian Development Bank: Key Indicators of Developing Asian and Pacific Countries (annual issues); ILO: Yearbook of Labour Statistics (annual issues); United Nations: National Account Statistics: Main Aggregates and Detailed Tables (annual issues).

mates of annual hours worked for a significant number of non-OECD economies.⁷ In some cases, use has also been made of national accounts statistics for individual countries.

Whenever data for employment is unavailable, The Conference Board supplements employment data with data of the total labour force, which happens in about one third of all cases – primarily in developing countries. Since labour force is not necessarily a sufficient proxy for employment, indicators on labour productivity by The Conference Board (table 17b) are supplemented with a table on labour productivity (17a), utilizing employment data from the ILO Trends Econometric Models (see KILM 2).

Labour productivity in table 17a is calculated using data on GDP in constant 2005 international dollars in PPP, derived from the World Development Indicators database of the World Bank.⁸ To compute labour productivity as GDP per person engaged, ILO estimates for total employment are used.⁹ Countries for which no real data on employment exist (meaning that all data points are estimates rather than reported data) in and after the year 2000 were excluded. Furthermore, table 17a is complemented by a series of GDP at market exchange rates (rather than PPPs) to get a better idea of labour productivity estimates when used for the purpose of competitiveness indicators. GDP figures (at constant 2005 US dollars) are also derived from the World Development Indicators database. Table 17a is available for 143 economies with coverage extending to all KILM regional groupings.

Limitations to comparability

The limitations to the international and historical comparability of the estimates are summarized under the following headings: Output measures in national currencies, employment, and working hours.

Output measures in national currencies

Output measures are obtained from national accounts and represent, as much as possible,

⁷ Maddison, A.: *Monitoring the World Economy 1820-1992* (Paris, OECD Development Centre, 1995).

⁸ For more detail, please refer to the website of the World Development Indicators database at <http://data.worldbank.org/data-catalog/world-development-indicators>.

⁹ For more details, please see KILM 2a.

GDP at market prices for the aggregate economy. 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 OECD. Such factors include:

- (a) *different treatment of output in services sectors.* In a considerable number of economies, especially for non-market services, output is often estimated on the basis of inputs, such as total labour compensation, or on an implicit assumption concerning productivity growth; in other cases – where output measures were available – quality changes are often insufficiently reflected in the measures of output volume.
- (b) *different procedures in correcting output measures for price changes, in particular the use of different weighting systems in obtaining deflators.* Traditionally output trends in constant prices have been weighted at values that are kept fixed for several years. Fixed weights usually imply an overestimation of volume growth rates, creating a bias that increases the further one moves away from the base year. Most economies therefore change weights every five or ten years. Over the past year an increasing number of OECD countries are shifting to using annual chain weights.¹⁰ Another important source of methodological difference between countries is the use of deflators for ICT products. Price declines of these goods are often insufficiently chosen with traditional price measurement methods. The United States has introduced a range of hedonic price deflators for ICT goods, which measure the price change of a commodity on the basis of changes in the major characteristics that impact the price. Many other countries are introducing this type of price measures in their national accounts, but at a much slower pace than the United States. In the estimates for the manufacturing sector the latter problem has been tackled by using harmonized deflators for ICT industries, based on hedonic deflators for the United States, for those countries that have no adequate ICT deflator themselves.

- (c) *different degree of coverage of informal economic activities in developing economies and of the underground economy in devel-*

¹⁰ The method of using chain weights allows for the use of different weights at different segments of a time series which are then “chained together”.

oped (industrialized) economies in national accounts. Some economies use data from special surveys for “unregistered activities”, or indirect estimates from population censuses or other sources to estimate these activities, and large differences in coverage between economies remain.¹¹

In addition to such inconsistencies there are significant differences in scope and quality of the primary national statistics and the staff resources available for the preparation of the relevant national estimates.

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. Furthermore, limitations to comparability of ILO employment estimates discussed in KILM 2 apply.

Working hours¹²

Estimates of annual working hours are often unavailable or are relatively unreliable. Even for developed economies, annual working hours are not consistently defined. For example, statistics on working hours often refer to paid hours rather than to hours actually worked, implying that no adjustments are made for paid hours that are not worked, such as hours for paid vacation or sickness, or for hours worked that are not paid for. Moreover, statistics on working hours often are only available for a single category of the workforce (in many cases, only employees), or only for a particular industry (such as manufacturing), or for particular types of establishments (for example, those above a certain size or in the formal sector). As always, these problems are particularly serious for a substantial number of low-income economies. Whether and how the estimates of annual hours worked have been adjusted for such weaknesses in the primary statistics is often undocumented.

