The Statistics Newsletter

for the extended OECD Statistical Network

Launch of the OECD System of Unit Labour Cost Indicators

By Richard McKenzie, OECD Statistics Directorate

For many years, the international community of economic analysts has underlined the limited availability of internationally comparable data concerning labour costs. Whilst the US Bureau of Labor Statistics has been publishing for many years some data for the manufacturing sector, this only covers a limited number of countries on an annual basis. Consequently, in various forums over recent years the OECD has been invited by a number of statistical offices and analysts to work towards the production of comparable measures of unit labour costs and related indicators covering a wider scope of economic activities and countries, using data based on national accounts definitions.

In response to this demand, the OECD has just completed development of a unique new statistical product referred to as the OECD System of Unit Labour Cost Indicators. The outputs of this System, which are updated at the end of each quarter, consist of long time series of annual and quarterly Unit Labour Cost and related indicators. The related indicators include annual time series for: Exchange Rate Adjusted Unit Labour Costs; Labour Income Share ratios; Labour Productivity levels and indices and; Labour Compensation per unit labour input levels and indices. Data are available for all OECD Member countries and the Euro area for a wide range of sectors including Total Economy, Manufacturing & Industry, Market Services and the Business Sector. All data, together with detailed methodological information are freely accessible on the OECD web-site at http://stats.oecd.org/mei/default.asp?rev=3

The release of this product culminates nearly three years of development work by the OECD which has benefited from contributions by academia and national consultants, and involved extensive consultation with the OECD Economics Department, several national central banks and national statistics offices. Feedback on initially proposed methodology and data sources was also received through the discussion of papers presented at the 2005 meetings of the OECD Short Term Economic Statistics Working Party (STESWP) and the OECD Statistical Working Party (SWIC). This new database also compliments the existing OECD Productivity Database.

Achieving Comparability for Unit Labour Costs

Unit labour costs (ULC) measure the average cost of labour per unit of output. They are calculated as the ratio of total labour costs to real output, or equivalently, as the ratio of mean labour costs per hour to labour productivity (output per hour). As such, a ULC represents a link between productivity and the cost of labour in producing output.

Achieving comparability across countries and economic activities for unit labour costs is a major challenge, particularly for those compiled on a quarterly basis. This stems largely from a lack of uniformity in earnings and labour cost data available on a sub annual basis across different economic activities within and across countries. In addition, coherence with quarterly indicators of real output may often be poor leading to large volatility in a derived statistic such as the unit labour cost.

The OECD has attempted to overcome these problems by developing a stepwise framework for choosing suitable quarterly indicator data, which is then benchmarked to more reliable annual data to form a consistent set of temporally disaggregated quarterly time series of total labour costs and real output. These series are then used to compile a set of quarterly unit labour cost indexes, whilst the annual benchmark data are decomposed and combined with other information to compile a range of related indicators such as exchange rate adjusted unit labour costs, labour income share ratios, labour productivity measures and labour compensation per unit labour input measures.

Data sources and compiling long time series

The annual benchmark data is sourced from the OECD System of National Accounts Database (SNA). However, in order to enable the longest possible time series to be produced, currently published time series available in the SNA are often linked to historical time series provided to the OECD some time in the past. This has enabled in most cases the compilation of annual ULC and related indicators back to 1970 for all OECD Member countries for each of the following eight economic activities according to the International Standard Industrial Classification (ISIC Rev. 3):

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

The majority of quarterly data is sourced from the OECD Quarterly National Accounts Database where the target variables are compensation of employees (for total labour costs) and constant price value added (for real output) by industry. However, many countries do not have complete GDP by income accounts (and to a lesser extent production accounts) and thus a range of proxy variables are taken from a variety of national and international sources. The general order of preference for proxy variables of total labour costs is: gross wages and salaries; labour cost index multiplied by total hours worked; average earnings multiplied by total employment. Proxy variables for real output generally consist of a production index for the relevant economic activity. Also, in order to enable the longest possible time series to be produced, currently sourced time series are often linked to historical series provided to the OECD some time in the past. The length of time series available for the quarterly ULC indicators therefore differs by country, but a large number of countries have at least 15 years worth of data for each economic activity.

The quarterly production process

A highly efficient cyclical production process has been developed in order to update both the annual and quarterly indicators on a quarterly basis. Around the middle of the last month of the quarter, annual data are downloaded

from the SNA and a range of quality checks applied. Quarterly data are then extracted from the various sources and benchmarked to the annual data using the Fernández method of temporal disaggregation to compile the raw series needed for the quarterly unit labour cost indexes. These series are seasonally adjusted using the TRAMO – SEATS package to produce both seasonally adjusted and trend-cycle series. The latter are then presented as the headline series in the monthly OECD Main Economic Indicators publication, although all outputs of the System are freely available on the website address below.

Ongoing development

The OECD hopes to extend the current System to include data for major OECD non-member economies such as Brazil, China, India, the Russian Federation and South Africa. It is also intended to develop a quarterly news release for presenting the latest developments in the quarterly series.

Detailed information describing the methodology and data sources used together with all time series outputs can be found on the *OECD System of Unit Labour Cost Indicators* website at http://stats.oecd.org/mei/default.asp?rev=3 .

The SME Policy Index, a tool to evaluate SME policy development in the Western Balkan economies
By Antonio Fanelli, OECD

Background

Small enterprises are the backbone of the Western Balkan economies. They make a major contribution to job creation and economic development. Small enterprises are behind the expansion of the

services, construction and transport sectors driving economic growth in the region. Clusters of small enterprises operating in high value added sectors are starting to emerge, spreading innovation throughout the economy.

Until a few years ago, small enterprise policy received relatively little attention in the region. The focus of governments was on consolidating macro-economic stabilisation and on managing the restructuring and privatisation of large state owned companies. Only limited support was available for small private enterprises. Over the last few years however, government action has shifted progressively from economic stabilization and macro reforms to the design and implementation of a set of micro-economic reforms directed at improving the business and investment climate. The adoption in 2003 of the European Charter for Small Enterprises (the Charter)– a pan-European instrument developed by the European Union under the framework of the Lisbon Agenda – by all the Western Balkan countries (Albania, Bosnia and Herzegovina, Croatia, the former Yugoslav Republic of Macedonia, Montenegro and Serbia) and UNMIK/Kosovo has contributed to a change in policy perspective.

