Measuring Trust in Official Statistics: New Model OECD Questionnaire
by the OECD Statistics Directorate

Nowcasting procedures in Austria for estimating Research & Development
by Statistics Austria

Making Stats Fun
by the Australian Bureau of Statistics
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Reputation – the factors determining the public’s opinion of official statistics can be influenced by a number of practices undertaken by the compiler; examples include: publication of relevant data that informs all users of issues of national importance; public consultation, including the media; handling of incidents or issues involving wrong data or unethical practices; etc.

While the three factors are considered to be the main sources of trust in official statistics, some provisos should be noted. In particular, none of these key factors operate in a cause and effect fashion. For example, just because a National Statistics Office invests in ensuring the quality of their high-profile products, this may not necessarily translate into more trust in their statistics (at least in the short term) and in isolation from other factors.

Factors affecting the level of trust in official statistics may be outside the control of the NSO or the national statistical system and for example, may reflect the general level of trust towards national institutions. This will result in differences in any country comparisons.

The Questionnaire

The questionnaire work was completed in two stages. In the first stage, the OECD Working Group agreed to a draft set of questions through an iterative process using the electronic platform established by the OECD. In this stage, the Chair proposed an initial set of questions, based closely on the framework outlined above, and the members of the Group provided feedback which was integrated into the questionnaire. This process continued until there was broad agreement within the Group on the proposed questions.

In the next step, six countries undertook cognitive testing of the questionnaire:

A. Mostly outside the statistical compilers control  
a. External Factors – Cultural norms, awareness and past history/experience

B. Under the statistical compilers control  
a. Influence public trust; trust in statistical products – Accuracy, timeliness, reliability, credibility, objectivity, relevance, coherence.
b. Maintaining trust; trust in statistical institutions – Protect confidentiality, integrity, transparency, impartiality, stakeholder management

Trust

The approach adopted by the OECD Electronic Working Group to measure trust in official statistics is based on three factors, first put forward in 2004 by Ivan Fellegi and later adopted by the Australian Bureau of Statistics. The three factors are:

Structural Factors – the extent statistics are (or are perceived as being) independent, objective, impartial (i.e. no political interference) and transparent (e.g. an adhered to advance release calendar, clear reasons for revisions, etc.).

Statistical Factors – complying with international standards and having sound methodological practices, robust statistical processes and quality outputs.

In light of the above considerations, the OECD Electronic Working Group on Measuring Trust in Official Statistics conceived the following measurement framework to aid in the questionnaire design.

Measurement of trust framework:
• Australia (Australian Bureau of Statistics);
• Canada (Statistics Canada);
• Korea (Statistics Korea);
• New Zealand (Statistics New Zealand);
• Turkey (Turkish Statistical Institute); and
• the United States (National Center for Health statistics, Centers for Disease Control and Prevention).

Each country that undertook the cognitive testing provided a report to the Group. The reports generally included comments and suggestions made by the questionnaire design divisions of the respective statistical organisations. The comments were based on how each question tested with respondents, including their feedback. Changes were also proposed to take account of national and cultural differences.

The cognitive testing resulted in a number of (mostly minor) changes to the original proposed questionnaire as well as providing some countries with their first (albeit limited) understanding of national trust in official statistics. Additionally, Australia and New Zealand disseminated reports on trust in official statistics – Trust in ABS and ABS Statistics (2010); and, Statistics New Zealand: Use and Trust in Official Statistics Survey (2010) – around the same time testing of the questionnaire was being undertaken.

Undertaking a survey on trust in official statistics

The model questionnaire on measuring trust in official statistics is based on some assumptions regarding the actual undertaking of the survey. These are: i) the survey is contracted out to an external institution and administered by interviewers; and ii) ensuring that the questionnaire is appropriately adapted by countries having a highly decentralised statistical system.

In regards to the first point, scope is left for NSOs to make modifications to the questionnaire so that it could be undertaken by the NSO itself.

The Model Questions

The model questionnaire is presented in six modules, with each module usually containing a number of questions (22 in total):

1. Awareness of the <Statistical Organisation>
2. Trust in National Organisations
3. Trust in Official Statistics
4. Assessment of <Statistical Organisation>
5. Trust in Selected Statistical Series
6. Demographics

Module 1

The first module contains seven questions and attempts to understand the respondent’s awareness of the statistical system or particular statistical organisation, past exposure to and experience with the statistical organisation and their major outputs, and to determine if the respondent is a frequent user (in which case they are asked about the frequency of their statistics use). The module also attempts to calibrate the respondent’s awareness of other well-known national organisations.

Module 2

The second module contains only one question, and asks about trust in the government, government organisations (e.g. parliament, police, etc), financial institutions and the national media. This question seeks to understand the “cultural norms” in relation to these agencies and thus to benchmark trust questions on official statistics in the national context.

Module 3

The third module also has a single question, which is at the heart of the questionnaire, and asks the respondent whether they have trust in the official statistics produced by the national statistics office (or a specific statistical agency in countries having a highly decentralised statistical system).

Module 4

Module four includes one question split into three parts. The first part relates to the respondent’s view on
the importance of statistics to the country. The second part asks for the respondent’s view on whether the statistics produced is free from ‘political interference’. There are interviewer notes for this part to ensure that the respondent has understood fully what ‘political interference’ is, with examples given e.g. pressure to change the release date for a certain statistic. The final part seeks to find out the respondent’s opinion of the statistical organisation.