¹¹ For an overview of methods, see, for example, OECD: *Measuring the Non-Observed Economy. A Handbook* (Paris, 2002).

¹² Readers may wish to review the corresponding section relating to comparability issue for working hours in KILM 7.

KILM 18. Poverty, income distribution, employment by economic class and working poverty

Introduction

Tables 18a and 18b present two of the indicators that are used for monitoring progress toward the first UN Millennium Development Goal (MDG), eradicating extreme poverty and hunger. The proportion of the population living below the international poverty line of US\$1.25 is an indicator under the first target (1a) of the MDG (on the eradication of poverty), while the proportion of persons living with their families below the poverty line, the “working poor”, is an indicator for monitoring the Goal’s second target (1b) on decent work.¹³ These indicators are supplemented by other measures of economic well-being, including the employed population living in different economic class groups (denoted by different per-capita household consumption thresholds), estimates of the population living below nationally defined poverty lines and the Gini index as a measure of the degree of inequality in income distribution.

Information on poverty in tables 18a and 18b relates almost entirely to developing economies because similar data do not exist for most high-income economies, where extreme poverty is a more rare occurrence. In table 18a, 114 economies have at least one estimate of people living below the national poverty line from 1990 to present while 86 countries have national poverty lines for at least two years since 1990. In terms of the international poverty lines, 124 economies have an estimate for one year from 1990 up to present, with 106 economies having at least two

estimates.¹⁴ The Gini index is shown only in those countries for which poverty information is available; however, this statistic is also available for many high-income economies from the original data repository (the World Bank). In table 18b, estimates of the “working poor” – defined as the proportion of employed persons in a household whose members are living below the US\$1.25 international poverty line as well as the full distribution of employment across five economic classes – are available for 59 economies.

Use of the indicator

The value of measures of poverty, the distribution of workers across different economic class groups and income inequality lies in the information these indicators provide on the outcome of economic processes at the national level, as a reflection of the access of different groups of people to goods and services. The information relating to poverty shows the absolute number and the proportion of the population that has “unacceptably” low consumption or income levels, while the employment by economic class and inequality series show the disparity between different groups of people within a country in terms of consumption or income levels. Measurements of poverty are extremely important as an indication of the well-being and living conditions in a country. In addition, a poverty line helps focus the attention of governments and civil society on the living conditions of the people in poverty and can be used to gauge the need to devise public policies and programmes to reduce poverty and enhance the welfare of individuals within a society. Analysing information on poverty over time, when comparable, is crucial for monitoring any increase or decrease in the incidence of

¹³ The first Millennium Goal includes three targets and nine indicators, see the official list at: <http://mdgs.un.org/unsd/mdg/Host.aspx?Content=Indicators/OfficialList.htm>. The remaining indicators under the target on decent work are the growth rate of GDP per person engaged (i.e. labour productivity growth; KILM 17), the employment-to-population ratio (KILM 2) and the vulnerable employment rate (KILM 3).

¹⁴ When compiling the poverty data for table 18, a few observations on the international poverty line were discarded when the overall trend for a country series was deemed inconsistent over time.

poverty and can help in assessing the results of poverty reduction programmes. Any assessment of poverty can also contribute to explaining its possible causes, an important step in finding a solution.

During the 1990s, a decade characterized by increased globalization and an increase in the number of market-based economies, poverty was increasingly recognized as a major challenge for the international community. The first of the UN MDGs¹⁵ is to “eradicate extreme poverty and hunger”, with the specific target of halving the share of people in the world living on less than US\$1 a day between 1990 and 2015.¹⁶

While poverty in the developed world is often associated with unemployment, the extreme US\$1-a-day poverty that exists throughout much of the developing world is largely a problem associated with persons who are working, which is why the second target under MDG 1 is to “achieve full and productive employment and decent work for all, including women and young people”. The majority of working-age people in poverty must work in order to survive and support their families in a context where no efficient social protection schemes or social safety nets exist. For these poor workers, the problem is typically one of poor employment quality, including low wages or incomes and low levels of labour productivity. Thus, reducing overall poverty rates in line with the MDG necessitates fostering an enabling environment in which the employment opportunities and incomes of the working poor are improved.