Together with the adoption of the Charter the Western Balkan countries have also made a commitment to regularly monitor SME policy development, within the framework of the broader EU integration process.

Therefore each country and UNMIK/Kosovo named a National Charter Co-ordinator and established mechanisms for systematic monitoring of the Charter implementation under the auspices of the European Commission (Directorate-General for Enterprise and Industry). Additionally, the European Training Foundation (ETF) gradually become an additional source of expertise and advice for monitoring Charter dimensions 1 and 4, which

address education, training and skills issues.

In parallel, the OECD Investment Compact, in co-operation with the European Bank for Reconstruction and Development (EBRD), carried out a periodic independent evaluation of government enterprise policy (Enterprise Policy Performance Assessments, EPPAs) which covered most of the Charter's ten dimensions.

Between 2003 and 2006 the Charter monitoring process resulted in the publication of three sets of country reports, prepared by the National Co-ordinators, and three regional reports on the *Implementation of the European Charter for Small Enterprises for the Western Balkans*, and two series of Enterprise Policy Performance Assessments country reports, published by the OECD Investment Compact. The monitoring reports were supported by an intense programme of consultation with the business and policy community in each of the countries and by expert missions and peer reviews. In 2006, the Charter process was mainstreamed in the new Lisbon Agenda ('Growth and Jobs') for the then 25 EU Member States.

Faced with the possibility of a discontinuation of the Charter process, the Western Balkan countries and UNMIK/Kosovo adopted the 'Belgrade Declaration' in October 2006, calling for the continuation and the strengthening of the Charter monitoring process at country and regional level. The Belgrade declaration opened a new phase in the Charter monitoring process, characterised by the following features:

- *A multi-agency approach:* The OECD Investment Compact and the EBRD decided to fully integrate their policy assessment activities with those conducted by the EC and to integrate them in one single process based on the European Charter for Small Enterprises. Therefore the

monitoring process now involves two lead organisations, the EC and the OECD, and two support organisations, the ETF and the EBRD;

- The development of a specific *measuring tool* (the SME Policy Index), based on the Charter 10 policy dimensions to allow progress on SME policy development to be monitored in a more tangible, rigorous and comparative way.

The first monitoring exercise using the SME policy Index was conducted between June and November 2006 and a regional report (Enterprise Policy Development in the Western Balkans), jointly prepared by the EC (DG Enterprise and Industry) and the OECD Investment Compact, in consultation with the EBRD and the ETF was published in March 2007.

The process started with self-assessment exercises conducted by the country National Charter Coordinators followed by counter-assessments conducted by a team of independent consultants coordinated by the OECD Investment Compact; in close cooperation with partner organisations. The final scoring is the result of the consolidation of these two assessments, enriched by further desk research by the four partner organisations and inputs from other organisations such as the World Bank, IFC and UNDP, research centres and bilateral development agencies. The information used for the assessment was updated to October 2006. Any policy developments that occurred after that date were not considered in this report.

The next monitoring cycle (2007-09) will include an assessment of the impact of government policy in priority areas through company surveys and focus groups, systematic monitoring of policy targets and a phase of policy coaching through peer reviews,

workshops and expert assistance. The next regional report will be published in the spring of 2009.

The SME Policy Index

The SME Policy Index combines the Charter structure with an assessment approach developed by the OECD Investment Compact for evaluation of the investment climate in South East Europe. The index has been developed by the EC and the OECD Investment Compact, the ETF and the EBRD with the active participation of the National Charter Co-ordinators of the Western Balkans. The Charter framework and the indicators have been adjusted to reflect the conditions of policymaking in the Western Balkans.

The SME Policy Index aims to provide a structured and comparative evaluation of progress on SME policy by defining the country position in each of 10 policy areas covered by the Charter, using a scale of 1 to 5 (weaker to stronger). This leads to the identification of weaknesses and strengths in policy development, allowing a better targeting of government action and a more efficient allocation of donor assistance and a more effective dialogue with the private sector.

The SME Policy Index methodology

The SME Policy Index is structured around the ten policy dimensions covered by the European Charter for Small Enterprises:
1. Education and training for entrepreneurship;
2. Cheaper and faster start-up;
3. Better legislation and regulation;
4. Availability of skills;
5. Improving on-line access;
6. Getting more out of the single market;
7. Taxation and financial matters;

8. Strengthening the technological capacity of small enterprises;
9. Successful e-business models and top-class business support;
10. Developing stronger, more effective representation of small enterprises.

Each policy dimension is further divided into sub-dimensions that capture the critical feature of policy development in each specific area. For example, the sub-dimensions included in dimension 3 (Better legislation and regulation) are:

1. Regulatory impact assessment for new SME-regulation;
2. Simplification of rules;
3. Institutional framework.

Sub-dimensions are broken down into indicators. For example, within the same dimension, the sub-dimension 'Simplification of business regulations and formalities affecting the small business sector' contains the following indicators:

a) Government Strategy/action plans for business simplification;
b) Application of the 'silence is consent' rule;
c) Simplification of administrative forms for standard procedures.

Other sub-dimensions cover, for example, access to finance, the adaptation of tax policy to SME needs, etc. All sub-dimensions and indicators are included in the regional report which is available at http://www.investmentcompact.org/dataoecd/31/41/38310075.pdf.

The indicators are structured around five levels of policy development, with 1 the weakest and 5 the strongest. The policy development path for each indicator is typically structured according to the following lines:

Level 1: There is no law or institution in place to cover the area concerned;

Level 2: There is a draft law or institution, and there are some signs of government activity to address the area concerned;

Level 3: A solid legal and/or institutional framework is in place for this specific policy area;

Level 4: Level 3 + some concrete indications of effective policy implementation of the law or institution;

Level 5: Level 3 + some significant record of concrete and effective policy implementation of the law or institution. This level comes closest to good practices identified as a result of the EU Charter process and the OECD Bologna Process.

Where countries were clearly in transition between two levels, or where the actual situation combined elements of two subsequent levels, a half point is attributed. In total the Index consists of 56 indicators, combining new research with data and information already provided by other reports such as the Cost of Doing Business produced by IFC or the OECD Investment Compact Investment Reform Index.

Each sub-dimension and indicator is weighted according to its perceived importance in relation to enterprise policy development. The weights have been assigned as result of a process of consultation between the four partner organisations and the National Charter Co-ordinators.