Module 5

Module five has five questions, all of which have the same format. A high-profile statistic is introduced, e.g. Inflation, and the respondent is asked if they have ever referred to it, and, if so, they are then asked about their views on it. If they have never referred to the statistic mentioned then they are routed past the last part of the question regarding their views on the timeliness, accuracy and the potential political basis of the particular statistic.

Module 6

Finally, module six collects demographic data on the respondent, e.g. age, gender, education, income, occupation and place of residence. The cognitive testing showed that this contextual information needs to be adjusted to meet specific country requirements. For example income ranges would differ depending on the income distribution in each country.

Some countries, for example Denmark, undertake regular surveys on public trust in (and image of) the national statistics office. While it is understood that the proposed questionnaire won’t replace these established surveys, it is hoped that some of the questions from the model questionnaire could be included in existing surveys. This has actually happened in the case of Denmark.

The full questionnaire can be found at: www.oecd.org/dataoecd/10/15/50021100.pdf.

Future Statistics

It is hoped that the development of the OECD model questionnaire will greatly increase the probability that internationally comparable data on trust might become available in the future. This will be achieved as countries embed questions from the OECD model questionnaire into their national surveys or undertake national surveys on trust based on the questionnaire developed by the Group.

At some point in the future, the OECD may thus undertake an analytic study on measuring trust in official statistics based on information from countries that have used the questions proposed in the model questionnaire.

Promote entrepreneurship to exit the crisis, OECD says

Start-up rates in most countries are slowly bouncing back toward their pre-crisis levels, but not all countries have seen significant acceleration in new businesses, according to a new OECD report. Most would-be entrepreneurs see far greater opportunities in the service sectors than in manufacturing. And women are far less likely than men to open their own businesses.

These are among the insights in the latest edition of Entrepreneurship at a Glance 2012, which gives an overview of entrepreneurship in OECD countries. Using indicators developed with Eurostat and other national statistics offices, the report explains how access to finance, market conditions, regulatory frameworks and cultural perceptions can boost or harm entrepreneurial activity.

New data on enterprise creations and bankruptcies shows the major impact that the economic and financial crisis has had on entrepreneurial activity. Start-up rates fell precipitously from mid-2008 in all OECD countries where data are available. Momentum slowed again in early-2011 in most countries but has since shown tentative signs of a pick-up.


www.oecd.org/document/0,0,3746,en_2649_34233_48107008_1_1_1_1,00.html
Research and development (R&D) as a core part of innovation activities is nowadays seen as one of the most important drivers of growth, well-being and sustainability. According to the main reference for statistics on R&D, the so-called OECD Frascati Manual, R&D is “creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications”. Needless to say that in order to oversee and understand R&D activities, proper statistical tools are needed to measure research and development and subsequently give policy makers and scientists a sound base for policy decisions on how to support and boost these types of activities.

Especially in the EU, since the implementation of the “Lisbon process”, enhancing R&D expenditure became an explicit target of the EU member states and the Union as a whole. By 2010, European countries were supposed to be spending 3% of GDP on research and development annually. As this goal was missed, the succeeding “Europe 2020” strategy determined the year 2020 to ultimately reach this goal. Many countries, in addition, set national targets, with dates, for R&D intensity to be reached. The Austrian government aims for a research intensity ratio of 3.76% by 2020. Consequently, there is a growing demand for accurate R&D data in benchmarking each country’s performance in relation to the preset target.

Already in 1962, the first edition of the Frascati Manual had furnished statisticians with a “proposed standard practice for surveys on research and experimental development”. Since this time the manual has become progressively more comprehensive and is considered a unique reference for compiling R&D data. Due to the complexity of the topic and the arguable difficulties in discriminating between R&D activities according to the Frascati definition and related scientific and technological activities, surveys among R&D performers are the most common tool to compile R&D data. Practically all OECD countries carry out regular surveys among enterprises, universities, research institutions and other entities performing R&D. European countries are obliged by a European regulation to deliver detailed R&D data every two years; many OECD countries even perform surveys annually.

While R&D surveys deliver highly detailed data, such as R&D expenditures by sector of (R&D) performance, by type of costs, by sector of financing, by type of research, by industry, and R&D personnel by sex, by occupation, by education and so forth, they suffer from one considerable drawback. There is usually a large time lag between the reference period and the date when survey results are available. Due to the specifically detailed methodology of the Austrian R&D survey, which is a census survey among all potential R&D performers, with very detailed questions, especially in the higher education sector, final results of the R&D survey are only available 18 months after the reference year. In addition to the biennial character of the survey, this means that the most recent data are already out of date and in the worst case, the most recent data available date back three and a half years.

GERD

In Austria, before the introduction of the EU regulation in 2003, R&D surveys were a rare occurrence (there is now a biennial R&D survey). In the past, national legislation was needed for the undertaking of a compulsory national R&D survey. However, when such a legal instrument was implemented it often referred to only one reference year. Therefore, to collect data for another calendar year, an amendment to the regulation, or even a completely new one, was necessary. In some years, even a decision from the Council of Ministers was necessary. As these were time-consuming exercises, the frequency of R&D surveys was often around four or five years. This process resulted in the introduction of a nowcasting exercise (referred to as the “global estimate”); an exercise that tries to estimate Gross Domestic Expenditures on R&D (GERD) by sector of financing and, additionally, the research intensity. The global estimate, started in the 1980s, provides the estimated research intensity for the current calendar year as its most important deliverable. The initial idea was for the global estimate to fill data gaps in years when the most recent survey data was outdated due to the more sporadic performances of full-scale surveys. It turned out that the
assumptions used to estimate even most recent R&D performances were so accurate, that the basic results of the estimates were mostly confirmed by the following R&D surveys. As these estimates were obviously of good quality they were kept as an annual exercise and are expected with interest from policy makers and academia. The annual estimates are also part of the annual research and technology report of the federal government.