It is important to note that the poverty, employment by economic class and inequality

¹⁵ As part of the Millennium Declaration of the United Nations “to create an environment – at the national and global levels alike – which is conducive to development and the elimination of poverty”, the international community has adopted a set of international goals for reducing income poverty and improving human development. A framework of eight goals, 21 targets and 60 indicators to measure progress was adopted by a group of experts from the United Nations Secretariat, ILO, IMF, OECD and the World Bank. The indicators are interrelated and represent a partnership between developed and developing economies. For further information on the Millennium Development Goals, see <http://www.un.org/millenniumgoals/>.

¹⁶ The Millennium Development Goal on poverty is expressed in terms of shares. That is, the goal is to reduce by half the proportion of people living below US\$1 a day. Because populations tend to rise over time, a falling share of the poor population will not necessarily translate into a decline in the actual number of poor people. US\$1.25 is the current threshold for the international “\$1 per day poverty line” (see box 18). This poverty line has been updated on the basis of 2005 price levels and new price data collected through the International Comparison Program (ICP).

measures presented here focus on only one aspect of absolute and relative deprivation. They concentrate on personal income or private consumption and do not directly address deprivation related to other spheres, such as access to health care, education, productive employment, and social and political participation. A comprehensive analysis of poverty and inequality should include a link to these other dimensions, which are captured at least partially in some of the other KILM indicators.

Definitions and sources

Because of the multiple dimensions of poverty, there are various theoretical conceptions of measurement. Three are described below:

1. One common approach is to analyse information on monetary income or personal consumption as opposed to human development. The underlying information relates, in most cases, to personal consumption expenditure and, in only a few cases, to personal income. This is because obtaining information on income from surveys can be difficult and because such information may not fully reflect the “real” living standard of households. A drawback of measuring poverty in this manner is that household surveys often vary across countries and over time, thus reducing the comparability of the information (see “Limitations to comparability” below).

A key feature of using income or personal consumption as measures of poverty is the establishment of a poverty line, the predetermined level of income or consumption below which a person (or household) is considered to be poor. The incidence of poverty is typically measured as the fraction of the population whose consumption expenditure falls below this predetermined level. Many countries have adopted national income poverty lines, using thresholds based on the amount of income necessary to buy a specified quantity of food. Measurement of poverty using internationally comparable poverty lines is also useful because it allows poverty estimates to be developed on a global basis. The World Bank has established two international poverty lines, at US\$1.25 and US\$2 of consumption per person a day.

2. A second perspective relies upon a “basic needs” approach and reflects deprivation in terms of material requirements for minimally acceptable fulfilment of human needs, includ-

ing food and employment. The concept goes beyond the lack of income because it takes into account the need for basic health care and education, as well as essential services such as access to safe water. In addition to its Human Development Index, the United Nations Development Programme (UNDP) in 1997 introduced the concept of the Human Poverty Index (HPI) for developing economies.¹⁷ The HPI is a composite index that aims to capture the extent of deprivation in human life. It combines three dimensions – limitations of life expectancy, illiteracy and overall standard of living – for which information is available and comparable across countries.

3. The third approach, which combines elements of the two previous perspectives, is related to the capabilities required for a person to function in a particular society, under the assumption that a minimally acceptable level of such capabilities exists. This approach covers a wide range of capabilities, and can vary from the capability of being well nourished in a low-income economy to more complex social achievements in a high-income economy, such as the capability of gaining computer literacy (on the assumption that a person lacking computer literacy is likely to face difficulties in entering the labour market in a developed economy). Poverty is defined in terms of being out of the mainstream of a society, notably being outside the labour market. Poverty analysis from this angle has led to development of the concept of “social exclusion”.
4. Finally, the Gini index is a well-known direct measure of the degree of distributional inequality in income or consumption. It looks at the cumulative distribution of income or consumption (represented by the Lorenz curve) and estimates the extent to which it deviates from perfect equality.

The data presented for national and international poverty lines and the Gini index were obtained from the set of World Bank development indicators.¹⁸ The data sets included in

¹⁷ For more information on the UNDP Human Poverty Index (HPI), see: <http://hdr.undp.org/en/statistics/indices/hpi/>.