The weighting system ranges from 3 (most important) to 1 (least important). The final score assigned to each policy dimension is therefore calculated as a weighted average of sub-dimensions and indicators.

Figure I.1: Breakdown of the SME Policy Index
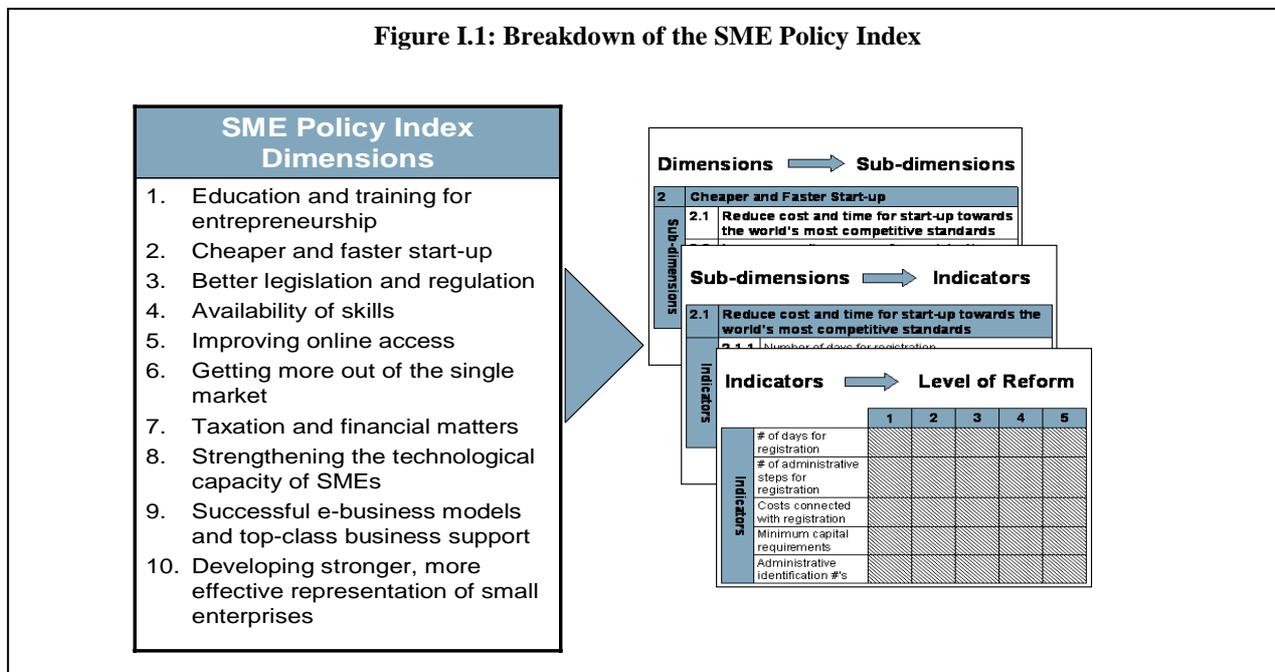
The evaluation results have not been aggregated into a single numeric index. It would, in fact, be impossible to correctly, and singularly, determine the weight of each of the 10 policy dimensions covered by the Charter. The SME Policy Index has been designed as a tool to foster policy dialogue among the SME policy stakeholders at country and regional level. It is therefore up to policy stakeholders to decide on which dimension or sub-dimension to concentrate their efforts. In addition a single numerical index would risk misleading the policy debate, concentrating the discussion on countries' overall relative performance instead of focusing more productively on relative strengths and weaknesses in specific areas.

Conclusions

Evaluating SME policy is a complex exercise, especially given the number of dimensions involved and the need to combine a qualitative and quantitative evaluation. The SME Policy Index is a first attempt to develop a comprehensive framework for SME policy evaluation, covering a range of policy dimensions and associating the evaluation phase to a policy dialogue process. By setting a policy development path structured in five steps for each

indicator it has been possible to assign numerical values to typically qualitative indicators and create a base for cross country comparison. By repeating the evaluation exercise over time, it will be possible to track progress in policy implementation at country and regional level.

The results of the first exercise have been encouraging. The Western Balkan countries took the exercise very seriously and committed considerable resources and provided strong political support through the entire process and are using the SME Policy Index as a tool for activity planning, for defining project priorities with donors and for structuring consultation with the private sector.

However, in the present format, the SME Policy Index has a number of limitations such as: the exclusion of important dimensions such as infrastructure and labour market policies; the lack of a comparable set of SME statistics providing a reliable picture of the structure and dynamics of the SME sector; and an agreed methodology to evaluate the impact of policy measures on the target SMEs. One of the objectives of the next phase of the monitoring process is indeed to find ways to overcome those limitations.

OECD - ISTAT seminar on dynamic graphics
Lars Thygesen, OECD

The OECD is committed to promoting informed decision making in all aspects of life: in policy making, in business decisions, in the private lives of citizens. The OECD is a provider of high quality comparable statistics that lend themselves well to international policy analysis and decision making. But first decision makers must be aware and understand the messages buried inside the data.

To many people, and especially younger audiences, statistics are seen as boring and hard to understand. Thus, they may never be turned into knowledge; meaning information that an individual understands and can use as the basis for action. Statistical organisations thus face a serious challenge of making potential users aware of statistics as an interesting and useful basis for forming an opinion and making decisions.

One of the ways the OECD has chosen to address this problem is to use dynamic graphical methods to make indicators appealing and uncover the messages they hide. In order to explore best practices as a basis for action, OECD decided to

organise a seminar, inviting people and organisations with excellent solutions to present them.

OECD arranged in cooperation with ISTAT (the Italian National Statistical Office) a seminar on Dynamic graphics 5-6 March in Rome. The web site of the event is www.oecd.org/oecdworldforum/graphics.

The seminar gathered 140 participants, a mixture of audiences with quite different cultures: statisticians who were keen to present their content, analysts and academia focusing on the messages themselves, and technical people mostly interested in what was inside the 'machine'. This proved to be an excellent mix, fertilising discussions and giving new insights.

Sixteen presentations showed applications of dynamic graphics, several of which were works in progress, not yet presented on the web sites of the organisations presenting them. They have one aspect in common: they are (more or less) dynamic. This means that when you change one aspect or choose one value of a dimension, other parts automatically follow; using more or less elegant transitions. Time (observation time or reference time of the data) is typically seen as a special dimension, with a "play" button allowing users to see developments over time like a movie.