According to the Frascati Manual, four sectors of financing can be distinguished in R&D statistics.

- The business enterprise sector (BES) comprises all funds for R&D which come from (domestic) businesses. BES is distinct from other sources of funding in that the primary activity of these enterprises is the market production of goods and services. In the OECD, around 61% of total GERD were financed by industry in 2009. The respective value for Austria was 47%.

- The government sector is the second most important source of R&D funding as regards quantity. 31% of total GERD in OECD countries were funded by national governments and 36% of Austrian GERD, in 2009.

- R&D funding from abroad is of high importance for the Austrian R&D landscape, contributing 17% of total R&D funds in 2009. These flows mostly come from foreign enterprises, with a considerable part originating from multinational enterprises which have chosen Austria as the place to carry out R&D in one of their local affiliates. For the OECD area, less than 5% of GERD is funded from “abroad” (2009).

- “Other national sources” can be considered the residual. The target of the nowcasting exercise in Statistics Austria is to estimate figures for these four components for the current calendar year, which together form total GERD, using a bottom-up approach. Each year in April, the “Global estimate of gross domestic expenditures on R&D” is carried out. The date is neither arbitrary nor coincidental as the end of March is the usual deadline when the two largest Austrian economic research institutes publish their joint estimates on GDP growth for the current and the forthcoming year. As parts of GERD are considered a function of GDP growth this is vital information for the estimate.

### Compilation of GERD

As already described, total national R&D expenditure consists of four components (four distinguished “sources of funds” or “financing sectors”) which themselves can consist of several sub-components. Each sector of funding is estimated individually using information available at that time. What follows is an example of the procedure to estimate the 2012 research intensity figure. Results of this latest estimate are indicated in Table 1.

In April 2012, the most recent results available from the comprehensive biennial R&D survey were from 2009, with data for 2011, the reference year of the next survey, not yet available. The data for 2009 being survey results are considered final and “frozen” and not subject to revision. Therefore, data from 2010 onwards are estimates and are revised once a year when the new GERD estimate is undertaken using current information.

### Table 1. Austrian global estimate 2012: Gross domestic expenditure on R&D (GERD)

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</tr>
</thead>
<tbody>
<tr>
<td>1 Gross domestic expenditure on R&amp;D (in million EUR)</td>
<td>896</td>
<td>1,249</td>
<td>1,669</td>
<td>2,303</td>
<td>3,400</td>
<td>4,684</td>
<td>5,250</td>
<td>6,319</td>
<td>6,868</td>
<td>7,548</td>
<td>7,480</td>
<td>7,984</td>
<td>8,263</td>
<td>8,611</td>
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<tr>
<td>of which financed by:</td>
<td></td>
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<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public sector</td>
<td>420</td>
<td>601</td>
<td>725</td>
<td>1,105</td>
<td>1,285</td>
<td>1,574</td>
<td>1,732</td>
<td>2,071</td>
<td>2,261</td>
<td>2,793</td>
<td>2,662</td>
<td>3,086</td>
<td>3,147</td>
<td>3,383</td>
</tr>
<tr>
<td>Federal government</td>
<td>362</td>
<td>518</td>
<td>618</td>
<td>957</td>
<td>1,098</td>
<td>1,362</td>
<td>1,462</td>
<td>1,772</td>
<td>1,917</td>
<td>2,357</td>
<td>2,297</td>
<td>2,586</td>
<td>2,646</td>
<td>2,870</td>
</tr>
<tr>
<td>Regional governments</td>
<td>48</td>
<td>71</td>
<td>89</td>
<td>130</td>
<td>142</td>
<td>171</td>
<td>208</td>
<td>220</td>
<td>263</td>
<td>354</td>
<td>273</td>
<td>405</td>
<td>404</td>
<td>411</td>
</tr>
<tr>
<td>Other public financing</td>
<td>10</td>
<td>11</td>
<td>18</td>
<td>19</td>
<td>45</td>
<td>41</td>
<td>62</td>
<td>79</td>
<td>81</td>
<td>82</td>
<td>91</td>
<td>94</td>
<td>98</td>
<td>102</td>
</tr>
<tr>
<td>Business enterprise sector</td>
<td>450</td>
<td>613</td>
<td>885</td>
<td>1,128</td>
<td>1,418</td>
<td>2,091</td>
<td>2,476</td>
<td>3,057</td>
<td>3,344</td>
<td>3,481</td>
<td>3,520</td>
<td>3,571</td>
<td>3,760</td>
<td>3,842</td>
</tr>
<tr>
<td>Private non-profit sector</td>
<td>4</td>
<td>4</td>
<td>5</td>
<td>10</td>
<td>12</td>
<td>17</td>
<td>25</td>
<td>27</td>
<td>32</td>
<td>34</td>
<td>42</td>
<td>44</td>
<td>46</td>
<td>47</td>
</tr>
<tr>
<td>Abroad</td>
<td>22</td>
<td>31</td>
<td>54</td>
<td>60</td>
<td>685</td>
<td>1,002</td>
<td>1,017</td>
<td>1,163</td>
<td>1,230</td>
<td>1,241</td>
<td>1,256</td>
<td>1,283</td>
<td>1,311</td>
<td>1,339</td>
</tr>
<tr>
<td>2 GDP, nominal (in billion EUR)</td>
<td>82</td>
<td>103</td>
<td>127</td>
<td>159</td>
<td>192</td>
<td>221</td>
<td>235</td>
<td>259</td>
<td>274</td>
<td>283</td>
<td>275</td>
<td>286</td>
<td>301</td>
<td>308</td>
</tr>
<tr>
<td>3 Gross domestic expenditure on R&amp;D, as % of GDP</td>
<td>1.10</td>
<td>1.21</td>
<td>1.32</td>
<td>1.45</td>
<td>1.77</td>
<td>2.12</td>
<td>2.24</td>
<td>2.44</td>
<td>2.51</td>
<td>2.67</td>
<td>2.72</td>
<td>2.79</td>
<td>2.74</td>
<td>2.80</td>
</tr>
</tbody>
</table>