¹⁸ National and international poverty data and the Gini index were extracted from the World Bank, World Development Indicators Online. Data on the population distribution across economic class thresholds were downloaded from PovcalNet, an interactive web-based computational tool managed by the World Bank that allows users to replicate the calculations by the World Bank’s researchers in estimating the extent of absolute poverty in the world. PovcalNet is available online at <http://iresearch.worldbank.org/povcalnet/>. It is important to note that alternatives to World Bank estimates of poverty do exist and the issue of

tables 18a involve the use of poverty lines, with poverty rates calculated as the percentage of the population living below the line. National poverty lines are based on the World Bank’s country poverty assessments, while international poverty lines are based on tabulations from nationally representative primary household surveys and published in the PovcalNet database. Estimates of the Gini index are based on national household surveys, supplemented by the Luxembourg Income Study database for high-income economies.¹⁹

Employment by economic class estimates, which provide the distribution of employment across five household consumption-based economic classes (see box 18), are also based on nationally representative primary household surveys, but only those surveys that include questions on employment status. In order for an estimate of employment across economic classes to be included in 18b, the definition of employment must be found to be sufficiently in line with the international definition of employment as provided in the resolution adopted by the 13th International Conference of Labour Statisticians (ICLS).²⁰ For countries and years with available distributional data from the World Bank’s PovcalNet database but for which no national employment by economic class estimate is available, the employment by economic class estimates are derived from an ILO econometric model referenced in box 18.

The **national, urban and rural poverty lines** are specific to each country. Several factors may have influenced the choice of poverty threshold, such as nutritional requirements, basic consumption needs or minimum acceptable consumption levels. The population below country-specific poverty lines cannot readily be compared between countries. Also, over time, these poverty lines may have been changed to take account of new developments or new data, casting doubts on comparability over time as well.

The **international poverty lines** use a sum of money in constant US dollars, converted into a

(Note 18 continued)

“best” poverty estimation is a topic of debate in the research community. See, for example, the ILO study on alternative estimates of poverty, Karshenas, M.: *Global Poverty: New National Accounts Consistent and Internationally Comparable Poverty Estimates*, ILO mimeo (Geneva, 2002).

¹⁹ For additional information regarding the Luxembourg Income Study, see: <http://www.lisproject.org/>

²⁰ See the manuscript for KILM 2 for further details on the ICLS definition of employment.

sum of money for the country concerned using purchasing power parity (PPP) conversion factors rather than market exchange rates. Taking the US\$1.25 poverty line as an example, this amount is converted into an equivalent amount in the currency of the country in question, using the PPP conversion factor. This measure has the virtue of allowing comparisons over space and time.

The third data set for the indicator, the **Gini index**, is a convenient and widely used measure of the degree of income inequality. It measures the extent to which the distribution of income (or, in some cases, consumption expenditure) among individuals or households within a country deviates from a perfectly equal distribution. A Lorenz curve plots the cumulative percentages of total income received against the cumulative percentages of recipients, starting with the poorest individual or household. The Gini index measures the area between the Lorenz curve and the hypothetical line of absolute equality, expressed as a percentage of the maximum area under the line.²¹ The Gini index has a value of zero for perfect equality of incomes and 100 for perfect inequality. As with all summary measures, it cannot fully capture differences between countries and over time in the cumulative share of different clusters (fractals) of the population in income or consumption, which is represented by the Lorenz curve.

Finally, the **employment by economic class** estimates indicate individuals who are employed *and* who fall within the per-capita consumption thresholds of a given economic class group. By combining labour market characteristics with household consumption group data, employment by economic class estimates give a clearer picture of the relationship between economic status and employment. Because of the important linkages between employment and material welfare, evaluating these two components side by side also provides a more detailed perspective on the dynamics of productive employment generation, poverty reduction and growth in the middle class throughout the world.

Limitations to comparability

Cross-country comparisons should not be made using national poverty lines, as these do not reflect any single agreed-upon international norm on poverty. However, when the focus is narrowed to one country and the same poverty line has been used consistently over time, analyses of trends and patterns of poverty may be informative and in many cases more useful for national inferences than analysis of international poverty lines.

At the country level, comparisons over time may be affected by such factors as changes in survey types or data collection procedures. Both agricultural conditions and the occurrence of natural and economic disasters affect poverty rates, and membership of the poor group may change from year to year, as some individuals climb out of poverty while others fall into it.

In the case of estimates based on an international poverty line, the use of PPPs rather than market exchange rates ensures that differences in price levels across countries are taken into account. However, it cannot be categorically asserted that two people in two different countries, consuming at US\$1.25 (or US\$2) a day at PPP, face the same degree of deprivation or have the same degree of need. Apart from the well-known problems in economics in making inter-personal comparisons of welfare, there are other problems, such as rural-urban price differentials and differences in required calorie intake due to climatic variations, 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 US\$1.25 (or US\$2) 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 can also impart bias to the resulting consumption distributions. The extent of non-market activity and the way in which non-market production and consumption are valued could substantially hamper comparability.