Two families of graphs were presented:

- General purpose tools, aiming to show almost any kind of statistics, e.g. as a front end to a data warehouse with many different topics;
- Special purpose tools, aiming to show a graph that is especially suited for just one kind of question or topic.

The special purpose tools can be more effective in the sense that they are adapted to the messages that the "sender" wants to get across. They can also give a more direct editing role to the sender.

A few standards were widely used in applications and discussed during the seminar. Several applications used SDMX as standard for the input into the tools. As this is the general standard for exchange of statistical data and metadata, this seems a wise choice that would allow the tools to be easily plugged into any serious statistical data source.

Regarding the graphing techniques, two standards were widely used: SVG (scalable vector graphics) and Flash.

The seminar confirmed that it is possible to improve the understanding and penetration of OECD statistics using dynamic graphical tools and the OECD will develop such tools. The development will start with a pilot project to demonstrate the viability of the idea. The first results of this will be shown in the OECD World Forum - Measuring and Fostering the Progress of Societies, in Istanbul 27-30 June 2007. Following that event, results will be evaluated and decisions will be made about how to move towards putting tools into production.

There will be tools for different purposes: one will be a general purpose tool that sits on top of the OECD general data warehouse OECD.Stat and allows users to compose their own presentations; another will be more special purpose, aiming to show the main messages in the more limited contents of the OECD Factbook. www.sourceoecd.org/factbook.

The solutions will build on standards. The interface for data and metadata will be SDMX. The general purpose tool will build on an SDMX web service out of OECD.Stat, which is already operational but will be further developed. The development will be made using Adobe Flex and the future Apollo for developing the Flash applications. The ECB is developing a similar tool for its web site and its statistical data warehouse. The OECD and the ECB will share programming efforts.

Exploiting the value of innovation survey micro-data for policy making: an international project

Alessandra Colecchia, Dominique Guellec, Vladimir Lopez-Bassols, OECD

The Oslo Manual provides guidelines for surveying the innovation activities of firms. It includes recommendations for obtaining data on different types of innovation expenditures, innovation outcomes -such as the share of sales from innovative products – on the role of knowledge transfers and cooperation for firms' innovative activities, on the methods of

protecting innovation, and the factors that hamper it. The third edition of the Manual (OECD, 2005) also broadens the concept of innovation to its non-technological forms.

There exists almost 15 years of experience with innovation surveys in a variety of countries that have been influenced by the Oslo Manual. Yet, the full potential of innovation surveys based on the Oslo Manual is a long way from being realised.

There continue to be well-known problems due to concerns over the reliability and accuracy of the data, comparability across countries, limited access to micro-data by researchers, low visibility of the indicators derived from the surveys, and still limited use of innovation survey results by the policy community.

The project described here addresses the determinants and impacts of innovation at the firm level across countries, using micro-data from innovation surveys. Its added value is its international scope: indicators development and econometric estimates will be carried out in several OECD and non-member countries based on the same methodological approach.

OECD experts have selected items of high policy interest for the compilation of indicators and econometric analysis.

Internationally comparable indicators will range from standard innovation indicators to more complex ones on innovation modes and performance (i.e. composite indicators reflecting the degree and type of innovation performed by firms), innovation linkages (with universities, between companies etc.), and obstacles to innovation.

The econometric analysis will investigate: i) the firm-level link between innovation and productivity; ii) the channels of international knowledge transfers;

iii) non technological innovation and its impacts on firm-level performance; and iv) the role played by intellectual property rights (IPR) in innovation. Important characteristics of the firm will be taken into account in the analyses, including size, industry and multinational character (or not). Hence the project will also be able to draw policy implications regarding SMEs and globalisation.

Groups of experts are working in different countries in a co-ordinated way on micro-data from national innovation surveys. These teams will run similar statistical operations on their respective national data sets: cleaning of the data, compilation of indicators, econometric regressions.

The core data come from the latest round of national innovation surveys, notably CIS 4 (Community Innovation Survey, 4th edition, co-ordinated by Eurostat). In order to be able to conduct some more sophisticated econometric analysis, country experts will also need to link the CIS type of survey with other national surveys and/or registers.

This decentralised approach (each national team working on its own data set) is required by the confidential character of survey micro-data sets. That legal constraint explains the fact that there is almost no internationally comparative analysis available on innovation survey microdata.

Major obstacles to be addressed by experts involved in the project include: imperfect comparability of innovation surveys data (especially for non European countries), and uneven access to firm level data other than innovation but necessary for meaningful economic analysis (e.g. companies balance sheet).

As a result of these cross-country disparities in data availability some models might not be estimated in all participating countries, or be estimated in a simplified version.

In addition to these national exercises, some indicators will be tabulated and regressions will be run on European pooled data assembled by Eurostat in its Safe data centre, if the OECD obtains the permission to access such data. That would allow comparisons of results obtained from the two channels, although not all EU countries have provided the data to this Centre and only innovation survey variables are available there.

OECD in Figures 2006

The 2006 edition of OECD in Figures contains key data on OECD countries, ranging from economic growth and employment to energy, trade and migration.

The online editions of OECD in Figures in English, French, and now also German and Spanish are available via SourceOECD at:

http://www.SourceOECD.org/rpsv/figures/en/toc.htm

After a series of technical expert meetings (in Paris in November 2006, in Vienna in March 2007, and next June in Paris) during which national experts developed individual themes, and are developing modelling specifications and software routines, a project conference will be held in November 2007, where the main methodological, statistical and analytical conclusions will be discussed by a wider audience.

This work, aiming at improving evidence-based policy analysis in the area of innovation, will provide an important contribution to the OECD Innovation Strategy which is currently being shaped.

Measuring biotechnology

Anthony Arundel and Brigitte van Beuzekom, OECD

Improving the comparability of biotechnology indicators – and their collection – has posed several major challenges for national statistical systems. Unlike ICT or other technologies, there is no single biotechnology 'sector' that can be quickly identified and surveyed. Instead, biotechnology consists of a collection of related technologies with pervasive applications in many different primary and manufacturing sectors. Yet it is precisely the range of current and potential applications of biotechnology, together with their economic, environmental and social impacts, that creates a policy interest in obtaining high quality economic and innovation indicators for biotechnology.