Status: 25 April 2012
Source: Statistics Austria, 2008, 2010-2012: Estimates. All other years: Survey results
According to the results of the 2009 survey, 36% of total GERD are financed by the public sector (which includes the minimal higher education sector funding). The required estimates for this type of funding for the next years are the most reliable as they depend on budget appropriation data and rely only to a small extent on pure estimates. The most important data source in this case is the R&D-specific part of the federal budget, the so called “Annex T of the Auxiliary Document for the Federal Finances Act”. This Annex to the federal budget lists all budget items which contain an R&D part. Annex T contains several hundred budget lines and each relevant budget line is attributed a “coefficient” between 1 and 100 that determines the assigned “research part” of the total expense in percent. The coefficients of the largest budget items themselves have a very close interrelation to the R&D survey and are largely determined by information derived from previous surveys. For 2012 the estimate was 2.42 billion euro.

A similar exercise is made to determine the R&D budgets of the nine regions (Länder). In contrast to the federal government, this information is not publicly available, but must be collected via a specific survey among the Länder which themselves send extractions from their budget appropriations. The R&D-relevant part of each budget line is determined in close cooperation between the statistical office and the respective Länder. The amount spent on R&D is estimated to be 411 million euro for 2012. This figure forms another part of “R&D expenditure funded by the public sector”.

Another flow of funds which is considered as a decisive contribution to overall GERD is the amount paid out via the tax system as R&D tax incentives. The measure introduced in the Austrian tax system is the so called “research premium” (Forschungsprämie). It concedes 8% of total R&D expenditures as a backflow to the R&D performing enterprises themselves on the understanding that the activity falls under the R&D definition of the Frascati Manual (and is therefore also applicable for R&D statistics). Starting from 2011, this rate was increased to 10%. The instrument is not considered a genuine tax credit, as it also accrues to R&D performing enterprises which have never paid any corporate taxes due to not having generated any profits. Data for the “research premium” are available from the Ministry of Finance which additionally makes estimates for the current calendar year (if data are not yet available). For 2012, the estimate is 450 million euro. Total R&D funding by the public sector are estimated at 3.38 billion euro for 2012.

According to the results of the 2009 survey almost half of total GERD (47%) is financed by the (domestic) business enterprise sector. To estimate the most recent contributions of the BES sector to the total national R&D performance much less up-to-date information is available. This estimate is the most critical element of the nowcasting exercise. In the model, GERD by the business enterprise sector is a function of nominal GDP, information from the latest R&D survey and if available information about the large R&D performers and any intended changes in their R&D arrangements. Statistics Austria forecasted that in 2012, 3.84 billion euro was funded by national enterprises for R&D.

The final large component of R&D funding are the funds coming from “abroad” comprising all flows from outside national borders. The 2009 R&D survey reported that 17% of GERD is foreign financed. The lion’s share comes from foreign enterprises; about half from parent companies of multinationals which have chosen Austria as one of their R&D locations. A relatively tiny part comes from the Framework Programmes for Research and Technological Development of the European Union. For the global estimate, current data on the annual backflows from the EU to Austria are used; these are available from the Ministry of Science and Research.

Estimates for the remaining foreign funds from foreign enterprises are based on GDP and economic forecasts of other European countries. For example, as around a quarter of total R&D expenditure among businesses (BERD) falls in German-controlled enterprises, economic development in Germany is regarded as being of key

Figure 1. Research intensity 1981-2009 — Total OECD and Austria

Source: OECD, Main Science and Technology Indicators (MSTI) 2012/1
importance for R&D funding from abroad. As business funding from abroad applies to a relatively small number of Austrian firms, information about these large corporations, such as structural changes or withdrawals of R&D activities to another country, if available, are also incorporated into the estimates.

Data for the small share of “other national public funding” and “funding from the private non-profit sector”, totalling less than 2% of GERD, are adjusted yearly using GDP data.

**Nowcasted GERD**

Nowcasted total GERD is the sum of all sources of funds described above and is forecasted to exceed 8.5 billion euro for the first time in Austria. Nevertheless, the indicator attracting the highest political and media attention is research intensity; the ratio of gross domestic R&D expenditure to GDP. Statistics Austria estimates research intensity at 2.80% in 2012, up from 2.74% in 2011, which itself was a fall from 2010 (2.79%). Due to normal revisions to GDP data, which often affect the whole time series in length, the research intensity ratio (as well as R&D estimates) are therefore also subject to annual revision for a number of years into the past.

It is important to say that Statistics Austria does not adapt its global estimate as soon as GDP is revised. GERD revisions are undertaken when the global estimate is compiled, using a known timetable, which makes the revision an integral part of the forthcoming year’s global estimate. Table 1 shows the results of the current global estimates. Figure 1 displays the development of the research intensity ratio of Austria vis-à-vis the OECD.