Even if measurements of poverty and economic class groups using international poverty lines were perfect, several unanswered questions would remain. For example, is a person with a particular consumption level (say US\$4 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 living on

²¹ Readers may wish to consult other sources for additional information and alternative measures of inequality. See, for example, Tabatabai, H.: *Statistics on Poverty and Income Distribution: An ILO Compendium of Data* (Geneva, ILO, 1996); and the *World Income Inequality Database* (WIID) of the United Nations University at: http://www.wider.unu.edu/research/Database/en_GB/database/.

Box 18. New ILO estimates of employment across economic classes

New ILO research has provided a picture of the developing world's workforce in terms of the distribution of workers across five economic classes: (1) the extreme working poor (less than US\$1.25 a day), (2) the moderate working poor (between US\$1.25 and US\$2); (3) the near poor (between US\$2 and US\$4); (4) developing middle-class workers, which are those workers living in households with per capita consumption between US\$4 and US\$13; and (5) developed world middle-class and above, which are those workers living in households with per capita consumption greater than US\$13 per person per day).

Building on earlier work by the ILO to produce global and regional estimates of the working poor, a new methodology has been developed to produce country-level estimates and projections of employment across five economic classes (Kapsos and Bourmpoula, 2013). This has facilitated the production of the first ever global and regional estimates of workers across economic classes, providing new insights into the evolution of employment in the developing world. The aim of the work is to enhance the body of evidence on trends in employment quality and income distribution in the developing world – a desirable outcome given the relative dearth of information on these issues in comparison with indicators on the quantity of employment, such as labour force participation and unemployment rates.

The authors define workers living with their families on between US\$4 and US\$13 at purchasing power parity as the developing world's middle-class, while workers living above US\$13 are considered middle-class and upper-middle-class based on a developed world definition. Growth in middle-class employment in the developing world can provide substantial benefits to workers and their families, with evidence suggesting that the developing world's middle-class is able to invest more in health and education and therefore live considerably healthier and more productive lives than the poor and near-poor classes. This, in turn, can benefit societies at large through a virtuous circle of higher productivity employment and faster development. The rise of a stable middle-class also helps to foster political stability through growing demand for accountability and good governance (see Ravallion, 2009).

The econometric model developed in the paper utilizes available national household survey-based estimates of the distribution of employment by economic class, augmented by a larger set of estimates of the total population distribution by class together with key labour market, macroeconomic and demographic indicators. The output of the model is a complete panel of national estimates and projections of employment by economic class for 142 developing countries, which serve as the basis for the production of regional aggregates.

Source: Kapsos, S. and Bourmpoula, E. (2013). "Employment and economic class in the developing world", ILO Research Paper No. 6. http://www.ilo.org/wcmsp5/groups/public/---dgreports/---inst/documents/publication/wcms_216451.pdf.

US\$4 a day worse off if he or she lives in a country that has high inequality?

The Gini index, in principle, makes it possible to compare inequality levels in different countries and over time, without defining a particular poverty line, national or international. In practice, however, it involves other problems of comparability. The index is calculated from survey data, which may relate to income or consumption. If both consumption and income information were available in the requisite detail, the Gini index would be expected to show greater inequality of income than of consumption. Whether the index is based on income or consumption is made clear in the notes to the tables, and it is important for users to bear the distinction in mind when attempting to make comparisons. The cumula-

tive distributions of consumption or income used in constructing the index relate to per capita levels, and the percentiles are of population, not households. Apart from possible weaknesses in the quality of the underlying consumption or income data, the adjustments made to convert the index into a cumulative distribution of the population may introduce additional bias or error into the estimates. Nevertheless, despite these numerous imperfections, the index is very useful for studying trends in inequality across space and time.

Aside from disaggregation into rural and urban areas for national poverty lines, the poverty and inequality data in table 18a are provided at the aggregate level only, without disaggregation by age and sex. This is due to the fact that disaggregated poverty data are not

available in the major international data repositories from which table 18a draws. However, the employment by economic class estimates in table 18b compiled by the ILO on the basis of

national survey data are disaggregated by age (age groups included are 15+, 15-24 and 25+) and by sex, allowing for comparisons across these groups.