The latest edition of OECD Biotechnology Statistics 2006 takes a major step forward in improving the comparability of biotechnology indicators between countries. The improvement in both data collection and comparability has been made possible by the work of the OECD and national experts to develop both a definition of biotechnology and the Framework for Biotechnology Statistics, which provides guidance for the collection of data on biotechnology.

Most countries now use the OECD list-based definition of biotechnology or similar definitions that focus on modern biotechnologies. However, full comparability has not yet been reached, due to different methods of constructing sample frames and dealing with survey non-response. The methodological similarities and differences of the national biotechnology surveys are summarised in OECD Biotechnology Statistics 2006. The biotechnology data presented here are official data collected by National Statistical Offices. This is only a small selection of the data presented in OECD Biotechnology Statistics 2006.

Biotechnology R&D

Biotechnology research and experimental development (R&D) is defined as R&D into biotechnology techniques, biotechnology products or biotechnology processes, in accordance with both the OECD biotechnology definition and the Frascati Manual for the measurement of R&D.

Business sector expenditures on biotechnology R&D are available for 17 countries plus China (Shanghai). Business sector expenditures on biotechnology R&D in 2003 are highest in the United States (USD 14 232 million current PPP), accounting for 66.3% of all business sector biotechnology R&D in the 17 countries (including Shanghai).

The share of all business sector R&D due to biotechnology is an indicator of a research focus on biotechnology by firms. In Iceland, biotechnology R&D accounts for 51.4% of all business sector R&D. The share exceeds 10% in Canada (12.0%), New Zealand (20.9%), and Denmark (23.8%). In the United States, 7.0% of business sector R&D expenditures are on biotechnology.

Public sector biotechnology R&D

The two main types of government programmes to support biotechnology research are either direct funding of research by the public research sector or direct (research grants) and indirect (tax deductions for research expenditures) funding of research by the private sector. Government funding of both public and private biotechnology research can be substantial.

Data on public sector expenditures on biotechnology R&D are available for 10 countries. In 2003, Korea had the highest level of government expenditures on biotechnology R&D, at USD 727.4 million (current PPP), followed by Canada and Spain. Biotechnology

R&D expenditures in Korea have increased 63.1% in two years, reaching USD 1 186.6 million (current PPP) in 2005.

The percentage of all public sector R&D expenditures due to biotechnology is a measure of the government's focus on biotechnology research. New Zealand has the highest share, at 24.2%, followed by Korea (15.3%) and Canada (12.4%). The results for the United Kingdom and Sweden are less than 2%, but in both of these countries the data only capture a part of total government R&D spending.

Biotechnology applications

Biotechnology has many different applications. Data on the number of firms active in specific application fields are available for 14 countries plus China (Shanghai).

Three main application fields are generally comparable across all countries: health, agro-food, and industry-environmental. Health includes both human and animal health, agro-food includes all agricultural applications plus fishing, forestry and food processing; and industry-environmental includes industrial processing, natural resources, and environmental applications. In addition, an 'other' category covers services and platform technologies such as bioinformatics, plus other applications that are not included in the three main fields in some countries.

Firms can be active in more than one application. When data are available for more than one application field the results are the percentage of total firm-field combinations in each specific application.

The majority of firms, 45%, are active in health, 22% are active in agro-food, 19% in industry-environmental applications, and 18% are active in the 'other' category.

Figure 1: Total expenditures on biotechnology R&D by biotechnology-active firms, Millions of USD PPP (current), 2003

Millions

Biotech R&D as a percent of total business expenditures on R&D (BERD)

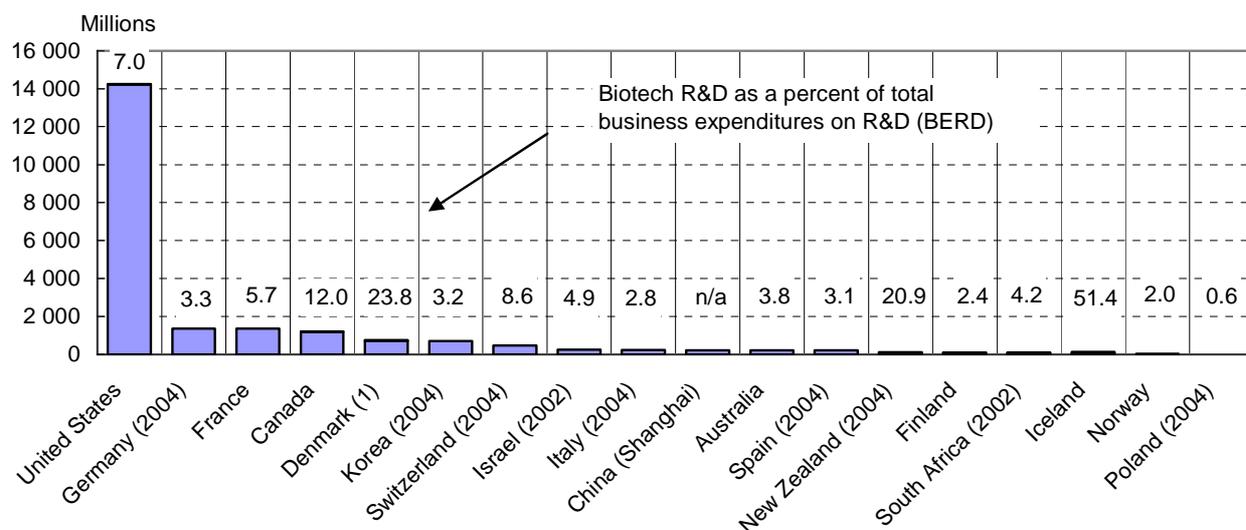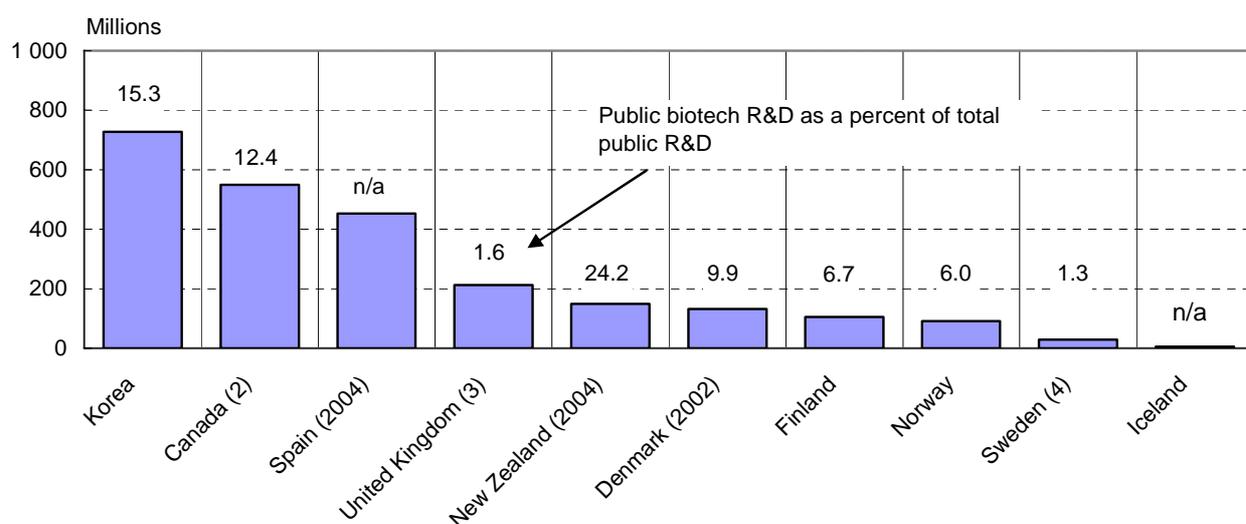| Country	Value
United States	7.0
Germany (2004)	3.3
France	5.7
Canada	12.0
Denmark (1)	23.8
Korea (2004)	3.2
Switzerland (2004)	8.6
Israel (2002)	4.9
Italy (2004)	2.8
China (Shanghai)	n/a
Australia	3.8
Spain (2004)	3.1
New Zealand (2004)	20.9
Finland	2.4
South Africa (2002)	4.2
Iceland	51.4
Norway	2.0
Poland (2004)	0.6