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**4th OECD World Forum**

**Statistics, Knowledge and Policy**

**Measuring Well-Being for Development and Policy Making**

New Delhi, India

16-19 October 2012

On 16-19 October 2012, the OECD will organise, jointly with the Government of India, the 4th OECD World Forum on Statistics, Knowledge and Policy under the theme Measuring Well-Being for Development and Policy Making. Building on the OECD Better Life Initiative, the main objectives of the Forum are to further the discussions on the different aspects that make for a good life today and in the future in different countries of the world and to promote the development and use of new measures of well-being for effective and accountable policy-making. Thus, an important expected outcome of the Forum is to contribute to the post-2015 development agenda.

The Forum agenda is being designed to reflect the conclusions of four regional conferences on Measuring Well-Being and Fostering the Progress of Societies that the OECD has organised in association with the OECD Development Centre, PARIS21 and regional actors. Four of these events, for Latin-America (held in Mexico City), for Asia-Pacific (held in Tokyo), Africa (held in Rabat) and Europe (held in Paris) took place in May 2011, December 2011, April 2012 and June 2012 respectively.

The four-day Forum will gather around 1,000 participants from all over the world, including policy-makers as well as representatives from international organisations, national statistical offices, government agencies, academia and civil society. It will include a combination of keynote speeches, round tables, and themed sessions on material conditions; quality of life; gender, minorities & life course perspectives; and sustainability. Each themed session will be organised around parallel sub-themed sessions involving speakers from different horizons.

www.oecd.org/oecdworldforum/newdelhi2012

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by contacting us at newdelhi2012@oecd.org
The Challenge

The truism that “good data does not guarantee good decisions” underpins many national statistical offices efforts to build the capabilities of those in the community so that are able to use data more effectively. However, the challenges faced by those involved in building capability is how to achieve this when the relevance of statistics as a part of our everyday lives is not well understood, along with dealing with the perception that learning statistical skills can be a dry and uninteresting pursuit?

The Australian Bureau of Statistics (ABS) has long realised that providing official statistics will not by itself lead to those statistics being used effectively, and that as Australia’s national statistical agency there needs to be investment in finding effective ways to build the statistical capabilities of the Australian community, including relevant strategies for specific target groups such as Australia’s Indigenous youth (http://en.wikipedia.org/wiki/Indigenous_Australians).

In relation to Indigenous young people, all levels of government in Australia have placed considerable emphasis on seeking to improve the socio-economic circumstances of the Indigenous population, with education acknowledged as one of the key enablers. The Committee for the Review of Government Service Provision noted that “...achievement in years 5 and 7 literacy and numeracy is a key determinant of whether children go on to year 12 and higher education. A lack of basic literacy and numeracy skills also results in poor employment prospects... low literacy is one of the biggest hurdles to improving the health of [Australia’s] Indigenous people”. See: www.pc.gov.au/oid/

For too many of Australia’s Indigenous youth their involvement in the formal education process can be ad hoc and incomplete in nature, requiring consideration of culturally appropriate as well as engaging solutions to address the challenges faced when developing and implementing strategies to build their statistical literacy.

The ABS Response

So how has the ABS approached this challenge? A recent initiative, and the focus of this article, has been to use something that many young people have an interest in as well as an aptitude for, and which would be suitable as a basis for a fun and engaging means of promoting a greater awareness of, and interest in statistics. The ABS used sport, specifically Australia’s own football code Australian Rules Football (http://en.wikipedia.org/wiki/Australian_rules_football), colloquially known as “Aussie Rules” or “Footy”, as the means to do this.

Footy Stats (www.abs.gov.au/footystats) OpenDocument, the name given to the eventual product developed by the ABS, is a free web-accessible program that involves groups of middle years students participating in a range of footy-based activities and games that help develop skills in how to collect, analyse, interpret and communicate basic statistical concepts, with the guidance of a facilitator. The facilitator could be a teacher if the activity is done as part of a school program, or a suitable adult if done in a community context.

The program contains six separate activity sheets that outline the steps involved in undertaking the activity, the intended learning outcomes, and any materials/equipment required. The suite of activities are accompanied by a Facilitator’s Guide which outlines the role of the facilitator, describes the statistical competencies that underpin the six activities, contains a Glossary of terms, and includes all the templates (which need to be printed) that are required by the participants in the various activities.

Put simply, Footy Stats is a series of activities based around practising some element of ‘footy’, such as kicking, marking, handballing, or
discussing aspects of their favourite team and using this information to improve their awareness of statistics while having some fun with their classmates. This is achieved by utilising the passion that young people have for sport, with a focus on our Indigenous youth, to help build some basic statistical abilities, but more importantly to raise awareness of the possible use and value of statistics in our lives.

Although Australian rule football forms the basis of the activities, the program would be relevant across a range of sporting codes that involve the use of a ball. In fact, work is currently underway within the ABS looking to apply the concept to rugby for the next phase of what is more broadly known as the “ABS Sports Stats program”. The overall program’s objectives are to:

- use sport as a vehicle for engaging middle-years Indigenous students in educational activities to promote statistical literacy and improve capability;
- develop further links between the ABS and Indigenous communities;
- develop Indigenous students’ interest in statistics and its applications;
- promote Census enumeration of Indigenous students and their communities; and to
- develop informed decision makers.

The program has taken into account the need for the learning environment to promote:

- independence (doing an activity)
- interdependence (working with others on an activity) and
- self-motivation (leveraging off the participants’ strong interest in football)

while all the time placing importance on the notion of having some fun.

The idea for the program came from an ABS Indigenous Engagement Manager working with remote communities in islands off the northern coast of Australia, where the first version of the initiative was trialled, and which has eventually evolved into the Footy Stats program. The program is suitable for those who have low literacy skills, with kinaesthetic learners well suited to this type of task.

The development of a series of videos, also freely accessible from the ABS website, is an important component of the program’s resources. The videos introduce the program, using an Indigenous former champion player from the national football league to engage the students, as well as demonstrate each of the activities, and discuss the role of the facilitator. The videos feature school children from a school which has a strong focus on using sport to engage with students and improve their attendance and retention. The videos provide an
audio-visual overview of the program activities, rather than solely rely on the written word.

As this program is most likely to be delivered outside of the classroom, its intent is to build the awareness of statistics and basic level capability as an adjunct to the formal education sector learning process. Full details of each of the activities and access to the accompanying video series are available from: www.abs.gov.au/footystats.

The Value of Collaboration

From an ABS perspective, another of the key outcomes from this initiative has been the collaboration between two or more organisations that would not usually work together, these being a national statistical office (ABS) and a national sporting body (the Australian Football League, or AFL).

The AFL, as with other national sporting bodies, has in place a range of programs that strengthen Indigenous communities, with a strong focus on Indigenous community capacity building. The AFL manages a number of Indigenous partnership programs, and works with the school sector to engage young people in education and sporting activities, including programs to support young Indigenous people to complete secondary school and qualify for tertiary education, traineeships or apprenticeships.

As the AFL is active in the development and provision of resources for the education sector across a range of curriculum areas, the ABS realised that there was clear potential for a mutually beneficial partnership when discussions between the two organisations commenced in January 2012 about working together to produce and promote the Footy Stats program.

The results of the partnership, which led to the co-branding of the Footy Stats resources with both the ABS and AFL logos, provided the ABS with access to high profile sports personalities, such as the Indigenous AFL champion Andrew McLeod who features in the video, as well as other in-kind contributions, and access to their community and education sector networks.

After the launch of Footy Stats the Australian Government Statistician, Mr. Brian Pink, commented in his letter to the CEO of the AFL: “I believe that Footy Stats is an exemplary example of a Government agency and a national sporting organisation working together to achieve positive education outcomes for students, in particular for Australia’s Indigenous youth... I’d also like to acknowledge the benefits to the ABS of our partnership with the AFL on this project. It enabled us to promote the new resources through greater access to the schools sector and Indigenous communities via the AFL’s extensive educational and community networks.”

The development of Footy Stats has shown that NSOs can benefit from partnering with other organisations who share similar philosophies about supporting communities and building capability, and who can offer access to networks and resources that complement the work of the NSO. The experience gained from the relationship between the ABS and AFL is now being used to guide discussions with other national sporting bodies to potentially expand the sport stats program.

Will Footy Stats, as a program, make young people statistically literate? By itself, this is not the ABS’ expectations, what the ABS is aiming for with this approach is to help create resources that will assist those who work with our youth to get them more engaged in the learning process and to help them appreciate the fact that statistics are a part of daily life. Despite William Farr once advising Florence Nightingale that “statistics should be the driest of all reading”, the ABS has adopted the alternate position that it is in our collective interests to make the process of building statistical literacy competencies as interesting and as relevant as possible to all of us.
Short-term statistics are often subject to seasonal influences, where seasonal patterns are variations in a time series representing intra-annual fluctuations that are considered reasonably stable both in terms of direction and magnitude and over time.

A seasonal pattern may hide the underlying movement of a time series, and as a consequence bias the interpretation. Hence undertaking seasonal adjustment can be seen as crucial for the analysis of short-term time series.

Monthly (and quarterly) the OECD Statistics Directorate collects short-term statistics from its 34 member countries and selected non member economies. Some of the data received by the OECD has already been seasonally adjusted by the national supplier, using what they consider are the most appropriate methods and taking into account national specificities; this data is used when it exists. However, when only unadjusted series are provided, in some cases the OECD performs seasonal adjustment on these series to derive seasonally adjusted data. Depending on the method chosen by the different compilers, undertaking seasonal adjustment may affect cross country comparability as different seasonal adjustment methods will give different results.

Over a year ago, the OECD Statistics Directorate began an investigation into its seasonal adjustment methods to ensure that they were up-to-date and reflected international common practice. The investigation demonstrated that methods used within the Statistics Directorate varied for different time series and subject areas and were based on different software. The OECD Statistics Directorate has now launched a work programme to improve the way that seasonal adjustment is performed and integrated into the data-processing workflow of various subject areas. This article presents changes that will be made in the seasonal adjustment processes following the investigation by the OECD Statistics Directorate.

### Available software and methods with the OECD

Different software and methods for seasonal adjustment are available in the OECD Statistics Directorate allowing different levels of interaction and varying degree of access to fine-tuning and integration within OECD production systems.

#### Software

DEMETRA+ ([http://circa.europa.eu/irc/dsis/eurosam/info/data/demetra.htm](http://circa.europa.eu/irc/dsis/eurosam/info/data/demetra.htm)) is a software developed by the National Bank of Belgium for the Statistical Office of the European Communities (Eurostat) that offers two methods of seasonal adjustment: TRAMO/SEATS ([www.bde.es/webbde/en/secciones/servicio/software/econom.html](http://www.bde.es/webbde/en/secciones/servicio/software/econom.html)); and X-12-ARIMA (AutoRegressive Integrated Moving Average - [www.census.gov/srd/www/x12a/](http://www.census.gov/srd/www/x12a/)). These are the two most common methods used by National Statistics Offices. DEMETRA+ is a recently updated version of the existing DEMETRA 2.0, which was developed by Eurostat in 1999, and released to the public in 2000. It is intended to provide a convenient and flexible tool for seasonal adjustment using TRAMO/SEATS and X-12-ARIMA methods.