Figure 2: Biotechnology R&D expenditures by the public sector, Millions of USD PPP (current), 2003

Government and higher education biotechnology R&D

Millions

Public biotech R&D as a percent of total public R&D

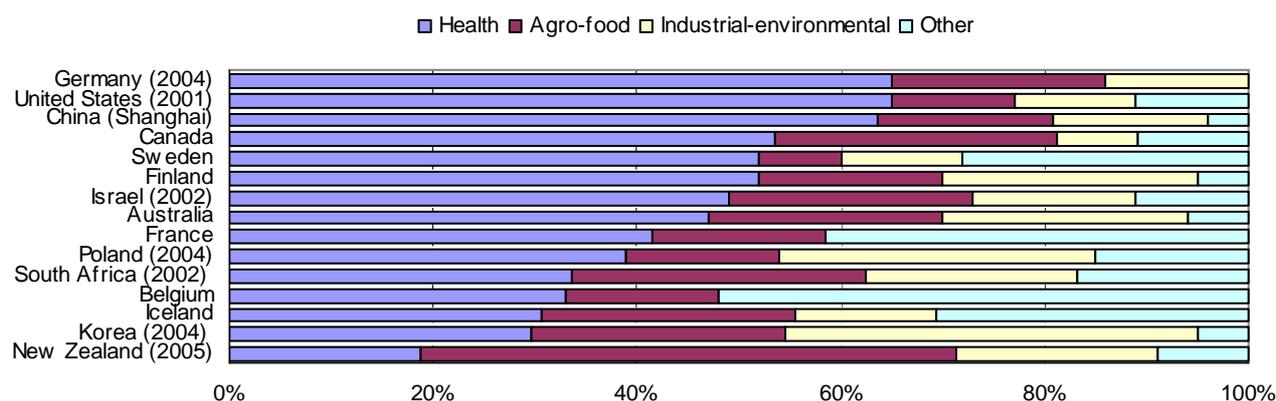| Country	Value
Korea	15.3
Canada (2)	12.4
Spain (2004)	n/a
United Kingdom (3)	1.6
New Zealand (2004)	24.2
Denmark (2002)	9.9
Finland	6.7
Norway	6.0
Sweden (4)	1.3
Iceland	n/a

n/a Not available.

1. Results for Denmark could overestimate biotechnology R&D because a few health biotechnology firms did not give the percentage of their total R&D allocated to biotechnology. For these firms, all R&D was assigned to biotechnology.
2. Biotechnology R&D financed by the federal government only (excludes provincial funding) and excludes business funding of public sector research.
3. Central government budget provision for R&D expenditure data.
4. Higher education sector only.

Source: OECD (2006), OECD Biotechnology Statistics 2006, OECD, Paris

Figure 3: Percent of biotechnology firms active by application field, 2003

Legend: ■ Health ■ Agro-food □ Industrial-environmental □ Other

Countries (top to bottom): Germany (2004), United States (2001), China (Shanghai), Canada, Sweden, Finland, Israel (2002), Australia, France, Poland (2004), South Africa (2002), Belgium, Iceland, Korea (2004), New Zealand (2005)

Application definitions

Health: includes human and animal health applications.
Industrial-environmental: includes industrial processing, environmental, energy and natural resource extraction applications.
Agro-Food: includes agricultural and food processing, marine, and silviculture applications.
Other: includes bioinformatics, support services and platform technologies not included above, and other applications not included above.

For further details, see page 40, *OECD Biotechnology Statistics 2006*.
Source: OECD (2006), OECD Biotechnology Statistics 2006, OECD, Paris

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Germany and the United States have the highest share of firms active in health applications (65%), followed by China (Shanghai, 63%) and Canada (54%). Only 19% of New Zealand firms are active in health biotechnology.

Conversely, New Zealand leads all other countries in the share of firms active in agro-food applications, at 53%, compared to less than 10% in Sweden.

For further reading

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Is happiness measurable and what do those measures mean for policy?
Anne Griffoin, OECD

On April 2 and 3 in Rome, the OECD in cooperation with the European Commission's Joint Research Centre, The Bank of Italy and the Centre for Economic and International Studies at the University of Rome (Tor Vergata) organised a conference on "Is happiness measurable and what do those measures mean for policy?"

The meeting brought together senior statisticians, policy makers and some of the leading academics in this field from across OECD member countries. More than 100 participants from around 20 countries attended.