FAME is a fully integrated software and database management system that provides capabilities including: time series and cross-sectional data management; calculation, data analysis, econometrics, and forecasting; table generation and
report writing; and, graphics. While FAME itself has an in-built seasonal adjustment routine (ADJUST), this is not used because at the OECD an interface is provided to undertake seasonal adjustment analysis of FAME data using a standalone version of X-12-ARIMA (or X-11).

Other software is available within the OECD that provides in-built seasonal adjustment routines, such as SAS and EVIEWS. However, their use is limited to data compiled for small one-off type projects.

It should be noted that while software e.g. DEMETRA+, EViews and SAS have TRAMO-SEATS and X-12-ARIMA built into their systems, the seasonally adjusted outputs may differ from the standalone programs of TRAMO-SEATS and X-12-ARIMA.

Methods
The two methods most widely used, and also suggested by Eurostat in its 2009 publication “European Statistical System Guidelines on Seasonal Adjustment”, are:

1. TRAMO/SEATS method was by developed by Victor Gomez and Agustín Maravall, both from the Bank of Spain (Banco de España). TRAMO/SEATS is a parametric method (i.e. a method that can be described using a finite number of parameters) based on signal extraction. The two programs TRAMO (Time series Regression with ARIMA noise, Missing observations and Outliers) and SEATS (Signal Extraction in ARIMA Time Series) are independent but typically used together:
   - TRAMO is used in the detection of missing values, outliers and calendars effects which it corrects automatically using ARIMA modelling and forecasting.
   - SEATS is used for the decomposition of the time series under examination into trend-cycle component, seasonal component, and irregular component.

2. The X-12-ARIMA method was developed by the United States Census Bureau. It broadly operates as follows:
   - a pre-parametric treatment finds the best suitable model of the selected time series, improving the seasonal adjustment by detecting and correcting for outliers, backcasting and forecasting to improve stability and reduce end point revisions; and
   - a non-parametric adjustment that applies moving averages to decompose the time series into trend-cycle component, seasonal component and irregular component.

The 2011 investigation
Within the OECD Statistics Directorate, seasonal adjustment methods were different across statistical areas:

1. For quarterly GDP: X-12-ARIMA run through the FAME software. Seasonal adjustment was done quarterly.
2. For quarterly Unit Labour Costs: TRAMO/SEATS with DEMETRA 2.0 was used with two routines: annually (model, filters, outliers and calendar regressors were identified) and monthly (parameters and factors re-estimated with latest data).
3. For monetary statistics, real indicators, infra-annual labour force statistics, business and consumer tendency surveys: X-12-ARIMA run through the FAME software. Seasonal adjustment was undertaken once a year with the seasonal factors forecasted and fixed for the following year.
4. For Monthly Statistics of International Trade (MSIT): X-12-ARIMA run through the FAME software. Seasonal adjustment was undertaken monthly in a brute force method (model, parameters, regressors and outliers were automatically detected and applied).

Methods elsewhere in the OECD include seasonal adjustment with X11 run through the FAME software. In some cases EViews is used to undertake one-off seasonal adjustment analysis of series.

FAME was thus the main software used to undertake seasonal adjustment (mostly using X-12-ARIMA) at the OECD. There are however, some limitations in the current version of FAME and the seasonal adjustment interface used at the OECD. In particular, the ability to view, in a user friendly way, feedback on the quality of the seasonal adjustment is limited.

Beyond 2011
To overcome the inconsistencies revealed by the 2011 investigation, the OECD Statistics Directorate has undertaken an evaluation of the new seasonal adjustment software “DEMETRA+”. The introduction of any software needs to provide statisticians with a tool that can be easily assimilated into their work flow while offering clear benefits, for example the ability to undertake batch jobs.

The OECD Statistics Directorate will introduce DEMETRA+ in its seasonal adjustment of short-term economic statistics. Reasons for deciding on DEMETRA+ were its: extra versatility; fast and efficient...
processing of series; use of a modern programming platform; readiness for batch operations; ease to integrate; and, friendly user-interface. In addition, DEMETRA+ is consistent with European Statistical System Guidelines on seasonal adjustment.

The interface DEMETRA+ provides a number of features in the compilation of seasonally adjusted series that are useful for statisticians, in particular, it:

- includes a choice of seasonal adjustment methods (TRAMO/SEATS and X-12-ARIMA);
- allows the possibility of adjusting large sets of time series; and
- provides tools for checking the quality of the seasonally adjustment undertaken.

To implement DEMETRA+, the OECD Statistics Directorate has established a yearly routine and an infra-annual routine that are applied to raw data (i.e. non seasonally adjusted data).

The Yearly Routine
DEMETERS+ can connect to a variety of sources for time series in different formats, for example Excel, CSV files, text files, html files etc., and can directly link to a SQL server. Furthermore, the connection is dynamic, meaning that time series are automatically refreshed when DEMETRA+ opens the connection.

Statisticians can make intensive use of the analytical tools in DEMETRA+ to check and modify when necessary the models and specifications of time series. DEMETRA+ has a range of statistical instruments, graphical tools and a detailed analysis interface that facilitates the work of the statisticians.

The Infra-Annual (monthly/quarterly) Routine
Once the model and specifications have been fixed (in the Yearly Routine), DEMETRA+ is used every month or quarter to undertake seasonal adjustment on the latest data.

The two routines have been implemented in three subject areas: Quarterly Unit Labour Costs; Quarterly National Accounts (QNA); (and recently with the newly established) Quarterly Labour Market Situation statistics.