The event began with a keynote address from Professor Ed Diener (University of Illinois) that summarised the latest thinking on whether and how happiness could be measured. The sessions that followed considered the determinants of happiness over time

and between countries, as well as the components of happiness with a particular focus on the links (in both directions) between subjective wellbeing and people's experiences with education and work. The final session looked at the ways in which happiness measures could be used for policy making.

The conference conclusions are still being finalised but there was widespread agreement that assessing subjective wellbeing was going to become increasingly important to policy makers and to which statisticians will need to pay more attention. Moreover, while measures of subjective wellbeing are unlikely to replace other measures of wellbeing, they are a useful complement to the more traditional measures. It was also felt that work on understanding the causes of some of the components of happiness (i.e. people's experience with work or education) could be a particular practical area of research on which to focus.

Discussion papers are available at http://www.oecd.org/oecdworldforum/happiness.

NEWS IN BRIEF

OECD.Stat web browser usage

Since 2005 OECD statistics have been made progressively available to the public via the internet. The OECD.stat web browser (http://stats.oecd.org/wbos/default.aspx) provides access to a selection of the corporate statistical data warehouse covering the vast majority of the organisation's activities. Use of the system has been steadily increasing as can be seen from the graphs and tables below.

Total Hits by month

The period August 2006 to March 2007 saw an almost threefold increase in users accessing the system via the internet and March had the highest number of hits in a single 24hr period (13,461).
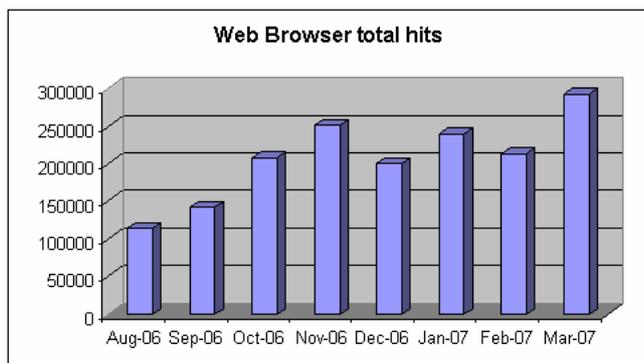
(Note: a "hit" refers to each time a user opens a dataset link to view the default data, or makes another selection and clicks on the browser's "View data" button)
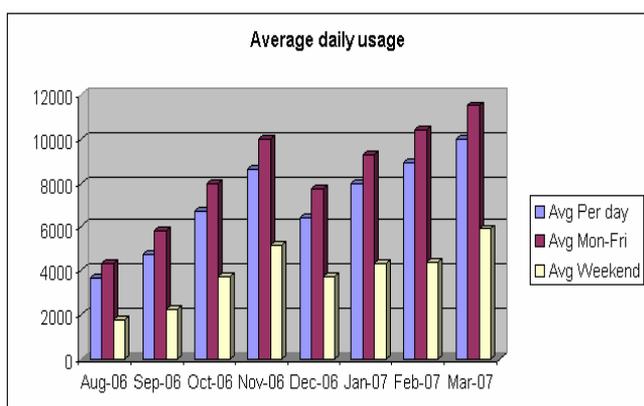
Average weekday access is currently around 11,500.

For further information please contact OECDdotStat@oecd.org.

Rich Internet applications for the visualisation of statistics: the use of Flex 2 and SDMX-ML on the European Central Bank website

Rich Internet Applications (RIAs) have become increasingly popular today, with the success of various Internet applications such as Mail, Finances and Maps from Google and Yahoo, for example. As a hybrid between desktop and web-based applications, Rich Internet Applications aim at offering the best of both worlds: the rich user experience and responsiveness of desktop applications together with the low maintenance costs, platform independence and broad reach of internet applications. Several technologies are available for implementing RIAs, such as Ajax, Flash and Java. They all rely on an intermediary client engine, which will execute user actions on the user computer instead of on the server, thereby improving the responsiveness of the application.

The European Central Bank (ECB) uses RIA technologies in order to improve the visualisation and accessibility, and therefore the understanding, of statistics published on the ECB website and in the Statistical Data Warehouse. Around mid-April 2007, new graphs were introduced for the euro foreign exchange reference rates (www.ecb.int/stats/exchange/eurofxref/) which are, by far, the most popular section on the ECB website with more than 165 million hits since January 2006. When on that page, one will arrive on the currency page which hosts the new graphs after having selected a currency.

When hovering over the graph, visitors will see the value of each data point together with the change over the last period, therefore improving the accessibility of the data. One of the most frequent requests concerning exchange rates on the ECB statistics hotline is for direct access to historical data. This situation has now been improved with the introduction of the new graphs. Different periods of observation (last month, last 3 months, last year, etc) can also be selected. As all actions requested by the visitor (such as changing the selected period) happen on the visitor's computer, the application responds immediately, which enhances the overall user satisfaction and allows to increase the quantity of information extracted from the data.

In the initial version, the new features have been voluntarily limited in order not to overwhelm visitors and, therefore, incremental updates will be favoured. New versions of the graphs will be released on a regular basis, with one or two features being added with every release. Features planned so far are:

- A modifiable slider to visually select the observation period;
- Possibility to switch from EUR vs. Currency to Currency vs. EUR;

- Possibility to change the time-series frequencies;
- Possibility to compare currency developments; and
- Add a data table to make it easier to download the data from the graph.

The first two features listed above will be available to the public by 15 May 2007 at the latest. The ECB plans to use the same technology for the charting functionality of the ECB Statistical Data Warehouse, for the Eurosystem joint dissemination framework, for the forthcoming Yield Curve to be published in July, and eventually for all charts that are on the ECB web site.

For further information about RIAs for the visualisation of statistics at the ECB please contact Xavier.Sosnowska@ecb.int.

RECENT PUBLICATIONS

All OECD publications can be ordered on line at: www.oecd.org/bookshop

▲OECD Factbook 2007

OECD Factbook 2007 is the third edition of a comprehensive and dynamic statistical annual from the OECD. More than 100 indicators cover a wide range of areas: economy, agriculture, education, energy, environment, foreign aid, health and quality of life, industry, information and communications, population/labour force, trade and investment, taxation, public expenditure and R&D. Data are provided for all OECD member countries with area totals, and for selected non-member economies. The 2007 edition includes a special focus on migration data.

The online version of the OECD Factbook 2007 is available at www.sourceoecd.org/factbook

▲OECD International Development Statistics CD-ROM: 2007 Edition

Published by the Development Assistance Committee (DAC) of the OECD, this CD-ROM provides economists and researchers with a unique source of up-to-date comparative statistics and information on international development.

Time series cover: volume, origin and types of aid and other resource flows to over 150 recipient countries; individual aid activities on bilateral and multilateral Official Development Assistance commitments by sector type, donors, recipient, with textual and numerical information on projects; key development indicators; numerous Aid charts for DAC members, recipient countries/territories and regions.

Further information is available on the OECD website at: www.oecd.org/dac/stats/idscd

OUT SOON

▲OECD Regions at a Glance: 2007 Edition

Regions are high on the policy agenda of OECD countries. And it is no wonder. Just 10% of regions accounted for more than half of total employment creation in most OECD countries between 1998 and 2003. This means that national growth tends to be driven by the dynamism of a small number of regions. Policy makers need sound statistical information on the source of regional competitiveness, but such information is not always available. Sub-national data are limited and regional indicators are difficult to compare between countries. *OECD Regions at a Glance* aims to fill this gap by analysing and comparing major territorial patterns and regional trends across OECD countries. It assesses the impact of regions on national growth. It identifies unused resources that can be mobilised to improve regional competitiveness. And it tackles more intangible factors that can make the difference: it shows how regions compete in terms of well-being (access to higher education, health services, safety etc.).

▲African Economic Outlook 2006/2007

The African Economic Outlook combines the expertise of the OECD with the knowledge of the African Development Bank on African economies. The objective is to review annually the recent economic situation and the short-term likely evolutions of selected African countries. The Outlook is drawn from a country-by-country analysis based on a unique analytical design. This common framework includes a forecasting exercise for the current and two following years using a simple macroeconomic model, together with an analysis of the social and political context. It also contains a comparative synthesis of African country prospects, placing the evolution of African economies in the world economic context. This edition includes a special focus on water and sanitation issues. A statistical appendix completes the volume.

▲Pensions at a Glance: Public Policies across OECD Countries 2007 Edition

Government-mandated pension and retirement policies have changed dramatically during the past decade. Pensions at a Glance presents a consistent framework for comparing public-pension policies across OECD countries, as well as reliable data. The report thus provides the basis for not only evaluating existing pension systems, but also designing and implementing future reforms.

This second edition updates in-depth information on the key features of mandatory pension systems—both public and private--in the 30 OECD countries, including projections of retirement-income for today's workers.

Forthcoming OECD Meetings

N.B. Unless otherwise indicated attendance at OECD meetings and Working Parties is by invitation only

2007	
10-11 May	OECD Expert Group on Statistical Data Metadata Exchange, Statistics Directorate (STD), Geneva, Switzerland (www.oecd.org/std/research/exchangeexpertgroup/2007)
10-11 May	OECD Structural Business Statistics Expert Meeting, Statistics Directorate (STD), Paris, France (www.oecd.org/std/sbs2007)
14-15 May	Innovation, Growth and Equity, OECD Forum 2007, Public Affairs and Communication Directorate (PAC), Paris, France (www.oecd.org/Forum2007)
15-16 May	Meeting of OECD Council at Ministerial Level, Paris, France
21 May	Working Party on Indicators for the Information Society (WPIIS), Directorate for Science, Technology and Industry (STI), London, United Kingdom
22-24 May	Working Party No. 2 on Tax Policy Analysis and Tax Statistics, Centre for Tax Policy (CTP), Ottawa, Canada
11-12 June	Development Assistance Committee (DAC) Working Party on Statistics, Development Co-operation Directorate (DCD), Paris, France
11-12 June	Working Party of National Experts on Science and Technology Indicators (NESTI), Directorate for Science, Technology and Industry (STI), Paris, France
13 June	Joint NESTI-TIP Workshop on Innovation Indicators for Policy Making and Impact Assessment, Directorate for Science, Technology and Industry (STI), Paris, France
13-14 June	Meeting of the OECD Committee on Statistics, Geneva, Switzerland
18 June	Working Party on Territorial Indicators - 14th Session, Public Governance and Territorial Development (GOV), Rome, Italy
25-27 June	OECD Short-term Economic Statistics Working Party (STESWP), Statistics Directorate (STD), Paris, France
27-30 June	Measuring and Fostering the Progress of Societies, Second OECD World Forum, in co-operation with the European Commission, the Organisation of the Islamic Conference, the United Nations and the World Bank, Istanbul, Turkey (www.oecd.org/oecdworldforum/Istanbul)
28-29 June	Focus Group on New Producer Support Estimate Classification and Indicators, Directorate for Trade and Agriculture (TAD), Paris, France
02 July	Insurance and Private Pensions Committee - Task Force on Pension Statistics, Directorate for Financial and Enterprise Affairs (DAF), Paris, France
02 July	Special Session of the Task Force on Pension Statistics dedicated to insurance statistics and indicators, Directorate for Financial and Enterprise Affairs (DAF), Paris, France

Other Statistics Meetings

2007	
17-18 May	Annual Bank Conference on Development Economics (ABCDE) 2007, the World Bank and the Government of Slovenia, Bled, Slovenia
11-13 June	Conference of European Statisticians, United Nations Economic Commission for Europe, Geneva, Switzerland (www.unece.org/stats/documents/2007.06.ces.htm)
25-28 June	Expert Group Meeting on Tourism Statistics, United Nations Statistics Division, New York, USA
4-6 July	Workshop on Statistical Metadata, United Nations Economic Commission for Europe, Vienna, Austria (www.unece.org/stats/documents/2007.07.metis.htm)
16-19 July	Expert Group Meeting on Distributive Trade Statistics - Second Meeting, United Nations Economic Commission for Europe, New York, USA (http://unstats.un.org/unsd/Distributive_trade/distributive_trade.htm)

New SOEP Newsletter, No. 76 / April 2007.

The German Socio Economic Panel Study (SOEP) in the DIW Berlin will move to a new location in the heart of the capital city. Despite all the added work and questions associated with the upcoming move, the next SOEP data distribution is still scheduled for summer 2007.

Please notice: SOEP data (up to wave W / 1984-2006) will be provided on DVD!

www.diw.de/deutsch/sop/newsletter/2007/nl76.pdf