For the remaining infra-annual series that require seasonal adjustment, the OECD Statistics Directorate will use the newly available JAVA version of DEMETRA+. This version allows seasonal adjustment for series with more than 600 observations and considered a necessity for these subject areas. The JAVA version of DEMETRA+ is expected to be available by the end of 2012.

References


The International Year of Statistics (Statistics2013) is a worldwide celebration and recognition of the contributions of statistical science. Through the combined energies of organisations worldwide, Statistics2013 will promote the importance of Statistics to the broader scientific community, business and government data users, the media, policy makers, employers, students, and the general public.

The goals of Statistics2013 include:

- increasing public awareness of the power and impact of Statistics on all aspects of society;
- nurturing Statistics as a profession, especially among young people; and
- promoting creativity and development in the sciences of Probability and Statistics.

What should we be doing to celebrate the International Year of Statistics? There are many activities you could undertake. Here are a few examples:

- Have a special conference, or add a component on Statistics2013 to your conferences already planned
- Hold special workshops or symposia on important topics in statistics for your area
- Have special editions of your journals or magazines related to Statistics2013

Would your organisation like to be a part of this celebration? Go to http://statistics2013.org/participants.cfm to indicate your interest and join the list of supporters of Statistics2013.

You can also participate in the international video contest to help launch the worldwide celebration of the positive impact of statistical science! Submissions must be posted on YouTube with a link sent to Tom Short, chair of the Statistics2013 Video Contest review committee, tshort@jcu.edu, by 31 October 2012.

Detailed information on Statistics2013 is available at http://statistics2013.org

Implementation of the 2008 SNA in Asia and the Pacific Region and its Challenges

18-19 September 2012, Seoul, Republic of Korea

An “International Seminar on the Implementation of the 2008 SNA in Asia and the Pacific Region and its Challenges” will be held at the Bank of Korea in Seoul on 18-19 September 2012. This international seminar is designed to share the diverse experiences in the process of implementing the 2008 SNA within Asia and the Pacific region.

At the seminar, experts from UNSD, UN ESCAP, the Bank of Korea (BOK) and the Asia-Pacific region will make presentations on the current status of implementation of 2008 SNA and the plans for future progress. It is expected to offer practical help in the setting up and implementation of the new global statistical standards as well as understanding recent trends in macroeconomic statistics. The seminar will consist of five sessions. At the first session, there will be an overall introduction of implementation of the 2008 SNA worldwide, in Korea and in the Asia and Pacific region.

Meanwhile, this seminar is linked to “Regional Training Course on the 2008 SNA” which will be hosted jointly by the Bank of Korea and the UN Statistical Institute for Asia and the Pacific (SIAP) from 11-15 September. Participation in both the training course and the seminar is considered optimal. Content related to the training course will available at www.unsiap.or.jp

Further information is available by contacting Ms Eunmi Kim at emkim@bok.or.kr or at http://www.bok.or.kr/contents/total/eng/boardView.action?menuNavId=1958&boardBean.brdid=11033&boardBean.menuid=1958
International Migration Outlook 2012

International migration fell for the third consecutive year in 2010 but started picking up again in 2011, according to a new OECD report.

The 2012 International Migration Outlook says that permanent migration into OECD countries fell by about 2.5% in 2010 from the previous year, to 4.1 million people.

Migration to the United States fell by 8% in 2010. It dropped by 3% to European OECD countries – excluding intra-European movements - and rose by more than 10% to Canada, Korea and Mexico. Recent national data suggest that migration picked up in 2011 in the United States, Australia, New Zealand and in most European OECD countries, with the exception of Italy, Spain and Sweden.

www.oecd.org/migration/imo

OECD Employment Outlook 2012

The current weak economic recovery will keep unemployment rates in OECD countries high until at least the end of 2013, according to a new OECD report.

The Employment Outlook 2012 says that the OECD-wide joblessness rate is forecast to remain high at 7.7% in the fourth quarter of 2013, close to the 7.9% rate in May 2012. This leaves around 48 million people out of work across the OECD. In the Euro area, unemployment rose further in May to an all-time peak of 11.1%.

To get employment rates back to pre-crisis levels, about 14 million jobs need to be created in the OECD area. Young people and the low-skilled continue to bear the brunt of the jobs crisis.

www.oecd.org/employment/outlook

OECD-FAO Agricultural Outlook 2012

While international agricultural commodity markets appear to have entered calmer conditions after record peaks last year, food commodity prices are anticipated to remain on a higher plateau over the next decade, underpinned by firm demand but a slowing growth in global production, according to the latest OECD-FAO Agricultural Outlook 2012-2021.

The report suggests that in addition to population growth, higher per capita incomes, urban migration and changing diets in developing countries, as well as rising requirements for biofuel feedstocks, are underpinning demand pressures. At the same time, agricultural output by developed, exporting countries has been slow to respond to higher prices in the last decade. Higher demand will be met increasingly by supplies that come to market at higher cost. With farmland area expected to expand only slightly in the coming decade, additional production will need to come from increased productivity, including by reducing productivity gaps in developing countries, the report said.

www.agri-outlook.org
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<td>Seminar on Innovative Approaches to Turn Statistics into Knowledge. OECD Statistics Directorate, Seoul, Korea</td>
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<tr>
<td>3-5 Oct. 2012</td>
<td>Innovation and Modernising the Rural Economy. OECD Rural Development Policy Conference, Krasnoyarsk, Russia</td>
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**Other meetings**

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<td>12-14 Oct. 2012</td>
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Unless otherwise indicated attendance at OECD meetings and working parties is by invitation only.